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# The Builder.

AN

## ILLUSTRATED WEEKLY MAGAZINE,

FOR THE

## ARCHITECT, ENGINEER, OPERATIVE, AND ARTIST.

"Every man's proper mansion-house, and home, being the theater of his hospitality, the seate of selfe-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kinde of private princedome, nay, to the possessors thereof, an epitomie of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

"Architecture can want no commendation, where there are noble men, or noble mindes."——Sir Henry Wotton.

"Our English word To Build is the Anglo-Saxon Bylban, to confirm, to establish, to make firm and sure and fast, to consolidate, to strengthen; and is applicable to all other things as well as to dwelling-places."——Diversions of Purley.

"Art shows us man as he can by no other means be made known. Art gives us 'nobler loves and nobler cares,'—furnishing objects by the contemplation of which we are taught and exalted,—and so are ultimately led to seek beauty in its highest form, which is Goodness."

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TO BUILDERS.

Kingsland, Dalston, and De Beauvoir Town Literary and Scientific Institution.

**THE Committee of the above Institution** HEREBY GIVE NOTICE that they are ready to receive TENDERS for the several works required in completing the carcase of the building, plans and specifications of which are now prepared, and may be seen between the hours of Ten and Four (Sundays excepted) at the office of the architect, Mr. JOHN CLARK CATLING (removed to), No. 10, Middleton-road, Dalston. Sealed Tenders to be delivered at Six o'clock p.m. on Thursday, the 7th day of January, 1847. The Committee do not pledge themselves to accept the lowest, or any other tender not fully approved of.

By order,
ROBERT SIMONS, Secretary.
10th December, 1846.

TO ENGINEERS AND OTHERS.

**THE Directors of the Commercial Gas-light** and Coke Company will meet at the office of the Works on Wednesday, the 13th day of January, 1847, to receive Tenders for the fixing of an Eight-horse High-pressure Engine with certain Machinery to be attached thereto. The Engine is on the Company's Works at Stepney, and may be seen with the plans and specifications of machinery to be attached by application to Mr. ISAAC MERCER, the Company's Engineer, any day previous to the date above-mentioned, between the hours of Ten and Two. The Directors do not bind themselves to accept the Lowest Tender.—By order of the Board,

H. AVERY, Secretary.

Commercial Gas-light and Coke Company's Offices, Ben Jonson's Fields, Stepney, December 30th, 1846.


**A FEW Statuary Marble Chimney Pieces** FOR SALE, at the following low prices:—Three 2 ft. 6 in. Openings, 34 in. piers, 33s. each; two 2 ft. 10 in. Openings, 10 in. piers, 50s. each; several larger Openings, 11 in. and 12 in. piers, 60s. each, worth £5, and some, with carved blockings, from £8 to £7, worth £12. Approved bills, if required, at three or six months, according to the amount. Apply at 33, Chichester-place, King's-cross.

TO BANKING OR OTHER PUBLIC COMPANIES.—First Class Commercialists or Traders requiring great space, extensive premises, and first-rate situation at the West-end of London.

**TO LET on LEASE, for any Term beyond** Twenty-one years parties may desire, those extensive premises, No 160, New Bond-street, containing on the ground floor an entrance hall, two noble parlours, most extensive corridor, leading to a magnificent banqueting-hall for upwards of 100 persons, with several minor rooms, comprehending an area of about 3000 square feet Stabling for nine or ten horses, and standing for three or four carriages. The house is replete with conveniences, including an excellent bath-room. The drawing-room and library are also well-proportioned rooms. For cards to view, apply to Mr. LESLIE, at the offices and manufactory for his new Patent Ethereal Gas Burner, 59, Conduit-street, Hanover-square.

**MR. GRAYSON'S ARCHITECTURAL** SCHOOL of DESIGN, established above Fifty Years—CIVIL ENGINEERS, MILLWRIGHTS, and others taught the principles of MACHINERY and PRACTICAL PERSPECTIVE. The selection of models and casts accompanying the diagrams which are introduced at this Academy will be found of great utility to the Student in elucidating the several Mechanical and Practical Sciences. Morning classes from 9 till 2 evening from 6 till 9, five nights in the week. For terms, apply at 1, Bangor-street, Finsbury-square, or at the office of "The Builder," 2, York street, Covent-garden, if by letter, post-paid.

**CHIMNEY SWEEPING MACHINE**, of the best description, may be obtained by applying to the Inventor, JOSEPH GLASS, No 2, Queen street, Tower-hill, or at No. 2, Moor lane, Cripplegate, London.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only,
82, WATERLOO BRIDGE ROAD.
An Apprentice wanted, to board and lodge with his friends Premium, £30.

**SILCOCK and Co.'s PATENT PLANES** may be had at the following places:—
Archer, 45, Goodge-street, Tottenham court-road; Blyth, White chapel; Cook, 424, Oxford-street; Dean, 46, King William street; Fenn, 1, Newgate-street; Holtzapffel and Co., 64, Charing-cross; and of all ironmongers and tool dealers in the United Kingdom.

**ART UNION of LONDON.—Established** 1837. Incorporated by Royal Charter, 10th Victoria, 1846.

PRESIDENT
HIS ROYAL HIGHNESS THE DUKE OF CAMBRIDGE.

VICE PRESIDENTS.
The Most Noble the Marquis of Northampton, P.R.S.
The Right Hon. the Lord Prudhoe.
The Right Hon. the John Monteagle.

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The Council have much satisfaction in announcing to the public that the Charter granted under the Act passed in the last session of Parliament has received the great seal, and that the Art-Union of London is now a corporate body, with all the rights and privileges thereto belonging.

The Council feel assured that, the Society being thus placed on a firm and permanent basis, a great extension of its beneficial operations will result, and that many will be induced to join who have been hitherto deterred by doubts of its legality or permanency; while the Council, feeling that the existence of the Society is no longer precarious, will be authorized to make all such prospective arrangements as may be desirable; and it will be their anxious endeavour so to apply the means at the Society's disposal as to carry out in the most effectual manner the great objects it has in view, the dissemination of a knowledge and love of Art, the improvement of the general taste, and the consequent elevation of the fine arts and their professors.

The scheme of prizes for the present year will embrace, in addition to the usual proportion of works to be selected by the prize-holders,

CASTS IN BRONZE, from an original figure of "Iris Ascending," made expressly for the Society by Mr. W. B. Kirk;

CASTS IN IRON, from a reduced copy by Mr. Dixon, of a figure of Thalia, in the British Museum;

STATUETTES IN PORCELAIN, from an original figure called "Innocence," made expressly for the Society by Mr. J. H. Foley; and

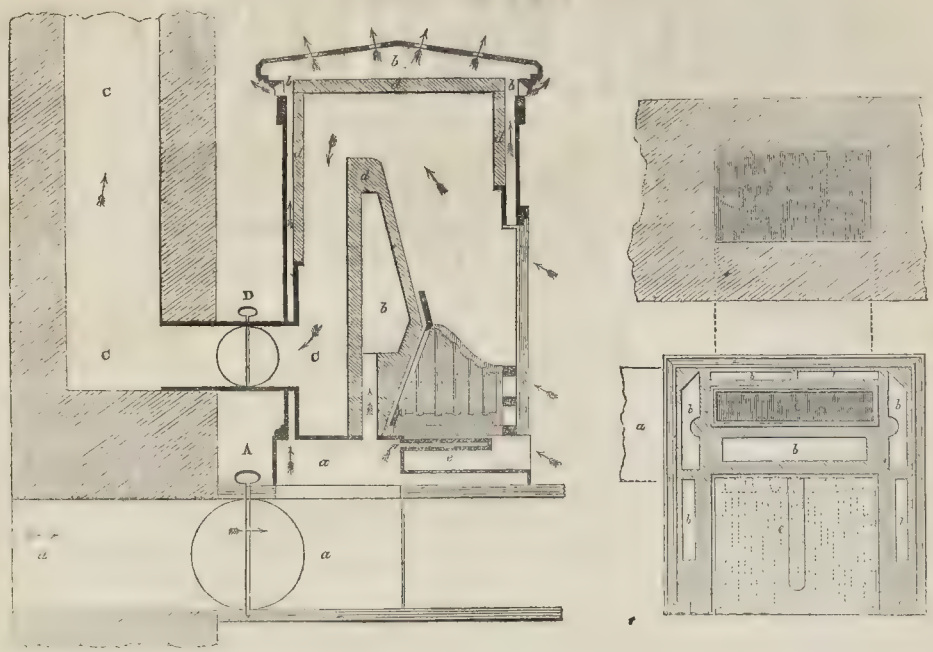
MEDALS IN SILVER, by Mr. W. Wilson, commemorative of Flaxman, in continuation of the series already commenced by the Society.

Every member will receive a pair of prints—"The Last Embrace," and "The Neapolitan Wedding," engraved by Mr. Charles Rolls and Mr. F. A. Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of £500 offered by the Society for an historical picture.

Subscriptions for the present year are now due.—By order,
GEORGE GODWIN, } Honorary
LEWIS POCOCK, } Secretaries.

4, Trafalgar-square, January 1st, 1847.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.




*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them: — Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same.

Yours truly,

ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my churc is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithful y,

WILLIAM GARRATT, Minister of St. John's, Fulham.

Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell.

MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

Letter from Professor BRADLEY.

King's College, London, July, 1846.

Sir,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant,

THOMAS BRADLEY.

*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices,

# The Builder.

NUMBER 204. VOLUME FOR 1847. SATURDAY, JAN. 2.


## OUR FIFTH VOLUME.

IN accordance with custom, we would bespeak, by a few words of kindly introduction, the good will of our readers for our forthcoming volume. We are as much led to do this by feeling, as bound to it by duty. We desire to stand well with them; to have their confidence: we would enlist their aid and secure their esteem. To be thought honest and useful recorders of facts,—even able expounders of principles (high praise as it would be), is not the extent of our ambition. We would have it felt that we have high objects in view, and are impelled by loftier motives than pecuniary profit or desire for reputation: that we are labouring honestly and sincerely, to advance the well-being and the happiness of our fellow men, and would find greater reward in effecting this than in personal success. That it is so we most seriously aver: and we therefore ask all who have the same end in view, or regard it with the consideration it demands, to give us the hand of fellowship, and look upon us as fellow-labourers in a work of great and universal interest.

The spread of architectural knowledge; the improvement of dwelling-places; the science of heat, of sound, of ventilation; legislative enactments affecting constructions, and the due administration of them; facilities of communication; a dissemination of a knowledge and love of art; and the scope of other objects which specially occupy our pages, are but means to an end,—and that end is, the health, well-being, happiness, GOODNESS, of the community at large.

The effect of an ill-ordered dwelling on the health of the inmates, and the connection between health and *morals*, are becoming understood. When once universally felt, improvements and ameliorations will be adopted more rapidly than they are now. Once make it the public opinion that improvements in this respect *must* be effected, and the thing is done.

The intimate connection which exists between the *good* and the *beautiful*, is not so obvious, but is none the less certain. The assertion of it has been duly scoffed at by those who could not understand it, but has now passed its probation, and is establishing itself in the public mind.

The effect produced on national character by the contemplation of works of art,—fine pictures, exalted statuary, or noble buildings,—is very great; much greater than is generally supposed; and has been too long overlooked in our country. The perfect and general recognition of it would lead to the free admission of the public to all national monuments and works of art, the adornment of cities, and the exercise of greater care in the selection of designs for public buildings.

Two years ago (in the preface to our third volume) we said, "It must be constantly remarked that architecture, as a *fine art*, is much less understood by the public than as a useful art, whence it follows that our advance in matters of taste is much slower than in matters of utility;" and the observation unfortunately is not yet out of date. On all matters of art the ignorance which prevails is excessive. It will continue to be our aim to spread abroad a knowledge of the principles of criticism, and to cultivate the taste of our readers, so far as we may be able to do so.

The coming year promises to be a busy one. A revised Buildings Act, the prevention of interments in towns, the abolition of the window-tax (a tax on cleanliness, health, and morals), the prevention of smoke, and general sanatory regulations, will probably come before the legislature, and will demand our attention. The new buildings commenced and projected are numerous. Amongst these, in the metropolis alone, we may mention the additions at Buckingham Palace, concerning which the public, up to this time, are entirely ignorant; the Carlton Club-house; Bridgewater House; new Westminster bridge, or whatever else it may be called, if the preposterous proposal to remove it be not defeated; Covent Garden theatre; the new theatre in Leicester-square; a building for the Records; improvements in the city; a score of churches of more or less pretension; and works in connection with the railways, of surprizing magnitude.

In the provinces too, much is contemplated; and we shall not fail to give the public full information of what is passing, both there and on the continent.

While we seek to render our journal valuable to architects, engineers, artists, and a large body of general readers, the building trade will find their interests watched and their requirements attended to. All new inventions likely to be of use to them, improvements in construction, new materials, and proceedings under the Buildings Act, will have our continued attention; nor shall we relax in our endeavours to induce a more careful preparation of estimates, and the maintenance of a judicious and enlightened course, as well between themselves and their workmen, as between themselves and their employers.

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EXPLOSION OF BOILERS.—The constant occurrence of accidents to steam boilers, is disgraceful to us as a nation in a mechanical point of view, and calls for inquiry. It would seem to be necessary that every boiler should be examined by a public officer before it is sent out.

## THE LIFE OF JAMES GANDON, ARCHITECT.

MESSRS. HODGES and SMITH, of Dublin, have made a very interesting addition to architectural biography, in publishing a life of Mr. Gandon.* It contains much valuable matter, and should be read, especially, by every architect who finds his spirits flag under the difficulties which attend him in his profession, even when successful.

GANDON was born on the 29th of February, 1742, in New Bond-street, London, and received his education at a boarding-school, at Kensington Gravel Pits, where he manifested a great predilection for mathematics and drawing. His father, Peter Gandon, becoming a proselyte to the science of alchemy, dissipated in fumes much of his property, and was involved to such an extent by mismanagement, that at fourteen our hero found himself recalled from school, and thrown entirely on his own resources. Having great love for the arts, he applied himself vigorously to study them, especially architecture and perspective: he read all day, and drew at Shipley's academy (then the best esteemed in London) every evening.

At this time Mr. William Chambers arrived in England from Rome, and being advised to settle here, bought a house in Poland-street. Hearing that he was in need of assistance, some of Gandon's friends advised him to call on Mr. Chambers, and shew his portfolio. The result of which was that Chambers took him into his house as a pupil, with a very moderate fee. Here he was introduced to the late Earl of Charlemont, who continued during his life one of his most attached friends. He obtained many other valuable friends, and when he left Sir William Chambers' office, and commenced practice, appears to have been introduced to good connections.

About the year 1766 (misprinted in the life 1776), he formed the intention of publishing a continuation of the "Vitruvius Britannicus," published by Colin Campbell, and in conjunction with Mr. Woolfe, of the Board of Works, issued two folio volumes before completing his 25th year.

In 1767 he exhibited, at two exhibitions arranged by the Incorporated Society of Artists, a design for a Mausoleum in memory of Handel, erected in the demesne of Sir S. Hillier, Staffordshire, and a design for a palace. About this same time he designed a park screen, which was erected in Portman-square, at the residence of the celebrated Mrs. Montague. His energy and industry were of no ordinary kind, for between 1766-1769 he had, in addition to the works we have spoken of, gained the premium for designs for the Court House of Nottingham (afterwards erected), obtained the gold medal offered by the Royal Academy, then just established (1768), and furnished designs for the Royal Exchange in Dublin. It seems that when he saw the Academy medal advertised, he was not a student, and therefore was not eligible; he however quickly removed that disability, and carried off the prize,—the subject of the design was a triumphal arch, commemorative of the seven years' war. Chambers appears to have

* "The Life of James Gandon, Esq., M.R.I.A., with original notices of contemporary artists, and fragments of Essays." From materials collected by his Son. Edited by the late Mr. T. J. Mulvany, R. H. A. Hodges and Smith, Dublin; 1846.

felt interested in his success on this occasion. Paul Sandby, the artist, was his warm friend, and introduced him to the Right Hon. John C. Beresford, who became his great patron, and ever continued so.

We should mention, that the plans for the Dublin Exchange were submitted in competition, at the suggestion of some of his friends who were on the spot. He had sixty-four competitors, and obtained the second premium. The first was given to Mr. Cooley: the third to Mr. T. Sandby.

On this occasion Malton, the author of a Treatise on Perspective, well known, published some abusive remarks on Gandon's design.*

In 1771, Gandon took a large house in Broad-street, where he remained for ten years, and married a lady to whom he had been long attached. During this period, namely, in 1776, 100 guineas were offered by advertisement for the best designs for the new Bethlehem Hospital, and Gandon, although fully occupied, and the task was one requiring much study, was led to submit plans. He was assisted in the preparation of these by the eminent philanthropist Mr. John Howard, and was awarded the premium, without a dissentient voice. The sum so gained, however, was quite incommensurate with the labour he had bestowed upon the work, which had nearly killed him; his object was of course to carry out the design, and he was therefore deeply mortified to see it handed over for that purpose to a man of very inferior ability.

In 1779, inducements were offered him to settle in Petersburgh; but while he was deliberating upon them, Lord Carlow and Mr. Beresford invited him to Ireland, at first on general grounds, with the offer of a pension till he was established, but afterwards for the express purpose of building a new custom-house. This determined his future course, and in April 1781, having previously forwarded his sketches, he left London for Dublin. Here, however, he found himself in a position of great difficulty: the proposal was most unpopular; for several weeks he was compelled to keep himself concealed; and when it was determined to go on, meetings were held to prevent it, and great tumult ensued. The first stone was laid in August 1781, but the difficulties in the way were not overcome till long after that: he was himself constantly threatened, and never visited the works without a good cane-sword.†

During the progress of the custom-house, he was solicited by the Earl of Tyrone (afterwards Marquis of Waterford) to make designs for a court-house in Waterford; and to oblige Mr. Beresford, he complied with the request against his will. This building unfortunately proved the source of great annoyance and trouble to him: chiefly caused by conflicts between the grand juries and the corporation, relative to raising the money to pay the workmen, and he was compelled to remonstrate with the grand jury. "In my interview with these gentlemen," he says, "I found they had a very erroneous idea of the profession of an 'architect,' as it stood in England. Some of them considered me as a contractor, or, as they termed me, 'a projector and undertaker,' not one of those sable personages whose occupation it is to bury the dead, but to bury stones and mortar!‡

"Having explained to them what my profession really was, and that I only conducted works, not contracted for them, the artificers were promised a settlement."

He afterwards sought to resign the appointment, but was induced by his steady friend, Mr. Beresford, to persevere. Various other commissions were offered to him, but were mostly refused; when applied to, however, to design improvements in the Irish House of Parliament, he could not decline, and his plans were ultimately carried out. New courts of law followed, and during the execution of these he was much harassed by an opposition in the House of Commons, and other endeavours to stop the works. In his notes he says;—"I cannot but observe in this place, the injurious tendency of repeated attempts of this kind on any of the works of which I had the management. Whenever the stopping of them became in this manner subject of conversation, impediments to their future progress immediately took place; every artificer was apprehensive that the materials prepared or ordered would be thrown on his hands, and that his bills might remain long unpaid. This directly gave a check to every exertion on their parts, by withdrawing their men, and counter-ordering the materials which came from any distance; so that when the business was to recommence, the season was nearly lost by the delays, which circumstance occasioned considerable injury to the works. Indeed, the frequent opposition given to this work had so harassed and disgusted me, that I did not like to go near it; and it prevented me from constructing the inner dome with brick, which, for the sake of expedition, and to save expense, was done with carpentry."

A report which he drew up in January 1794, shewed that 44,234*l.* had been expended on the courts up to that time, and that 15,898*l.* were wanted to complete them: further, that delay would entail great expense and injuries. The result of this was a vote of 16,000*l.*, and the completion of the courts for the reception of the Judges by November 1796. The whole of the buildings, however, were not finished till 1802.

In respect of some designs made by Mr. Gandon for considerable additions to the Irish House of Commons, he considered himself ill-treated, his plans being carried out by others without compensation to him.

In 1786 he gave designs for a military college in Phœnix-park (also carried out by others), and in 1791 built Carlisle bridge. The last building which he conducted was the King's Inns, Dublin, the first stone of which was laid in 1795. During this time the works at the Custom-house were going on (interrupted for a time by the lamentable political occurences of this period), and with them constant annoyances to Gandon. At the King's Inns too, he found objectors and difficulties; and considering relaxation necessary, he resigned the appointment, and retired to his house at Lucan, about the year 1808, where he afterwards died, aged eighty-two. Amongst his last projects was one, which he forwarded to Lord Castlereagh in 1816, on the subject of a triumphal memorial to celebrate the achievements of the navy. He proposed that Westminster Bridge should be made a triumphal bridge, with a colonnade over the centre arch, and the statues of the admirals on the adjoining piers. Lord Castlereagh's secretary, in acknowledging it, said his lordship's avocations did "not permit his attending to proposals of *such a nature!*"

Our epitome of Gandon's life having already extended farther than was at first proposed, we can only say that the volume before us contains notices by himself of Captain Grose, the antiquary; Horace Hone; Sir William Chambers; Paul Sandby; Athenian Stuart, and many others; together with an essay on the progress of architecture in Ireland, and hints for erecting testimonials.

A description and review of his works, by an impartial hand, would have been a valuable addition. Some of them possess great merit.

* At a later period of Gandon's life, he employed Malton's son in his office, at the urgent request of the father, but, after three years, was obliged to discharge him for betrayal of confidence.

† The foundation of the new building was very bad, and required the utmost care. Piling was resorted to, but had objections besides that of expense. He says, in his own notes,—"I therefore gave directions to have a grating of Memel timber prepared, the timber to be one foot square, to have the upper ones notched down three inches in the ground pieces, which were to be bedded on a layer of cut heath, the whole ground being first correctly levelled; the interstices of the grating to be filled in with hard sound stock bricks, up to the level of the timbers, swimming in mortar composed of pounded roach-lime and mortar well mixed, which answered nearly as well as tarras; over which was laid four-inch fir plank, fastened down on the grating with oak trenels, which was all completed. The foundation-walls were then set out on the 17th of September. The part directly under the cupola was laid with rough blocks of mountain-granite, in regular courses; in the first course was sunk an iron chain of flat bar, four inches wide and two and a half inches thick, into collars which were run with lead, but the bars were only covered with a cement of wax, resin, and stone dust."

‡ The following testimonial will shew to what class of persons the professional term "architect" was applied in the country parts of Ireland about fifty years ago.

"We have known Benjamin Shorter, of Bandon, architect, for the last ten years, during which period he has worked for us at different times, and in every matter executed his work in a very proper and masterly manner. We recommend him, therefore, to the public as an honest, industrious, sober, able workman, and think him very capable of executing any work he undertakes."

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WINDSOR CASTLE.—An alteration in the present arrangements, by which tickets for viewing the state apartments can be obtained only in town, is contemplated. It has not worked well lor Windsor.

## ON THE SEVEN ARCHITECTURAL HARMONIES OR PROPORTIONS,

CONSISTING OF MAXIMS AND PRACTICAL RULES FOR REGULATING THE SIZE OF ROOMS, DOORS, AND WINDOWS.

IN the construction of rooms in buildings, whether they are designed for convenience and comfort, or merely to please the eye by their elegance and beauty, there are certain rules and proportions to be observed, which, being dependent on the principles of natural harmony, cannot be violated without offending the most stolid and unpractised eye, and producing an effect precisely the reverse of that which was originally contemplated by the design.

It is not known to us, whether or not the architects of modern times are generally acquainted with the rules and proportions to which we allude; but if they are, one thing is certain, that such knowledge is to them no better than a dead letter, for it would be difficult to point out one single example amongst the most celebrated erections of our times, in which an astute and judicious observer could not detect some very glaring inconsistency; and it would be still more difficult to produce an instance, in which the proportion of parts has been rigorously adhered to, both externally and internally, in the same building, if indeed we except one or two very conspicuous and rare examples copied from Sir Christopher Wren and Inigo Jones, but which examples it is unnecessary to mention more particularly in this place.

In music, nature has established certain rules for adjusting the proportions of sounds, so as to please the ear by the production of harmony. In like manner, architecture has its rules and maxims dependent on similar proportions, or at least on such principles as are similarly adapted for pleasing the eye, by effecting such arrangements as combine to produce the harmony of order.

Beauty and proportion are inseparable between themselves, for wherever the one of them exists so must the other; there must consequently be some fixed and immutable laws by which they are produced in unison, and the more we violate those laws, the more we offend nature, and the farther do we recede from the attainment of real elegance and imposing symmetry. It is therefore indispensable in accurate practice, that just laws should be rigorously adhered to; and it is for the purpose of inculcating the application of those laws, that the subject of the present paper is humbly submitted to the perusal of the candid and intelligent architectural reader.

There are in music only seven distinct degrees of sound that are recognised by the human ear; so in architecture, which is more immediately the subject of geometrical harmony, there are only seven distinct proportions or gradations of form, which by reason of their affinity to the notes in music are rendered pleasurable, to the eye, and under one or other of these proportions every species of building that has the smallest claim to regularity of arrangement or accuracy of principle may be comprehended.

Palladio has testified to the fact, although he abstains from assigning a reason, why those proportions and no other should produce such agreeable sensations on the eye and the imagination. He specifies seven distinct proportions or varieties of form which he calls *beautiful*, but beyond this point he does not attempt to proceed, and accordingly here the analogy breaks off, leaving us to assume, that no other terms in the series would be found in perfect accordance with the laws of nature as referred to this particular subject.

The proportions particularized by Palladio, are the circle, the square, the diagonal of a square, the square and its third, the square and its half, the square and two-thirds, and the square doubled. At this term the series terminates, no other additional point being assignable, from which the entire profile of a building could be distinctly encompassed at one view, without moving the eye from its original position.

These analogies are perfectly in accordance with the laws of nature, in as far as they have a direct reference to plane figures of only two dimensions; but as all buildings involve the idea of three dimensions, viz. length, breadth, and depth or height, it becomes necessary so to modify the foregoing proportions as to take

into account the three linear dimensions of the fabric, and for this purpose, we have only to apply a similar mode of reasoning, and a similar process of variation, to the cube considered as a basis, which Palladio adopted for the square, since this figure bears precisely the same analogy to solid bodies that the square does to plane surfaces, each of them being made the measuring unit of their respective species of magnitude.

Thus modified, the seven varieties of proportion which constitute the subject of the present paper become—

No. 1—1, 1, 1, corresponding to the perfect cube.
No. 2—1½, 1, 1, corresponding to the perfect cube and its half.
No. 3—2, 1, 1, corresponding to the double of the perfect cube.
No. 4—3, 2, 1, corresponding to six perfect cubes.
No. 5—4, 3, 2, corresponding to twenty-four perfect cubes.
No. 6—5, 4, 3, corresponding to sixty perfect cubes.
No. 7—6, 4, 3, corresponding to seventy-two perfect cubes.

Now, in all these varieties of proportion, it must be understood, that the first term respects the length of a room or other compartment of a building, whether considered internally or externally; the second term has reference to the breadth, and the third to the height, the terms themselves merely indicating the proportion of the parts, the actual dimensions being the same equimultiples of each variety, or the arithmetical harmonies of the respective terms. These analogies, therefore, comprehend the whole doctrine of Architectural proportion; for, whatever may be the nature of the building, the relation of its parts will always be represented by the terms of the analogy employed, according to the value of the base or radical dimension of the building given.

Thus, for example, if we suppose the length of a building to be 54 feet, and the analogy of construction to be 6, 4, and 3, corresponding to No. 7 in the foregoing tablet, then we get 54 for the length, 36 for the breadth, and 27 for the height, the breadth and height being obtained from the given length in the following manner:—

6 : 4 : : 54 : 36, the breadth.
6 : 3 : : 54 : 27, the height.

Or if 54, the given length, be divided by 6, the corresponding term in the given analogy, the quotient 9 will be the greatest common divisor of the three dimensions; and if each term of the radical proportion be multiplied by the greatest common divisor, the products will be the required dimensions of the building, considered as a whole, or of any specified compartment thereof; thus we have—

6 × 9 = 54, the length of the building.
4 × 9 = 36, the breadth of ditto.
3 × 9 = 27, the height of ditto.

And the same process applies to the consideration of the rooms, and other subdivisions of the entire fabric.

The above is the method of assigning the dimensions of a room or building corresponding to a specified proportion, and it is easy to perceive, that the same process will apply in the case of any other proportion, whatever may be the name of the given dimension assumed as the radix of calculation, provided that we employ the corresponding term of the specified analogy to determine the greatest common divisor of the required dimensions.

Thus, for instance, if we suppose the breadth of a room to be 28 feet, and the analogy of construction 5, 4, and 3, as in No. 6 of the foregoing tablet; then the length will be 35 feet and the height 21; for 28 divided by 4 quotes 7 for the greatest common divisor, from which we get

5 × 7 = 35, the length of the room.
4 × 7 = 28, the breadth of ditto.
3 × 7 = 21, the height of ditto.

Again, suppose the height of a room to be 18 feet, and the analogy of construction 4, 3 and 2, as in No. 5 of our tablet; then will the length be 36 feet and the breadth 27; for in this case the greatest common divisor is 9, from which we get

4 × 9 = 36, the length of the room.
3 × 9 = 27, the breadth of ditto.
2 × 9 = 18, the height of ditto.

It would be an excellent way of exemplifying the beauty and utility of the seven proportions given above, whether as applied to an entire building, or to some compartment of it, to exhibit a plan and elevation as deduced from each of them; this, however, would extend the present paper to too great a length, and occupy too much of the writer's time, but it would be valuable exercise to the students of architecture, inasmuch as it would fix the principles firmly in the mind, and satisfy them as to the correctness of the several analogies adopted, which probably will not be so readily admitted without some kind of graphic illustration.

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What we have hitherto done, has reference only to the proportions that ought to obtain in the dimensions of rooms, when considered independently of the general form of the building, and the proportions that ought to obtain in the dimensions of the building itself when considered as an independent whole. We have, therefore, in the next place, to inquire what ought to be the dimensions of the doors, windows, and other openings, to admit a sufficient quantity of air and light for the supply of apartments constructed on the principles of the foregoing analogies.

Since nature has established certain rules for giving to buildings the just and proper proportions, so also has theory established rules and maxims for proportioning the quantity of light to be admitted, according to the magnitude of the space to be illuminated. It is not necessary in this place to trace the steps of investigation which have led to the discovery of the rules and maxims here alluded to; this would carry us far beyond the subject of the present communication, and claim the aid of a higher calculus than would be consistent with the object we had in view, when the idea of this discussion first presented itself; we shall, therefore, waive the investigation, and content ourselves with simply propounding the practical rule by which the quantity of opening is to be obtained, for any proposed dimensions of the space to be illuminated. The practical rule for the quantity of opening is as follows:

*Multiply the three dimensions of length, breadth, and height together, and the square root of the solid thus produced will be the superficial content of the opening required for light.*

As an example of the application of the rule, we shall take the first of the preceding cases, where the length is 54 feet, breadth 36 feet, and height 27 feet; these numbers being in the proportion of 6, 4, and 3, agreeably to No. 7 of the natural scale.

The product of the three dimensions is, $54 \times 36 \times 27 = 729 \times 72 = 52488$, and the square root of this is $\sqrt{52488} = 229{\cdot}12$ square feet. Now, since the length of the room is 54 feet, we may suppose that it contains five windows in the tier; therefore, if the above root be divided by 5, we get $229{\cdot}12 \div 5 = 45{\cdot}824$ square feet for each window.

A very common and a very just proportion for doors and windows in the principal rooms of large dwelling-houses is that of two diameters, or where the height is twice the breadth; we have, therefore, to convert the square 45·824 into a rectangular parallelogram, in which the one side shall be double of the other, and for this purpose we have only to divide the given quantity by 2, and extract the square root of the quotient for the breadth or least dimension of the window, and the double of this will accordingly be the height thereof.

Thus we have $\sqrt{45{\cdot}824 \div 2} = \sqrt{22\,912} = 4{\cdot}786$ feet, the breadth of each window, and $4{\cdot}786 \times 2 = 9{\cdot}572$ feet, the corresponding height. It is not necessary to adduce more examples for the illustration of this part of the subject, for the application of the rule is so easy, that there can be little danger of even the most superficial calculator falling into error. But here, as in the foregoing department of the inquiry, we strongly recommend a graphic delineation of the room and the windows, in order the more fully to appreciate the value of the rule itself, and the correctness of the proportions employed in its production.

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The third and last part of the subject relates to the determination of the proper dimensions of fire-places and chimney-flues, so as to obtain a proper degree of heat and ventilation, according to the quantity of space proposed to be ventilated. This is indeed a very important branch of practical architecture, and has of late acquired additional interest, in consequence of the dispute that has arisen between Mr. Barry and Dr. Reid, in regard to the mode of ventilating the new houses of parliament. The whole doctrine, however, is contained in a nutshell, and the desired object can easily be effected, without having recourse to the refined artifices which modern science has brought to bear upon it. The rules which nature supplies for working out her own economy are invariably general in their principles and simple in their operation; and, if practical men could only be induced to follow those rules, many of the difficulties which operate to retard the progress of improvement would be found to disappear. T.

*** This theory was propounded and treated at considerable length by Robert Morris, in "Lectures on Architecture, consisting of rules founded upon harmonick and arithmetical proportions in Building," 1736.

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## PRESERVATION AND METALIZATION OF WOOD.

A patent for improvements in the mode of preserving wood has been taken out in France, by Mr. Banner. As in what is called Payne's process, the air is extracted from the pores of the wood, and solutions of metallic oxides, producing "by their combination another insoluble substance resulting from a double decomposition," made to take its place. The following is a portion of the patentee's specification.

"1. The chemical agents are composed by the employment of a saturated solution of sulphate of iron, in the proportion of 5 oz. 3 dwts. to 1 quart; that is to say, having a specific gravity of 1,756 to the temperature of the atmosphere.

2. The employment of a saturated solution of muriate of lime, having a density to the ordinary temperature of the atmosphere of 2,344, or 27 oz. 7 dwts. to 1 quart. I declare that my improvements consist in the following preparations, and I claim them as being my exclusive property and invention; namely—1,000 lbs. of brass filings should be placed upon a table or bench so as to form a conical heap. I moisten this mass or heap with a solution of sal-amoniac (muriate of ammonia), composed of 24 lbs. of salt upon 200 lbs. of water, when a certain chemical action commences to manifest itself, which is rendered visible by the escape of the ammonia or volatile alkali, and aqueous vapours, so as to produce a considerable development of heat. The whole of the mass must now be stirred, to expose the different layers of the heap to the action of the air. This operation finished, it is necessary to restore to the mass a conical or pyramidal form, and to add again a certain quantity of the solution of sal-amoniac. The whole mass then loses its metallic character to take that of an earthy substance of a bluish colour. Salts of zinc and copper are now produced, and the chemical decomposition is terminated.

It is now necessary to dissolve this substance in sulphuric acid, diluted with water in the proportion of 20 per cent. of acid to 80 per cent. of water. I inject with this solution (by a process mentioned) the wood upon which I operate, and I decompose the preceding substance by a muriate of barytes, composed of 2 lbs. of salt with 100 lbs. of water, in the same way as in the muriate of lime above described.

The result of this combination (says the patentee) produces a metallic salt of an intensely insoluble quality, of an extreme tenacity, and of a great weight, which gives to the wood prepared by this process a character eminently impervious to water, and which makes it resist the united attacks of animalculæ and of the most destructive vegetable matter; while the price of the raw material is much less than that of any of the salts hitherto employed for the preservation of wood when used upon a large scale."

Mr. Banner gives the credit of this invention to the late Mr. Marsh, the chemist, in behalf of whose family an application was lately made to Government. We have seen a letter from Mr. Marsh, wherein, speaking of the process patented by Mr. Payne, he claims it entirely as his own. We shall be glad if this statement should strengthen the hands of those who are interesting themselves for Mrs. Marsh.

## SAINT ANDREW'S, MARYLEBONE.

MESSRS. DAUKES AND HAMILTON, ARCHITECTS.



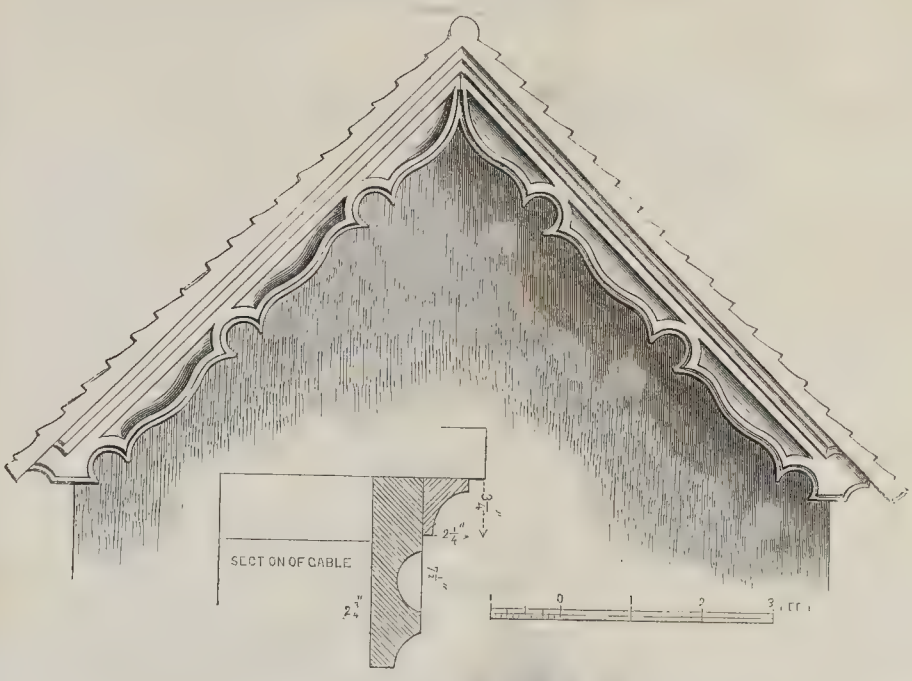
### ST. ANDREW'S, MARYLEBONE.

The new church for the district of St. Andrew, Marylebone, represented above, stands on the east side of Wells-street. The first stone was laid on the 13th of January, 1845, and the 28th of the present January is the day fixed for the consecration.

The style is early perpendicular. The length of the church, inclusive of the chancel, is 78 feet, the breadth from north to south 65 feet, and the height of the nave 55 feet. The tower and spire, both of stone, are together 155 feet in height. The whole is built of Whitby stone with Bath stone dressings. Within, columns and arches (bearing a clerestory) separated the nave from a wide aisle on each side.* The roofs are open, stained dark oak. The pews, low and without doors, are similarly stained, and varnished. A stone pulpit is attached to the first column next the chancel, on the south side. On this same side, in the wall

* A clear fourth of the whole width, between wall and column.

## GABLE IN EARL STREET, MAIDSTONE.




of the chancel, are two handsomely sculptured sedilia. A large, five-light window occupies the east wall of the chancel, with stone screen beneath it, with panels to receive the "commandments." The chancel is paved with encaustic tiles, and the rest of the church with the black and red diamonds from the potteries.

There are galleries on three sides of the church, but being kept behind the main pillars, and carried on separate uprights, and stopping short at some distance from the east end, they do not interfere with the general design. The organ stands on the floor under a window, at the east end of the south aisle; and behind it there is a robing-room.

The font stands at the west end of the nave. It is octagon, with a bowl of the full size of ancient fonts. The sides of the octagon contain the symbols of the four evangelists; the lamb; the symbol of the holy spirit; the sacred monogram, and a cross.

Mr. Myers was the builder, and has earned credit by the manner in which the works are executed.

The contract was undertaken for 7,000*l.*, exclusive of extra foundations, the architect's commission, and clerk of the works' salary. This was for the *bare* building. The ornamental work, including the oak reredos, on each side of the chancel to separate it from the aisles, sedilia, carved chancel seats, and the font already described, were the special gift of friends, designed by Mr. Pugin and others, and will cost between 400*l.* and 500*l.*; besides which there is the cost of the warming and ventilating apparatus, the gas fittings, the bell, the organ, plate, and furnishing the vestry; which will probably amount to 900*l.* more.

For the last of these items there yet remains a sum of 500*l.* to be collected. The church will accommodate 1,200 persons; all the sittings will be free of rent charge, but for the *exclusive* use of the inhabitants of the district parish of St. Andrew, it being the wish of the incumbent, the Rev. Thomas Mount Fallow, A.M. that the inhabitants of a town parish should be similarly circumstanced, as regards seats in their parish church, with the inhabitants of a country parish. This is, we believe, the first of the new parish churches in London built on this principle.*

Towards the cost of erecting this building the Parliamentary Commissioners granted 600*l.*, and The Incorporated Society 900*l.*; the rest of the money has been raised by the voluntary contributions of the parishioners of St. Marylebone, and it is hoped there will be no difficulty in obtaining the 500*l.* still required.

The east window is to be filled with stained glass, to be designed and executed, without regard to expense, by Mr. Pugin.

We cannot hesitate to award considerable praise to Messrs. Daukes and Hamilton, the architects (now separated), for this design, difficulties having been successfully met, and indeed rendered into advantages.

Thus, in the entrance front, occurring as it does in a part of the street not running directly north and south, in order to place the church east and west, the line of the front does not range with the line of the houses, but is set back at the northern end, by which means room is obtained for the boldly projecting buttress against the tower, and a picturesque effect is produced. The door in this buttress, and the introduction of a stairs' turret at the southern angle of the tower, greatly aids the appearance. †

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New Acquisition to the British Museum.—The Right Hon. Thomas Grenville, lately deceased, has bequeathed his valuable library to the British Museum.

Free-will Offering.—Two stained windows have been presented by Mr. Fairs, of Hanover-street, to All Saints', St. John's-wood.

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* The Dean of Chichester was the original projector of the church, and to his zeal and self-denying exertions the inhabitants of St. Andrew's are principally indebted.

It should be added, that the ground-landlord, the Archdeacon Berners, gave the freehold of the site, valued at about 2,000*l.*, and the intermediate interests in the property were purchased by grants from the Metropolis Churches' Aid Fund, and the St. Marylebone Local Fund.

† Along the front of the porch, formed between the tower and a buttress at the junction of the nave with the south aisle, is sculptured "How dreadful is this place! this is none other but the house of God, and this is the gate of heaven. (Gen. xxviii.)"

### BARGE-BOARD, OR VERGE-BOARD, FROM HOUSE IN MAIDSTONE.

The barge-boards, or verge-boards, fixed to the gables of ancient houses, to hide and protect the timbers of the roof, present a great variety in design. Specimens as early as the 14th century are occasionally met with, but the greater number of them belong to the 16th century. The earlier examples are much more elegant than the later. The former are usually moulded, and finished with care; while in many later specimens, openings to form the design are simply cut out of a board, with the edges left square.

The accompanying engraving represents a plain but not inelegant example, from a house in Earl-street, Maidstone, said to be of about the time of Henry VIII.

### AWARDS OF OFFICIAL REFEREES.

#### PROJECTING EAVES.

Mr. Hibberd having built four attached houses in Norfolk-road, district of Marylebone, and formed "the projecting eaves or cornices with wooden rafters, and with fascias and lath and plaster soffits;"—information was given to the referees.

The referees directed Mr. Hibberd "to amend the same, and either to cut off and remove the whole of the said cornice, or to take down the whole of the soffit and fascia thereof, formed of laths and plaster, and replace the same with iron laths and plaster—such plaster being of clean sand and grey stone, or blue lias lime, and not less than one and a quarter inch thick, including the keying; and to fill in between the wall plate and the pole plate with brickwork, and also to make a fire-proof separation between the cornices of the adjoining houses, of the full thickness of the party wall, and in the line thereof, and extending at least one inch beyond the cornice, and two inches and a half above the roof-covering, and two inches and a half at the lowest below the soffit.'

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In another case, Mr. Duncan had built a pair of detached villa residences, and construct-

ed the eaves "with the projecting rafters, having the soffit and fascia stuccoed with cement on wood laths." Other pairs were to be built, "each pair being at least 22 feet apart between flank wall and flank wall, with the addition of side entrances on the ground story, about 13 or 14 feet apart;" and Mr. Duncan was prevented by his lease from encroaching on this space.

The award was that, although the construction was not such as can be fully approved as proper and sufficient, "yet, inasmuch as it appears that the said George Duncan had endeavoured to conform to the requirements of the Metropolitan Buildings Act in this matter, and inasmuch as the two pair of houses in question are to be widely separated from each other and from all others, and inasmuch as cement is a material to which the official referees do not wholly object for the purpose of covering the soffits of cornices of overhanging roofs, we make no further award with respect to the pair of cottages, the subject of the said requisition, except that the cornices in question must be separated in the line of the party wall by a corbel of brick or stone," as described in the preceding award.

ROOF COVERINGS: ASPHALTED FELT.

Information being laid against Mr. Cameron for covering the roof of a house with asphalted felt, the referees determined "that asphalted felt is not to be deemed a cement proper to be used as a covering for the external parts of the roof of any building, and that the roof of the building in question has not been covered with any of the materials required by the first-mentioned Metropolitan Buildings Act. And we do hereby direct the said John Cameron forthwith to cover the said roof with slates, tiles, metal, glass, artificial stone, or cement, or to take off the roof of the said building so far as the same is constructed and formed of timber or other wood-work."

FIRE-PROOF ACCESSES.

The Messrs. Druce having made certain alterations in the Baker-street Bazaar, the district surveyor objected "that the said building operations form, or are intended to form, a way of ingress and regress from Baker-street to the furniture department of the said bazaar, which said way is not wholly supported, constructed, or intended to be made and finished fire-proof, the said bazaar being a building of the third or public class of building."

It was contended on the part of Messrs. Druce and Co. that not a brick had been disturbed, and that the work in question is a mere platform on trestles, and that nothing has been done to form an entrance to either of the buildings in question; and with respect to a previous award of the referees mentioned in the information, that the intention therein referred to had been abandoned for the present, the communication between the bazaar and the house being made that the rooms of the house may be used as pattern show-rooms in connection with the furniture department of the bazaar. The referees, on attending, found that the work in question consisted "of the removal of the sashes from the window of the back room on the second or ground-floor story of the house No. 68, Baker-street, and of the sashes, or whatever else may have occupied the sash-frame, of the window opposite to it in the second or ground-floor story of the bazaar; of the formation of a short flight of wooden steps in each of the two buildings, to lead up to the sills of the sash-frames; and of a wooden platform, set as a gangway from the window of the bazaar to the window of the house, and extending over the lead-flat-roof of the kitchen of the house."

The award was:—"That, by the removal of the sashes or other fittings from the opposite windows of the bazaar and of the house, and the formation of steps and of a gangway to lead to and from the bazaar and the house, such removal and formation being for the purpose of using the house in connection with the bazaar, the said house has been altered so as to bring it within the class of building to which the bazaar belongs, that is to say, to the third class; and we do hereby direct, that unless all the conditions prescribed as to buildings of the third class be complied with, and especially the rule with regard to buildings of the third class in part 6 of schedule C of the first-mentioned Metropolitan Buildings Act, the said flights of steps and the said gangway be forthwith removed, and the sashes or other fittings to the opposite windows restored, so that the said house may not be used as an entrance to, or otherwise in connection with, the said bazaar or any part thereof."

## LARGE OR SMALL AREAS FOR MONUMENTS.

THE STATUE AGAIN.

SIR,—The affair of the Wellington statue, as is observed in the last number of THE BUILDER, still requires watching. It is not to be supposed that the committee will relax one instant from their exertions to retain possession of a site, gained temporarily, at least, after long years of obstinate fight; and the difficulty of finding an appropriate position now comes in most opportunely to their aid, and will, no doubt, be taken full advantage of by these guardians of the public taste. Certainly, if once the statue is down, and provided with a suitable location, no event could possibly have occurred the better to vindicate the character of the said public taste from the aspersions of connoisseurs at home and abroad. Of apathy, during the interval between the erection of the bronze and the wooden horse, they have no doubt been guilty; but the almost unanimous condemnation and ridicule that it has met with, since the question has been generally mooted, clearly shews that our sense of artistic propriety is not yet reduced to the lowest ebb.

The question is, where is this suitable location? Now we cannot find that any one has been yet proposed more suitable than the space between the Athenæum and the United Service Club. This space is sufficiently large to allow of a full view of the statue from the most advantageous distance and position, and yet small enough to allow its colossal proportions to have their due effect. This is consistent both with authority and reason. The ancients almost invariably placed their largest monuments, whether of architecture or sculpture, in a confined space, so that the first point of view was at such a distance that their grandeur of effect was proportioned to the increased cost and labour of their execution. This cost, if, as the size of the object is increased, you increase without limit the space in which it is placed, is entirely thrown away. The monolithic column of St. Petersburgh is reduced to insignificance by its position in the centre of an extensive review-ground; while that of Trajan, on the contrary, possesses the full value of its dimensions, from the comparatively small extent of the forum in which it is situated. Still more contracted in their dimensions were the receptacles of the colossal statues of the Greeks of the greatest celebrity, viz., the cells of their temples; and the authority of the ancients, though by no means to be implicitly followed, yet, as shewing us the opinion of those who were at least capable of imagining and executing works which, mutilated as they now are, still are looked upon as the master-works of human genius, must surely be of some value.

The position indicated, too, is one of the greatest publicity, and it appears to call for some important object to fill up the vacant space; in addition to which, the statue would group well with the column beyond. The advantage of the union of several objects of art in one spot has never been sufficiently thought of in this country. We have no space in which all the greatest wonders of art are concentrated, as in the Roman forum—no *réunion* of sculpture and architecture, to attract the attention of the passer-by, and tempt him to linger, as in a costly museum. Statues by our best artists are banished to the remote and deserted squares, dropped down, one here, one there, so unassuming in the position they have taken up as hardly to attract a passing glance; whereas, by collecting some of the best of them in one or two spots, as in Trafalgar-square, or the space before alluded to, our character as a nation for taste and the appreciation of works of art, would be much more fully and deservedly vindicated than it now is.

These remarks and suggestions would not have been made, did it not appear that the question of site was again in a state of uncertainty, and that there was also reason to apprehend that the attention of the public might be withdrawn, in a great measure, from the subject, while some danger of an unfortunate result still remained—that the army would be disbanded before the enemy was completely conquered, and the rebel reduced to obedience. While the statue, and, what is even more destructive of the beauty of the arch's proportions, its pedestal, still remain, we must remember that the snake is "scotched, but not killed," and that no stone should be left unturned to ensure final triumph. We cannot hold the architect of the arch altogether free from blame, for the *apparent* indifference with which he regarded the whole affair; he was very aptly and justly satirized for his faint-heartedness in taking no public step to prevent the ruin of his work, in *Punch's* report of the examination of the "competent persons." Until his letter was dragged from its concealment by a motion of the House of Commons, his opinion was far from being generally known: had it been so, it would have done much in leading public opinion and drawing earlier attention to the subject.* J. L.

## WORKS ON THE LANCASTER AND CARLISLE RAILWAY.

THE Lancaster and Carlisle Railway was opened on the 16th ultimo, making an extension of seventy miles in the great trunk line from London to Glasgow. The new station from which the train started, is situated about one mile from the junction with the Lancaster and Preston Railway. It is a neat little structure, built of white freestone, from a design by Mr. Tite, as are all the different stations on the line. Leaving the station, we pass on to the viaduct over the River Lune, which consists of eleven arches, eight of which are 33 feet span, and three 120 feet span. The eight 33 feet arches are built of brick and stone, the large arches are of timber. The height of viaduct is 55 feet, and it contains—of stone, ashlar, 246,383 cubic feet; brickwork, 1,098 and two-thirds cubic yards; timber, 27,300 cubic feet; and ironwork, 63,984 lbs.

The tide rises twelve feet in the river Lune, and the foundation of the South River Pier had to be sunk 25 feet below low water. Leaving the Lune, we pass on to Hest Bank, and here the line passes the end of Morecombe Bay. Here also is the first station from Lancaster. Passing on from Hest Bank, we next reach Carnforth. The gradients of this portion are 1 in 471, and 1 in 300. The next work of interest is a handsome skew bridge over the Lancaster and Millthorpe turnpike-road, built very obliquely, being on an angle of 30°. The arch contains nearly 4,000 cubic feet of stone. The gradient here is 1 in 131 for about 2½ miles, which bring us nearly to Holme, the third station from Lancaster; 14 miles from Lancaster the line crosses the river Beetha, whence there is an uninterrupted rise of thirteen miles, broken into gradients, varying from 1 in 193 to 1 in 105. At 20 miles from Lancaster is the junction of the Kendal and Windermere Railway. The line now proceeds upon very heavy embankments and cuttings. One of the most formidable of these contains 150,000 cubic yards of earthwork. We now shortly cross the Sedburgh turnpike road, over which is an iron girder bridge. Then skirting the Benson Knot, one of the highest hills in Westmoreland, the line crosses the turnpike-road from Kendal to Appleby, close to which is a very heavy rock cutting, containing 90,000 cubic yards. Then follows a large embankment in the Valley of the Mint, in which are 121,000 cubic yards, succeeded by a cutting, from which 200,000 cubic yards have been taken. At the end of this cutting the Appleby turnpike-road is again crossed. 25 miles from Lancaster is Docker Gill viaduct, consisting of six arches of 50 feet span, and 75 feet high; the total length of viaduct is 370 feet; the width between the parapets 25 feet. It is built of lime stone, and contains 7,000 cubic yards. Following the

* We continue to receive numerous letters on this subject. Our correspondent, "An Inhabitant of May Fair," after scolding the government for permitting the statue still to remain up, again urges "that the site most appropriate for its reception is, on that portion of ground which one may designate 'no man's land,' in St. James's park, at such a distance within it as good taste might appoint, facing the Horse Guards, and in front of the parade where the household troops relieve guard every day in the year. The parade would not be encroached on, there would be some distance from which it might be viewed, and the representation of military honour and renown would be constantly before the soldier's eye."

viaduct is a very heavy cutting of hard material, called samel, containing 152,000 cubic yards. 1 mile further is the Low Gill embankment, containing 170,000 cubic yards, being one of the highest banks in England, reaching nearly 95 feet above the level of the ravine. Next is a very great piece of excavation through blue rock, in extent about 120,000 cubic yards. Of this hard material none of the excavations for some miles northward are altogether clear. We now reach Dillacar Hills. Through one of these hills is a very large cutting, containing 70,000 cubic yards of solid blue rock. The line is here carried over the Borrow Water, near its junction with the Lune, upon a neat viaduct, 68 feet high, and composed of three arches, 45 feet span each. We next arrive at Borrow Bridge, where the gradient begins of 1 in 75, for eight miles in length. Here also is the Borrow Bridge cut, containing 69,500 cubic yards of hard blue rock; the Lune embankment is next, and contains 75,000 cubic yards. It rests on the old bed of the river, which has been diverted from its course. Thirty-four miles from Lancaster is Birbeck embankment, containing 200,000 cubic yards of earthwork, and a viaduct 45 feet in height, the arches being similar to those of Borrow viaduct. The line then passes on to Shap Wells without much difficulty, with the exception of cutting through the Crosby Ravensworth Fells, containing about 65,000 cubic yards of rock and earth. A mile and a half farther is Shap Summit, which is 888 feet above the line at Morecombe Bay, and 1,000 feet above the level of the sea; rising 60 feet overhead on each side, are rugged walls of hard rock, presenting a magnificent appearance. This was the most difficult piece of work on the line, and five hundred men were clustered upon it for many months. Upwards of twenty-three tons of gunpowder were used in blasting it. The length of the cutting is about one mile, and the quantity of material excavated 350,000 cubic yards, one-half of which was rock. The formation of it occupied two years. The line now proceeds along the east side of the town of Shap, through a heavy cutting of limestone rock, descending on a gradient of 1 in 125, and passes under a skew bridge at an angle of 45°. The line now pursues its course by Shrimsby; the ground at this point, being precipitous, has caused a succession of heavy works, viz., the Hackthope cutting, containing 140,000 cubic yards; the Clifton embankment, 200,000 cubic yards, and the Lowther embankment, 270,000 cubic yards.

At this point (Clifton), in the course of excavation, a Roman altar, in a high state of preservation, and inscribed to Jupiter, was dug up. This relic of antiquity is now in the possession of George Mould, Esq. We now cross the river Lowther on a large and handsome viaduct, consisting of six arches of sixty feet span. The piers are eight feet thick at the springing, and increase to 17 feet 6 inches at the base; its total length 500 feet. On the north side is a large cutting through clay, containing 275,000 cubic yards. A mile and a half from Lowther the line crosses on a viaduct of some beauty, consisting of five semi-circular arches, 50 feet span each. Its height is 70 feet, and its extreme length 300 feet. We now reach a large cutting, containing 180,000 cubic yards. From Penrith the line runs straight and level on the west side of the turnpike road. Crossing the road, it enters the valley of Pettrill, through which it pursues an almost direct course to Carlisle: the first inclination in this valley is 1 in 184, making a fall from Shap of 500 feet. We then enter a cutting a mile and a half long, 30 feet deep, containing 250,000 cubic yards. Then commences another incline of 1 in 169 for 2¼ miles, which makes a fall from Shap 575 feet. An average fall of 1 in 200, with gentle curves, brings us to Wreay, where much difficulty has been experienced from frequent slips. The Wreay cutting is situate on the east side of the village, a mile long, 45 feet deep, in the deepest point; the quantity of earth work amounts to 410,000 cubic yards. The line passes Upperby on the east, joining the Newcastle and Carlisle Railway at the London road station. From Upperby the gradient is 1 in 140; at Carlisle the level of the rail is 36 feet above the rail at Morecombe Bay, and 852 feet below Shap summit. Besides the principal viaducts mentioned, the works on the line comprise fifteen turnpike road bridges, sixty-four public road bridges, eighty-six occupation bridges, and sixty level crossings.

## NEW WORKS IN WOOLWICH.

The new marine barracks, forming an extensive range of substantial buildings, are now nearly completed. These are to afford accommodation for 1,000 men, and form three sides of a square in plan. Brick and stone dressings are the materials of the outside; iron girders and brick arches separate the stories; asphalte forms the floors, and the whole is fire-proof. Ventilation is effected by a revolving fan worked by weights. In front of the main building an arcade, two stories in height, is formed by square brick piers and arches, affording spacious covered walking places, with room for six abreast. Messrs. Rigby are the builders, under the government officers.

The number of new barracks now in course of construction, can scarcely fail to excite attention. Those in the Tower of London, at Bristol, at Birmingham, and elsewhere, have already been mentioned by us. The way in which the designs for these structures are obtained, and information as to the gentlemen who take the credit or discredit of them (as architectural works), may afford matter for some remarks on another occasion.

Very extensive improvements are contemplated in the lower part of Woolwich, where many houses are to be pulled down, and a spacious new street formed.

The new church (designed by Mr. F. Fowler), has been finished for some time, but is not yet opened; an objection which the official referees have thought it their duty to make, has caused the delay. The tower is left incomplete till fresh funds are provided.

In the old church, a stained glass window by Mr. G. Hoadley, from a drawing by Mr. Corbould, has been recently put up. It illustrates the line, "and he bearing his cross, went forth." The figure of our Saviour is seven feet high, and is painted in the modern style, to accord with the character of the church. The border around the window is formed of the passion flower, and a conventional scroll entwined; and in our opinion, somewhat militates against the general effect.

The Roman Catholic Church by Mr. Pugin (who, by the way, is very ill), is probably already known to our readers; as well as Mr. Donaldson's "Scotch Church," which closely adjoins it.

## RAILWAY JOTTINGS.

A "Law Reformer," a correspondent of the *Times*, on the subject of the "liability of committee-men," while adverting to the fact that without joint-stock companies we should have had neither canals nor railroads, gas-light nor supply of water, life insurances nor joint-stock banks, splendid club-houses nor any, indeed, of those magnificent results of joint-stock contributions which make England the wonder and envy of the world; with great good sense and ability points to and deplores the clear and inevitable sequence of cause and effect whereby the present state of the law, by rendering even non-acting committee-men or non-acting directors subject, by the acts of partners or agents, to liabilities, *in any case whatever, to any unknown amount*, and even to the utter ruin of themselves and families, not only discourages the establishment of joint-stock unions of fixed, limited means, in which men of capital might risk a definite sum of money and nothing more; but, by means of such discouragement, inevitably tends to throw existing establishments out of the hands of responsible and prudent capitalists altogether, into the exclusive management of either knaves with nothing to lose, or fools, with immense risk of losing all that they possess. The sooner such a state of the law as this is put an end to, of course, he thinks, the better; and surely it would be *wise* to remove these ridiculous impediments to the employment of capital *at home*. We have all a little to risk. Why should we not be allowed to judge for ourselves how much we will risk? Creditors of companies can always be safe, for they never need trust, and it is much better they should not: for companies requiring such aid must be bubble companies, which would thus at once be burst. "To encourage the employment of capital is to better the condition of the labourer and the artisan."—The labour for railways already sanctioned, but not formed, according to calculations announced on Wednesday week by Mr. Houldsworth, chairman of the Manchester and Leeds line, will require the employment of 500,000 men for ten years, supposing that this number *can* be withdrawn from the general labour market of the country. It is the maximum that *can* be withdrawn. The maximum cost of the railways now in course of formation, or for which Acts have been got, in Great Britain, he estimated at 200,000,000*l.*, of which 160,000,000*l.* will have to be expended on those in England; and of this 160,000,000*l.* the sum of 120,000,000*l.* will be spent for labour.——The *Somerset Gazette* assures us that a new engine of Mr. Stephenson's lately "did" the express train business on the London and North Western, between Birmingham and Wolverton, 60¼ miles, in 64 minutes, including stoppages—upwards of a mile a minute, in fact. The gradients are an ascending plane of some length at starting, and then ascending and descending gradients of 16 feet in the mile for the rest of the distance. The London and North Western Company, it is said, are determined to sustain this speed, and so come up to the Great Western standard.——Fears are reasonably entertained that the cutting of the tunnel on the railway from Ipswich to Woodbridge, which penetrates through the hills north of the town, may injure or withdraw the supply of water to the town.——The Cambridge station is likely to be another of those "largest ones in England" which are getting rather rife of late. The arcade is to be 410 feet long.——The Stour Valley Extension branch line from Bury to Lavenham, for which the plans are deposited, would pass over a viaduct 370 yards long, west of Sicklesmere toll-gate, cross the Ipswich road, and proceed along the vine fields to Eastgate-street, crossing it by an arch of 45 feet span and 20 feet in height, towards the Ipswich and Bury line. It will be stoutly opposed, however, by landowners.——The Cheltenham General Hospital and Dispensary has been purchased by the Cheltenham and Oxford, at cost price, for the purposes of their works, on condition that they provide an extended building on an improved site. The Grammar School, too, it appears from the deposited plans, will be required, and another, and probably also extended building, erected in its place.

## NOTES IN THE PROVINCES.

A proposal to preserve and restore the old Grammar School at Ipswich, the last relic of its ancient and numerous monastic institutions, has been rejected by the corporation, many of whom, strange to say, are nevertheless members of the Archæological Association. This interesting relic was originally the refectory of the Dominican friars, and very ornamental in character, and is still in comparatively good general preservation, with its black oak roof defaced with many a coat of whitewash certainly, but exhibiting, nevertheless, many traces of its ancient ornamental painting.——A memorial, or sea-mark, in honour of the late Earl of Yarborough, is to be erected in the Isle of Wight. The subscriptions now amount to upwards of 600*l.*——The repair and re-pewing of Trowbridge church, Wilts, is talked of.——Government is about to be applied to for permission to erect a custom-house at Birkenhead, to be forthwith commenced.——Two extensive rice-mills are in course of erection at Liverpool, where rice is being ground at a great rate, day and night, in eight other like establishments, in consequence of the failure of the potato crop. A thriving trade is at present done here in the importation of paving-stones from the Isle of Man. The council have organized a regular sanatory staff, under the new Act, which comes into operation to-morrow (1st January, 1847). The provisions of this new leaf which is to be turned along with the in-coming year, seem to be no less beneficial and excellent than stringent and peremptory. The smoke from furnaces, steam-engines, bakeries, &c., from every steamer plying on the Mersey, every steamer

entering coastwise into the Mersey, must be "used up," under heavy penalties, though probably even the pecuniary profit to the consumers themselves will at least equal the forfeit in amount—a somewhat odd and unusual ground of compulsion this, as futurity will doubtless think, independently altogether of the still more precious and substantial benefits derivable from a clear atmosphere, clean-swept lung-flues, and vigorous lungs, consuming their own pure *pabulum vitæ* instead of smoke. Many other nuisances and evils are to be simultaneously remedied. "Middens" are to be kept under, mendicants' lodging-houses licensed, and their occupants restricted in number, cellars limited in extent, or rather extended in limit, and other means enforced to open the way to a more vigorous and healthy generation of fellow men. The bakers appear to have been amongst the first to bestir themselves in this new movement, albeit one of salutary compulsion, in the meantime; and chaffer-ovens, patent smoke-consumers, and the like, discussed, and with a will, too, to the work.——The penny-a-mile omnibus system is to be started in Manchester.——Contracts for the particular branches of work connected with the erection and completion of the new Town-hall at Doncaster were to be advertized in course of the present week. The plans and specifications are said to be complete. The Old Angel is almost wholly demolished. ——A tower has been added by subscription to Maryport church, and by similar means a large and commodious sunday-school is to be founded in March next, in connection with this church.——Explosive cotton, or tow, and sawdust, have been used in the north, of late, for blasting whinstone rocks, it is said, of the most solid description, and, as the *Edinburgh Weekly Express* has it, "with splendid effect;" a bore 2¼ inches in diameter and 3 feet in length, charged with 9 oz. of tow, in the usual place of 3 lbs. of the *old* material, gunpowder, blasting to the extent of 10 tons, and indeed a charge of 11 oz. of tow and cotton mixed blowing up, or bringing down, no less than 15 tons. ——New joint-stock markets are in the way of being got up in the north, at Elgin.

## BARRY'S PICTURES AT THE SOCIETY OF ARTS.

A MEMBER of the Society of Arts, who considers himself improperly alluded to in a letter on this subject, which appeared in the last number of our journal, has taken pains to shew us that, so far from being a "disappointed contractor for the decoration of the hall," he could not conveniently have undertaken any of the work there, if it had been offered to him, and that he has no motive for the charge he has made, in respect of the injury done to the pictures, but desire to preserve for the society what every one must consider their sheet-anchor.

It appears to us of the utmost importance, as we said a fortnight ago, that all proper steps should be taken to ensure the preservation of these works. The Council owe it to themselves and to the Society, to shew that they duly regard their trust. The production of the report of the eminent artists who are said to have examined the pictures, would probably set the matter at rest.

## TO PREVENT INJURY TO BRICKWORK BY FROST.

SIR,—Having been engaged in erecting brickwork at factories and places of business where the work was required to be done regardless of the weather, my attention was drawn to the best mode to prevent the frost affecting the mortar. I have adopted the following plan for the last eight years with complete success; and as this winter is likely to be severe, I think it may be useful to make it more generally known through your valuable publication. To the proportion of six bushels of river sand mix one pound of common salt; instead of screening the sand wash it, and let it be well saturated with water. Then take the usual proportion of greystone lime, which must be ground, and make it up the same as concrete to the proper consistency. The mortar should be used while warm, and if convenient the brickwork should be covered up for one night.—I am, Sir, &c.

Stamford-hill. JOHN WORKMAN.

## New Books.

*The Railway Shareholder's Manual; or Practical Guide to all the Railways in the World.* By HENRY TUCK. 8th Edition. Effingham Wilson, Royal Exchange.

WHEN a book has passed through eight ditions, recommendation would seem unnecessary: the inference may fairly be drawn that it contains matter valuable or interesting to the public. The present edition of the manual has been carefully revised, and contains much additional information, together with statistics never before given to the public. The writer has a hard "fling" at "Cato" and the *Times*, and is perfectly satisfied that all obligations incurred on account of railways will be met without in any degree affecting the money market. The preface states that out of 561 bills presented to the House of Commons in the last session, 271 only have received the royal assent. "Of these 24 were for amalgamations and purchase, 7 for new stations and enlargements, 131 for branches to be constructed by old companies, and 109 for new lines by new companies, the whole requiring a capital of about 100,000,000*l.* The total length of these lines is upwards of 4,700 miles (60 of which is tunnelling) and will require 55,000 acres of land for their site."

## Correspondence.

HIGHBURY CHURCH COMPETITION.

SIR,—Though your columns have, from time to time, teemed with letters and articles exposing the abuses of the present system of competition, the evil is not yet checked, as the following circumstances will plainly shew.

A committee was lately formed at Highbury, in the parish of Islington, with the view of erecting, if possible, a church suited to that hamlet. Amongst the several wealthy families residing there, many are dissenters, and consequently subscriptions for an episcopal church would necessarily be limited; but as the inhabitants had greatly assisted in defraying the expense of building the other district churches, it was confidently expected the parish at large would, in return, enable them to raise a sum of 4,000*l.* Accordingly, instructions were given to seven or eight architects to send in designs, the cost of carrying out of which was, on no account, to exceed the sum abovementioned.

After a time, the committee distributed amongst the subscribers to the work a circular, headed by a smart vignette, exhibiting indeed an elegant structure, which an episcopalian would rejoice in seeing erected. The engraving to which I allude is taken from the design of Mr. Allom, whose intended structure, if it can be carried out in *every particular* at the sum proposed, will entitle him to the warmest thanks, not of the committee only, but of the whole body of architects, inasmuch as they may learn from him how to build with little money. The remark of an eminent architect, on seeing the vignette, was this—"The sum named, instead of being printed 4,800*l.*, should have been 8,400*l.*, as being nearer the mark." Of course, the unsuccessful competitors, whose abilities and taste had been strictly limited to preparing designs for a church that could actually be built for the sum proposed, are not a little surprised and mortified, to find a plan accepted which must necessarily involve an expense of at least double the amount prescribed.—I am, Sir, &c.,

AN ENEMY TO UNFAIR COMPETITION.

Dec. 28, 1846.

DISCOVERY OF ROMAN MANUSCRIPTS.—The excavators on the Caledonian Railway, in the wild and solitary passes of the Avon valley, near Beattock, have just turned up, in this strange deposit, a small stone trough carefully placed on a flat block, and enclosing a bronze case with "a precious manuscript" rolled up in it, 30 feet in length by 2 feet in breadth, with the title of "Historia Romæ," in large distinct characters at the head. The perhaps too sanguine anticipation is, that here we have one of the long lost and sought for books of Livy; though it is more likely, we should think, that the care displayed in its preservation was of a paternal order, hence not Livy's, unless he had been a sojourner, in his day, at Beattock.

## Miscellanea.

ARCHITECTURAL NOMENCLATURE.—SIR, —The *Ecclesiologist* for November last contains a critique on the "Architectural Notices of the Churches of the Archdeaconry of Northampton. No. 3," in which the following sentence will be found:—"We really lament that the letter-press is deformed by the use of the absurd terms, 'early English,' 'decorated,' &c., particularly as Mr. Poole has adopted the improved nomenclature of Professor Willis for details." I think it would be a gratification to some junior ecclesiologists to know why "first," "middle," and "third pointed," are so much preferable to the terms above mentioned. I shall not offer any arguments in favour of the old system beyond this, that I believe that "first pointed" conveys nothing, expresses nothing, that is not conveyed, and equally well expressed, by "early English;" and, with reference to "perpendicular," it appears to me far superior to "third pointed," as it expresses the peculiarity of the style.—AMATEUR.

PROJECTED WORKS.—Advertisements have appeared in the current newspapers for tenders for the construction of nineteen miles of the Malton and Driffield Railway, with a tunnel, bridges, stations, &c.; for the erection of an extensive cotton-mill, near Mansfield; for materials for metropolitan roads, and for making roads at Aigburth on the Mersey, and cutting and masonry work in altering and improving roads near Glasgow; for the construction of a wooden wharf at the latter place, promptly; for 20,000 flue bricks to be shipped to Banffshire; for water cranes, turn-tables, switchings, &c. for the Chester and Holyhead Railway; for cast-iron work for the city of London Sewers Commissioners; for the construction of the Rugby and Leamington Railway, and of various branches connected with other lines; and for widening the Leicester and Swannington branch, &c.

THE SANATORY ACT AT CROYDON.—The proprietor of a piece of land with an open drain or cesspool, into which all the filth and impurities of the higher ground accumulates, was summoned, on Saturday last, to the police-court, where evidence was called to the effect that fever prevailed around it, that noxious effluvia issued from it, and that, in all probability, it was the cause of much injury to health, and therefore ought to be covered in. The magistrate declared, that he should have ordered this at once to be done, but as the proprietor, Mr. Bridge, had met the case very fairly, in not only proposing to aid in the removal of the nuisance, but in having previously endeavoured, though hitherto unavailingly, to obtain the co-operation of the parish authorities, who were as much responsible as himself, in such a case, the matter was allowed to lie over for a fortnight, in order that some amicable arrangement might be come to.

PUBLIC WORKS IN IRELAND.—On the 3rd of October last, 26,193 persons were employed on the relief works in Ireland, and on the 28th of November the number had increased to 273,023 persons!—able-bodied men—the individual representatives of at least a million of people—all dependant on the Government, not only for present but for future support—all irresistibly attracted, and still followed by more and more, from their only permanent source of support, the agricultural labour of the land, by the surety of money wages, in the place of that land-truck remuneration which the failure of the potato-crop, and the prejudice, and other difficulties, in the way of the substitution of new and even superior produce, has, in the meantime, rendered altogether valueless, in their possession. Government have recently issued fresh orders on the subject, with the view of turning the labour into its former channel.

THE PAVEMENTS OF PARIS.—From official returns lately published, on the paving and maintenance of the pavements of Paris, it appears that the paved surface of the streets of that capital is 3,321,000 square yards, of which the state maintains 1,083,090 square yards, and the corporation of Paris 2,238,000 yards. The charge of keeping up this pavement is fixed at 53,000*l.*

COMPETITION.—The Scarborough parish church restoration plans will be received till 1st March, 1847.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Nyman Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE OATES, 18, Southwark-square, Borough, London.

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**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

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**CAUTION.**—Messrs. **STEVENS** and **SON**, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout to depth and fineness.
3. Its colour, which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most extensive [illegible] and Lessees of the Patent Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

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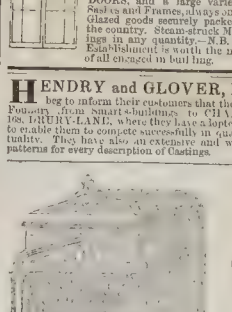
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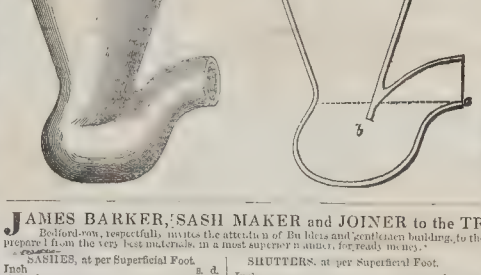
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| 2½ Shop Front | 0 | 6½ |
| 1½ Green-house, or Skylights | 0 | 4 |
| 2 Ditto | 0 | 4½ |

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| 1¼ Ditto, both sashes to hang | 0 | 10 |
| 2 Ovolo sashes and frames | 0 | 11 |
| 2 Ditto, both sashes to hang | 1 | 0 |
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| Inch | s. | d. |
|---|---|---|
| 1½ Square Sliding Shutters | 0 | 6½ |
| 1¼ Ditto, moulded one side | 0 | 7½ |
| 1½ Moulded, bead and butt back | 0 | 8½ |
| 1½ Boxing Shutters, with front moulded, and back, with 1 inch back flaps, bead in [illegible] | 0 | 8 |
| 1½ Shutters and back flaps, moulded front and bead, and butt back.. | 0 | 9 |

DOORS, at per Superficial Foot.

| Inch. | s. | d. |
|---|---|---|
| 1½ Dwarf square | 0 | 6½ |
| 1½ Ditto, moulded front | 0 | 7½ |
| 1½ Four panel square | 0 | 7 |
| 1½ Ditto, moulded front | 0 | 8 |
| 1½ Ditto, square | 0 | 8 |
| 1½ Moulded one side | 0 | 9 |
| 1½ Ditto, both sides | 0 | 11 |
| 1½ Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

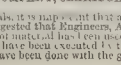
| Inch | s. | d. |
|---|---|---|
| 1½ Ditto, bead, flush, and ditto | 0 | 11 |
| 1½ Ditto, ditto, and moulded back | 1 | 0 |
| 1½ Six panel square | 0 | 9 |
| 1½ Ditto, moulded one side | 0 | 10½ |
| 1½ Ditto, ditto both sides | 1 | 0 |
| 2 Four panel square | 0 | 10 |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto ditto, both sides | 1 | 0½ |
| 2 Ditto, bead, butt, and square | 0 | 11½ |
| 2 Ditto, bead, flush, and square | 1 | 0½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2 |
| 2 Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
| 2 Ditto, ditto, both sides | 1 | 2 |
| 2 Ditto, bead, butt, and square | 1 | 1 |
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**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouthpieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney bars, Rests, Oven-heads and rails, Door and Frames, Rollers and Frames, Lamps, &c. &c. all of the best description, at very moderate prices.—CAST-IRON CISTETS.

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The most effectual and most ornamental Chimney-pot yet invented, which by obtaining Ventilation to which all others are open, cures the first of soon becoming closed with soot, and consequently useless.

A large quantity have been made in various parts of the kingdom, which have given universal satisfaction.

Price, Strong Painted Iron ..... 32s.
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SMOKY CHIMNEYS EFFECTUALLY CURED
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VENTILATING CHIMNEY POT.



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be fix'd to any sort of fire-place at a very moderate price.

They are now manufactured of artificial Stone Cement.

The trade supplied with them at the Manufactory,
VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.
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**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly-discovered Liquid Substance, which Resists for ever all Damp, has been found to be the only effectual Remedy that possesses the unique property of perfectly filling the Knot in Wood, both hard and soft, and creating a beautiful Wood Panel, ready for Painting or Graining.

Many distinguished Artists have been employed for some time endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis have the full pleasure in offering to the public an article so long and anxiously called for.

In the application of this Liquid to Knots it is put on like work with a Brush, and in a few minutes can be used in all Paint's hot situations, and looks like pure Wood.

Sold wholesale and retail, by Messrs. Goodall, Wallis, Varnish, Japan, and Colour Manufacturers, No. 9, Lime Alley, Piccadilly, per gallon.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by THOS. FRANCIS and SONS, CEMENT WORKS, KING'S ROAD, CHELSEA, LONDON.

The properties of this Paint are peculiar for preventing rust from oxidation, wood from decay, and masonry from damp. It will not crack on the hardest surface, nor scale off, and is therefore valuable for Railways, Roofs, Sheds, Coach and Wagon-work, Dwelling-houses, Country-houses and for Shipping. Its adhesion is so great to iron and wood that the vessels need not be scraped, painted. It prevents vegetation on stuccoed buildings, and is not affected by spray. Seawater.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is so great that one hundred weight is equal to one and a half of lead. It works well under the brush, and dries with an even surface. It is a permanent mixture. If thinned with other paints it has a softer tint than whitelead. For houses painted during operation, it is most preferable, being perfectly unobnoxious.

**JENNINGS'S SHUTTER FASTENER.** Shop Fronts are more damaged and defaced by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and frequently mislaid or lost. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fastenings are made of brass, afford greater protection to the corner of the shutter, can be used by any person, and are sold at a very moderate. Hundreds of tradesmen have testified to their value, and testimonials of their ease and efficiency may be obtained, on the premises. A front, containing eight shutters complete, can be fixed in a few minutes. A model and full particulars will be forwarded on application. Patentee, Mr. Wm. Jennings, Ironmonger, Pentonville. Wholesale and retail of persons who keep shops of the trade, to be had of the Inventor, 53, Great Charlotte-street, Blackfriars-road, or of any respectable Ironmonger.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only,
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An Apprentice wanted to Board and Lodge with his friends. Premium, £20.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

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**THE** Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them as peculiarly and durability, the rebate, ring, sheathing, and Iron Thief completely in so simple that the largest shop-front can be put up, or taken down in the shortest possible case without the use of any machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal pieces, consequently cannot rust, rattle, be strained or get out of order, and are safer. Persons desirous of having their premises secured from depredation by shutters that are at the same time ornamental, can draw up in any part of the premises with the slightest exertion, without machinery, thereby rendering the application useful.

LIGHTNING CONDUCTORS FOR BUILDINGS.

**A.** SMITH'S PATENT COPPER WIRE ROPE is being daily employed for the protection of CHURCHES and other buildings from the effects of thunder storms; it possesses important advantages over other forms of conductor. Numerous CHURCHES, PUBLIC and PRIVATE BUILDINGS, &c. &c. have been secured on the Arkwright and Mercer's Mill, Cotton Factories, &c. &c. A SMITH begs to call the attention of Architects to his IMPROVED PATENT VENTILATING IRON SHUTTERS. Also, the Patent Weather-tight Fastening and Cill for the same, which renders them a complete protection from storms, and requires no fastenings. Testimonials of the merits of his Patent Bolt and Staple Astragal Door Springs,
Do Floor Centre Springs,
Patent Wire and Line, &c. &c.
Latch and Casement Fasteners are pretty generally known and appreciated.
Manufactory for Iron Suspension, Sliding, and other Doors, Sash Lines, Plain and Ornamental Railings for Gates and Conservatories, Metal Sashes, Shop-fronts Shell-headed Plates, Brass Butt, and other Hinges. Buildings heated upon a new, safe, and superior plan.
Estimates given for every description of Metal-work.
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INJUNCTION.

**BUNNETT and CORPE'S Patent RE-** VOLVING SHUTTERS, specified in the following Injunction in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and those are all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, of requisite form, and wheel motion for raising and lowering, giving a uniform pressure to the Patent Joint, as the only safe and durable mode of effecting that object. In large shutters a compound wheel is used.

In such cases as Bunnett and Corpe's shutters have been put up, without a single complaint of their want of strength or security, during the severest gales of wind, while those of the same dimensions, not having the improvement applied to the Patent Joint, have been carried away with the violence, and all manner of Shutter Gear so destroyed as to render it necessary to put up new ones, at the cost of the tradesman.

B and C. also manufacture REVOLVING WOOD SHUTTERS of the first class, inspected by the Patentees, and approved of by makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

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Shop-fronts fitted with their Sash Bars, Patent Joint, Fire Sashes, Plate, ornamental, Inside, and Outside Moulded Staff Beads, and the whole or any part of their improvements applied to any description of Shop-front, on the shortest notice, and at the lowest prices consistent with good workmanship.

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Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, specially adapted for Builders' purposes, upon the most moderate terms.

TO ARCHITECTS AND BUILDERS.

**THE** attention of Architects and Builders is directed to the Patent Architectural Works for CARVING IN WOOD (of any kind), STONE, and MARBLE. The advantages are very many. They consist in the facility obvious on comparison whether in the execution of the work, or under the price. A Show-room is fitted up on the premises, containing a variety of specimens, and from which the Machine may be seen at work. Communications should be addressed, "Architectural Carving Works, 1, Chester place, Pimlico," having no connection with any other establishment.

**WORCESTER ENCAUSTIC TILES** Specimens of these beautiful Tiles in all their Varieties, may be seen and had on the Premises, or at the London Agents, Messrs. GRIEVE and GRIFFITH, Marble wharf, Belvidere-road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

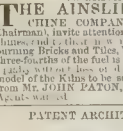
**ENCAUSTIC, VENETIAN, and other** PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON'S, of the manufactory and place, factory sale of Blackfriars-bridge.—J. M. BLASHFIELD, Agent. The above tiles have lately been generally reduced in price.

N.B. An assortment of plain and ornamental door furniture, slabs and tiles for hearths &c.

TO BRICK AND TILE MAKERS

**THE AINSLIE PATENT TILE MA-** CHINE COMPANY James Smith, Esq., of Deanstone, Chairman, invite attention to their improved Brick and Tile Machines, for the manufacture of the improved Patent Kilns for drying and burning Bricks and Tiles, by which a saving of from two-thirds to three-fourths of the fuel is effected, and all the articles are burnt equally without loss of time. The Machines at work, and a model of the Kilns to be seen, and all particulars to be obtained from Mr. JOHN PATON, Secretary, 193a, Piccadilly, London,—Agents wanted.

PATENT ARCHITECTURAL ROOFING TILES.



**ARCHITECTS,** Builders, and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and cheapness surpass every other kind of roofing whilst their cost but little exceeds the covering with common pantiles, and their superiority over slating is at once apparent.

For particulars and full particulars, apply to Mr. J. G. HUGHES, at the Company's Offices, 108, Strand.

Price, from 16s. to 22s. per square.

By Her Majesty's | Royal Letters Patent

**WILKINS'S "SILENT" WATER-** CLOSET.—To Architects, Surveyors, and Builders.

Gentlemen,—Your attention is respectfully invited to the above Closet, the peculiar qualities of which are, that it is perfectly free from the sound of the Valve in supplying the Water, and may be kept in use all night in the House, without causing or creating the least annoyance to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Tower, Wi Cranes, Levers, Handles, and Chains, which are the cause of so much trouble. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Establishments, has long been felt, and cannot be better supplied than by one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

The Valve is placed in the Basin, and the Handle which applies to it—each of the apparatus including the trap), being completed between the floor of the room and the ceiling of the Water Closet below, it is quite easy to remove any noisy Closet and fix the "Silent" one in its place, without any disturbance to the Soil Pipe, which is usually called Drain Pipe, or to the Water Pipe. The Handle to the "Silent" Closet is also obtained, as to the fixing of it in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

May be viewed Daily, and Orders taken at No. 25, Tower place, University College, London, from 8 in the Morning to 9 in the Evening.

CHEAP AND DURABLE ROOFING.

By her Majesty's | Royal Letters Patent.

**F.** McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c. Patronised by

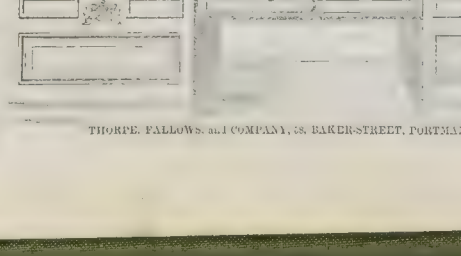
His Majesty's Woods and Forests,
His Majesty's Commissioners of Customs,
Honourable East-India Company,
Dock Company at Blackwall,
Her Majesty's Estate, Isle of Wight,
Royal Barracks, Land-Transport Corps,
Royal Gardens, Regent's Park.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and awarded THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat. The price is ONE PENNY PER SQUARE FOOT. Samples, with full directions for the use of, and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, may be had gratis and post free. A Deptford Felt, for covering boilers, &c., is also manufactured, by which a saving of about 33 per cent. in fuel is effected. The TRADE are respectfully informed that McNEILL and Co. have DIRECT FACTORY AGENTS in all the principal towns in the United Kingdom, and the Continent, who will supply them with the Felt in any required quantities, and at their prices. The attention of CARPENTERS and BUILDERS is directed to the Felt, and roofing made up ready for fixing, manufactured and sold by McNEILL and Co., Manufacturers, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.

Roofs may be laid with the Felt by Journeymen Plasterers, after the new Water Cement, at a saving of 50 per cent. on the cost of Lead, and at one-fifth part of the weight. Estimates given for roofing, also for under slates at the Royal Agricultural Society's House, Hanover-square, Bunhill-row, and at Drill Hall, and at Cavalry Barracks, New Barracks, Deptford. A Liberal Discount allowed to the Trade.

THE PANKLIBANON IRON WORKS,
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**ARCHITECTS,** BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most splendid and extensive assortment of Stoves, Fenders, and Fire Irons, ever offered to the Public at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive Stock of IRONMONGERY, Tinned Copper, Tin and Iron Tea Boards, Tea Trays, Tea Urns, Tea Pots adopted by the Proprietors of affixing the price to each article for cash, Tea Chests, Packages to have the same advantage.

The Patent Thermio Stove is on daily exhibition. Also,

IRON'S IMPROVED HOT-AIR STOVES, for heating and ventilating Lobbies.

THORPE, FALLOWS, and COMPANY, 8, BAKER-STREET, PORTMAN SQUARE, LONDON.

The Builder.

No. CCV.

SATURDAY, JANUARY 9, 1846.

ALTHOUGH two years have elapsed since the Metropolitan Buildings Act came into operation, doubts as to the precise meaning of many of its provisions still exist. In some, the district-surveyors are not agreed even amongst themselves, but act differently in similar cases; and considerable unpleasantness is the unavoidable result. The means given by the Act to resolve these doubts and prevent this diversity of practice, namely, an appeal to the official referees, will of course gradually have that effect; but unless the district-surveyors and the public will look to the awards made by the referees, and conform their opinions and mould their course in similar cases accordingly, irritation will still be kept up, and certainty never be arrived at.

At the Buildings Office it is possible a different opinion may prevail. It may be considered there, that every case ought to be decided on its own merits, and that the surveyor ought not to be guided or influenced by any previous award, however fully it may seem to bear on the case before him. We do not know that this is so: we should suppose otherwise indeed, if it were not for statements made by some of the district surveyors. But if it be so, we must respectfully dissent from it. There will necessarily be cases of difference arising, on which appeal must be made; but these ought to become fewer every day, to which end it is of the greatest consequence that district surveyors should make themselves acquainted with all the awards, and read the Act with these before them.

We are not to be understood as arguing for implicit adoption, without question, of all the decisions arrived at by the referees. They are able and conscientious men, and doubtless give full consideration to every question submitted to them, and decide it according to their best judgment. But all men are fallible, and the referees are men. Still the awards open to sound objection are exceptions,—we are speaking of a general rule.

Amongst the doubts (it ought to be a doubt no longer), is one concerning flues which has been submitted to us several times, in one case a twelvemonth ago, and now as lately as the present week.

The question is stated thus by an operative builder:—

"Sir,—I should feel much obliged if you would give us some information on the following point, namely,—whether an opening can be made in a flue to admit of the insertion or the connection of a wash-house flue?

In fact, whether any coppers are to be used at all, except by those persons who already possess them. For if the making of a distinct chimney for a copper be insisted on, it will in fact, entirely prohibit the setting of coppers. Surely this cannot be the intention of the Buildings Act; as it expressly allows the cutting of flues for the insertion of stove-pipes.

The case in which this question has been particularly raised is this:—I have a contract to set fifty or more coppers in three new streets in the Greenwich district, comprising sixty fourth-rate houses, belonging principally to working men. In most of the houses, an opening has been left for the purpose of inserting the copper flue; but in some of them the opening has not been left, and in several others has been left on the wrong side for the copper.

The district surveyor's assistant tells me that where the opening has not been left, no copper shall be fixed unless I carry a distinct chimney up through the roof, which as a matter of course, will not and hardly can be done even at a great expense.

I am bound by my contract to fix the coppers on a York stone 2½-inches thick on solid earth, and to do the same in a sound, workmanlike manner. You will greatly oblige me and many others by stating your views on this subject, as it is a most important question to the working classes especially. If insisted on, it will almost prevent the use of an indispensable article to cleanliness, and therefore health.

The houses are not yet finished or inhabited, and the fees have been paid."

In reply to previous inquiries to the same effect, we expressed our decided opinion that nothing in the Act was intended to prevent such a connection being made. The clause supposed to prohibit it, headed "*Cuttings into Chimneys*" (schedule F), says:—

"And as to every chimney-shaft, jamb, breast, or flue, already built, or which shall be hereafter built, in reference to cutting the same, no such erection shall be cut into for any other purpose than the repair thereof, or for the formation of soot doors, or *for letting in, removing, or altering stove pipes* or smoke jacks, except as directed for building an external wall against an old sound party-wall."

And we pointed out that it was simply necessary to make the connection by means of a small piece of pipe, to overcome the objection which, through a verbal omission, might be raised, though only by one who was willing to create a difficulty.

We are glad to be able to confirm this opinion by an award dated the 21st of last month, and which will, we hope, set the question at rest.

In the case of building a new angle chimney in a bath room, on the ground or entrance floor of 35, Hill-street, in the district of St. George, Hanover-square, the flue from which is taken, by a short pipe wholly inclosed with brickwork, into the flue of the kitchen chimney, the district surveyor contended, "that it must have a separate and distinct flue, and that it is contrary to the Act for two fire-places to be connected with the same flue, and that such cutting into the flue, to form the connection, is prohibited by the clause in schedule F, "cuttings into chimneys." The owner's surveyor, on the other hand, contended, that such clause admitted of what had been done, as the cutting away for letting in stove pipes is clearly laid down, and that in no part of the Act is the carrying the smoke from two fire-places into one flue prohibited.

The referees awarded:—"That inasmuch as it is not provided in the said Act that every chimney must have a 'separate and distinct flue,' if the flue in question be properly inclosed with brickwork, at least four inches thick, or if being a smoke-pipe, and not so inclosed, it be placed at the required distance from any timber or other combustible materials, the same will not be contrary to the said Act."

The last circular from the registrar, relative to projections from walls of buildings over public ways,* gives a less objectionable view of the question than the first, but, nevertheless, still puts a construction on Schedule E certain to produce an injurious effect on street architecture, and which, moreover, we venture to think it was not intended to bear.

The modification of their first opinion must be regarded as an admission that they saw the mischief that would be caused by the rule, if carried out as was at first thought necessary; for in truth, the ground for the modification is absolutely *nil*. If Schedule F declares that no decorative projections,—window dressings, cornices, or shop-fronts,—from the wall of a house erected since the new Act came into operation, shall be permitted to overhang a public way, it also unquestionably extends to buildings erected *before* that event upon their being rebuilt. We will not, however, find fault with this; but we call upon the referees to go still farther, and revoke their first instructions altogether, although they may feel able to prove them correct.

We have attentively considered the whole of the schedule again and again, and are more perfectly than ever satisfied, that the constructors of the Act never intended that the owner of a house abutting on the public way should give up a portion of his ground (without any advantage to the public, too), or forego all attempt at architectural decoration. There is an evident distinction made between decorative projections and those which form essential parts of a building, as was pointed out in the able letter on the subject, by T. L., in our last volume;* notwithstanding this distinction is not recognized in the clause which sets forth, that no projections shall overhang the ground of another owner.

"Though we are accustomed to strange anomalies in Acts of Parliament," says T. L., "yet in this case one can scarcely suppose that the legislature had enacted that a thing might be legally done by one clause, and that it could not be done by almost a successive clause. There would surely have been some exception or proviso made in the first, to meet the contingency in the second; but there is, however, none. The Act expressly enacts that cornices may project beyond the line of houses, a case that occurs most frequently in the city, but the official referees say no; the subsequent clause nullifies the first.

It appears to me that there is an ambiguity in the word projections, which I submit is used in three different senses in the three clauses; in the *first*, it is applied to architectural decorations, which are allowed; in the *second*, to projections which do not form a portion of the building, such as balconies, verandahs, &c., and which are also allowed, with a proviso; and in the *third*, to projections which do form essential parts in a building, such as projections on plan (a wing and centre for instance), or projections in elevation, such as bay windows or corbelled rooms. These are prohibited unless the house is set back."

In respect of shop-fronts, an amount of projection is stipulated for, to be the same "*whether there be an area or not*,"—in other words, as we take it, whether it be over the owner's own ground or *not*.

If the rule be insisted on even in respect of new buildings, the result will be the entire abandonment of all architectural decoration. Houses set back to admit of window dressings or cornice would of course lose, in appearance of extent, the thickness of the two half party-walls,—a sufficient reason of itself to prevent the majority of owners from adopting that course.

We have stated our opinion that the referees are not bound to insist on this rule. Let that opinion go for what it may be worth. But if the referees still think otherwise, we trust they will forthwith endeavour to obtain such a modification of the Act in this respect, as may be considered necessary.

* Vol. IV., p. 617.

COMPETITION.—Designs have been called for, by advertisement, for a tower of medieval character, to be erected near St. Peter's Port, Guernsey.—A premium will be given for the approved design.

* See Vol. IV., p. 555.

## CONTEMPORARY ARCHITECTURAL CRITICISM.

It has become an established opinion with writers of the day, that there is but one field which the human intellect leaves uncultivated. That this *dictum* has been applied to architecture, not without reason, we are not quite prepared to deny, but rather to assert, as we have already done, that the present state of architecture is a reproach to the age, and matter for deep regret to its professors. But when it is also put forth as an axiom, in the common criticism of newspapers, that architecture has no reproductive power,—that here is an art which will admit of no alteration, much less improvement, to which the ordinary revivifying influence of new matter is denied,—then we deem it necessary, however little so extreme an opinion may have taken hold of those who have really studied the art and the history of architecture, to protest against the frequent publication of erroneous views, with the sanction which the world at large will generally allow to what is confidently stated in print.—Probably, in no profession are the merits of a production more freely canvassed than in that of architecture; whilst seldom can we find professors so indifferent to the expression of their opinions in the form of publication. Were architectural criticism, generally, in the hands of architects, such writers would estimate conflicting views, and consider the merits of a work ere they would condemn it; with the pen, they would pause to examine what the ready tongue is too prone to say, often with little consideration for propriety of phrase. Instead of a mere repetition of crude or exploded notions, gleaned by the gentlemen who "do the fine arts," from encyclopædias and periodicals, real principles would be ascertained, and enunciated, and the people would have laid before them correct views in art, for those now substituted. Popular opinions upon architecture seem to us matter for the serious attention of architects; influencing, as they do, through the channels we have alluded to, the opinions of the educated, and often supplanting the result of mature reflection in the minds of architects themselves.

A careful examination into the actual state of architecture, considered as a reproductive art, compared with those other arts and sciences which occupy the attention of the world, would, we think, show,—first, a too highly rated estimate of the present exercise of invention in general, and, secondly, a misconception of the position of architecture in the present day, as compared with its state at former epochs. Now we might succeed in proving, that invention, strictly speaking, has never had any existence since the time of the creation. The most happy efforts of ingenuity, called inventions, have never been any thing more than the re-arrangement of matter, or knowledge, previously existing; and discoveries in nature and science, which are not originative, are merely existing facts, made patent, through a careful balance of accompanying circumstances and causes.—It will be recollected, that we are only contending against popular fallacies; there may be some who know better.

But, by those who most of all lament the present state of architecture, a position is expected for it, in which *it* has never been placed, and which has never attached to any science, or to any other branch of art. By these writers it is assumed that architecture—which, let it also be recollected, deals with forms which can strongly impress themselves upon the recollection—should in all its works employ outlines and details, which had not before been met with—forgetting that such would be an exercise of invention, to which humanity is not equal.

By some of these critics it is supposed that the whole matter of architectural design is fully expressed in previously existing styles, and that the merits of any composition under notice, are to be estimated solely by its likeness to the architecture of a former period; whilst the stereotyped phrases of "slavish adherence to precedent," "want of originality," and the like, are used by others, who are unable to judge of the propriety of such condemnation. Were these writers architects, or had they examined the past history of art, they would know, that not architecture only, but every other department of art, has had slow progress; that in changes of style, and in what passes for originality of design, little, comparatively, is due to individuals; and that, in any particular era, had only one inventive mind been exercised, future ages would have found it hard to separate the modifications introduced, from the general style of the date. It is true that architects, and other professors of art, are often able, as in the architecture of Italy during "the revival," to distinguish the style of each master, and to ascribe, where due, the authorship of an invention. But the very circumstance, that the world in general is unable to do this, shews that the stages by which alterations in design are made, are too minute to constitute what the vulgar deem originality, and freedom from the "shackles of precedent." It does not follow because, for example, the capital and order from the Temple of Jupiter Stator are used in a modern building, that the whole design is not as creditable to its architect, and as fine in conception as any building by Palladio, or Vignola, or by an architect of any other period equally lamented as superior to this. In truth, the painter and the sculptor, as well as the architect, if they would produce works which may really be creditable to themselves and to the age, must draw largely for materials and ideas upon the works of predecessors, and because they do this, it does not follow that they render themselves less worthy of the admiration of their contemporaries, or less entitled to their place in the Walhalla of artistic fame. There may be many who repeat, rather than re-combine, and in whose works it is impossible to find the expression of an idea, the origin of which is not at once discernable; but it is our complaint, that ordinary critics do not separate these from the really intellectual and refined, and deny therefore the reproductive power of architecture, or suggest impossible theories for its renovation. What may be called originality in design has really the claim, only because the source of the idea is not, or at least not readily, apparent; for it is the ingenuity in seeking out unexamined and secret sources of ideas, rather than the originating of the ideas themselves, which makes the true artist.

We believe, that amongst the world, it is much easier to recollect the general character of a building, or the design of a capital, or other detail, than the treatment of the composition in a painting or a statue. Consequently the debt which is due to precedent in two of the arts, escapes the eye, whilst it is apparent in architecture; and as those who ordinarily write upon art, know little of its history and principles, it is assumed that architecture is in a position to which it has never before fallen, which is unparalleled in any other branch, and from which it can never recover. Now, indeed, we find, the more we examine into the past history as compared with the present state of art, that there is not quite that reason to doubt the occurrence of a future brilliant era, which many writers would have us suppose. We look back to the age of Grecian art, and find the style then proceeding by stages, scarcely discoverable by the eye, even of an artist; in the early Roman period, and in the Revival, we find a respect for "precedent" which may not unfairly be compared to that, for which we are said to be remarkable; and during the same age of "the revival" we find the Italian and the Gothic styles co-existent, and even practised by the same architects, which is the chief stigma upon architecture now. Even in Gothic architecture, we doubt whether the changes of style appeared as great and important whilst in progress, as they do to us, or whether posterity will not see in our efforts something of general progress, which they will be able to comprehend and classify, somewhat as we are able to do similar periods of co-existant styles, which the history of art, if at all minutely examined, discloses.—That the monuments of art of all ages and styles, can be made to minister to invention and good architecture, we should not find it necessary to state, were not the contrary asserted, in effect, in the writings of critics of the order we have referred to. Such writers, in their hostility to copyism, would deny us even the legitimate and proper use of ancient models, forgetting that even "precedent" may have its value, and, further, afford that which one mind alone could not by nature supply.

There is yet one circumstance in the present state of architecture, which is not wholly without cause for congratulation, and yet may have some immediate effects. It cannot be denied, that the very advantages which architecture has, through the accurate manner in which it is illustrated, are not applied in the way most conducive to excellence in style. But, were it asserted, that in this there could be any thing opposed to the interests of the art, it would in effect be to deny the value of ancient models, which, it is our object to urge, contain the chief matter out of which future excellence in style must be created. Architecture has within it a reproductive power, which can parallel the style of any age; but that power is impeded, whilst the ordinary channels of criticism are made to disseminate views, not founded upon a deep insight into a subject of much difficulty, one which can only be grappled with by those who are perfectly familiar with every branch of the inquiry.

## MURAL DECORATIONS: ST. GERMAIN L'AUXERROIS, PARIS.

For four years M. Mottez, a French artist, has been engaged in the decoration of the porch of St. Germain l'Auxerrois, an addition to the main building attributed to the middle of the fifteenth century. He has now finished his work, and produced a series of pictures in fresco, illustrative of the establishment of the Christian religion, conceived in the Gothic spirit, and made to accord in character with the church.

The principal picture is in the tympanum of the great doorway, and represents the Saviour on the cross, supported on the knees of the Father, who sits behind the head of it. Around, at his feet, are clustered the persons who have thrown lustre on the church of France,—all saints but one, and that is Joan of Arc! On the right and left of this are two long upright pictures, with pointed heads, filled with super-posed groups. One, Christ preaching on the mountain, with groups of figures below, illustrating certain commandments; and the other our Saviour on the Mount of Olives, with the Virgin Mary, surrounded by a group of women, at the foot.

Some of the French journals object to the external decoration of a Gothic building with painting; and, secondly, to a return to a style of art long since abrogated.

One of these, *L'Illustration*, offers many objections to such works, and to that now under consideration in particular. "If we candidly examine," says that journal, "this specimen of monumental ornament, the return to polychromatic architecture which has been attempted in the porch of the church of St. Germain l'Auxerrois, leaving out of consideration the work of the painter, of which we will not yet speak, we must frankly own our opinion, that these works which have received so much praise, are neither correct, useful, nor agreeable. Are they legitimate—do they belong to the art of the middle age? is a question that qualified archæologists must decide. They found, under the white-wash, traces of painting at the cathedral of Saint Denis, also at the Sainte-Chapelle of Paris, upon a bas-relief on the outside wall of the choir of Notre Dame, in the cathedrals of Rheims, Chartres, Soissons, &c., but these remains of painting are mostly seen in the interior, and we should, perhaps, commend a zeal which has there restored these works to general favour. There these fanciful ornaments, of a thousand colours, blend well with the play of light produced by the stained glass; and their rich details form in the chapels a natural transition to the rich decorations of the altars." But outside, continues the writer, it is another matter, and he gives reasons for objecting to it. "No architect of taste," he goes on to say, "would think of making a vestibule as costly as a reception-room; and then what place have they chosen for this architectural miniature? We would accept it in some dark place away from the city. But here, in front of the largest and the most beautiful monument in Paris,—in front of the noble architecture of the colonnade of the Louvre, the folly of the toy is made more apparent by contrast. Moreover, is it a wise thing that these works should be under an open portico, open in every direction to the west wind, that is to say, to the rainy quarter which rules in our Parisian climate three parts of the year. When one sees the damps which, in the interior of the church, have greatly spoilt

the paintings recently completed, one must fear that the exterior dampness will cause a more rapid destruction."

The frescoes themselves, the writer thinks, have undoubted merit; they agree with the structure which contains them.

Executed in a plain tone, they harmonise well together, with the exception of some blues, which are rather too bright. In such a work the artist has hardly fair play:—"He was not free to inscribe on those walls his independent fancy;—a figure graceful and young, by the side of a form stiff and gothic; a conception of our time by the side of the traditions of the middle age. He has also sacrificed in his works form to symbolism: and this sacrifice has been in some parts carried very far, as in the tympanum, representing Christ on the cross. The Eternal Father holding between his knees, and sustaining with his extended arms the instrument of punishment, forms, with the body of the victim, an ugly and ungraceful whole. Further, if the Holy Spirit, the Father and the Son, are here only as symbols, it is perhaps wrong to have given to the two angels, at the right and left of the Eternal, too animated gestures of human affliction. The skies of gold, on which are cut the lines of the horizon; the discs of gold, on which the heads are inlaid; the want of ethereal perspective; the sacrifice of geometrical perspective; all in this great composition shew the shackles of conventional art. And is it not a hard necessity that condemns the artist to suppress inspiration, to sadden form and colour, to stifle life and sentiment, for the gain of a useless concordance with an old form, once a lively work of the faith, now a dead letter, and not understood by the crowd? Nevertheless, whatever we may say of the system, let us do justice to the persevering courage, the long and difficult researches, of the artist, who, during four seasons, has devoted himself to this great work, has lived as a man of the middle ages, and has brought to completion, with a great character of unity, this immense monumental decoration."

## VICTORIA PARK AND THE "WOODS AND FORESTS."

### SIR JOHN CASS'S CHARITY LANDS.

Correspondents have drawn our attention to the eastern Park, complaining of the tardy pace at which the Commissioners of Woods and Forests have proceeded in all the arrangements relating to this improvement. The Act for its formation was obtained some years ago, and it is only *now* partially laid out and planted. The respectable community on the eastern side of the metropolis have really ground for complaint in this hope long deferred. *When* completed, it is said, that, in some respects, it will outvie Regent's or Hyde Park. A lake, six acres in area, with a fountain to throw fifty feet high, is promised; and the size and costliness of the lodge and bridge (near where old Bonner's Hall stood) bears out the assertion. The lodge, designed by Mr. Pennythorne, may be called Elizabethan in character, and is built of red brick with stone dressings. It is lofty, and has a tower, the lower part of which is open on three sides to form a porch. At the time of the formation of this park, there was much discussion as to the site. The landowners of Stepney, Limehouse, and its vicinity, urged on the Commissioners that the south side of the Mile-end-road would form a more desirable position for a public park; but it seems clear that the site chosen was really better for the public weal,—the districts of Bow, Stratford, Hackney, Dalston, Clapton, Kingsland, and Stoke Newington, will all, more or less, derive benefit, when the park is finished and the approaches made; and the projected line of road from Limehouse will open a suitable avenue from that quarter. The Commissioners of Woods have given notice of application to Parliament in the ensuing session, with reference to this approach, and also for powers to form an approach from Cambridge-heath gate, and another from Bethnal-green-road. Surely, this was a *faux pas* on the part of the authorities to omit provision for the approaches till now; another two or three years will be absorbed, which might have been saved if the approaches had at least been formed simultaneously with the park. Where is Victoria Park? is not at all an unfrequent question, even within a hundred yards of the gate, so obscured and hidden is it in its position; the block of houses on the eastern side of Bethnal-green-road, and thence northward to Cambridge-heath, form a perfect *curtain* to the park from the London side. It might seem hypercritical to carry these remarks further, but really it is too true; at the present moment, there is not one direct and accessible road by which a visitor could drive to the park. No person standing at the Cambridge-heath gate could imagine that he was within two minutes' walk of the park, and might see the lodge if he knew where to look for it. Surely, as a mere piece of worldly policy, this is unwise.

The land in Victoria-park will *not let* for building purposes until the public know and can see the way to it. It was the natural hope of all who were interested in the improvement of the eastern side of the metropolis, that the park would excite to a better class of buildings than had been formerly erected. In this respect some few have honourably emulated, and have gone forward with energy to the work. There is an important charity estate, known as Sir John Cass's Charity, lying north of the park, and forming the entire northern boundary; and the trustees of this property seem resolved to do their part for the improvement of the neighbourhood. They have swept away a wretched village of houses (or hovels, more properly), formerly known as Botany Bay; and this peculiar cognomen arose out of the circumstance of so many of its inhabitants being sent to the *real place*, not for their good deeds, it may well be believed.*

The estate of Sir J. Cass's Charity bids fair to become a most important one in this district; and when the contemplated approach is made from Cambridge-heath to Gun-street, and the other roads in course of formation are carried out, it cannot fail to become popular as building property: new roads and sewers are being formed. The Governors of St. Thomas's Hospital have also an estate at the north-west corner of the park; but they do not seem yet to be in the field for building purposes. It is satisfactory to find, that large owners of property are making a resolute effort to improve the eastern side of the metropolis. There is much to be done in the neighbourhood of Hackney, as any one who has had occasion to travel in a vehicle, in any direction but the one main line to London (and that is any thing but a direct one) will verify.

If those who are interested would unite and obtain a local Act, they might at comparatively small cost improve their own property and benefit the public greatly. An immense number of small houses have been built in Hackney and Homerton within a few years, and unless some general plan for improvement be determined on quickly, it may be too late. In the neighbourhood of the park an enormous church (St. John of Jerusalem) is being erected, under Mr. Hakewill, which promises well. It is a cross church, early English in style, and has a most capacious chancel. The roofs are now being put on.

* Sir John Cass was a worthy alderman of London, who died in 1718. His father, Thomas Cass, was carpenter to the Royal Ordnance, and acquired a large fortune, which descended to Sir John. The latter built two schools near the church of St. Botolph, Aldgate (opened 1710), besides some other buildings contiguous to these; and provided salaries for the master and mistress. He willed, that after the death of his wife the whole of his estate should be held by certain trustees, to provide the charity-children of his schools with a dinner every day, and for other purposes; but died with the pen in his hand without fully completing the instrument; which led to much litigation and difficulty, not settled till thirty years after Cass's death. The estate is managed by twenty-one trustees. Sir James Flower is the treasurer. It is proposed to build schools at Hackney in a short time.

## THE NEW HOUSES OF PARLIAMENT,

### AND THE PROGRESSIVE RISE OF THE RIVER.

I have noticed, for nearly half a century, the gradual and regular rise of the waters of the river Thames. My attention was first drawn to it by finding that extreme high tides were not preceded, nor succeeded by, similar tides.

These were recorded by the watermen of the Westminster Horseferry, by notches cut by them on a post there, ere the post was removed when the street was raised.

This subject led me to conjecture as to the origin of the Marsh Walls.

I now observe, that professional men in reporting on some localities, such as Westminster, say that the sewers there were originally too low. But it appears from what I shall relate, that the said sewers were high enough when they were first made; but are not so now, owing to the rise of the river.

It appears that I am the first person who has noticed a circumstance so universally continuously evident. The architects of modern, as well as ancient buildings, were not aware of it, as will be too plainly seen by referring to the floor of Westminster Hall, the upper line of the starlings of old London-bridge, the gate of Lambeth Palace, the York Water-gate, Adelphi, the level of the wharfs there, &c.

A paper by me, going more fully into the subject, was printed in the *Morning Herald* of April 4th, 1843.

In 1844, the Commissioners for improving the metropolis published their first report, comprising the evidence as to the proposed embankment of the Thames, by Mr. Walker, Mr. Page, Mr. Cubitt, and other scientific men, *up to August*, 1843, with numerous plans, sections, &c. of the river.

Not one of these gentlemen alluded to the rise of the river; but, on the contrary, they all refer to a *fixed standard level of high water, called Trinity datum* (made, it appears, in 1800). And in referring to the Marsh Walls, they attribute the formation of them to the Romans, *vide* pages 66, 212, 230.

My theory has hitherto been met at every step by contradiction, although it is supported by the science of physical geography, combined with geology.

It appears that the ground line or plinth of the palatial Houses of Parliament is already below the level of extreme high tides. The difference of the rise of the highest tide before the Parliament Houses were burnt down, to the last highest tide, viz. in December, 1845, is but ten inches. The preceding highest tide was in October, 1841. These two tides were very carefully noticed at the "Fox under the Hill," Adelphi, the people there being up at the late hours both these tides occurred at; the difference was exactly one inch; the lines of elevation are painted in the tap-room there.

The gate-towers of Lambeth Palace were built by Cardinal Morton, about 1490. It is evident, by the height of the door-way there, that the ground was elevated two feet, when the hall was rebuilt at the restoration; the last highest tide was 18 inches above the line of the said present raised ground or road.

There is a house in Upper Fore-street, Lambeth, with large chesnut beams and uprights; this appears of about the time of King Edward the First; the first floor is now only 3 feet 1 inch above the street, which is close to the river; therefore, when this house was built, the lowest marsh, viz. that opposite to Greenwich, was above the level of the highest tide, and might then be entitled to its name of "The *Isle* of Dogs."

The said ancient house in Fore-street is now in a most neglected and decayed state. There is a tradition there that it was part of a bishop's house, and had steps in front, with trees before it. I cannot find any account of it in topographical works, but Mr. Green, the proprietor, says it adjoined the remains of a larger building of similar materials.

*The River Locks.*—In 1803 there was no lock between London and Windsor. The locks since made must in a slight degree increase the height of some tides at London.

*The Old London-bridge* was taken down before the commencement of the palatial Houses of Parliament. The removal of the old bridge has very much altered the *ebbs*, but can only to a slight degree affect the height of the flood tides, because there was no fall when the tide was running up, but only a strong current. The fall was greatest about half an hour before low water (above the bridge), when it has been as much as five or six feet,—then keeping the water above the bridge, at that time of so much superior elevation—of course, the higher portion of water kept running down, until the water below bridge rose to a common level.

T. Higgs.

Fall of a Wall.—A wall 10 feet high, at Blackwall Point, was thrown down last week, by piling sand against it, and a person who was passing at the moment was killed.

## RAILWAYS IN THE PAPAL STATES.

In a notification lately issued by Cardinal Gizzi, secretary of state, the Pope authorizes the execution of the lines of railway undermentioned:—1. That from Rome through the *Valle del Sacco*, to the Neapolitan confine near Ceprano. 2. That joining Rome with the port of Anzio. 3. One from Rome to Civita Vecchia. 4. That from Rome to Bologna, by way of Ancona, which passes through the most populous parts of Umbria, as Foligno and the valley of the river Potenza, and follows in part the traces of the Via Flaminia Emilia. —The conditions on which these lines shall be assigned to the companies, represented by pontifical subjects, after approval, are, the presentation of:—1st. The description of the lines contemplated. 2. "Artistic and economic information" which they may be able to give in regard to these lines. 3. The statement of the time in which they propose to complete the studies, and the works, if approved of, and of the time for which they demand the enjoyment of the concession after the completion of the works. 4. The security they propose to give in favour of the proprietors of the lands, and the security to the Government, before the works are undertaken, that they shall be completed. 5th. The exposition of the means by which they propose to conduct the undertaking. The interests of the pontifical subjects being considered, both as regards capital and work.—Three months are granted for presenting the projects, with these conditions, which time may be extended on proper representation.—The Government also notifies that the construction of these lines being secured, it will take into consideration the line from Foligno to Perugia, and Citta di Castello, through the *Valle del Tevere*, and others, whose utility may be perceived; and it further offers a gold medal of the value of 1,000 scudi, to whomsoever may indicate the best mode of passage between Umbria and the *Marche*.—This resolution of the Papal Government, holding out, as it does, the prospect of many other "judicial reforms, and economic ameliorations," in the words of the notification—will have a most important and invigorating influence upon the prosperity of the Roman states, and the effects of the enlightened policy of the present Pope will reach, through the still active agency of the Roman Catholic Church, far beyond the mere confines of Italy. —We trust, that a hint, given in the programme of conditions, may warrant us in assuming that some arrangements will be made for the careful preservation of all works of art which the works will approach, or which may be discovered during their execution.—The *Roman Advertiser*, the English newspaper published in Rome, still continues to give much interesting information to residents, and those who have visited "the eternal city," and may, we perceive, now be seen in London.

## RAILWAY JOTTINGS.

The invention of a railway speed-register, or regulator, has been already cursorily noticed in *The Builder*, but no account of its mechanism has appeared till now that it has been called for and constructed for use on the East-Indian Railway, for the guidance of the servants, chiefly native, on that line; a circumstance likely to lead to its general adoption at home as well as abroad, as it provides for a want continually experienced, and hitherto inadequately supplied by tabular forms. It consists of a dial of about five feet in diameter, upon the upper half of which is a series of numbers, showing the distances of each station along the line, the number of hours occupied by every train in both directions between each station, and the several stations and stopping-places between the extreme termini. In the centre is a clock dial, by which the departure and arrival of every description of train can be ascertained at a glance. The several trains are indicated by elongated hands, which are worked by a movement constructed according to the speeds required, and attached to the works of the clock. In the railway regulator the goods' train travels at the rate of 12½, the passenger train at 25, and the express train at 50 miles an hour. The trunk line movements are all indicated upon the outer circle; and the branches are provided for by a similar division of the dial, nearer the centre, by which means additional branches can at any time be introduced, and put in motion when required, without inconvenience, expense, or derangement of the original machine.——The saving of expense in the transit, by railway, of the yearly supply of 150,000 head of cattle, and 1,500,000 sheep, to the metropolitan market, is estimated at no less than 675,000*l.*; and considering that the trouble and expense of conveying live cattle and sheep are much greater than those of the mere dead-weight, from which, moreover, a heavy surplus of waste, garbage, &c., would be further deducted; the saving might be greatly increased by the transmission of the so far ready-prepared article instead of the live, as well as raw, material, with all its intolerable annoyances, both metropolitan and provincial.——The rate-payers and residents of Regent's-park and its vicinity have memorialized the Marylebone vestry against the Regent's Canal Railway scheme, as likely to deteriorate the property and destroy the retirement of the neighbourhood, as well as to stop the equestrian, and take away the security of the pedestrian, exercise in the park.——A brisk trade in coals, to be unshipped at Blackwall in order to avoid the heavy London port dues, and transmitted along the Blackwall and Stratford lines to Stamford, Cambridge, &c., is anticipated since the announcement of the Eastern Counties Company's intention to carry coals along their line. From Lynn, too, by way of Ely, an additional supply is looked for. Yorkshire coals are thus expected to be had at Cambridge for 17s. to 18s. a ton, and even Newcastle for 21s. to 22s,—less, in fact, than in the metropolis, though to be thus further carried through the Eastern Counties to their ultimate market.——The South-Eastern Company design to form an immense locomotive establishment at Ashford, where the following and other buildings comprise but one-half of the works intended to be carried out simultaneously with their new lines. The works alluded to consist of a large engine shed, a repairing shop, smiths' and boiler shops, and tender shed. The engine shed, which is for sixteen locomotives, with tenders, is 208 feet 9 inches, by 63 feet. Four lines of rail extend the whole length of the building. The repairing shop has room for fifteen engines and tenders, length 395 feet by 45. Attached is to be a stationary engine of twenty-five horse power, for driving the works. A transverse crane, to move on rails, along this shop, will lift twenty tons at its centre. The smithy, which will contain twenty fires, is 176 feet long by 45 wide, and 28 high.——A bridge at Timsbury, over the Salisbury and Bishopstoke branch line has just fallen in.——The Shiffnall contract on the Shrewsbury and Birmingham line has been let to Mr. M'Leod of Gloucester.——Arrangements are in progress for the erection of the central station at Chester on an extensive scale, and at an estimated cost of 80,000*l.* A new and improved approach to the city is also projected.——In a late newspaper paragraph, it was announced, that a contract for works between Peterborough and London, on the London and York line, had been let to Mr. Brassey at 120,000*l.*, whereas Mr. Brassy's tender, which was for 75 miles, or the whole distance from Peterborough to London, was, in fact, 120,000*l.* below the next lowest bidder.——Contracts for 35,000 tons of rails for the London and York have been taken by the two firms of Bailey Brothers and the Colebrook Dale Company, but chiefly the former, at or about 10*l.* delivered; the rails to be only 72lb. ones. Sir John Guest and others declined, it is said; not liking the conditions, one of which, as reported, is, that if, within twelve months after the rails are laid down, the engineer disapprove of them, he may order the contractor to take them back, without any appeal from his decision. ——At Middlesborough, an extensive market-house and new town hall were lately opened. We have already repeatedly noticed this striking manifestation of the creative power of railways (*inter alia*, see vol. iv., pp. 137, 316). The thriving town which has here so rapidly sprung up, besides its spacious docks and coal drops, and its excellent port, accessible at all times, its custom-house and ship-building yards, its church and chapels, has now several schools, a mechanics' institution, news' room, branch bank, various manufactories, three iron-foundries, and extensive rolling mill for bar-iron, &c. &c., and has for some years been lighted with gas. In business it now so far outvies the port of Stockton, of which it may be said to be an off-shoot, that while in 1844 and 1845 the shipments of coals at Stockton were respectively 22,644 and 21,170 chaldrons, those at Middlesborough were 137,885, and 195,796 chaldrons. By one establishment at Middlesborough, it is said that 70,000 chaldrons of Brancepeth coke were shipped to Railway and Iron-foundry Companies and others, throughout the three Kingdoms.——The North British Line is said to be on the eve of passing into Mr. Hudson's hands on a guarantee of 8 per cent. with half profits.——On the Dublin and Kingstown Line, second class carriages are henceforth to be lighted at night, along with the first class. ——The Board of Control and the Directors of the East-India Company have at length decided upon giving their sanction to the introduction of railway communication into British India on the following conditions:—The Direct Trunk, or East-India Line, is to be adopted; the Government guaranteeing four per cent. to the shareholders. The amount guaranteed is fixed at 3,000,000*l.* to commence with: the guarantee to extend over fifteen years: Government to have the privilege of purchasing the railway after thirty years from the date of its completion, at the then fair market value of the property: the company to be incorporated by an act of the Legislative Council as well as by charter.——The preparatory works for the railway from Rome to the frontier of Naples and Civita-Vecchia have already commenced.——The French Minister of Public Works has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.—— The Dieppe Railway Tunnel has been bored (length 2,400 metres), and the mason-work begun; the engineer, Mr. Newton, having placed the first bricks in presence of Mr. Smith, the Company's agent, and the workmen.—— The virtual power of levelling the hills with the filled-up valleys, by piercing through the bowels of them, as in tunnelling operations, is likely, it appears, to receive a mighty accession of force from the operative aid of machinery, experiments with which, according to the *Moniteur Belge*, have been already made, in order to test the power of penetrating the Alps through the great projected tunnel about to be commenced on one of the Italian lines. "The machine was placed in front of the web, and effected a bore to the depth of eighteen centimetres in thirty-five minutes. At this rate the new invention will complete upwards of five metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success."

## ELECTRO-TELEGRAPHIC PROGRESS.

The electric telegraph on the Midland Railway was opened for public use on Friday week, so that communication may now be made between Leeds, Normanton, Masborough, Sheffield, Chesterfield, Derby, Leicester, Rugby, Burton, Tamworth, Birmingham, Nottingham, Newark, and Lincoln, at the following rates per mile, namely:—Under ten words, 1d.; above ten, and under twenty, 1½d.; above twenty, and under thirty, 3d.; and for every additional ten words, one halfpenny per mile. A messenger, if required, may be dispatched from any of the above stations, on foot, at 1s. per mile; or if by postchaise, on a reasonable remuneration. In case of any message failing through the defect of the instrument, or neglect of the company's servants, the money will be returned. Messages relating to luggage lost or mislaid by the company's servants, are to be sent free of charge. ——By the way, the electric telegraph, like every good thing, is occasionally turned to evil account, as well as to good. We do not at present allude to the merely business qualifications of this winged Mercury, or swift-flying messenger—and to be, ere long, enthroned divinity—of

commerce, enabling the speculating devotee, who may be first in consulting the oracle, to steal a march on his less ardent or sagacious fellow, thereby "netting 50*l.* in a quarter of an hour," by outrunning, at least, if not by overreaching, his friend. What we have more particularly in our eye at present is, the alleged existence of certain malpractices of those devotees of the commercial god—the Americans—of a kindred order, though of a slightly darker shade; more akin, indeed, to the dark than to the bright side of the two-faced patron of commerce, trickery, and thieving. The malpractices complained of are said to have occurred at New York, where speculators "have managed to get the business news from England in advance of the press, and in this way have 'made great operations.' One or two more such instances of abuse," adds our authority, the *New York Correspondence*, "will effect a very good object,—forcing the telegraph, like the mail-post, into the exclusive hands of the government."

— — —

Sir,—In the new edition of Templeton's "Engineers and Contractors' Pocket Book," a mistake occurs, to which I beg to allude through your most practical columns, because it is in an article of considerable interest, on the electric telegraph, and the passage in question is likely to mislead, with regard to one of the fundamental laws of electro-magnetism.

It is stated, that "if we imagine a man to have the (electric) current transmitted through his body, the positive wire being applied to his feet, and the negative to his head, so that the current flows from his feet upwards, then a magnetic needle suspended freely before him, will place itself at right angles to his body, the north pole being to his left, and the south to his right. *If he turn half round, so as to present his back to the needle,* or if the wires be reversed, *the needle will place itself in an opposite position.*"

The first part of this latter statement (in italics) is surely incorrect. When once a needle has been deflected by an electric current in a particular direction, it will not alter its position while the current exists, unless either—1st, The direction of the current, or 2nd, The situation of the wire with respect to the needle, or 3rd, The situation of the needle with respect to the wire, be altered. Either one of these alterations would produce a variation in the needle; but the turning half round of a man, or the twisting half round of a portion of the connecting wires on its own axis, if it were made capable of such a motion, would have no effect on the needle. The man's right hand would be where his left had been, and that would be the only change.

I am, Sir, &c., A. D.

## SUBJECTS FOR PRIZE ESSAYS.

Among the subjects on which the council of the Institution of Civil Engineers invite communications, for premiums, are the following:—

1. The best mode of combining materials, by arranging or cementing them together, so as to insure uniformity of action from change of temperature.

2. On the construction of retaining and wharf walls, with examples of failure and the causes.

3. The construction of piers and moles, whether solid or on arches, in a tideway.

4. The conveyance of fluids in pipes, under pressure, and the circumstances which usually affect the velocity of their currents; with accounts of water-works and gas-works.

5. The construction of girder bridges, whether of iron or timber.

6. The construction of wrought-iron roofs, for covering considerable areas.

7. The internal arrangements of the termini, and intermediate stations of railways, whether for passengers or merchandize; and whether independent of, or connected with, inland navigation.

8. The various modes of boring artesian wells, and the geological formations which have been found most productive of water.

The communications must be forwarded by the 31st of May next.

## THE ANCIENT CHURCH RUINS AT DONCASTER,

DISCLOSED IN RAZING THE OLD TOWN-HALL.

The ruins of the very ancient church or chapel of St. Mary Magdalene have appeared like a shadow, and so they are likely to depart; for the very necessity under which they have come to be disentombed from the less ancient buildings in which they were embodied, in a manner compels their final demolition, in order to make way for the new buildings to be erected in their place.

The attention and interest of the Archæological Institute, however, have been engaged on behalf of their preservation; and it is to be hoped that "one of the most unique and valuable specimens of middle age architecture which this country can produce," as this has been already confidently characterized, will, by some means, or under some form or arrangement, be preserved; since, though there are abundant examples of the more decorated Anglo-Norman style to be met with, there are extant very few such specimens of the earlier character which the remains of this venerable pile appear to exhibit. The whole character of the building, indeed, as observed by a writer in the *Doncaster Chronicle*, to which, and to the *Gazette*, we are indebted for our knowledge of this interesting discovery, "is of that rude, plain, and heavy sort, relieved only by the simplest efforts to lighten and adorn, that we may with much safety conclude this sacred edifice was erected about the period when the Saxon merged into the Norman, and before the decorative work found in the arches and other parts of almost every other Norman building in this country, had come into vogue."

There have been from time to time many and divers speculations as to what portion of the ancient church of St. Mary Magdalene was contained within the site of the late municipal building; but very few suspected that in the walls themselves was entombed nearly the whole columnar arrangement of the ancient church. Such, however, is the fact; and the remains which are now disencumbered of their more modern additions, shew pretty clearly the character of the church of St. Mary Magdalene. It appears to have originally occupied a considerable area, its length outside, from east to west, being 124 feet 7 inches; the nave, 78 feet 9 inches in length, and 23 feet 4 inches in width between the columns; the length of the chancel 37 feet, but it may have extended further eastward.

There are no traces whatever of grooves or any other contrivance for the insertion of glass in the small round-headed apertures, or clerestory windows, if they may be so called, in the north wall, which, with its pillars and arches, constitutes the most entire portion of the remains. Neither, indeed, are there any such traces in other and larger openings of the same character in this, and in the north wall of the chancel, nor were there any in the demolished south wall.

Among the indications of past customs brought to light in this long-buried pile, are several patches of painted plaster work on the wall of the chancel. These show that the interior of this part of the building was covered with a thin coating of white plaster, and this afterwards marked out with black lines into a sort of ashler work. On the centre of every alternate stone in this is a sort of cinque-foil, rudely painted in red, with a curved line or stalk of the same colour, coiling round the flower. On the other stones there have been some red and black characters, but these are quite defaced. Over the arch separating the nave from the chancel, and on the west side, are also some characters, or scroll work, painted in shades of dirty red and white.

It is now quite evident that there has been no tower or steeple attached to this building, unless, as is very probable, the west end wall of the chancel supported a small bell turret. The north and south walls of the nave are 3 feet thick; the west end wall 3 feet 3 in.

It is a somewhat singular circumstance, that there is not the slightest trace of a foundation having been laid for this massive structure. The huge walls and massive columns have been built upon the bare surface of the ground; and the level of the original floor of the church would correspond very nearly with that of the depressed portion of the Magdalene's, near the south-west corner of the Town Hall.

From the decayed state of the columns and other parts of the nave, it is clearly evident that the church or chapel of St. Mary Magdalene stood for many years, perhaps centuries, a ruin. It would also seem, from the traces of fire left on much of the stone-work in the lower part of the building, and especially the chancel, that the edifice was destroyed by fire. To this cause, probably, may be attributed its abandonment as a place of public worship, and its subsequent gradual decay, until converted into a grammar-school and town-hall.

## THE ANTIQUITIES OF TREVES.

Railways and steam boats have made travelling on the continent so very easy, expeditious, and inexpensive, that the sight-loving English may be seen every where, rivalling, in their erratic courses, the almost equally celebrated ramblers, the German students. There is one track where all go alike to enjoy the picturesque and romantic, and this "up the Rhine." For the many thousands who visit this far-famed river, how many tens of our countrymen have made a tour up the Moselle? It is comparatively unknown even among artists; and it is surprising that the majority of the world thus follow each other in the beaten track, like a flock of sheep, turning neither right nor left, and admiring by rote all they are told to admire, totally regardless of the beauty that lies beside them unvisited, and which would more than repay the compliment of inspection. The beauty of this river, which joins the Rhine at Coblentz, has been acknowledged by all men of taste; and the Latin poet Ausonius has sung its praises at a time when Roman princes rowed on its waters; praises which have been echoed by many other "disciples of the tuneful Nine" of more modern date. Upon these banks stood the Belgian Rome, the parent of modern Treves; and here resided some of the later emperors of this all conquering people; while the immense number of Roman coins still existing, which were struck at this city, as well as the magnificent remains of buildings erected by this people, shew the great importance of the place during their dynasty. The situation of the city is most lovely, in a plain surrounded by vine covered hills, the river washing its walls; and the opposite banks, grand in an assemblage of wood and rock of the most picturesque and varied beauty. The hills on either side were dedicated by the Romans to Apollo and Mars. "Thus unto a situation peculiarly lovely they associated the most powerful influence their religion could afford; and we need not wonder if, so placed, so founded, and so protected, the rising city should soon attain to a very unusual prosperity. The importance of Treves, as long as the Roman empire flourished, is abundantly testified by numerous facts; by none more decisively than that she was repeatedly honoured with the presence of the master of the world. Many also, and high sounding, are the epithets bestowed upon her by the writers of that nation. She is designated in their works as the richest, the most distinguished, the most glorious, and the greatest, of the towns on that side of the Alps."

Thus writes Professor Wyttenbach, as translated in Dawson Turner's "Guide to the Roman Antiquities of Treves." After lamenting "how the rude hand of the spoiler, and mouldering touch of time, have destroyed what care, and art, and industry, had reared," he adds, "gone, utterly gone, are the Capitol of ancient Treves, and that senate-house, which, still venerable and massy in its ruins, excited the wonder of Venantius Fortunatus in the 6th century. No traces are to be found of our circus, said to have vied with that of Rome, nor of our imperial palaces. The triumphal arches of Valentinian and Gratian, the Forum, the Thermæ, and the Aqueducts, as likewise the temples and basilicæ, rich in statues and frescoes, have equally disappeared; and it is by tradition alone that we are assured of the existence of the splendid entrance near the Moselle, entitled the *Porta nigra*, which, studded with golden stars, served likewise as a lighthouse. Neither do these, considerable though they be, constitute the total of our losses; many other noble works of art have

## ROMAN GATEWAY AT TREVES.



likewise vanished, but still all is not taken from us. To adorn our valley, and to attract the attention of the inquisitive and cultivated traveller, there yet remain, albeit in a more or less injured state, so many objects curious in art and pregnant with historical recollections, that Treves is secure of always exciting the most lively interest, and indeed may, in this respect, safely claim a superiority over every other city in Germany."

It is to these existing remains of past greatness we must now direct the attention of our readers; and among them all, there is none more important and interesting than the ancient gate, perhaps the most perfect Roman work of that kind at present in existence, and which is known as the Porta Martis or Porta Nigra. It is engraved here from a sketch made but three months since, and is a faithful transcript of its present state. There are few buildings more commanding than this grand old structure, and which is represented upon some of the coins of Constantine struck in this city. It is of colossal dimensions, and magnificent proportion; its breadth is 115 feet, and the highest tower from the basement to the summit measures 70 feet. The construction throughout is equally colossal. It is built of enormous blocks of sandstone, averaging from 4 and 5 feet in length; but some measure 8 or 9 feet, while their depth varies from 2 to 3 feet. "So skilfully are they joined together without mortar or cement of any kind, that they appear to be supported by their own weight alone."—*Wyttenbach*. The barbaric conquerors of the Romans when they obtained possession of Treves, imagined a different construction was adopted, and believing that metal clamps rivetted each stone, they proceeded to obtain them if possible, to convert into other uses, and in every direction have they bored in the interstices of the stones for this much desired end. The Colosseum, at Rome, exhibits similar ravages, which have a most injurious effect on these buildings, and give a very shattered and ruinous look to them in many parts.*

Two arched gates, each 14 feet wide, formed the entrance through the Porta Martis to the Belgian Rome in its palmy days. The height of the arch is at present little more than 12 feet; but the soil has so accumulated here, that it is conjectured they were originally "at least 5 foot higher." The voussoirs of the arch continue through the string course above. At the sides, the grooved channels would lead to the supposition that some contrivance similar to a portcullis was used to fasten these entrances on the side next the country, where extra protection became requisite.

"In every direction, and as well on the ground-floor as on the upper stories, the face of the building is ornamented with rows of Tuscan columns. These in the two fronts stand out from the wall full two-thirds of their diameter: on the sides they are no more than pilasters; and their projection does not exceed 3 inches. Their form is plain and simple, and thus the better adapted to harmonize with the dimensions and solidity of the whole."—*Wyttenback*. The centre of the gate is composed of two uniform stories, the side towers of three; the third story of one, is, however, ruined. Towards the town these wings exhibit a flat line, and project about 4 feet; on the country side, the principal front, and which is represented in our engraving, they come forward in semicircles just 15 feet in advance of the centre.

Wyttenbach considers this colossal structure the Propylæum, or more probably the Pretorian, gate of the fortifications wherewith Constantine the Great environed Treves, and that it shows marks of the work of different eras; for even at the close of the western empire, when it was brought to its present state, it was not regarded as altogether complete. Some additions were still considered necessary to give the last touch to its size, its strength, or its beauty. The fall of the Roman empire stayed the progress of this work; the barbarians spoiled it, in the hope of finding metal; and later barbarians converted it into a church, disfiguring it in many parts. It has indeed seen strange vicissitudes since its erection as a gate, and its modern return to its old uses; for it was not always sacred to its original destination. A certain St. Simeon, sometimes called *Stylites*, from his great propensity to living abstracted from the world, on the summit of columns, chose this gate for his residence, and resided on its highest tower during the last seven years of his life, from 1028 to 1035. His history may be seen in the early part of Hone's Every Day Book, and is a frightful instance of what passed for religious devotion in the middle ages. After voluntary tortures

* "The characters that are to be seen in great variety upon the stones, may possibly be *masonic marks*. They resemble those frequently found on grave-stones of the 4th century, in which the letters have the appearance of belonging to the earliest period of the Romans. Specimens of these are given in the work of the Benedictine Monk, Joseph Fuchs (see his *Alte Geschichte von Mainz* ii., p. 165), and in that of Quednow (*Beschreifung der Alterthümer in Trier*, p. 54)."—Turner's translation of Wyttenbach, to which excellent *guide*, we must acknowledge once for all our obligations for facts and dates connected with the interesting objects it descants on.

## OLD HOUSE IN GLOUCESTER.



of a repulsive kind, he died, and was canonized by Pope Benedict IX., and the Roman gate on which he last appeared became converted into a Christian church, in which he was buried. To effect this, earth was piled up before either gate, to a level with the first stage of the building, over which was constructed a flight of steps leading to this story; the interior of the gate thus formed the body of the church, which was dedicated to St. Simeon, the lower part or gateway forming a crypt. An apse was built on one side, and incorporated with the Roman building; and this venerable and ornamental relic of the 12th century still remains, as will be seen in the engraving: it was found unsafe to remove it, as it aided in strengthening the more ancient building. Thus the Pagan gate became a Christian church until the first French revolution, when the gateway, having lain for nearly 800 years blocked up, was again restored to its original use, as a gate to the town, which the erection beside it, also seen in the sketch, had usurped, and which was placed there in the 17th century. The traces of church decoration still remain on its interior walls, and it is devoted to a collection of Roman ruins, found in the city and neighbourhood.*

METAL BOATS.—It is proposed to cast vessels in one mass, and a composition has been invented, combining the advantages of copper and iron.

* We venture to direct attention to our engraving, the drawing for which was made on the spot by Mr. Fairholt expressly for us.

### OLD HOUSE IN GLOUCESTER.

The accompanying engraving represents a curious specimen of wooden construction, in the ancient city of Gloucester, and will aid in completing the series illustrative of domestic architecture, already carried to a considerable extent in previous numbers of our journal.

### STAINED GLASS AT HAMPTON COURT.

WOLSEY'S HALL is adorned with thirteen new stained-glass windows, and is now open to the public. Each of the windows is 20 feet high and of considerable width. They contain the armorial pedigrees of the six wives of the monster King Henry VIII. Curiously enough they all trace their descent from Edward I. of England. Good subjects as the arms may be for stained glass, we should have hesitated before emblazoning crimes which disgrace the pages of our history. We shall pay an early visit to the hall, and have no doubt we shall find the windows worthy of the established reputation of Mr. Willement, by whom they are executed.

A morning contemporary, after describing these windows, says:—

"We have been thus far minute in our description of the new embellishments at Hampton-court Palace, from a desire to see the highest artistic talent in the country finding honourable and lucrative employment in the pursuit of a long-neglected branch of the fine arts. When we remember the cold and cheerless aspect of most of our cathedrals and ecclesiastical edifices, from the absence of those stained-glass windows, which at once ministered to the religious sentiment, and infused a sense of bodily warmth and comfort, we shall perceive how wide a field is open to men of science, and painters of genius, who may endeavour to perfectionate this branch of high and devotional art. The Government are making a wise and enlightened exercise of their patronage, in doing what they can to stimulate and encourage the art of staining in glass; and as the English school of painters is acknowledged to excel all other existing schools in colouring, there seems no reason why our church and cathedral stained-glass windows should not, if possible, excel the *chefs d'œuvres* of the modern Munich artists."

### COMPETITION DESIGNS FOR DALSTON LITERARY INSTITUTION.

SIR,—Some few months since designs for the above-named institution were advertised for in THE BUILDER; I obtained the particulars (which I inclose you), wherein you will see that *one of the instructions to architects, limits the amount to be expended to* 1,500*l.* I submitted a design, keeping as near as possible to that sum, and was one of the unsuccessful competitors. A design by Mr. Catlin was chosen, and in your last publication is an advertisement to builders for estimates for *the carcass* only. I called at Mr. Catlin's office to make an estimate for a builder, when I was told the quantities were being made out, and that in all probability there would be about 90 rods of brickwork, and 90 loads of timber. Putting the brickwork at 11*l.* per rod, and the

timber at 7*l.* per load, including sawing, these two items alone would amount to 1,620*l.*, being 120*l.* more than was intended to be expended upon the whole building. Is this fair or honourable on the part of the committee, naming a certain sum, and then selecting a design which will cost at least 3,000*l.*? It is another lesson to architects, not to waste their time and talents in competing for self-appointed committees, when in most cases, as in the present, the instructions have not been taken the least notice of, but the prettiest picture chosen. Ought not the names of the committee to be made known to the architects in all cases, to prove that they are honourable men? I am, Sir, &c.,

5th Jan. 1847. ALPHA.

## THE FOUNDER OF THE RAILWAY SYSTEM.

SIR,—In the 188th number of your journal you allude to Thomas Gray, whom you designate the founder of the railway system; but being very much disposed to question the justice of your remarks, I have been at some trouble to investigate the matter, and believe the merit of its introduction is due to another party.

On perusing Thomas Gray's "Observations on a General Iron Railway, or Land Steam Conveyance," published in 1825, I find that in 1822 he sent petitions to the then ministers of state, in which an allusion is made to a former petition he had sent to Lord Sidmouth in 1821, while, as you will observe by the annexed letter, an act of Parliament was actually obtained for the first iron railway for general purposes in 1820.*

Thomas Gray sent similar petitions to his Majesty's ministers and to the Board of Agriculture in 1823, and also to the corporation of the city of London in 1824.

In the year 1822 the Liverpool and Manchester Railway was first projected, the survey of which was made by Mr. Wm. James (an intimate friend of the Mr. Baylis alluded to in the subjoined letter). In the autumn of that year he witnessed the success attending the Stratford-on-Avon and Moreton-in-the-Marsh Railway, which induced him to project the Liverpool and Manchester. But the scheme was abandoned for a time, in consequence of the opposition shewn to it by the projectors of the inland navigation throughout the kingdom; and in 1824 Mr. Stephenson was employed to re-survey the country, and, as the sequel proved, with better success.

I am, Sir, &c.

Chester, Dec. 21. B. B.

*** This does not interfere with the claim made for Mr. Gray. It is not assumed that he first projected a railway. Railways of wood have been used to facilitate the transport of coals and metals from a very early period, and even an iron railway was employed for that purpose at Coalbrookdale as early as 1767. Moreover, *steam power* was applied on the Stockton and Darlington Railway in 1805. Nevertheless, it was left for Thomas Gray to foresee the general applicability of railway travelling, arrange a system, and urge resolutely the importance of adopting it, long before the public were prepared to admit the truth of his views.

FIRE-ENGINES KEPT ON THE PREMISES.—A correspondent of the *Daily News* suggests, that in premises where steam-engines are used, an excellent provision might be made against fire by making screw joints to the water-pipes which convey water to the boiler, so as to fit the hose of a fire-engine. By this means a body of water might be readily thrown into the building, and in great quantities.

* To the Editor of *The Birmingham Journal*.

THE ORIGINATOR OF RAILWAYS.—Sir,—I beg to put your correspondent "E. B." right upon this much disputed point. The late Mr. James was *not* the "originator of railways;" he was *not* the projector of the Stratford and Moreton Railway; neither was he a Birmingham man. By reference to the act obtained in 1820 for the construction of the above railway, the first designed for general purposes, it will appear that Messrs. Hunt, Bellamy, and Bannister were solicitors to the bill, and the late Mr. Baylis was the engineer, who *was* a native of Birmingham. Mr. James was at that time deeply interested in mineral and *canal* property, and *opposed* to the introduction of railways; but several years subsequent to that period he certainly projected the Liverpool and Manchester Railway, but it is ridiculous to claim for Mr. James the priority.

Stourbridge. G. F. B.

## BERLIN ACADEMY OF FINE ARTS EXHIBITION.

PORTRAIT OF HUMBOLDT.

THE late exhibition in the Prussian capital comprised nearly nineteen hundred works of living artists, which were placed in *twenty-five saloons*, some larger, others smaller. And, strange to say, the men of first order chanced not to have contributed to this numerous art-show; neither Cornelius, nor Overbeck, Kaulbach, Lessing, etc. We perceive, however, that for the sake of a legitimate emulation, works of *foreign* (not Prussian) artists are also received within the walls of the Berlin Academy, amongst which those of Schorn, of Munich, H. Vernet, and Rahl of Vienna, are most conspicuous.

But besides the many art-lamentations and complaints uttered in this country, those of the Germans also, which became audible on the present occasion, will be interesting and instructive. It is said there, that "*art has in Germany only patrons or opponents—but no public.*" A consequence of these untoward circumstances is the fading away of entire art-schools; like, for instance, that of Düsseldorff, where Lessing alone shines as a remaining light. A *healthy* vigour seems wanting everywhere, and whether we look at King Saul or Lear, Canute or Gottfried, they are always the same smooth countenances, content-void (*inhaltsleer*). It appears from all these pictures, that the painters had never perceived either true monarchs or true saints, be it in reality or with their fancy's eyes. There they are—figures without either bone or muscle, *doughy* flesh, sweet-mellow features without marrow. These German critics praise *French* painters, and amongst the pictures exhibited at Berlin, Vernet's "Editha recognizing Harold after the Battle of Hastings," is placed in the first rank.

The admired picture of *all*, however, was the portrait of Mr. Humboldt, by Bezas. Who that has ever seen the great German *savant*, will know that to paint him is any thing but easy. But Mr. Bezas has succeeded in rendering the deep searcher, philosopher, diplomatist, and man of the world, and to impart to his portrait that penetrativeness, vast intellect, benevolence, eloquence, and versatility, which Humboldt possesses combined.

## METROPOLITAN ASSOCIATION FOR IMPROVING THE DWELLINGS OF THE POOR.

At the first annual meeting of this association, held on the 24th ult., a report was read, which, after mentioning that a royal charter had been granted to the association, went on to state that an agreement for a lease for ninety-nine years, at a rental of 90*l.* per annum, had been entered into with the Brewers' Company, for a piece of ground opposite to the church in the Old Pancras-road, leading from King's-cross to Camden Town, which was considered well suited to the purpose, being situate in the immediate neighbourhood of a crowded district, and on a healthy and well-drained site. The object of the erections was to ensure to each family the greatest amount of accommodation at the lowest practicable expense. The rooms were to be so contrived that an ample quantity of light would be secured to each, while every set would be perfect and independent of others. Each dwelling was to be supplied with water at the rate of forty gallons per day, and with a sink, and the means of carrying off refuse and ashes through a shaft accessible from the scullery. The first building which the association purposed to erect, would consist of twenty-one sets of two rooms, and ninety sets of three rooms, of various sizes, each having the above conveniences attached; thus furnishing dwellings proportioned to the requirements of different families, and to their means of payment. In cases where there were two bed-rooms, each would have a separate entrance from the sitting-room, and the larger bed-rooms a fire-place. Under the slate sink in each scullery would be a galvanized coal-box; there would also be a meat-safe fixed against the external wall. The living rooms would be furnished with a range, boiler, and oven, and the shutters in the ground-floor rooms, so contrived as to form a table during the day. The committee of works had carefully examined all the systems and plans that had been suggested for ventilation, but they regretted to state that no plan had come under their consideration which appeared to them sufficiently secure from the danger of failure to warrant their adoption of it. According to the present mode of assessment, each set of rooms having four windows was liable to 7¼d. per week window duty, while a similar set of rooms in the Albany, or in the inns of court, or in either of the universities, was liable to a tax of only 1¾d. per set—a special exemption in favour of the wealthier classes. The directors confidently hoped that an alteration in the mode of rating would shortly be effected. The plans for the new buildings were now complete, and only awaited the official seal of the authorities under the Metropolitan Buildings Act for the commencement of the works. Since September, 1841, 1,155 shares had been allotted, almost entirely among the wealthy and aristocratic classes. By the financial statement it appeared that 7,963*l.* 10s. had been received, and 2,094*l.* 3s. 7d. expended. A contract for the execution of the proposed works, for the sum of 12,345*l.*, has been entered into.

## TO GLAZE AND ENAMEL THE SURFACES OF CAST IRON.

THE specification of a patent for coating and glazing cast iron, recently granted to Mr. Kenrick, of West Bromwich, gives the following particulars, which may interest our readers:—

"After the article of cast iron has been thoroughly cleaned, it will be ready to receive the coatings of the compositions, the first of which consists of 100 lbs. of calcined flints, ground to a fine powder, mixed with 75 lbs. of borax, ground fine. This mixture is then fused, and, when cooled, take 40 lbs. thereof, and add to it 5 lbs. of potters' clay; then grind them well in water, till of such a consistency that when the article to be glazed is dipped into it, it will retain a coating of about 1-16th of an inch in thickness. This is then allowed to set, and, while yet moist, the neat composition to produce the glaze is carefully sifted over the surface; this consists of 100 lbs. of Cornish stone, ground to a fine powder, 117 lbs. of borax, ground fine, 35 lbs. of soda ash, 35 lbs. of saltpetre, 35 lbs. of sifted slaked lime, 13 lbs. of white sand, and 50 lbs. of white glass, well pounded. The whole of these materials are then mixed and well vitrified; when cool, they are ground to a fine powder, which is washed and dried. Then take 45 lbs. thereof, to which add 1 lb. of soda ash, and mix the same in hot water; this is to be well stirred, and allowed to dry in a stove, when a fine powder will be produced, which, being evenly sifted over the surface of the yet moist former coating, the article is placed in a stove, and kept at a temperature of 212 deg. Fahr., for the purpose of drying the composition; it is then fired by being placed in a kiln or muffle, raised to a heat sufficient to fuze the glaze, which may then be removed and examined; and should it be found that the glazing is not perfect, the mixture is sifted over it, and it is again subjected to the action of the kiln or muffle."

In coating the interior of iron pipes, the composition is shaken through them, and the powder afterwards passed through in the same way. The patentee proposes to apply it to the surfaces of cast-iron ornaments also.

## TO SET OUT A SQUARE ANGLE WITH THE TAPE ALONE.

A Country Carpenter asks "if he has a tape measure in his pocket, but no set square with him, what is the simplest method of setting out a square angle, which can be proved mathematically true, and be easily remembered."

Make a triangle with the tape, the sides of which are either 3, 4, and 5 feet each, or any other numbers in the same proportion, as 6, 8, and 10, or 15, 20, and 25. The angle between the 2 lesser sides is a square angle. So that, if the end of the ring and the 12 feet mark are held together, and two pegs stuck in, one at the 3 and the other at the 7 feet mark, straining the tape tight, the angle at the 3 feet mark is a true square.

Proof: $(3\,a)^2 + (4\,a)^2 = (5\,a)^2$, whatever $a$ may be. ∴ by 47th Euclid I. the angle between 3 and 4, its multiples, must be a right angle.

## NOTES IN LONDON STREETS.*

*Park-lane* was formerly called Tyburn-lane. The large house at the south-west corner, now inhabited by her royal highness the Duchess of Gloucester, was formerly in the occupation of the Earl of Elgin. Here were first exhibited the famous marbles which will ever bear his lordship's name. Byron, in his "English Bards and Scotch Reviewers," written at a time when he felt inclined to sneer and carp at every thing, calls this house "a stone shop," and

> "General mart
> For all the mutilated works of art."

In the year 1816, Parliament voted the sum of 35,000*l.* for the purchase of the marbles, and they were removed from their former place of exhibition to the British Museum, where they remain fine studies, accessible to English artists; but enduring mementos of a very unworthy cupidity (?)

*Piccadilly.*—The house No. 133 was built by the late Duke of Queensberry for the celebrated Kitty Frederick. The first house on the right hand was, it is said, designed by George III., to whom are also attributed the designs for the Trinity House on Tower-hill, and the Office of Ordnance, which formerly stood in Margaret-street, at the east end of St. Margaret's Church, but which was demolished during the alterations completed in that part of Westminster about the year 1822. The ground behind the opposite houses, between the back of Lord Coventry's, No. 106, and the south side wall of the Earl of Chesterfield's garden, in Curzon-street, was, in 1772, an irregular space; "Mayfair-row" and "Hayhill-row" being at that time the only regular buildings. The ground upon which Hertford-street, Curzon-street, Shepherd's Market, &c., stand, was annually for many years covered with booths during the period of May Fair.

* * * * *

*Shepherd's Market*, still in use, was named after the ground landlord, who built and resided in that long white mansion on the north side of Curzon-street, for many years inhabited by Lady Fane, and afterwards by Lady Reade, who died in it. The surrounding ground, now so completely covered by the houses of the noble and the wealthy, was in 1750 so little esteemed, that Mr. Shepherd offered his freehold mansion, just alluded to, and gardens for the small sum of 500*l.* However, after the death of Lady Reade, this house and gardens were purchased by Lord Carhampton for about 500*l.*; and his lordship, after making considerable improvements, sold it to the present Lord Wharncliffe, then Mr. Stuart Wortley, the member for the county of York, for the sum of 12,000*l.*

The house on the left in Piccadilly was built by Novosischi for the late Earl of Barrymore, but was unfinished at his death, and remained so for many years, until it was taken as a hotel. It has been rendered memorable ever since the royal visitors, the Emperor of Russia and the late Queen of Wirtemburg, then Duchess of Oldenburg, resided in it during their stay in London. It was then kept by Escudier, and is now styled, "The Pulteney and Russian Imperial Hotel."

*Half Moon-street* was built in 1730, as appears by that date on the south-west corner house. Its name was taken from the Half Moon public-house, which stood at the corner. Clarges-street, originally called "Clarges-street, in Hayhill-row," was built by Sir Walter Clarges.

Few persons, from the appearance of Piccadilly front, could have been aware of the extensive premises of Bath House, standing, until the year 1821, at the south-west corner of Bolton-row. It contained upwards of fifty excellent rooms, besides numerous servants' offices and capacious cellars. The ceiling of the library was richly carved with foilage, and most splendidly gilt; its chimneypiece could not have cost less than between 600*l.* and 700*l.*; it was of the finest Carrara marble, and was profusely decorated with fruit and flowers. The foliated panels of the staircase were adorned with busts of Homer, Cicero, Seneca, &c. The mansion was taken down in 1821, and a most substantial house erected upon its site for the present Lord Ashburton, then Mr. Baring.

* Condensed from "An Antiquarian Ramble in the Streets of London." By the late John Thos. Smith. Bentley.

*Whitehall.*—With the male line of the Stuarts ended the glories of Whitehall. On the 10th of April, 1691, a fire broke out in the apartments formerly occupied by the Duchess of Portsmouth, which burned down all that range of buildings to the waterside, and all those over the large stone gallery. They were never rebuilt; and another conflagration, more extensive, which broke out about seven years afterwards, completed the ruin the first had began. Sir Christopher Wren had apartments in the palace in right of his office of Surveyor-General, which were burnt with the rest. Sir Christopher was very anxious in his endeavours to save the palace, and when that became hopeless, the valuable pictures and works of art which it contained.

*The Horse Guards* is the work of Nardy, the same architect to whom we owe the front of Earl Spencer's mansion in the Green-park.

*Melbourne House*, adjoining the Horse Guards, was built by Payne, the architect, for Sir Matthew Featherstonehaugh. It was for many years inhabited by General Amherst, and afterwards by Frederick, Duke of York, who exchanged it with the late Lord Melbourne for his house in Piccadilly. The Duke of York made considerable improvements in it under the superintendence of Holland, the architect, who built a new front to it, and the dome portico across the street. It is now inhabited by Lady Dover. A few yards south of it, anciently stood the gate said to have been designed by Hans Holbein for Henry VIII. (engraved by G. Vertue, and published by the Society of Antiquaries).

The offices of the Treasury are contiguous. The old grey remnant of a building which forms part of the suite is supposed to be the only remaining portion of Wolsey's original mansion of York-place. The park front that reaches to the extremity of Downing-street, with which there is communication leading to the park by a low arched passage, was built from the design of Kent, and consists of three stories of the Tuscan, Doric, and Ionic styles of architecture.

## NOTES IN THE PROVINCES.

The Government works at Harwich harbour, notwithstanding the advent of winter, have been progressing uninterruptedly, both as regards the erection of the stone breakwater from the cliff, and the deepening of the channels by means of steam dredging. Mr. Williams, the contractor, has lately added a steam tug, to assist still further in forwarding the work.——Contracts for a fever hospital are to be entered into at Bedford, when the whole amount of the cost, about 2,000*l.*, has been subscribed; meantime plans and estimates are to be prepared.——At Liverpool, on Monday week, Mr. Cunningham, the architect, lectured to the Literary and Philosophical Society, on the geological conformation of the vicinity of Liverpool as regards the supply of water; from which it appears that artesian, or other subterranean borings for water, would be there a hopeless labour. The collection of surface water, over an area of 70 to 80 square miles, from the valley opposite Runcorn, was recommended, as a full supply from the Liverpool district itself was deemed impossible. The Rivington pike scheme was unfavourably regarded, on account of the adulteration of the water by dye-works, smoke, peat, &c.——The new bridge to connect Birkenhead and Seacombe has been commenced. Its gates are upwards of 70 feet wide. In the Bridge-end dock wall, 14 or 15 sluices, adjoining the great float to the river side, have been already erected. These will give a scouring power equal to that of 9,000 men, when in operation by the agency of steam. The completion of this bridge is required by the Woods and Forests previous to the docks being opened, and as part payment for the grant of land for graving docks. The opening will thus be delayed till March or April next. One of the gates to the new Bridge-end dock was lately put up.——A Cambrian Archæological Association has been established.——The inhabitants of Oldham are taking steps for the formation of parks and places of recreation, to which Government have already contributed 1,000*l.*——A correspondent of the *Manchester Courier* urges his fellow-townsmen to the good work of building a cathedral for their expectant bishop. "They have wealth, they have power, they have talents," says he, and "why not devote them to the glory of God?"——It has been determined to complete the Doncaster new town-hall by next Michaelmas sessions. Estimates have already been called for.——Of 9,000*l.*, the cost of five or six national school-houses erected at Bradford, churchmen have contributed only 639*l.*; and of 6,000*l.*, the cost of three Lancasterian school-houses also erected there, 5,000*l.* and upwards were contributed by dissenters. A contemporary suggests that the churchmen must be asleep at Bradford; but is it not far more likely that there are few churchmen there, either asleep or awake, compared with the number of dissenters? Perhaps it is the clergy of the establishment that are asleep.——At Kendal, Mr. John Wakefield is said to have offered 500*l.* towards the erection of a vicarage-house, on condition that a like sum is added by Trinity College.——The interesting old walls of Berwick are gradually wearing away by means of frost, rain, and mischievous dilapidation. The Board of Ordnance will surely at length awake to the propriety of redeeming these distinguished relics of the olden times from ruin; a few pounds at present would suffice.——The Lord Lieutenant of Ireland has intimated to the National Art-Union of Ireland, that steps have been taken by the Government towards the establishment of schools of design in Ireland.

## SOME RESULTS OF GAS LIGHTING.

In one of a course of lectures on coal gas, by Mr. Headley, before alluded to by us, the lecturer drew attention to some of the benefits which have resulted to the world from gas-lighting. He said:—The celebrated and well-known article, Mackintosh's waterproof cloth, is one. The product of the distillation or manufacture of coal into gas is naptha or coal oil; this was found by Mr. Mackintosh to possess the invaluable property of dissolving India-rubber (caoutchouc)—a desideratum that scientific men had been seeking for ages, from its great importance in the arts and manufactures; and the knowledge and use of this property has given rise not only to the rendering cloths waterproof, but to the innumerable uses to which India-rubber, in a solvent state, is now applied; and amongst other elastic contrivances to which it is applicable, we have rather a curious one, superseding the lawyer's red tape—and it may now truly be said, he ties up his papers by a "gas tape."

We have next the application of gas to lace-making. Messrs. G. F. Urling and Company took out a patent for this invention, and which has been wonderfully successful and productive. The operation is this,—instead of running the lace over a red-hot iron roller, as heretofore, it is drawn over or through a gas flame; and the superior effect desired, of entirely freeing it from the flew or flough of the thread, is attained, as the flame of the gas actually passes into the meshes of the lace, and most perfectly accomplishes the object, and in an extremelly beautiful and effective manner.

Hot-blast, too, for smelting iron, may be said to be another attribute of the knowledge of gas; for its inventor, the talented J. B. Neilson, was the engineer and manager of the Glasgow Gas-works; and, in that capacity, made, in conjunction with the late Mr. Mackintosh, a great number of experiments—not only with reference to his water-proofing, but also to carbonising iron, by means of gas tar, and thus converting it into steel; and there can be little doubt, that during some of these experiments, the idea was created of applying heated air to the making and smelting of iron, now of such vast importance and consequence to the country. There are other applications, too, of gas—such as motive power to a steam-engine, patented by Mr. Brown—and the practical acquaintance with it has led even to the introduction of the atmospheric railway—Pinkus and Clegg, the originators of this principle, being both gas engineers. Thus, we may exclaim with the poet, "What mighty ends from minor causes spring."

The Adelphi Theatre is about to be rebuilt on a larger scale; adjoining properties have been purchased for that purpose.

## SIR ROBERT PEEL'S NEW GALLERY AT DRAYTON MANOR.

The new picture gallery, of which we gave a view some time ago,* is now finished. It is attached to the south-east angle of the mansion, and forms a wing 100 feet long in extension of the north front. The exterior is built of stone from Hollington. The style of architecture is that which prevailed during the latter part of Queen Elizabeth's reign, and that of James I. An arcade extends along all three sides, surmounted by an entablature, with an attic, upon which are small carved pinnacles breaking the outline of the building. The exterior is further decorated by four stone statues, somewhat larger than life; the two towards the south, or garden front, representing Rubens and Vandyke, and the two towards the north representing Reynolds and Lawrence. There are no windows, but a glazed sash door at the south-western extremity, which leads on to a new terrace, about 160 feet long and 19 feet wide, decorated with a stone balustrade, vases, pedestals, &c. This terrace joins on to other terraces surrounding three sides of the mansion, embellished with a profusion of marble and stone vases. Within, the ceiling is of various shades of oak and walnut-tree wood. The walls are painted of a strong greenish neutral colour; the skirtings are of wainscot. The floor is bordered with an inlaid band of a scroll pattern, consisting of oak, walnut-tree, and ebony woods. The columns and pilasters, seen in our engraving, are of marble. The capitals and bases are of white veined Italian marble; the shafts are each of a single block of Belgian marble, of variegated colours, chiefly of reddish hues, intermixed with white. The pedestals on which they stand are panelled, and composed of the same marbles.

## QUESTION AS TO THE STRENGTH OF CAST-IRON.

Sir,—If any of your correspondents, whose experience qualifies them for the task, would favour your readers with their opinions upon the following questions, probably the information would be felt of value by others, as well as by your obedient servant,

Islington. G. M.

Suppose I wish to settle the scantlings of some iron castings, such as girders, pillars, &c.; and suppose that, with the intention of resting my case upon the best and soundest authority, I consult Tredgold's well-known Essay on Cast-iron, in which I find some beautiful theories of the action of forces upon materials, joined to what the author seems to have considered sufficiently sound data for the strength of the particular material, cast-iron. But, suppose my copy of the book is one of the fourth edition (edited by Mr. E. Hodgkinson, 1842), in which I find, in the editor's notes, some slur] cast upon Tredgold's accuracy, principally as regards the varying strength of iron of different manufactures, of which many sorts are said to be very much below the author's assumed average:—

Now I wish to ascertain whether, if my girders, &c., are procured from manufacturers of established credit and respectability, in London or elsewhere, they may not be calculated to possess the degree of strength, at elastic limits, which is assumed in Tredgold's formulæ? If not, what may be expected to happen to the numerous buildings in which cast-iron supports have been used, but which have been erected previously to the recent researches of Mr. Hodgkinson and Mr. Fairbairn? I have not yet procured a detailed copy of these: when I do, shall I have to unlearn Tredgold's beautiful system of calculating pillars and struts, or shall I only be obliged to modify his constants, to suit another scale of strength?

Club Competition.—We understand that the members of the Army and Navy Club have purchased a large space of ground adjoining their old house of meeting in St. James's-square, with the view of erecting a building which shall take rank among the architectural ornaments of the metropolis. For this purpose, according to the *Athenæum*, it is their intention to offer two prizes, of 200*l.* and 100*l.* each, for the first and second best plans of such a building, and to open the competition to the members of the architectural profession at large.

* See Vol. III., p. 222.

## CHINESE ARCHITECTURE.

Mr. Montgomery Martin, in his recent work on China, says—"The northern division of *Peking* consists of three inclosures, one within another, each surrounded by its own wall. The first inclosure ('forbidden city') is the most splendid and important part of Peking. It is situated nearly in the centre of the northern division of the city. It is an oblong parallelogram about two miles in circumference, and inclosed by a wall nearly 30 feet high. This wall is built of polished red brick, surrounded by a ditch lined with hewn stone, and covered with varnished tiles of a brilliant yellow, which give it the appearance, when seen under the rays of the sun, of being covered with a roof of gold. The interior of this inclosure is occupied by a suite of courtyards and apartments, which, it is said, for beauty and splendour, cannot be surpassed. It is divided into three parts—the eastern, middle, and western. The Gate of Peace has five avenues, and is a superb building of white marble. The height of the basement is 20 feet, and the whole edifice 110. The ascent to it is by five flights of forty steps each, and it is highly ornamented with tripods and other figures in bronze.

*Suchaw*, two days distant from the sea, accessible only by inland water communication, has a high reputation in every part of China for its splendid marble buildings, the elegance of its tombs, the number of its granite bridges, and artificial canals, gardens, streets, and quays. Indeed, there are several towns included in one, comprising what is called Suchaw. The city proper is inclosed with high walls, which are about ten miles in circumference: the suburbs are four distinct towns, about ten miles in length, and nearly the same in breadth.

## PROTECTION OF BUILDINGS FROM LIGHTNING.

SOCIETY OF ARTS.

In a paper by Mr. Highton on the effects of heavy discharges of atmospheric electricity, as exemplified in the storms of 1846 (including an account of the destruction of St. George's Church at Leicester on the 1st of August), with remarks on the use and application of lightning conductors, read at the last meeting of the Society of Arts, the author proceeded to compare the power developed in the discharge of the lightning which destroyed this church, with some known mechanical force. He stated that 100 tons of stone were blown down a distance of 30 feet in three seconds; and, consequently, a 12,220 horse-power engine would have been required to resist the efforts of this single flash. He exhibited the effects of a new battery constructed by himself, and which was less than the $\frac{1}{10}$ of a cubic inch in size. This battery he had found would, for a month together, ring a telegraphic bell ten miles off. He also exhibited a second battery, which, although so small that it would pass through the eye of a needle, is of power sufficient to work a telegraph. Having detailed the course of several discharges of atmospheric electricity, he proceeded to shew the effects produced on the electric telegraphs, and the means which have since been adopted to prevent injury to them in future. He stated that, since the occurrence of the above storms, he had examined the Cathedral of St. Paul, in London, to ascertain how far this noble pile of building is protected from the effects of lightning. He found that the two small turrets have lightning conductors erected, but the central dome has none. The position of the spouts and other metallic connections is, however, such, that he considers, if the same are preserved as they now are, the building will for years to come be free from damage by lightning; but should they be removed at any time, and glass or porcelain employed in their stead, the main part of the building would be in constant danger from every storm that passes over the city. He concluded by urging the importance of a correct and systematic principle being acted on in the new Houses of Parliament, with a view to securing them from the disastrous effects of lightning.

A pier half a mile long is to be built at St. Helier's, Jersey, with other works, for all of which contracts have been advertised for.

## New Books.

*Turning and Mechanical Manipulation. Intended as a Work of Practical Instruction on the Lathe, and the Various Mechanical Pursuits followed by Amateurs.* By Chas. Holtzapffel, Associate of Institution of Civil Engineers (64, Charing-cross). 1846.

This is the second volume of eight contemplated by Mr. Holtzapffel, and is entitled to the strongest recommendation we can give it, as a sound and sterling work,—the result of personal experience, careful calculation, and great ingenuity. The first volume treated of materials, their differences and preparation, and the various modes of working them, generally without cutting tools. The volume before us treats of the principles of construction, action, and application; of cutting tools used by hand, and also of the machines derived from the hand tools, and embraces chisels and planes, turning tools, boring tools, screw-cutting tools, saws, files, shears,—and has a number of valuable notes in the shape of an appendix. The author says:—"The chisel was selected as the subject of the first chapter, as, from the simplicity of its form and action, it may be viewed as a keen wedge—sometimes employed with quiet pressure, at other times used with percussion, as in tools of the character of axes and adzes; and the straight chisel, mounted in a stock for its guidance, becomes a plane. Further, the chisel may be used as a turning tool; and many tools of this kind (the second in classification) follow the conditions of chisels and planes, if we imagine the tool to be held at rest, and the work to revolve against it on a fixed axis; the practice of turning is naturally associated with that of boring holes, although, in most cases, the boring tool revolves, whilst the work remains at rest. Turning and boring, each circulatory processes, led to the selection of the screw as the subject of the next chapter—for revolution, combined with rectilinear advance, are exhibited in all the numerous modes of producing screws. Saws were ideally compared with some of the scraping chisels, but with a multiplication of points, and these sometimes arranged in continuous order, as in the circular saw. The file, from its vast assemblage of scraping teeth, was likened to a multiplication of the saw. Shears and punches are next considered, in great measure, as parallel chisels, and the rectilinear edges of shears, although mostly duplicated, bear some resemblance to simple chisels—although, from their duplication, they act on both sides of the material; and, lastly, the ordinary punch is comparable with the rectilinear edges of the shears and chisels, if we do but consider these to be bent into the circular form."

All are treated in the clearest and most philosophical manner.

As a specimen of the style in which the work is written, we quote the following remarks on

METAL TURNING.

"The softest of the metals, such as lead, tin, and soft pewter, may be turned with the ordinary tools for soft wood; but for the harder metals, such as zinc, and hard alloys containing much antimony, the tools resemble those used for the hard woods, and they are mostly employed dry.

Copper, which is much harder and tougher, is turned with tools similar to those for wrought-iron, but in general they are sharpened a little more keenly, and water is allowed to drop upon the work, to lessen the risk of *dragging* or tearing up the face of the copper, a metal that neither admits of being turned or filed with the ordinary facility of most others. Silver and gold, having the tenacious character of copper, require similar turning tools, and they are generally lubricated with milk.

In the above, and nearly all the metals except iron and those of equal or superior hardness, there seems a disposition to adhere, when, by accident, the recently removed shaving gets forcibly pressed against a recently exposed surface (the metals at the time being chemically clean). This disposition to unite is nearly prevented when water or other fluid is used.

Water is occasionally resorted to in turning wrought-iron and steel; this causes the work to be left somewhat smoother, but it is not generally used, as it is apt to rust the machinery; oil fulfils the same end, but is too expensive for general purposes.

Cast-iron having a crystalline structure, the shavings soon break, without causing so much friction as the hard ductile metals; cast-iron is therefore always worked dry, even when the acute edges of 60 degrees are thickened to those of 80 or 90, either from necessity, as in some of the small boring tools, or from choice on the score of durability, as in the largest boring tools and others. Brass and gun-metal are also worked dry, although the turning tools are nearly rectangular, as the copper becomes so far modified by the zinc or tin, that the alloys, although much less crystalline than cast-iron, and less ductile than copper, yield to the turning tools very cleanly without water."

The volume is beautifully printed; is illustrated by more than 700 wood cuts; and must become a text book.

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*Algebra Made Easy.*—By T. Tate, Mathematical Master of the Training College, Battersea. Longman and Co.

"Algebra, which is peculiarly called the analytic art," says Mr. Tate, "exercises, in a way which no other subject can, those powers of analysis and abstraction, which would otherwise lie dormant and enfeebled. The philosopher, embracing within the comprehensive grasp of his intellect the known laws of the universe, was once a feeble-minded child; and in order that such a child may become a philosopher, its powers of analysis and induction should be cultivated, in a manner corresponding to its capabilities, at an early period of its intellectual development. While moral training, of a specific kind, should not be lost sight of, at the same time it is important to bear in mind, that the patient and reflective spirit which analysis engenders, gives a healthful tone to the character, and renders us more capable of appreciating and enjoying whatever is morally sublime or beautiful in nature or revelation."

We have not seen a book better calculated to lead to the study of this most important branch of education than Mr. Tate's unpretending volume. It is clear and simple, and, withal, small and inexpensive. We advise all who would gain some knowledge of the principles of algebra to purchase it forthwith.

## Correspondence.

### WANTED: A THOROUGHFARE.

Sir,—As the whole of the articles in your excellent publication tend to convenience, comfort, and health, will you allow me to call your attention to the want of a thoroughfare from the Strand to Holborn, say by continuing Pickett-place, talked of some twenty or thirty years since, to Serle-street, by Lincoln's-inn Hall to Great Turnstile. What a place for a great thoroughfare!

Having to go from Essex-street to Redlion-square several times in the course of the day, the loss of time is most serious. It is really disgraceful to suffer the few dilapidated houses at the top of Pickett-place to block up what, but for them, would be a good thoroughfare. I know of no improvement that could be made at so small a cost. The press is the moral goad, which you, Mr. Editor, apply sometimes with right good will.—I am, &c.,

A SUBSCRIBER FROM THE COMMENCEMENT.
Strand.

### COMMITTEE OF WORKS FOR LONDON.

Sir,—Your valuable little work is doing much good, and I am emboldened on that account to say a few words to you now, on one subject which has engaged much of my attention when perambulating this great metropolis, —it is to express my regret that there is not any Board (and I do not except the one lately formed for Metropolitan Improvements), taking a comprehensive view and checking an outlay of money on public buildings for *particular* purposes, and without any regard to the general effect.

I shall only allude at present to the expense incurred, a year or two ago, on the external front of the Admiralty, next to St. James's Park; had that building been *stuccoed*, and also one or two houses west of the Horseguards (on the park side), what a good effect it would have had when viewed from the esplanade on which the Guards occasionally form. They *pointed* the brickwork, and coloured it, in such a way as to make as great a contrast as possible with the stonework of the Horse Guards. That esplanade would also be much improved by being extended to the margin of the water in the park. Do look at the fronts mentioned, from the park gate, when you are passing that way.

By M. Angelo Taylor's Act, all the *urinals* have been taken away, not only from the public thoroughfares, but even in the private corners of *back* streets, and no public ones are erected in other places. In consequence, poor men coming from the country, and without money to enter a public house, must walk miles before they can get relieved; it has aggravated disease previously existing, and been the origin of many complaints. It has shewn a want of feeling for the poor man, and cannot be too much reprobated and exposed; this duty may not be altogether within your province, but I think it is that of every considerate man, and I have therefore stated it to you in addition to the suggestion about the esplanade.

An Old Architect.

Dec. 28, 1846.

*** We need not tell our old readers, that we have long ago pointed out the want of these last-mentioned conveniences.

## Miscellanea.

Character of Classic Art.—The most prominent character of classic art — nay of classic life and literature, is their perfect and thorough *seriousness*. For one Aristophanes or Plautus, we find a host of authors, only intent on elevating and instructing the people, point blank, without any circumflexes or inuendos whatever; authors—dreamy, rambling, soaring in quite other spheres than those of ephemeral and absurd amusement. The same it was with their art. They pictured and sculptured Silenus and satyrs and the like—but how rarely; and not knowing the modes of modern multiplication of art-products, whatever they did, they knew they did—for *eternity*; a very serious and ticklish admonitor indeed. An artist—a man, who *knows* that he stands before futurity, even only hopes so, will act quite differently from the penny or pound *catcher*. But it requires some brass to think so, to act so, at least. The *will*, however, is the first condition of the deed. The artist—the man who has staked his whole life on one idea, keeps this idea enshrined in a framework of adoration, love, reverence. And what would, we say, even any beauteous, intelligent woman think of a lover, who would speak of her or to her in a stream of jests, puns, and the like buffoonery? What we reverence, we joke not on—what we want the people to reverence, we will not let others make a laughing-stock of. Goethe was right (but not *understood*) when he said, "Times are worse than we imagine." Frantics often antecede idiocy and derangement; therefore, it may be, why some believe the age incurable.—[*Isis of Oken.*]

New Planing Machine.—Mr. Job Shelden, of New Haven County, has invented a machine for planing boards, in which is combined more originality of mechanical movement, with judicious proportion and application, than has been combined in any new invention within the past year. In this machine, the inventor has boldly struck out on entirely new principles of operation, and there appears nothing about the machine which bears any resemblance to those in use. It carries a series of planing cutters, which work with a reciprocating motion, cutting transversely, but with oblique edges, in each opposite direction.—*Patent Journal.*

Science in Art.—A machine has been invented by Mr. Kingston, called the Carsoetype. Its purpose is to give certainty in drawing the lines of the human face. By means of this, the exact size of the several features and of the head is obtained. The portrait, in its shadowings, is afterwards completed by art on a ground of marble.

Silcock's Patent Planes.—Mr. Silcock has given much attention to the manufacture of planes, and has produced a very superior tool. He has invented three patent metallic planes to do the work of forty-nine planes made on the old plan, which seem worthy of examination.

Llandaff Cathedral Restorations.—The dean has issued a statement of the expenditure of the funds put into the hands of the chapter for the restoration of the cathedral, from which it appears, that though the work is progressing somewhat slowly, like the original construction, the eastern chapel has been completely restored at an expense of 165*l.* 12*s.*; the eastern extremity of the south aisle, with its windows and open-work parapets, is in progress, and is estimated at the cost of under 300*l.* The next proposed alteration is the restoration of the choir. The present winter is dedicated to this in-door work, and the funds in their present state are considered inadequate to the completion of the lower story so high as the *Italian* cornice. The balance remaining in the banker's hands is stated at 225*l.*, and of the sums subscribed, 1,000*l.* still remain to be called in. Since this was printed, works have been actively commenced in the choir at its eastern end. A Norman arch of Bishop Urban's work has been opened out, commanding a perspective into the eastern chapel. The mouldings of this arch are in good preservation. Beneath this, a screen, of Bishop Marshall's work, A.D. 1480, has since been exposed. A sepulchral recess, in which the capitals of the side-shafts are executed in the style of 1200, is likewise now again disclosed to view in the south-east wall of the choir. Tradition assigns this as the tomb of St. Teilo, or rather of one of his three miraculously multiplied corpses. The Archbishop of Canterbury, Bishop of Bangor, and Bishop of St. Asaph have each subscribed 50*l.* towards the work.

Important to Iron Merchants.—In the High Court of Justiciary, Edinburgh, a case, in which Messrs. Vincent, Higgins, and Sons, iron merchants in Liverpool, were pursuers, and Messrs. Dunlop, Wilson, and Co., iron merchants in Glasgow, were defenders, came before the Lord Justice-General and a jury. The question in dispute arose out of an offer made by the defenders to the pursuers of 2,000 tons of pig-iron, at 65*s.* per ton; but, as the pursuers did not answer the letter containing the offer by return of post, the defenders held they were freed from it. The issue was couched as follows:—Whether, about the end of January, 1845, the pursuers purchased from the defenders 2,000 tons of pig-iron at the price of 65*s.* per ton? and whether the defenders wrongfully failed to deliver the same, to the loss, damage, and injury of the pursuers? Damages laid at 6,000*l.* The pursuers produced six witnesses to prove that, according to the practice in mercantile matters, they were not bound to answer in course of post, while the defenders brought forward an equal number to prove that the contrary was the practice, to render the transaction obligatory. The jury, after a short deliberation, returned a verdict for the pursuers—damages, 1,500*l.*

Lead Ores at Cape of Good Hope.—In the division of Albany, on the eastern coast of the Cape, near Algoa Bay, is found in the original formation a rather extensive bed of lead ore, which has only lately been mined. An experienced mineralogist, who had heard in England of these ores, purchased lands in the vicinity of Van Staden's River, and commenced to work them with practical men, after satisfying himself as to the productiveness of these ores. On an analysis lately by a competent person, 3,269 grains of ore produced 4·070 grains of sulphate of lead, 0·015 grains of sulphuret of antimony, 0·126 grains oxide of zinc (with traces of iron), and 0·383 grains sulphate of barium. If, from this the quantity of lead, antimony, zinc, and sulphur be calculated, it shews that—

| 3,269 grains of lead ore contain, in 100 parts, | | |
|---|---|---|
| Lead ..... | 2,781 .. | 85·07 |
| Antimony ..... | 0,011 .. | 00·34 |
| Zinc, with traces of iron | 0,021 .. | 00·64 |
| Sulphur ..... | 0,447 .. | 13·67 |
| | 3,260 | 99·72 |

Buckingham Palace.—Sir,—It must have occurred to you, as it has to others, that the wings of Buckingham-palace are too *narrow*. Now, I would suggest (if not too late), that by making them double on each side, with an *open* colonnade between each wing and the addition, a handsome building would be the result, and would offer all the accommodation required.

C. F. A.

PROJECTED WORKS.—Advertisements have appeared in the current newspapers for contract-tenders for the various works to be done in the erection of the new town hall at Doncaster; in the erection of two villas near Southampton; and in the construction of a stone pier half a mile long, and other works of a new harbour, at St. Helier's, Jersey; also for the whole of the works on 10¾ miles of the Wakefield and Goole, 11 miles of the North British, 19 miles of the Malton and Driffield, 16 miles of the Belfast and county Down, and 10 miles of the Stirling and Dunfermline, lines of railway; and for earthwork and masonry of two contracts on the North Western; larch sleepers for same line; and backmatack, pine, or hemlock sleepers to be shipped abroad; also for repair of roads in Staffordshire: for lighting Writtesley with gas; and for 60 cast iron lamp-posts, and as many lanterns, for Wavertree, Liverpool.

RUTTER'S LIGHT.—The *Art-Union Journal*, of the present month, in describing Mr. Rutter's "Ventilating Light" says, "through the body of this, the whole of the heated air, vapour, and other products of combustion ascend to the ceiling, and are thence conveyed by a suitable pipe, laid between the ceiling and floor, to a chimney *or the open air*, as may be most convenient." Now, some months ago we caused one of these lights to be fitted up by the patentee's manufacturer, in a position where the pipe could not be taken into a flue, but came into the air under a verandah; and notwithstanding the end of the pipe was protected by a cowl, and that other expedients were resorted to, to prevent down draft, the result was a failure. We think it right therefore to caution our readers against committing a similar mistake.

CELLARS UNDER NEW BUILDINGS ACT.—At Bow-street, the first case of the sort under 7 & 8 Vict., cap. 84, sec. 53, occurred in course of last week, when a lodging-house keeper was brought before the court on a summons charging him with unlawfully suffering a certain cellar in his house, the same being a dwelling-house, to be occupied as a dwelling, to which he pleaded guilty, but that he received no rent. The case was discharged on payment of costs, as the authorities had interfered in his favour. The apartment in question was a stone cellar without any window to admit light or air. Another cellar of a like order was also discovered with a family dwelling in it. The inhabitants were removed to the workhouse. It ought to be generally known that in such cases householders render themselves liable to a penalty of 20s. a day, which the authorities are determined to enforce.

DWELLINGS FOR THE LABOURING CLASSES IN AUSTRIA.—[*Audiatur et altera pars*]. A society having been formed at *Prague* for the providing the above with cheap and salubrious dwellings, the police have kept the petition for the formation of the society eighteen months, without replying to it. Still, the necessity for such houses increases every day, as the Embellishing Commission (*Verschönerungs Comission*) is only intent on pulling down indifferent parts of the city, and replacing them by fine or elegant, and consequently expensive buildings; so much so, that while the spaces and accommodation for the higher and middle classes are constantly increasing, the labouring population is completely out-elbowed of their very existence and habitations.

LIBERAL ACT OF A MANUFACTURER OF IRONIN FRANCE.—The condition of the working classes is attracting the attention of masters in France — amongst whom the plan of Mr. Talabat, *maitre des forges* at Sant-du-Labat (Tarn), is worthy of remark. Mr. T. has resolved on *idealizing* the hitherto truck system of masters, and to furnish his workmen with meat, bread, wine, and all other necessaries, at *cost prices*. By so doing, Mr. Talabat loses every year 4,000 francs (160*l.*), but says, in his *compte-rendû*, that this loss has been *largely balanced* "by the material and *moral* amelioration of his workmen."

PUBLIC OVENS.—It is said that a company is about to be formed for the erection of public ovens on the same principle as the baths and washhouses. The labouring poor will then be enabled to make their own bread, of whatever quality their means will permit; as pans and other requisites will be provided, and the baking performed at a very trifling expense.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, Jan. 11th.—Royal Institute of British Architects, 16, Grosvenor-square, 8 P.M.

TUESDAY, 12th.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.; Syro-Egyptian Society, 71, Mortimer-street, Cavendish-square, 7½ P.M.; Freemasons of the Church, 3, Great Newport-street, 8 P.M.

WEDNESDAY, 13th.—Society of Arts, Adelphi, 8 P.M.; Graphic Society, Thatched House Tavern, 8 P.M.

THURSDAY, 14th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*G. H.*"—We will not fail to return free the drawings if sent.

"*J. H.*"—A license is necessary for valuing artificers' work. A builder does not need one for his own bills.

"*W. H. H.*"—The early volumes, we are sorry to say, are out of print. Immediate application would be necessary for that of last year.

"*Cane-Work.*"—A correspondent wishes to know how best to clean the cane-work of old furniture. He says, "I have tried strong solutions of vitriol and water, and the antipodes—soda and water, but without avail, the said cane-work pertinaciously persisting in its nasty, dirty, yellow aspect."

*Received.*—"T. G.," "Observer," "S. S. W.," "G. T.," (Bath) "J. B.," "M. I." (Brixton), "J. K."

*Books Received.*—"Memoirs of Benvenuto Cellini," translated by Thomas Roscoe. (H. G. Bohn, York-street.) "The High Pressure Steam Engine Investigated," by Dr. E. Alban, translated by W. Pole, F.R.A. (Weale, Holborn. Parts I. & II.) "The Man in the Moon," No. 1, edited by Albert Smith and Angus Reach. (All thanks to those who make us laugh without bad feelings.) People's edition of Part I. of Hadyn's "Messiah" and "Creation."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

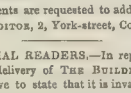
*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.


## ADVERTISEMENTS.

FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Defoe's Patent Filters, begs to call the attention of those large establishments, to an improved apparatus which are easily applied to extensive water-works, and which will require little or no attention from servants, and never get out of order. The prices are from Two to Four Guineas, according to size. Numerous gentlemen, both for brewers, distillers, paper makers, hospitals, and large establishments, to an unlimited quantity, the prices varying accordingly.

40, Love-lane Pancras, Rotherhithe; Office, 23, Conduit-street, Bond street.



H. MORRELL'S FINE PREPARED DRAWING PENCILS. Under the patronage of her Majesty's Secretary of War, the Honorable Board of Ordnance, and the Honourable East India Company

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly finished drawings.

Sold Wholesale and Retail, by Messrs. Th. Lefevre, London, and may be had retail of all the Principal Booksellers and Stationers in Town and Country.



TO ENGINEERS AND BOILER MAKERS.
LAP WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under exclusive Licenses from Mr. Richard Prosser, the Patentee. These Tubes are in very extensive use in the Locomotive and Marine and Land Steam Engines in England and on the Continent, are stronger, lighter, of superior workmanship, and more durable than Brass or Copper Tubes, and warrant a good job in the Weld. They may be had in the Boiler-makers' Yards and can be put in at any time, without incurring additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.

DECORATIONS in WOOD.—The unrivalled perfection at length attained by the patent process of carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of carved wood for external and internal ornament; their excellence in the genuine material of these manufactures, which alone is strength, is not found fragile or unsatisfactory. Mouldings and carvings of all kinds are thus supplied, suitable for church or library fittings, altar chairs, picture frames, chimney-pieces, and every description of Gothic or Elizabethan furniture. Specimens may be seen and drawings obtained at the Patent Wood Carving Offices, 444, West Strand; or at the Works, Ranelagh-road, Thames-bank.

ARCHITECTURAL ENRICHMENTS. BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decorations, has been introduced by him into the Royal Palaces, the Houses of Parliament, the Board of Works, the Residence of the Nobility and Gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, at the new Conservative Club House, at Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and can repeat, it will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff, price £1.—Works, 15, Wellington-street, North, Strand.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, DODONEAN BITUMEN PAVEMENT OFFICE, 15, WHARF ROAD, CITY-ROAD. N.B. Country Agents and Railway Companies supplied on contract readily with the best bitumen for covering bridges and arches.

TO ENGINEERS AND ARCHITECTS.
And as an Elegant Present to a Lady, as well as a most Convenient Pocket Appendage.

TO all those who find a Difficulty in the Use of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS'S PERPETUAL PEN, made of Gold, with Points which never wear or alter, offers a most convenient substitute, as Ink, which oxydises and injures the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 10s. It may be had with a common holder. With an ever-pointed Silver Pencil Case, with Leads, 27s.

Sold by the Inventor, HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London. On application, by letter, this Pen will be sent, per post, to any part of the Kingdom.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up of every detail, ready made from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-bridge-road, Borough, S.E.

Or ex-ship direct from Caen to any port.

The Waterman steamboats call at Lavender pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

SAMUEL CUNDY begs to inform Architects and others that GOTHIC WINDOWS, and every other branch of stonework, &c., are executed at these extensive premises, and supplied to the trade, ready for fixing, at very moderate prices. ARCHITECTS to have the most GOTHIC TRACERY for CHURCHES, and other buildings, in the PROVINCES, executed with great accuracy and despatch. Estimates given, and working drawings made from the most correct sketches. Inspection invited.

BUILDERS and MASONS can at all times have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste or heavy carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

PORTLAND CEMENT does not vegetate in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, the public are hereby cautioned to avoid the mistakes of those distant advertisers.

Manufactured by J. B. WHITE and SONS, of Millbank-street, Westminster; and sold at their warehouses—Earl-street, Blackfriars; Price's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; at Steel-street, Liverpool; and Salmon and Co.'s, Dublin.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may outlast the stone, for paint or limewash in imitation of stone, by the addition of pigments or other stuccos.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it is found to be a most fine white stucco.

Patentee's Agents, J. B. WHITE and SONS, Millbank-street, Westminster, and Sackville-street, Liverpool.

MARTIN'S FIRE PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally, against the practice of persons who, having purchased their Cement, represent themselves as the Sole Agents, or as Agents for the Patentees, and in order to effect the sale of their own spurious compositions, which, if used strictly possesses—

1. Imperfect adhesive properties to bricks or stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. As surface which may be made equal to that of the finest marble. NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is adapted to Superior Internal Stucco, Dado, Skirtings, Architraves, mouldings, enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For external purposes it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface, present an immense advantage over any description of composition hitherto presented. The most satisfactory references can be given. To the Trade of the Patentees, Plaster of Paris can be had Manufactured by Messrs. DERBY LANE.

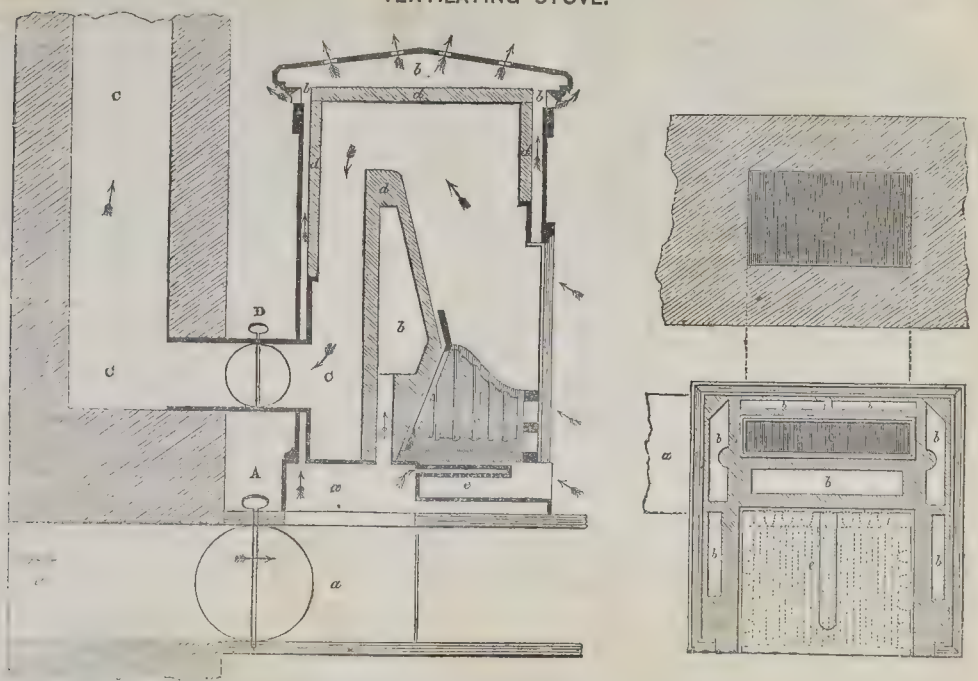
Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist damp, and will not absorb moisture, and consequently will not grow green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete stucco casing to any building covered with it. It will resist the effects of fire to such a degree as to render it impossible to ignite it. It never requires coats of fresh paint to preserve it. It will keep fresh and good in the cask, in any climate from one to two years. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger proportion of sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked three hours after it has been mixed. It may be used in the inner Walls of new Houses, and will not injure the Paper Hangings. By its use, labour is greatly reduced, as this Cement will remain unimpaired by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and explicit. The Patentees, JOHN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London, of whom a sample may be had.

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which soon become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the minute pores, thereby rendering the wall proof against wet, and in the finish producing a pure stone-like effect, producesable by no other Paint whatever. It is clean in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.




*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1845.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same. Yours truly,

ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

29, Charter-house-square, Monday, Feb. 17, 1845.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my church is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,

WILLIAM GARRATT, Minister of St. John's, Fulham.

Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe), I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell. MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

Letter from Professor BRADLEY.

King's College, London, July, 1846.

Sir,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant, THOMAS BRADLEY.

*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

TIMBER SAWING FRAME FOR SALE.

WELL Manufactured, and in complete working order, and only set consequence of the room it is required for other purposes.—Apply to W. G. WARDLE, Staindale Saw Mills, Palace-road, Lambeth.

NOTTING HILL, WILLIAM-STREET TO CARPENTERS AND OTHERS.

TWO Carcases of Small Houses TO BE SOLD, singly or together, for half their cost, viz. £50 per house. The neighbourhood is becoming very populous, and they would let well, as all do as soon they are finished. The leases for 99 years, direct from the freeholder, may be had immediately on completion of the purchase. Building societies will advance fully the amount. Apply to Mr. MALLCOTT, Surveyor, at the Stone Houses, corner of Addison-road North, and St. James's-square, opposite the Church.

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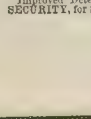
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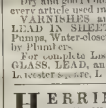
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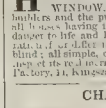
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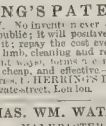
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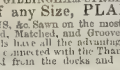
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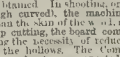
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ARTISTS, DESIGNERS, and Amateurs are informed that the General PRACTICAL SCHOOL OF DESIGN, 18½, Maddox-street, Hanover-square (Master, J. M. Leigh, Esq.), is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female—with Weekly Lectures on Art. Terms, One Guinea per Quarter.

R. W. HERMAN, Hon. Sec.
24, Green street, Grosvenor-square.

NOTICE IS HEREBY GIVEN, that a General Annual Meeting of Members of the INSTITUTION OF BUILDERS' FOREMEN will take place on Wednesday Evening next, January 20th, at the Salisbury Arms Tavern, Durham-street, Strand, for the purpose of receiving the Annual Report, and other general business. W. ALLARD, Secretary.

MASONS' Provident INSTITUTION.—The First Annual General Meeting of the Donors and Subscribers to the above Institution will be held on Monday Evening, January 25, 1847, at the City of Westminster Literary and Scientific Institution, Great Smith-street, Westminster, for the purpose of receiving the Report of the Auditors and General Committee, and for the transaction of other important business connected with the Institution.

JOSEPH T. WHITEHEAD, Hon. Sec.
Chair taken at Half past Seven.


CONTRACTS.

NOTICE TO BUILDERS.
Office of Ordnance, Pall Mall.
11th January, 1847.


TENDERS will be received at the ORDNANCE OFFICE, Pall Mall, London, on or before THURSDAY, the 4th day of February next, from persons desirous of CONTRACTING with the Honourable Board of Ordnance for constructing a Coffer-Dam and taking down and rebuilding 270 feet in length of the Gun Wharf River Wall and other Works connected therewith, at Chatham, agreeably to drawings and specification, which may be seen at the Royal Engineers' Office, Chatham Lines.

The person whose tender may be accepted will be required to enter into a bond with two eligible sureties, jointly and separately, to be bound under a penalty of £3,000, for the due performance of the contract.

Further particulars and forms of tender may be obtained on application at the Royal Engineers' Office, Chatham Lines, and no tender can be admitted after the said 4th day of February next, at Twelve o'clock at noon.—By order of the Board,

R. BYHAM, Secretary.

Sewers' Office, Guildhall, Dec. 19, 1846.
TO IRONFOUNDERS AND OTHERS.

THE Commissioners of Sewers of the City of London and the Liberties thereof, HEREBY GIVE NOTICE, that they will meet in the Guildhall of the said city on TUESDAY, the 19th day of January next, at TEN o'clock in the forenoon, to receive TENDERS for the supply of Cast-iron Work, for the term of three years from the 31st December, 1846, agreeably to particulars as detailed in a specification which may be seen at this office. Security will be required for the due performance of the contract, and no tender will be received after ten o'clock on the day of treaty. The Commissioners do not pledge themselves to accept the lowest tender.

JOS. DAW, Principal Clerk.

TO BUILDERS.

PERSONS desirous of Tendering for the Execution of any, or all of the Works required in the rebuilding of Ince Hall, near Chester, can see the Plans and Specification at the Hall, where they will lie for inspection from Thursday, the 21st of January, to Wednesday, the 10th of February, inclusive.—The Tenders to be sent in to Messrs. SHARPE and PALEY, Architects, Lancaster, on or before Wednesday, Feb. 17th

TO BUILDERS.—SAINT ANNE, WESTMINSTER

PERSONS desirous of TENDERING for various works required to be done at the Parochial School, in Rose-street, for the purposes of forming an Infant School, are requested to apply at the office of Mr. WARNE, No. 41, Lisle-street, Leicester square, where the plan and particulars may be seen any day between the hours of Twelve and Three o'clock. The tenders, sealed up and addressed to the "Building Committee," are to be delivered before Five o'clock on Thursday, January 21st, at the office of Mr WARNE. The committee do not bind themselves to accept the lowest tender.

TOWN OF BRIGHTON.—Notice is hereby given, that the Commissioners acting under the Act of Parliament for the regulating, paving, improving, and managing the said town, are about to appoint a person properly qualified to perform the duties of a Surveyor and Engineer, in the carrying out the public works authorised and required by the said Act, at a salary of Two Hundred Pounds per annum. All persons who are desirous of becoming Candidates may obtain every particular, with a statement of the defined duties, by application at my office, at which place testimonials must be left on or before Saturday, the 6th day of February next.—By order of the Commissioners,

LEWIS SLIGHT, Clerk.
Clerk's Office, Town Hall, 12th January, 1847.

MISS BESSEMER, EMBROIDERESS, 9, JUDD-STREET, Brunswick-square, respectfully solicits orders for the cleaning, repairing, and transferring of ancient Needlework and Tapestry; also for the embroidering of Altar-cloths in the new and approved designs: Coats of Arms, Crests, &c. &c., worked in gold or silk.—Miss B. is allowed to refer to some of the first houses in the trade as to her care and abilities.


PUBLICATIONS.


THE HIGH PRESSURE STEAM ENGINE, INVESTIGATED by Dr. ALBAN, Translated from the German with notes by Professor POLE, C.E. In 8vo., with Engravings. Is now published, price 7s. 6d.—JOHN WEALE, 59, High Holborn.

Just published a new edition for 1847, price 1s.,

LAXTON'S BUILDERS' PRICES, containing nearly 11,000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Building Act and the modification of the Act. To be had at the office of the "Civil Engineer and Architects' Journal," 10, Finsbury-street, Whitehall; WEALE, High Holborn; SIMPLIN, MARSHALL, and Co., Paternoster-row; and at the office of "The Builder," 2, York-street, Covent garden.

Just published, Part I., price 21s. (containing seven 3s. Numbers),

GOTHIC ORNAMENTS; being a Series of Examples of enriched Details and accessories of the Architecture of Great Britain, drawn from existing authorities, by JAMES K. COLLING, Architect.

*** This part contains Thirty Plates, several of which are beautifully printed in gold and colours after the originals.

London: GEORGE BELL, 186, Fleet-street.

DOUGLAS JERROLD'S WEEKLY NEWSPAPER. Enlargement of one-third on the Meeting of Parliament. In order to give greater space for all the News of the Week, including the Debates in Parliament, The Most Important Occurrences—Law and Police Reports—Public Meetings—Foreign Intelligence, Literature—Correspondence, &c., will also for Original and various New Serial Articles the Proprietor has determined to enlarge the Paper to the utmost limit allowed by the Stamp Law, and to Add One-third, or Two-and-four Columns, making in the whole Thirty-two Pages, or Nineteen Columns, rendering it equal to the Fullest and Largest Newspaper in the extent and variety of its News of the Week, and still retaining the large space heretofore devoted to Original Articles by the Editor, and his Eminent Literary Colleagues. Price as heretofore, Sixpence. Order of all Newsmen, Town or Country, from whom detailed Prospectuses can be had.

NEW ARCHITECTURAL AND ENGINEERING PUBLICATIONS FOR 1847.—JOHN WILLIAMS AND CO., 193, Strand, offer the following Works:—

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**SOHO PLATE GLASS WAREHOUSE,** 2, SOHO SQUARE, Depôt for the Sale of the Plate Glass manufactured by the St. Gobain Company, Paris. The attention of Architects, Builders, and the Public generally, is particularly requested to this article, which stands unrivalled for brilliancy of colour, superiority of substance and polish, and possessing almost faultless quality. The Prices have been greatly reduced on previous sions.—Applications for simples, lists of prices, and all further particulars, to be addressed to

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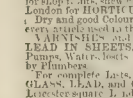
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Many substances have at various times been spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously collected.

In the application, skill is not required; it is put on to the work with a brush like common paint, and is used in all climates and weather, and costs 2s. per pint.

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The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from decay; it neither cracks, blisters, or scales, but is unalterable in any climate. Suitable for Railways, Bridges, Sheds, Roofs, and Warehouses; Hot houses, Locks, Hinges, for Ships, &c. &c. It is applied to Hot and Cold, Damp and Wet, and in London will last 7 years. It prevents vegetation on stucco, and keeps out wet, and not affected by steam or sea water.

PROTOXIDE PAINT is sold ground and mixed, ready for use with white lead, its property of covering is as 7 to 1 to white lead; it is hungry, and will absorb 4 lbs. to the square yard. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

**DECORATIONS in WOOD.**—The unrivalled perfection at length attained by the patent process of carving, enables the proprietors of the Patent Machine Carving Establishment to offer every possible study of ornamental and architectural enrichment that is not only more truly natural for these purposes than can be obtained by hand labour, but at less than half the cost. Workmen of the first talent are also supplied, adapted for church or house decoration, chairs, picture frames, chimney-pieces, and every description of foliage, flowers, birds, &c. Specimens may be seen at the Patent Wood Carving Offices, 11, West Strand; or at the Works, Ranelagh road, Thames-bank.

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Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent, in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the Ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which are much of the cause to which the old Closets are liable. The want of a Water closet more suitable for the present mode of living than in the interior parts of Dwelling Houses, and other Metropolitan Buildings, has long been felt, and the object to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

The Closet can be fixed in any Room, to which a Pipe of the ordinary size for the supply of Water can be conveyed, in the same manner as the Pipe; being completely between the floor of the one, and the ceiling of the other, it can be placed in the room to suit any taste, and does not take the "Silent" one in its place, which is the case with all the Valve Closets now in use, and the Machinery can be fixed in any convenient place below the Closet. The "Silent" Closet is also clean, sweet, free from any offensive smell, as it is being fixed in any bed-room where there is a convenience of fixing a pipe down the outer wall of the house, without it occasioning the least annoyance whatever.

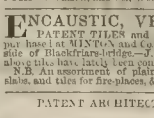
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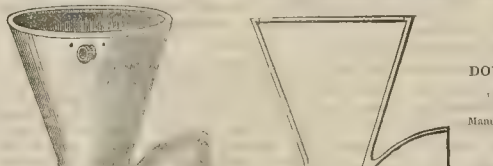
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| Inch. | s. | d. |
|---|---|---|
| 1¼ Ovolo | 0 | 4 |
| 1½ Ditto | 0 | 4½ |
| 2 Lambs-Tongue, or Gothic | 0 | 5½ |
| 2½ Sloop Front | 0 | 6 |
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From 1¼ inches Sashes, Fan lights, and Circular Sashes, made to order at the ultimate prices.

SASHES WITH FRAMES, at Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo, sashes and frames | 0 | 9 |
| 1½ Ditto, both sashes to hang | 0 | 10 |
| 2 Ovolo sashes and frames | 0 | 11 |
| 2 Ditto, both sashes to hang | 1 | 0 |
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Gothic Frames and Sashes, Mullion Windows. Wainscot and Mahogany Sashes.

SHUTTERS, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Square Sliding Shutters | 0 | 6½ |
| 1½ Ditto, moulded one side | 0 | 7½ |
| 1¾ Moulded, head and butt back | 0 | 8 |
| 1½ Boxing Shutters, with front moulded, and back with 1 inch back flap, framed and butt | 0 | 8 |
| 1¾ Shutters, and back flap in middle, front and head, and butt back | 0 | 9 |

DOORS, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Beads pare | 0 | 6½ |
| 1¼ Ditto, moulded front | 0 | 7 |
| 1¼ Bead flush, square | 0 | 7 |
| 1¼ Ditto, one side | 0 | 8 |
| 1¼ Ditto, both sides | 0 | 9 |
| 1¼ Ovolo one side | 0 | 9 |
| 1¼ Ditto, both sides | 0 | 11 |
| 1¼ Ditto, bead, butt, and square work | 0 | 11 |

DOORS, at per Superficial Foot, continued

| Inch | s. | d. |
|---|---|---|
| 1¼ Ditto, bead, flush, and ditto | 0 | 11 |
| 1¼ Ditto, ditto, and moulded back | 1 | 0 |
| 1¼ Ditto, square one side | 0 | 10 |
| 1¼ Ditto, moulded one side | 0 | 10½ |
| 1¼ Ditto, both sides | 1 | 0 |
| 2 Ditto moulded one side | 0 | 11 |
| 2 Ditto ditto, both sides | 1 | 0½ |
| 2 Ditto bead, flush, and square | 1 | 1½ |
| 2 Ditto, bead, flush, and square | 1 | 1½ |
| 2 Ditto, ditto, and moulded back | 1 | 2 |
| Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
| 2 Ditto, moulded both sides | 1 | 1 |
| 2 Ditto, bead, butt, and square | 1 | 1 |
| 2 Ditto, bead, flush, and square | 1 | 2 |

Round, moulded, and carved doors, to any design

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| Foot Pavements. | Cesspools and Sewers. | Piggeries, &c. &c. | Walls, Floors, Arches, Lining of Tanks, Fish-ponds, &c. &c. |
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In order to guard against the use of spurious materials, it is important that all applications for Works to be executed by made direct to this Company; and as a further precaution, it is suggested that Specifications and Contracts should require a CERTIFICATE from the Company's Agent that the Asphalte used is that manufactured at the Mines of Seyssel.

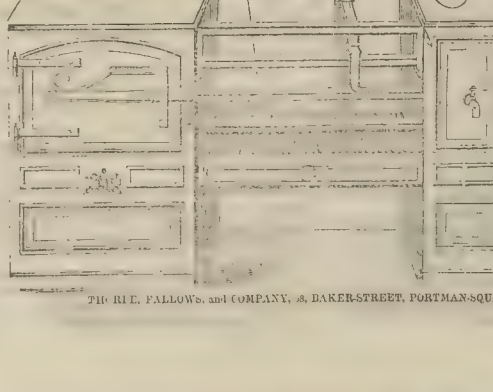
Information may be obtained at the Company's Offices, established in 1838, which will prove that the failure of the Works of Pavement, &c. have been due, either to the use of spurious materials, or to the unskilful manner in which the genuine article has been laid.

J. TARRELL, Secretary.

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# The Builder.

**No. CCVI.**

*SATURDAY, JANUARY 16, 1847.*


THE social reforms needed for the preservation of the public health, and the advancement of the general welfare, appear to have taken a considerable hold upon the public mind. Various societies are working sedulously to advance them; deputations go to prime ministers; and reports of committees fly about in all directions.

We have the Health of Towns Association; the Health of London Association; the Metropolitan Working Classes Association for Improving the Public Health; the Society for the Abolition of Burials in Towns,* and others; and if some important result be not speedily effected, our faith in the strength of public opinion will be lessened considerably.

The report of the Health of Towns Association on Lord Lincoln's drainage bill, while reviewing this bill and pointing out forcibly its inadequacy in many respects, gives a general and most important view of all the matters affecting the sanatory condition of the metropolis; and, if extensively circulated, must effect much good. The intensity and mortality of disease have increased, and are increasing, through neglect of efficient drainage, well arranged streets and houses, proper cleansing, a due supply of water, want of ventilation and other sanatory arrangements, all obtainable for the whole population. It is proclaimed in language not to be misunderstood, that *every day's delay in the adoption of these measures costs the lives of* 136 *persons in England alone!*†

The report dwells with great severity on the mischief which has been done by the Westminster Court of Sewers, and on the enormous sums of money which have been spent by the commission uselessly. The reduction recently made by this commission in the cost of sewers, will prove of great advantage to the public. Their duty unquestionably is to afford every facility for drainage, to induce by all means in their power the construction of sewers; and we have a strong conviction that great changes are even yet necessary in the constitution of the commission, and its motives of action. We hope before long to test the value of our opinion by an examination of the powers under which the court acts.

The construction of drains, and the means of efficiently trapping them, to keep back noxious gases, require early attention. It is an error to suppose that the interposition of water is a sufficient protection against the escape of noxious gases from sinks and cesspools; such is not the fact; as soon as the water is saturated with the gas, it escapes into the house or street, to the injury of the health of the inhabitants; yet builders rely wholly on the efficacy of water in preventing these emanations.

One of the prominent objects of Lord Lincoln's bill is, to remedy the present extremely defective supply of water for domestic uses; and the committee in their examination of the bill go fully into this question. Evidence is adduced to shew the great superiority of a constant over an *intermittent* supply of water as now furnished.

"The present daily consumption of water in the metropolis is equal to the contents of a lake fifty acres in extent, of a mean depth of three feet. The intermittent mode of supply having been universally adopted, there arises the necessity of receptacles to receive this mass of water, at the times when it is pumped out, and to retain it until it is wanted. Let the mind dwell for a moment on what the expense of these vessels must be. The actual cost for butts, tanks, and cisterns, is estimated at two millions of money; and those who have attentively considered the subject believe that this estimate is too low. It has been shewn that these receptacles are at once unnecessary and pernicious. On these grounds her Majesty's commissioners protest against the continuance of the intermittent system, and declare their opinion, that 'the system of constant supply offers advantages for the introduction of water into all houses which are unobtainable by any other mode.' It cannot but be useful to direct attention to the evidence on which the soundness of this conclusion is established; and the following may be taken as examples of the statements and opinions of the chief authorities on the subject.

First, by the mode of constant supply at high pressure, the water is preserved in a state of purity. 'All the evils arising from the want of proper receptacles for water,' says Mr. Hawksley, 'from neglect in cleaning the tanks and water butts, and from the accumulation of soot, dust, and other impurities in them, are completely removed by keeping the pipes constantly full. The effect of this arrangement is to substitute one large reservoir or tank well constructed, well situated, and under effectual care, for the many thousand ill-constructed, ill-placed butts and tanks, requisite to afford a copious supply on the common arrangement. It also prevents the impregnation of water with gas, which often takes place when the water is supplied on the intermittent system.'

'A never-failing and uninterrupted flow direct from the main,' says Dr. Playfair, 'is not liable, as in the case of collected water, to acquire a temperature unpleasantly high, and is secured from the absorption of vitiated air and unpleasant effluvia, to hasten the decomposition of the small amount of organic matter generally existing in water.'"

Many evils result from the want of water. "The obstacles to the maintenance of domestic or personal cleanliness soon produce habits of personal carelessness, which rapidly lower both the moral and physical condition of a whole population."*

Improvement too, is needed in the mode of laying gas-pipes. The water is injured, says Mr. Mylne, by the gas which escapes, and the sewers are rendered dangerous.

Amongst the errors and defects of the Bill, the committee name:—

"Neglecting to make it compulsory on water companies to give the public a constant instead of an intermittent supply, and to deliver it in all cases at as high a pressure as is practicable.

Neglecting to make it compulsory on water companies either to filter the water or to provide a sufficient area of depositing bed.

The omission absolutely to forbid the construction of cesspools in all new dwellings, and to provide for the compulsory removal of all existing cesspools as soon as the general introduction of sewers and drains, combined with an adequate supply of water, shall have rendered the universal adoption of the water-closet apparatus practicable.

Neglecting the entire subject of ventilation, one of fundamental importance in a sanatory measure.

It is not necessary to point out the great value of the constant supply for the prevention of fires. It is stated, that under this system at high pressure, even the smallest street might be supplied with a three-inch main, affording at least one 40-feet jet, which is equivalent to keeping the power of one engine and twenty men at every door, to act at one minute's notice after the first alarm of fire. In fact, no town ought to be considered fully supplied with water unless the pipes are kept constantly full, and arrangements are made by which a powerful force of water can be taken from them, at a minute's notice, to extinguish fire at any part of the town, high or low.

The mode of intermittent supply ought to be immediately abandoned, and the constant supply introduced, as the most effective, and, moreover, the most economical.

The importance of ventilation, to which reference is omitted in the bill, is forcibly dwelt on by the Committee, and at considerable length.

"The general introduction of an efficient mode of ventilation in dwelling-houses, and especially in the abodes of the poor, would be attended with beneficial results far beyond what it is possible to estimate; still, however, the adoption of compulsory provisions for this purpose may not be expedient, on account of the interference with the privacy of domestic life, which the enforcement of any such legislative enactments must involve. But this objection does not apply to buildings intended for public resort, such as churches, courts of justice, concert and assembly rooms, theatres, houses and rooms for the public use of which a license is required, factories already under government regulation and inspection, workshops, in which great numbers of work-people habitually assemble, lodging-houses, and schools. The introduction, in a general sanatory measure, of compulsory provisions for the purpose of securing proper ventilation in all places of this description, appears to be justified by the absolute necessity of the case, and to be free from any objection in principle."

The repeal of the window-tax is another part of the same great question, and should be loudly called for from every quarter. As was said at a meeting of delegates from various metropolitan parishes held last week, it should be repealed if it were only for its inequality and injustice, pressing, as it does, upon those who are the least capable of paying it. In a sanatory point of view, however, repeal of this abominable tax is imperatively necessary, operating, as it does, most injuriously on the comfort, health, and morality of the people. It positively offers a premium for the defective and vicious construction of houses, and tends to create those abodes of filth and disease which disgrace our land. The necessity of ventilation, and the advantages of light, are not felt sufficiently to induce the payment of even so many shillings a year; and cellars, privies, and staircases are left to be magazines of deleterious air, even in the houses of the middle classes.

Houses having less than eight windows are exempt from the duty; "but the window-tax," says Mr. Hickson, "is not therefore inoperative as it regards the working classes of towns. In London the poor do not live in cottages, but several families occupy lodgings in the same house, and that perhaps a house built

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* The address of this society, just now issued, says:—"The sanatory condition of the people, so long neglected, has at length excited some degree of attention. Yet one of the most important subjects connected with the health of the inhabitants of large towns, has been unaccountably overlooked. No one presumes to deny the poisonous effects of decaying *animal* substances; more powerful, more dangerous, more deadly, than *vegetable* exhalations, they manifest their agency in the production of sudden death—in the development of disease which too often baffles medical skill—and in the slow but certain destruction of those who are more constantly exposed to their influence. It is necessary to state that the overcharged grave-yards which exist in the midst of this crowded metropolis, and in all large towns throughout the empire, are a chief source of these animal exhalations? Is it necessary to re-affirm that the *moral* and *physical* evils connected with the practice of intra-mural sepulture must *inevitably* continue so long as we continue to inter *unlimited numbers of dead bodies* in *limited* spaces of ground? It may be demonstrated that an acre of earth is capable of affording decent interment every year to 136 bodies, or thereabouts. In many of the parochial and other burial grounds, *each acre* of land is compelled to receive *annually* more than *one thousand* bodies, some even *two or three thousand, every year!*"

† "This high mortality has been traced to crowded lodgings, dirty dwellings, personal uncleanliness, and the concentration of unhealthy emanations from narrow streets, without fresh air, water, or sewers: the rapidity of decomposition, and the facility with which all kinds of animal matter become tainted and run into putrefaction, enable us to understand how, in a summer like the past, in which the temperature was unusually high, the diseases referable to an impure atmosphere should be so prevalent and fatal."—*Report of the Registrar-General.*

* Report of Poor Law Commissioners.

with the maximum of untaxed windows allowed by the law. One more window would possibly let a little sunshine into a sick room; but the landlord says No, the house would then have eight windows, and I should be liable to a tax of 16s. 6d. per annum. If the commissioners would examine personally the houses in which the poor live, in the close courts and alleys of the metropolis, they would be surprised at the number of dark staircases and filthy holes which, although in upper floors, are quite as ill ventilated and unfavourable to health as the cellars of Liverpool. And the permanent cause of this state of things is the option given to builders of saving money in taxation, by shutting out air and light."

Supposing it were shewn that Government could not give up the revenue produced by the window tax, or supply it in a far better manner, the present mode of assessment should at all events be altered, as operating most injuriously without advantage to any,—and a suggestion by Mr. Hickson would be worth consideration.

"I would submit," he said, to the Health of Towns Commission, "that all new houses should be assessed upon the principle, that every house built requires for light and air a certain number of openings in proportion to its cubic contents, and that these openings should be paid for whether they exist or not. This would at once remove every temptation to defective construction; and I think that after a house had been once assessed, the proprietor should be at liberty to make as many additional openings as he pleased; in fact, to turn the whole of the walls into glass if he thought proper. I most sincerely hope that the serious and earnest attention of the Commission will be given to this part of their inquiry. A great practical improvement can be effected without any loss to the revenue, and by a few very simple clauses. The majority of houses of the second and third class, will never be so constructed as to be healthful habitations while assessed to the window-tax as at present. I would pass a law to the effect, that if a house contained twelve squares on a floor, it should be liable for, say six windows on that floor; but that the owner might make six more windows on that floor if he pleased without any additional charge."

We are not disposed, however, to listen to any modification of this tax; it should be repealed altogether, at once and for ever.*

Amongst other documents on sanatory requirements now before us, is the memorial to the common council of the City of London adopted at a meeting of the inhabitants of the ward of Farringdon-without, presided over by Sir James Duke, M.P., in opposition to the proposed appropriation of a large sum of money to the making of a new street from King William-street to Queen-street. Opposed as we are to the course adopted by the corporation, we cannot agree with the able memorial in question, that this particular sum should be expended in making sewers and cleansing highways, rather than in widening streets, or forming new ones for the purposes of traffic. Still the memorial has considerable interest in our eyes, as shewing that at least one influential ward fully appreciates the importance of those sanatory reforms we are advocating. The memorial very properly reminds the common council, that "in addition to all the other and pressing obligations which rest upon that honourable court to promote the sanatory condition of the city, there is one arising out of the fact, that it was the corporation of the city that opposed Sir Christopher Wren's plan for the rebuilding of London, which was approved by the king, and which would have excluded all grave-yards, as well as all narrow, dark alleys without thoroughfares, and courts; as also all trades that use great fires, or yield noisome smells; while it would have secured perfect ventilation, and arteries of communication throughout the city, sufficient even for its present enormous traffic."

With corporation revenues exceeding 150,000*l.* per annum, it seems disgraceful that so little has been done in the city to reduce the amount of disease and mortality, and consequent poverty and wretchedness, which exists, and spreads from class to class until it touches the highest.

As to the cost of all the improvements most wanted,—good supply of water, clean streets, efficient sewerage and house drains, water-closets and good ventilation, according to the Health of Towns' Association, may be carried into every street and house of the metropolis for the small weekly sum of threepence halfpenny. "The work may be thoroughly done, and all immediate and contingent expenses provided for, by less than *a groat a week for each family*. Nay, it is confidently affirmed by those who have given most attention to the subject, that the refuse of our towns, properly applied, would alone defray all the expenses."

For this latter purpose one company has obtained an Act, and others are about to apply to Parliament.

In a letter to Lord John Russell by Mr. Morewood, on this subject, recently published, it is said,—

"The lowest estimated value of the sewage manure of the metropolis is 600,000*l.* per annum; the loss, consequently, since the last general war, is eighteen million pounds worth of fertilizing substance. No wonder we have had to exhaust the deposit of centuries in the Atlantic, and that hundreds of ships are now searching for Guano in the Pacific, whilst the Sperm Fishery there is left to other nations. 25,000 miles are traversed to fetch manure by ships, which cost the country at least three millions, whilst for less than half that amount, a Guano field, more valuable than Ichaboe, may be permanently secured to our agriculturists. Looking, therefore, at the proposed work merely in respect to the supply of manure, the existing and the prospective circumstances of the country may be said to demand the adoption of a plan at once so simple and so comprehensive for its preservation.

By the diversion of the contents of all the sewers of the metropolis, an immediate improvement will be afforded in the Thames, and in the course of a few years, good water would be within reach of the inhabitants.

Without instituting any comparisons between the modes by which it is proposed to effect the desired end, we must express an earnest hope that no long time will elapse before it is achieved. The gradual rise in the bed of the Thames, pointed out in our last number, is an additional argument against a continuance in our present most injudicious and wasteful practice.

The present moment is favourable to efforts to procure the reforms we desire; do not let it be neglected. The government are well disposed towards them; indeed, we may venture to say, some general measure is actually in contemplation. The vestry of Kensington recently appointed a committee to prepare a bill for the improvement of that parish, with the view of submitting it to Parliament; before proceeding, however, it was thought expedient to inquire officially of the government, if they contemplated bringing in any bill which might render this step on the part of Kensington unnecessary, and the reply was in the affirmative. We would suggest, nevertheless, that a committee be immediately appointed by every parish in England, to co-operate in effecting perfect sanatory reforms, and the adornment of the country. We assert, without fear of contradiction, that this is the interest of every man, woman, and child, in the kingdom.

* By a Parliamentary paper, printed in the session of 1845, it appears, according to *The Times*, that the total amount of window duty in the year ending the 5th of April, 1840, was, 1,486,023*l.* In the year following it was 1,774,638*l.*; in 1842, 1,775,751*l.*; in 1843, 1,776,799*l.*; and in 1844, it was 1,786,514*l.* In the last session Viscount Duncan obtained the following return:—"Accounts of the total number of houses charged with the window duty in Great Britain on the 5th day of April, 1840, 1841, 1842, 1843, and 1844, and of the net amount of window duty received on the 5th day of April, 1840, 1841, 1842, 1843, and 1844." In the year ending the 5th of April, 1841, the number of houses charged was 450,913, and the net amount of duty received was 1,545,105*l.* 5*s.* 11*d.* In 1842, the houses numbered 447,420, and the amount was 1,530,457*l.* 15*s.* 11*d.* In 1843, houses 448,106, and amount 1,726,276*l.* 3*s.* 9*d.* In 1844, houses 447,383, and amount 1,699,309*l.* 6*s.* 8*d.*; and in 1845, the houses numbered 453,738, and the net amount of duty received was 1,743,401*l.* 3*s.* 2*d.* In the year 1844, Bath paid 21,551*l.* in window duty; Birmingham, 11,249*l.*; Brighton, 15,912*l.*; Bristol, 14,688*l.*; Cheltenham, 7,122*l.*; Clifton, 8,109*l.*; Leeds, 7,175*l.*; Liverpool, 29,810*l.*; Manchester, 19,907*l.*; Newcastle-upon-Tyne, 6,010*l.*; Norwich, 6,674*l.*; and Plymouth, 11,196*l.*

## THE OBJECTS AND RESOURCES OF ART IN INTERIOR DECORATION.

The few leading principles of art, which now seem so far unquestionable, that all are surprised there should ever have been any hesitation in admitting them, mainly are those which it had been the most difficult to ascertain. The doctrines, which meanwhile usurp the place of such admitted truths, are numerous and conflicting; asserted, whilst often incapable of being supported by reason, it requires many years to escape from the errors they originate. The history of architecture during the present century, and of the many dogmas and theories in style, which are now unsanctioned or debated, might indeed deter us from the attempt to discover and enunciate any of the fundamental principles of an art, where the search seems so often to deviate. But, feeling that no principles in interior decoration had then been published, which had received general sanction, or of which the form of expression was not more that of a fashion, soon to be succeeded by another, we endeavoured in a former volume,* to convey the explanation of such, as we deemed were so far able to be substantiated, as to be worthy of being acted upon. We had last to consider the general principles of form and colour, applicable to the decoration of walls, ceilings, and floors; and had also to notice the injury to the art of interior decoration, through so many of its works being designed by men who were not artists, instances of which are the tasteless ceilings, constantly put up in ordinary houses. We now think it necessary to refer to certain other principles, connected with the choice of a particular character of decoration, according to the purpose of each apartment, and to consider, what materials may be deemed the fitting resources of the art.

The principal object of an apartment being its actual *use*, whether on occasions of festivity, or for ordinary occupation, it does appear a mistaken practice, now too much sought after, to embellish it in such a manner, as may overpower the more important adjuncts of the occasion, or may interfere with the serenity of mind, which one might desiderate in a home. A far more satisfactory result will follow from a system of decoration, in which every feature does not at once strike the eye, but in which much beautiful detail is left for examination, rather than when the sole effect is one of dazzling colour, overpowering accessories, and much of the beauty of form, in the decorations themselves. The mistake in the Princess's Theatre, where the decorations are such as interfere with the main object, namely the effect of the stage, is perhaps worth mentioning as a parallel case. In the domestic circle, or in the library, many would delight in being surrounded with elegant outlines and combinations of colour, and these would reflect upon the spirits, and accord with the kindred current of thought; but most men would rather avoid the constant companionship of splendour. The labour or expense of production is assumed to be the same in each case. A chimney piece in deal, enriched as we have seen inferior examples in many old London houses, might be far preferable to one of Carrara marble, or any other

* Vide Vol. IV.—"Colour in internal decoration: Questions affecting its treatment;" "On the adaptation to furniture and interior decoration of woods not generally employed;" and "Principles of Art, considered in reference to the decoration of rooms."

dazzling material or colour. It is, of course, outline and colour, that are the implements, by the judicious use of which, elegance is attained, and the different materials available, are of course mainly valuable, in the degree in which they contribute to these elements. Intrinsic, or mercantile value, has hardly any concern with the effect of a work of art, as such, and it would rather betoken a want of skill in the designer, should the main attraction be the price, or the scarcity of the material. And, the use of the richest treasures of the quarry, or the mine, will never entirely supply the want of beauty of form and happy arrangement of colour, unless they have also and chiefly, evidence of the application of design.

The decorations, therefore, though they may court examination, and afford an increasing fund of delight, should never be in opposition to the purpose of an apartment. And, in all other particulars, they must be equally accordant, not only as regards the time of day at which the room will be occupied, but also, so that the decorations may not be inexpressive of the use. Thus an entrance, which is little more than a passage, is hardly the place for great enrichment, as any thing intended to detain the eye, would there inevitably fail in its effect. Nothing more than a passing effect of magnificence, such as may be a fitting preparation, and a medium between the plainness—speaking comparatively—of the exterior, and the ornamental character of the principal rooms, should be attempted. The quantity of light admitted would also be for similar reasons, a point for judicious management. Still, the decoration may appropriately convey some intimation, in a dwelling, of the tastes of the owner, and in a public building, of the purpose which it serves. The doorways to the different rooms, also, instead of being quite uniform, as they frequently are, might be judiciously varied in details, so as to bespeak the nature of the apartment, to which they open.—The principle, generally pertaining to entrances, may be considered likewise applicable to a large hall of entrance, with the exception, that the size may give it an appearance of purpose, in some measure to be associated with that of an ante-room, where it may be necessary to pause, or wait, and where consequently, some occupation for the eye may be pleasing and desirable. And, where space for the disposal of works of art, is not otherwise adequate, this part of the house becomes of too great value, to allow of the rigid application of our principle. Mr. Eastlake approves of the common practice of placing sculpture in the principal hall; for, a statue having an advantage which a painting generally has not, that of being seen from any point of view, may command attention where an oil painting would not. If paintings be placed there, they should be in fresco, since these do not require the best light, and can be examined from several stations.—Ante-rooms are better adapted for decoration which courts examination, than halls, because of their obvious purpose, and they may therefore claim a different treatment to either libraries or dining rooms, where the attention is supposed to be otherwise engaged. But, in general amount of embellishment, they should be strictly subordinate to the rooms, of which they are the entrances.—Staircases may be classed with halls, and here the objections, urged against large historical or allegorical subjects in ceilings, may be considered. The decorations, here and in all cases, should "appear to grow out of, and complete the architecture.—In a dining room, it may be questioned, whether the time at which it is used, and the purpose to which it is almost confined in many houses, will render much use of painting desirable. Mr. Eastlake thinks that portraits of celebrated individuals, and landscapes, though they are not likely to be duly examined, at the time during which the principal purpose of the room is fulfilled, may convey associations, to which the spectator is supposed to be alive at all times. But he allows, that a dining room, used for nothing else, is not the place where fine works of art should be bestowed, and he recommends small frescos and arabesques, having an air of elegance and festive splendour, in great variety, calculated to please the eye and the imagination, merely.—In libraries, it seems to have been much the custom, to banish every thing that might interfere with the supposed only purpose of the apartment. But in the library of a man of taste, or of an artist, paintings and sculpture cannot be deemed always obtrusive; but coloured decoration should be used sparingly, and with judgment, being perhaps almost confined to the books themselves, or their cases. Still, the introduction of stained glass carries with it so many beautiful associations, that we might be disposed to retain it, where the mode of decoration would seem rather to aid, than to be opposed to the character of this place of study and meditation.—In most of the particular principles, to be considered in the decoration of drawing rooms, there would appear to be less danger of mistake than in other cases, since this being the apartment always devoted to hours of leisure and enjoyment; the decoration is governed only by such principles as we have before mentioned. The highest efforts of the pencil or the chisel, will obviously find here their most appropriate locality.

In the choice of materials, we seem to have a larger number for the exercise of art, than have hitherto been available, yet it is remarkable that few of them are employed to any extent. Plastering, paper-hanging, painting, and gilding, to which are added, festoons of drapery, are not the only means at hand; and yet it is by very slow degrees, that other resources are brought into use. We have native marbles, which may be obtained at a moderate expense, and which almost equal those of Italy; porcelain slabs and tiles can be prepared and enriched with paintings; and the beauty of the natural appearance of foreign and English woods is, as we have said, quite unappreciated. The resources of glass and enamel, whether used colourless, stained, or in the form of mosaic, are scarcely examined. Glass and porcelain might be employed more frequently than at present, not only for enrichments on walls, for panels of shutters and doors, and for handles, but for many other purposes, as the shafts of columns, in which, it has been suggested, a very beautiful effect would be produced by making them with a gilt metal core in the centre of a glass tube. Marble cement, scagliola, parquetried floors, wrought and cast iron, and stamped leather are all materials, with which every body is acquainted, but which it is remarkable, are very sparingly used in interior decoration. The discovery of the electro-type and electro-gilding, which might afford the means of most delicate enrichment, has hardly been turned to any account. Indeed, it is curious, that whilst these and similar inventions might be constantly enlisted, there should seem to be so little anxiety, to produce novelty of effect by such obvious and legitimate means. It ought not to be necessary to repeat now, that, in the words of M. de Chateauneuf, "the most durable materials are the most economical, and they carry with them a nobleness of appearance, not attainable by even lavish ornaments, costly at first, yet of a perishable nature. Consider what large sums are expended in the course of a few years, in keeping up houses that have to be repaired or refitted up, from time to time, as regards all but their bare walls, in consequence either of the materials getting soiled and shabby, or of the changes of fashion which, having been the only guidance in matters of taste at first, must continue to be consulted or conformed to, otherwise the whole looks out of date; whereas, that which is originally beautiful, independently of any particular fashion of the day, will so remain, let the caprice of fashion change as it will. I do really believe, there are many rooms that would have cost their owners less, had they been entirely lined with marble, and otherwise ornamented with fresco painting and mosaic, than they have done, in consequence of being furbished up every now and then by decorators and paper-hangers; and often in very questionable taste, while after all, the effect at the time, is at the best of an inferior kind." Architects cannot too strongly impress these considerations, evident to themselves, upon the public.

Some novelty would be gained in interior decoration by following the principle of Gothic architecture, which makes all construction apparent. Thus the hinges of doors could be shown, and in some apartments the beams and joists could be chamfered, and moulded, so as to produce an effect, superior to that of a flat, unbroken surface of plaster. Of course, in all such modifications, it is necessary to consider whether the previous method has really any recommendation; for if, as in the prevention of the passage of sound, in the case of the ceiling, the object could not be as well attained in the altered method of construction, it would not be desirable to make any change. Plaster work, not being adapted to represent any other material, should be treated precisely as what it is. Therefore, it appears a very useless and unsatisfactory attempt to show the joints, in imitation of masonry. A more appropriate enrichment would be by stamping a pattern upon it, whilst wet, being somewhat similar to the ornament of the Alhambra. Colour might, perhaps, be given to the surface, or the hollows, by the same process; and should this be accomplished, several colours might be printed at once, as in one method of block calico printing.

## ROYAL INSTITUTE OF ARCHITECTS.

An ordinary meeting of the Institute was held on Monday evening last, Mr. Tite, V.P., in the chair. Amongst the donations announced was Mr. David Roberts's fine work on the Holy Land, presented by Mr. S. Angell, V.P., which the chairman justly eulogized as honourable to English art. The first copy of a new edition of the catalogue of works in the library was laid on the table.

A communication having been received from Mr. J. B. Papworth, stating that he had retired from the practice of the profession, the meeting, with expressions of considerable respect, unanimously elected Mr. Papworth an honorary member. By a coincidence, Mr. J. W. Papworth was admitted a fellow at the same meeting. We were glad to hear that a number of Mr. Papworth's friends in the profession have subscribed to present to him some slight testimonial of esteem.

Mr. Donaldson read a letter from M. Girault de Prangey, of Paris, acknowledging the honour of his election as corresponding member.

Mr. Angell then read a paper descriptive of the ancient city of Syracuse, which we shall give at length next week.

Mr. Scoles, honorary secretary, exhibited a drawing of an ancient bath in Syracuse (he considered it Roman), the vault of which was formed by series of earthen cylindrical tubes, each something like a wine-bottle with the bottom out, the smaller end of which entered the larger end of the tube next it, and so without involving the principle of the arch, formed a vault, in this case seven feet in span. The tubes were filled with cement, and covered on the top with a layer of tiles.

Mr. Donaldson communicated a paper by Mr. Browning, architect, on a mode of measuring and valuing carpenters' and joiners' work, with the view of obtaining greater correctness than by the mode now pursued.

The Chairman said, architects had been told recently, in a work which had attracted some notice, that this was a matter with which they should have nothing to do. But the fact was, they couldn't help it, and moreover would not do their duty towards their employers if they neglected attention to it. He had himself no liking for measuring and valuing, but nevertheless he was obliged to do it. As to any change in the mode of measuring, he thought it would have to come from the operatives rather than from the profession. (?) That it was much needed there could be no doubt. The mode of measuring stone was especially empirical. Measuring first the cube stone, then "face," "bed," and "joint," as plain work; then the sunk work; then the moulded work; led to a false result. Sir Robert Smirke, at the Post Office, had struck a blow at the system when he refused to allow the bed and joint to be measured, and gave an increased price for the cube stone. The engineers had cut the knot which the other attempted to untie, by measuring the cube stone, and nothing else, including all labour in the price. This, however, was manifestly an unsatisfactory mode. Returning to the general question, architects were bound to see that their employers were fairly dealt with. It was easy to certify an amount, but no man should do so unless satisfied as to its correctness. The art could not be separated from the business. Measuring might be delegated to others, but even then

the architect was justly held responsible. It was so also in Greece, where, if an architect's estimates were exceeded in the execution of the works, his own fortune was liable for the difference.

## INSTITUTION OF CIVIL ENGINEERS.

### IRON DOCK-GATES.

Sir John Rennie, president, in the chair. The first meeting of the session was held on Tuesday evening, January 12th, when a paper by Mr. Shears was read, descriptive of the iron dock gates constructed by Messrs. Rennie for the Russian Government, and erected at Sevastopol, on the Black Sea.

Sevastopol is very peculiarly situated amidst rocky ground, rising so abruptly from the shore, that there was not space for the buildings necessary for a dockyard. On account of the depth of water close in shore, and other natural advantages, the emperor determined to make it the site of an extensive establishment, and as there is not any rise of tide in the Black Sea, and the construction of cofferdams would have been very expensive and difficult, in such a rocky position, it was decided to build three locks, each having a rise of ten feet, and at this level of thirty feet above the sea to place a main dock, with lateral docks, into which vessels of war could be introduced, and the gates being closed, the water could be discharged by subterranean conduits to the sea, and the vessel being left dry, could be examined and repaired even beneath the keel. A stream was conducted from a distance of twelve miles, to supply the locks, and to keep the docks full; this, however, has been found insufficient, and a pumping engine has since been erected by Messrs. Maudslay and Field, for assisting. The original intention was, to have made the gates for the docks of timber, but on account of the ravages of a worm, which it appears does not, as in the case of the *teredo navalis*, or the *terebrans*, confine itself to the salt water, it was resolved to make them with cast-iron frames covered with wrought-iron plates.

There are nine pair of gates, whose openings vary from 64 feet in width, and 34 feet 4 inches in height, for ships of 120 guns, to 46 feet 7 inches in width, and 21 feet in height, for frigates.

The manifestation of such masses of metal as composed these gates demanded peculiar machines; accordingly, Messrs. Rennie fitted up a building expressly with machines constructed by Mr. Whitworth, by which all the bearing surfaces could be planed and the holes bored in the ribs, and all the other parts, whether their surfaces were curved or plain. The planing was effected by tools which travelled over the surfaces backward and forward, cutting each way; the piece of metal being either held in blocks, if the surface was plain, or turned on centres, if the surface was curved. The drilling was performed by machines so fixed, that the pieces could be brought beneath or against the drills in the required direction, and guided so as to insure perfect uniformity and accordance between them. Travelling cranes were so arranged as to take the largest pieces from the wharf and place them in the various machines, by the agency of a very few men, notwithstanding their formidable dimensions; the heelposts in some cases being upwards of 34 feet long. Each endless screw, for giving progressive motion to the cutting tools, was 45 feet long. Some idea may be formed of the manual labour avoided by the machines, when it is stated, that the surface planed or turned in the nine pairs of gates equals 717,464 square inches; and in some cases a thickness of three quarters of an inch was cut off. The surface in the drilled bolt holes equals 120,000 square inches.

The paper gave all the details of the construction of the gates, and the machines for making them, and was illustrated by a series of detailed drawings.

An interesting discussion followed, chiefly on the peculiarity of the site selected for the docks, and the supposed ravages of the worm in fresh water, as it was of unusual occurrence.

It seemed to be the opinion, that temperature of climate influenced the ravages of these insects. The meeting was held in the library, as the new theatre was yet too damp to be used with safety. It was announced the meetings would be held there in February.

## GREAT BURSTEAD CHURCH, ESSEX.

Although Great Burstead is but a village, it gives name to the parish, including Billericay, a market town, from which it is situated about one mile. The church is an interesting one, and rather larger than the parish churches in the neighbourhood. It consists of western tower, with spire; nave and south aisle; chancel and south chapel; and north and south timber porches.

The south aisle and chapel are under a continuous roof; but the separation of nave from chancel is marked externally in the usual manner: the whole being roofed with tiles.

One of the best features of the church is the stone, embattled, perpendicular tower. It is divided into three stages by string courses, which have almost crumbled away. In the highest stage are four windows, all alike; viz., of two lights, cinque-foiled, square-headed, with dripstones. The middle stage contains, on the west side, a two-light, pointed, perpendicular window, with tracery (internally well splayed); and on the north side a cinque-foiled window.

On each side of the tower are about forty very small square holes, arranged in two lines. It is supported by buttresses, placed at right angles (at the north and south-west corners); these are of two stages, with plain slopes, and commence a little less than half way up the tower. On the western side is a pointed doorway, with bold mouldings continued down the jambs. The spire is apparently of shingles; it is rather high, but the base of it is not large enough for the tower.

The nave has on the north side (beginning at the west end), a three-light square-headed Tudor window, with dripstone; a small lancet, on the east side of, and close to, the north porch (the internal splaying of this window is very wide); and a three-light, early perpendicular window, with tracery and dripstone,—a very good window. In the south side of the south aisle are two two-light, pointed, early perpendicular windows, with tracery, but without dripstones; one on each side of the porch. At the west end of this aisle is a three-light Tudor window, under a four-centred arch, with dripstone.

The porches are opposite each other, and are placed in the second bay from the west end. They are fine, with good, high pitched, timber roofs; that on the south has the best roof; and that on the north a fine barge board. The latter is foliated, and on each side, between the eaves and the featherings, or cusps, a line may be traced, with a representation of crockets upon it. It is not cut deeply, and cannot be seen at any distance. The roof of this porch has but two principals, each being composed of a tie-beam with pierced spandrils, wall-plates, and king-post with struts. The north door is four-centered perpendicular, under a square dripstone, with notch heads; having angels in the spandrils, bearing scrolls. On the right hand of this door is a very perfect "benatura." It is recessed, square-headed, with dripstone, and were it in the interior, might easily be mistaken for a piscina.

The south porch has at the entrance a piece of framework, consisting of boarding up to the eaves (a four-centered doorway being cut through it); and from this springs a king-post, with a collar, supporting the gable end of the roof. The roof is simply a row of principal rafters on either side, with a collar some distance below the ridge piece, connecting each with that opposite; the beams are thick, and the effect very good.

The south doorway is plain pointed; and on the door is a good escutcheon: it is circular and pierced.

The chancel contains, on the north, one three-light window, under a four-centred arch, with dripstone; and a three-light square-headed Tudor window, without foliations, high up in the wall, and very short.

The east end is bricked up, and plastered over; and where the east window stood (perhaps still stands), a monumental tablet has been stuck up.

The chapel has at the east end a three-light window, under a four-centered arch, exactly similar to that in the north wall of the chancel, and that at the west end of the south aisle: and the two windows on the south are of the same design.

*Interior.*—The nave and chancel are separated from the south aisle and chapel by a row of arches resting on octagonal pillars, with moulded capitals and bases.

The pavement of the church has been lowered and made level; the ground exteriorly being much higher; there are no chancel or altar steps, and the pillars are uncovered below the bases, to the depth of about two feet.

Five principals of the nave and chancel roofs remain, each consisting of horizontal tie-beam, with king post and four struts or braces, two to support the ridge piece, and two the rafters.

Through the pillar against which the chancel screen must have rested, a small doorway is cut (consequently this pillar is much thicker than the others), which opens into the south aisle; probably it was formerly connected with the rood loft. In the south-east corner of the chancel is a perpendicular piscina; it closely resembles the benatura in the north porch, with the exception that it has no dripstone.

Here has been erected a large altar-piece, of which it cannot be said (to use the words of a last century topographical writer) "that the style is in accordance with the edifice in which it is placed."*

The south chapel has a groined oak ceiling, with bosses. In the south aisle are several original low open seats, the ends having carved panels; the design is good, and they are all alike. In the windows of this aisle are some fragments of stained glass; one contains a coat of arms. At the west end of the nave is a large gallery, and under it is the "old oak chest," covered with bands of iron, and secured by three padlocks. Close to this stands the font; it is octagonal, with moulded stem and base. There are no monuments of interest.

### HISTORICAL NOTICE.

In the reign of Edward the Confessor, the lordship of Great Burstead (then known as Burghesfedam), consisted of one manor and ten hides, and belonged to Ingar, a Saxon theyn.

William the Conqueror having confiscated it, gave it to his brother, Odo, Bishop of Bayeux. The latter was deprived of his immense possessions, for his participation in a plot against Rufus in 1088, and this manor remained in the crown for many years.

The first mention of it after this event is in 1263. "The Abbot of Stratford held of the donor of the Mareschall," Mareschalls, Earls of Pembroke, "half a fee in Bordestedd."—*Inq.* 47, H. 3.

Thomas, Earl Stafford, who died in 1393, had half a fee in Great Burstead, which the same abbot held.—*Inq.* 16, Ric. 2.

And Edmund Stafford (died 1403), and Humphrey Stafford, Duke of Buckingham (died 1459), possessed each half a fee.

John Mowbray, in 1433, possessed two fees and a half. These show the lords paramount of the lands in this parish.

It contains three manors; viz. Great Burstead, otherwise known as Burstead Grange, West House, and Blunt's Walls. The first belonged to the Cistercian abbey of Stratford Langthorne, which possessed most of the lands in this parish; but only some of the donors of them are known.

In 1262, they held a fee of Earl Mareschall; donor unknown. Henry III., in 1253, and Edward I., in 1285, granted the abbot and monks a market and fair in Great Burstead. Their greatest benefactor was William Langdich, who in 1358, granted them one messuage and 345 acres of arable and pasture land, and 44s. rent in Great Burstead; held of the Earl of Gloucester. In 1388, John Henny, and Rohesia, his wife, gave them 60 acres of arable land, and 1 acre of wood in this parish. In 1476, Edward IV. granted a market and two fairs in Billericay.

In 1515, this manor was let for thirty years for 31*l.* 7*s.* 4*d.* It was granted by Henry VIII., in 1539, to Sir Rd. Riche; and remained in this family till 1600, when Sir Edwin Riche sold it to Sir John Petre, knt., in whose family it still remains.

The manor of West House belonged to the same abbey, and at the dissolution it was granted to the same Sir R. Riche. He sold it; and, passing through various hands, it came, during the last century, into the possession of Guy's Hospital.

* This is stated of a "large and commodious pew," erected by one of the Bishops of Hereford in the choir of his cathedral, during the last century.

The manor of Blunt's Walls was so called from an ancient family of the name of Blunt, and Walls was added (on account of some earth works here), to distinguish it from the manor adjoining, in the parishes of Butsbury and Stock, held by them. This estate belonged to the priory of Mountnessing. In 1525, it was granted, among many others, for the endowment of Wolsey's colleges; but on his disgrace, falling to the Crown, it was granted to Sir Richard Page, knt., in 1530, for the term of his life, without any account. At his death, in 1554, Henry sold it for 191*l.* 19s. 5d. to Sir Wm. Petre; it still belongs to that family.

The hamlet of Billericay is first mentioned in 1843, as the hamlet of Belenca. There is a chapel here; the founders are unknown, but supposed to have been the Sulyards, of Flemyngs, in the parish of Runwell.

It was a chantry chapel, but mass was sung and sacraments administered; which last was not the office of a mere chantry priest, so that it appears to have been partly built for the accommodation of the inhabitants of Billericay, as, in the winter, inundation prevented them from attending the parish church.

In the book of Chantries, after other information, is this entry:—

| | |
|---|---|
| The value of all the goods, jewels, &c. | |
| One small bell praised at ..... | 1s. |
| One hutch ..... | 1s. |
| Two vestments, one surplice and other implements ..... | 2s. 6d. |

King Edward VI. sold this chapel and the chantry lands to Mr. Tyrell, who retained the lands, but sold the chapel to the inhabitants of Billericay. It was re-consecrated in 1693, by the Bishop of London, and dedicated to the Virgin Mary. Mr. Bayly, circa 1654, left 20*l.* for the education of ten poor children.

The great tithes of this parish belonged to the abbey of Stratford Langthorne, being appropriated to them; and they had the advowson of the vicarage, to which they presented till the dissolution. Then they both passed through the family of Riche, into that of Petre.

Abridged from "Morant's Essex."

AMATEUR.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

"*Effossion*" *of Roman Baths in a high state of Preservation at Baden.*—In the middle of last year, the remains of a fine Roman bath dressed with marble—the internal round space inclosed by a square of walls and flanked by semicircular chambers in the four angles, were discovered; but have been since *demolished*, for the sake, as it would seem, of testing the durability of these ancient fabrics. Luckily, however, another discovery has taken place very lately, near the church of the Holy Sepulchre, at the foot of the *Spring-hill*, which shews, how extensively these thermal waters had been used by the Romans and the inhabitants of Southern Italy. The first traces even, at some inconsiderable depth, bespoke the existence of a Roman bath. The angle of the building, first discovered, exhibited two walls, which were internally covered with oblong, somewhat rounded, perpendicular tubes of burnt clay (in the clear 4 in. by 2 in. and 1 foot high)—which formed a row of connected air-tubes open *below*, whose destination for heating the bath could not be mistaken. The floor, supported by small pillars, contained a hollow space, also for the sake of heating. The earthen flags of the floor, burnt with that perfection peculiar to the Romans, measure 2 feet square each, and are 2 in. thick. They are placed on a stratum of lime, mixed with fragments of bricks, under which again, a floor, formed like that above, is situated. This whole flooring (8 in. thick), is supported by small round pillars of brick, measuring 7 in. in diameter—which, surmounted by an abacus, are placed at a distance of 12 in. from each other, in rows parallel to the walls, and thus form a hollow space 3 feet 2 inches high. The extent of this bath-chamber has not been yet ascertained, but seems considerable. The analogy with the thermæ of Pompeii, and the account of Vitruvius, leave no room for doubting that a vapour-bath was here contemplated. The difference between the Pompeian and Baden building is merely, that in the former the supporting pillars are *square*, and that there the walls of that *Calcidarium* are not covered with tubes, but square brick plates, fixed with iron to the walls. Whatever further excavations may yet bring forth—still, it is certain, that in no other ancient building the hollowings of the floor (*suspensura*) have been so well preserved and demonstrated, in none the lathing of walls with earthen tubes. It is also important to observe, that Roman houses effossed at Sinzheim and Pforzheim, possess also hollow floors, although there no use for hot baths was anywise to be supposed.

"*Freemasonry in its true Signification.*"—Under this title Dr. G. Kloss has published a work, dedicated (by permission) to the great Orient of Frankfort. Dr. G. denies all mystic and mythic origin of the fraternity, and puts its date at *scarcely two hundred years*, having then sprung up from the guilds of the great masons (*Grossmannes?*) or stone-masons in England; and says, that the ideas of primordial Christianity, Templarism, Rosecrucianism, and secret knowledge, had never entered the heads of the founders, either in London, or York, and Edinburgh.

*Cornelius's Opinion on the lately discovered Fresco Painting of Raffaelle, at St. Onofrio, Florence.*—This splendid art-relic, which, moreover, had the good luck to remain unscathed by the hands of *cobbling restorators*,—has given rise to much dispute, being first ascribed to Raffaelle, but subsequently to the Florentine painter, Neri de Bicci, who died twenty-two years before Raffaelle was born. As, however, the celebrated engraver, Mr. Jesi, has undertaken to publish it in a large-sized plate, the public will have ample means of judging by themselves. The following is the drift of a letter addressed by *Cornelius* to Messrs. de la Porta and Zotti, at Florence. According to his opinion, this picture (representing the Last Supper) is to be placed beside the finest of the above capital — conjointly with those del Carmine and de la Annunciata. "I recognize,"—continues Mr. C.—"in this wall-painting a depth of sentiment and a characteristic execution, as neither the master of Raffaelle, nor any contemporaneous painter, could impart to their works. — Everywhere that enlivened genius and divine purity are manifest, by which Raffaelle overtops all other painters. In the *ensemble* of composition, that same architectural style is to be recognized, which the Urbinate had so fortunately introduced in the pictures of the Vatican. And what concerns those beauteous, infantile figures, to be seen in the skies—they at once bespeak the hand of him who alone could depict images so true and lovely."

## FREEMASONS OF THE CHURCH.

ANTIQUITIES OF CAMBRIDGE. — DISCOVERIES IN WESTMINSTER ABBEY.

JAN. 12.—The first meeting for the present year was held in the Society's new rooms, No. 10, Carlisle-street, Soho-square, Mr. French in the chair. Among the persons present, was the Right Rev. Lord Bishop of Tasmania.

The Rev. David James, M.A., rector of Kirkdale, was elected an honorary fellow, and one of the chaplains. Mr. George Godwin, F.R.S., was also unanimously elected an honorary fellow.

Mr. W. P. Griffith, secretary, moved,—"That a petition be presented to both Houses of Parliament, praying that the immediate attention of the Legislature may be directed towards an improved drainage and ventilation of the present wretched courts, alleys, yards, &c., throughout London; and further, that the window tax, or *tax upon light, health, and morality*, may be repealed forthwith." (We shall be glad to see this example extensively imitated.)

Mr. W. Harry Rogers was then called upon to read some observations upon the antiquities of the University of Cambridge. He commenced by saying, that it must be evident to those who are acquainted with the many treasures yet existing in this ancient seat of learning that to do justice even to a portion of them would require far more than the limited space of time now allotted to him, since a volume alone might be devoted to the Royal Chapel of Our Lady and St. Nicholas, to the church of the Holy Sepulchre, or to the Early English architecture of Jesus College. That a portion of ground situated on the banks of the Cam was at a very remote period occupied by some kind of university, is easily proved, and it is nearly as certain that Saint Felix in the early part of the 7th century forwarded within its walls the study of theology. Some, indeed, placing perhaps too much reliance upon the truth of legendary lore, have endeavoured to represent that many hundred years before the birth of Our Saviour, a modest species of learning was cultivated in Cambridge, and have revived from mouldering chronicles the names of its first philosophers. They have considered themselves borne out in their supposition by the remains of British art, which have been discovered in the neighbourhood, added to the now universal belief that the extensive mound known as the Castle Hill, situated at the north-western extremity of the town, is entitled to an earlier date than that of the Roman invasion. But to leave theory for fact, we know that the eleventh and twelfth centuries combined to strike the centre of that circle of celebrity of which Bacon, Milton, Porson, and Newton have since formed illustrious radii. At the period the university became suddenly rich, and made the wisest use of its liberal resources, Europe was fast merging from the darkness and ignorance of ages. Throughout her colleges and ecclesiastical schools, was added to the old routine of divinity, the germ of a more refined education. The trivium and quadrivium of learning, which comprised grammar, logic, rhetoric, poetry, arithmetic, geometry, and astronomy, were now considered necessary to the dignity of the clergy. These seven important studies are curiously enumerated in the old monastic distich:

Gramm: loquitur, Dia: vera docet, Rhet: verba colorat,
Mus: canit, Ar: numerat, Geo: ponderat, Ast: colit astra.

The next step was the interference of royalty in the affairs of the University, when in the first instance, Henry III. took into consideration the proper means for establishing its permanency, and granted to its members an express charter of privilege in 1230. Mr. Rogers then described the various memorable endowments since lavished on the University, and called the attention of the Society, particularly, to the architectural improvements at present in hand in various colleges; and alluded to many of the smaller works of antiquity which some of them contain. With regard to King's College Chapel, he considered that the carved stalls were for the most part coeval with the organ screen of Anne Boleyn, and that the tabernacles only were the gift of Thomas Weaver in 1595. Some extracts were then given from original documents in connection with the erection of the Chapel-roof by the Society of Freemasons. At the close of the subject, Mr. Rogers presented a metallic rubbing of the brass of Sir Roger de Trumpington, from the village of Trumpington, near Cambridge, and said to be the most ancient in existence.

This elicited some valuable remarks from Mr. Wyckham Archer, who suggested, that if the Rev. the Dean of Westminster would permit the stones in the floor of the Abbey to be taken up, there would be found under them many beautiful brasses, which had been turned over during the Civil Wars, for protection. The Bishop of Tasmania undertook to solicit the Dean's permission, observing, that the turning of stones would not be new to him.

CHALK FOR FUEL.—A paragraph on this subject, which was quoted from our pages by all our contemporaries, has led to a letter to *The Times*, stating that, in consequence of the suggestion, in Dunstable, where chalk abounds, the hint has been taken advantage of by Mr. Clarke, chemist, who, after a few experiments, has succeeded in greatly improving the raw material, by drying it in a kiln till the whole of its own watery property is evaporated, after which it is thrown into a vat containing some chemical compound, and, after remaining until it is thoroughly saturated with the preparation, it is redried, and is fit for use, giving an intense heat.

## ANTIQUITIES OF TREVES.

HOUSE NEAR THE PORTA NIGRA.



### ANTIQUITIES OF TREVES.*

HAVING spoken so fully on the principal, or at least the most perfect, Roman antiquity in Treves, in our previous paper, we shall now take a more rapid view of the other erections of the same period, with which this ancient city abounds.

The palace of Constantine is the popular name bestowed on one of the most interesting of these remains. It is built entirely of the ordinary flat Roman tiles, which have a singular effect when used in the construction of so large a building. The mortar between them is of great hardness, composed in the ordinary Roman method, with pounded tile scattered through it, and which renders their buildings all but indestructible. It measures 97 feet in height, and 225 feet in length. It had originally a tower at each angle, but one of them is now down. When perfect, the front was pierced from end to end, with two rows of open, round-headed arches, one above the other; those of the lower tier encircled with two concentric ranges of brick voussoirs, the upper with three. In the tower were likewise similar apertures, disposed in the same manner; but all of them, in later times, have been filled up, and small square windows inserted in them, of the fashion adopted at the end of the 17th century, when the building was converted into an electoral palace. At that time the greater part was destroyed, leaving only now standing the western side of the building, with the north-eastern semi-circular tower, it having originally been a quadrangular erection with similar towers at the angles. Since the occupation of Treves by the French, it has been used as barracks, into which they had converted it. It is now, however, undergoing renovation, and restoration to something like its original purity. Workmen are busily engaged in clearing away the modern additions, and we were agreeably surprised at finding bricklayers employed in pounding tiles, to work in the mortar necessary for the restorations in the style of the older work. It is now said to be the intention of the King of Prussia to convert the buiding into a church for Protestants.

The Thermæ are close to this building, and it has been doubted whether they may not have been originally all one; indeed the palace just described has been called by some writers a mere covered entrance to them, the large open arches all round being a shelter for promenade. Others call it a hippodrome, a basilica, a hall of justice, and a hall of commerce. The thermæ themselves are doubted, and by some called a theatre. It is not easy to describe them in their present ruinous condition, except as a grand mass of building, imposing in decay, and offering much to reflect upon and study.

The Amphitheatre, about which there can be no conflicting opinion, is constructed on the side of a hill, so that the slope on one side forms one-half of the embankment upon which the seats were placed. The seats are now gone, and the building a mere wreck, but the wall is perfect round the lower area, and the trench dug beneath it in the slaty rock, which forms its floor. The entrances are still perfect enough to comprehend those devoted to carriages and horsemen, and those used by foot passengers. The length of the amphitheatre is 219¼ feet, its breadth in the centre 155 ft. The whole of the neighbourhood contains traces of Roman work, and is worth exploration.

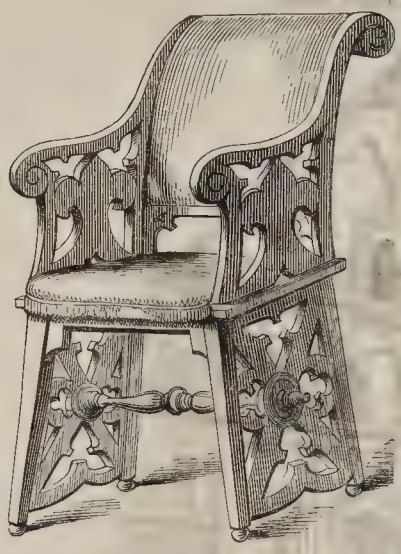
Besides the bridge, the foundation of which is Roman, there is also in Treves two great square towers, said to be the work of that people, one in Diedrich Strasse, the other in *La Cour de la Regence*. The small windows in them are separated by a pillar. They have been believed to be towers of the original Roman wall, but it is now doubted whether they are older than the ninth or tenth century.

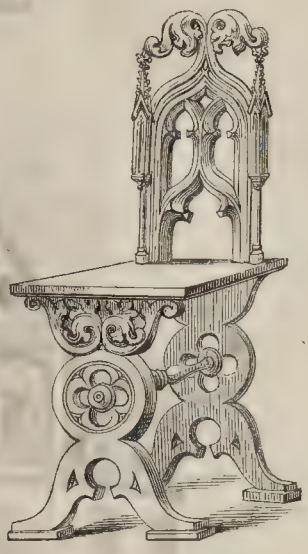
The substructure of the cathedral is Roman, and a careful observer may detect much that is of that age in its walls, as well as some capitals evidently of the same period, imbedded in the more modern masonry of the choir. In the screen at the sides, some interesting discoveries have been made of capitals, ornamental arches, and figures of saints, the work of the twelfth century. All these are particularly curious, as they show the use of *colour* at this time; for the various ornamental enrichments of the arches and capitals are painted in various tints.

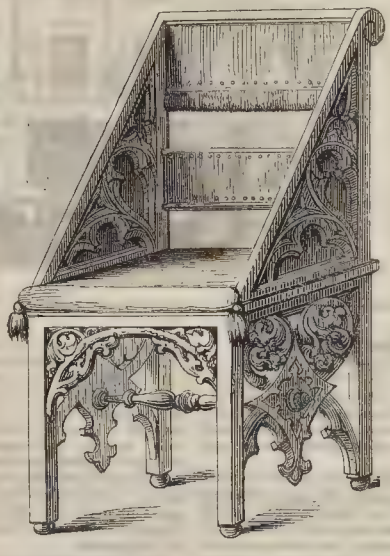
It is not in our plan to give a detail of the other churches within this interesting city or in its immediate neighbourhood. We may say, that the artist, architect, and antiquary will all find abundance to occupy their attention. The ancient cross in the market-place is, however, a conspicuous object, and which tells you in good Latin, "Henricus Archiepiscopus me erexit," in the year 958. Opposite this cross, in the street leading to the cathedral, is the old Hotel de Ville, now an inn, and known as

* See p. 14, *ante*.

## GERMAN GOTHIC CHAIRS.







the Red House. It is an interesting building of the 16th century, with many a quaint figure and motto on it, not the least boastful of which is that which tells you, that Treves existed 300 years before Rome; piously adding, "May it exist for ever, amen."

Of domestic architecture at various periods Treves possesses some curious specimens. The most ancient and interesting is the one we have engraved. It is now a wine shop, and is known by the sign of the Three Kings. It is situated in the street of St. Simeon, very near the Porta Nigra—it is of stone. The lower story has been much modernized by an alteration in its windows. The upper story is in its original condition, and in the Byzantine style, and believed by some to be as old as the 12th century.(?) The detail of this upper part is very interesting; but its simplicity speaks to the eye so forcibly as to render a detailed description unnecessary here. As an example of early domestic architecture it is valuable, and adds another variety to the many specimens given in this journal. F. W. F.

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Mr. Editor,—Everybody must be pleased with the clever representation of the gateway at Treves in your last number.

But it has a few inadvertencies as to detail, which I am sure that its talented author will not be offended at my pointing out; and more especially, since some of them affect the character which this gateway has lately acquired of being a monument of Etrurian architecture.

The first of these relates to the diameter of the columns, which generally is too great; and the second, to the proportions and form of the several members of the capitals in the lower stage, and which M. Schmidt, the city architect of Treves, has demonstrated to be each of the same height, viz., 10 inches, and all of *rectilinear* profile.

I may likewise state, that the small arcade under the apsidal gallery of the 12th century portion should consist of *semi-circular* and not trefoliated pointed arches; and that the St. Simeon of Treves was not the St. Simeon Stylites, who died at Antioch, A.D. 460.

I am, Sir, &c., W. Bromet.

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Damage to Buildings at Bordeaux.—The local journals of the 24th ult. announce that the cathedral, custom-house, and exchange, have been greatly damaged, many other buildings stripped of slates, chimneys, &c., and the suspension bridge over the Reole entirely swept away by tempests.

### GERMAN GOTHIC CHAIRS.

Herr Heideloff, a German architect, who has devoted much attention to Byzantine and Gothic decorations, and has a good reputation in his own country, has contributed to the current number of the *Art-Union Journal* a series of designs for chairs, founded on originals still remaining in the old castles of Germany. We are indebted to the proprietors of that journal for permission to place three of these before our readers.* They all display a trace of Byzantine feeling, and will not altogether satisfy a fastidious critic; still they are valuable, and supply good hints.

The object of the article which accompanies them is to advocate the employment of artistical talent in decorating and furnishing our houses.

* The present number of the *Art-Union Journal* deserves the highest praise. The illustrations alone are worth double the cost of the whole. As a specimen of printing and "getting up" it stands quite alone.

"When Louis, the reigning sovereign of Bavaria," says the writer, "commanded the construction of a new palace, he said to his architect: 'I desire to build a palace which shall be "All Art;" from the architecture to the commonest articles, every thing shall be designed by my best artists; nothing shall be copied; I will have no "upholstery."' This project, worthy of a high and enlightened mind, has been fully carried out; and the new palace, externally and internally, is literally a monument of artistic invention. A grand idea is completed. From the saloon of entrance into the throne room, a gradation of decoration is observed; beginning by simple forms and modest colours, up to the luxuriance of gilding, ornament, and vivid hues.

'I will have no looking-glasses to usurp the places I can occupy with pictures,' was another of the sovereign's commands in the furnishing of his Palace of Art. Thus, every thing is in perfect harmony of style; whatever the style

may be—it is strictly adopted; not an object violates the unity of thought.

In the most magnificent mansions of England this completeness has scarcely ever been attained; there is always some incongruous piece of furniture, some ill-patterned carpet, badly designed curtain cornice, or ugly gilt frame. We are so much accustomed to these 'upholsteries,' that we become blinded to their anomalies, by valuing them only at the great sums they have cost.

Even in the architectural composition of the interior of the principal rooms of such mansions, what 'monstrosities' of proportion, jumblings of character, and violations of forms, are displayed. Lanky pilasters and column patchwork cornices, and clumsily massive chimney-pieces of the purest Carrara marble, carved into repulsive forms, without an atom of skill, much less of design!

It is true, a brighter dawn gently opens upon us, and the interiors of our houses are gradually becoming covered with DESIGNED ornament. Hope is, however, chilled by the certainty, that much of good intention will be wasted by its being consigned to incapable hands. It is not here our province, nor does it suit our present purpose, to investigate all the bearings wherefore—or the under-current of influences which makes attempts sickly and feeble; all comment on the subject may be condensed into a sentence, 'EMPLOY AN ARTIST TO DESIGN, AND AN UPHOLSTERER TO EXECUTE.' You cannot go into a shop and order works of art as you would a portmanteau. Study, cultivation, learning, and talent, are wanting; they form no part of the stock in trade of the stone-mason, the carpenter, or the upholsterer. If, therefore, we would make our houses palaces of art, let us impress upon our minds the noble 'order' of the monarch of Bavaria: 'I will have ALL Art—I will have no upholstery.'"

## THE MASONS' PROVIDENT INSTITUTION.

THIS institution has been formed for the purpose of granting pensions to aged and necessitous members of the trade, their widows, or orphans, and the erection and maintenance of an asylum. In order to raise a fund to carry these objects into effect, subscribers of 10s. per annum, or donors of 5*l.* 5s., are entitled to one vote at all elections, and so on for every additional annual subscription of 10s., or donation of 5*l.* 5s.

The persons eligible to be elected to the benefits of this institution are—masons and sculptors who have been engaged at the business for ten years, and who are fifty-five years of age, their widows, or orphans, and who do not receive 10s. per week from any source, independent of this institution (sick or superannuation allowance from a benefit society excepted, which shall not be considered as a part of their income), and have been members for four successive years by annual subscription, and who shall be recommended by a donor or subscriber.—In the event of any member being totally disabled, either by accident or bodily infirmity, he is eligible to stand as a candidate for the benefit of this institution, although not of the age above specified.

Until funds are available for the erection of an asylum, the sum of 7s. per week is to be allowed to the successful candidates.

The committee have just now issued the rules of the society, and while they properly say, "It is a duty we owe not only to ourselves, but to our wives and families, to make that provision which individually we cannot, but collectively, in this institution, is at our command;" they appeal for assistance to their employers and to architects, as their natural protectors.* In the list of donors already published are the names of Mr. Wakley, M.P., Messrs. Freeman, Piper, Nowell, Jackson, Baker, W. Cubitt, T. Cubitt, Seth Smith, W. Harrison, and other well-known builders.

* "In appealing to those who have been justly termed our natural protectors, the 'Architectural Profession,' whose skilful and elaborate designs shed a lustre over and adorn our country, the promoters of this Institution trust they may not be thought too presumptuous in seeking their support, considering the masons' trade closely allied to that eminent profession. When we contemplate those noble edifices which have been erected, and the public works in progress, made prolific by the aid of masonry, we venture to indulge the hope that the industrious mason has some claim upon their patronage and support, and that those charitable and kindly feelings which have ever actuated the profession, will be extended to watch over and protect our Institution."

## SOME REMARKS ON BRIDGES.*

WESTMINSTER BRIDGE, by Labelye, in 1740-47, may be considered the first example of extensive structures of this kind. It consists of 13 semicircular arches (the centre of which is 75 feet span), 1164 feet long. It was originally intended for a wooden bridge, and was partly commenced on this principle. It was a great work at the time, but, as might have been expected, contained defects, particularly in the foundations, which at that time were but imperfectly understood, and have suffered much by the scour of the current. It will probably be rebuilt in a short time. Caissons, or water-tight chests, were first introduced there for the purpose of founding the piers below the level of low-water. Previous to this, the principal existing bridges consisted of a number of small Gothic, or of circular arches, with rough piers of masonry built either upon a foundation of loose rubble stones thrown promiscuously into the river until sufficiently high and solid, or upon timber platforms resting upon piles surrounded by large bulwarks of timber, filled with loose stones, called starlings, which materially contracted the water-way where they were placed, and, by causing increased rapidity in the current, created great obstacles to the navigation, as well as to the drainage of the adjacent country. Of this, the well-known examples of Old London Bridge, those at Newcastle-upon-Tyne, Rochester, and Belfast, may be mentioned. All these, with the exception of Rochester Bridge, are now removed, and are replaced with others, constructed upon the modern improved principles. Westminster Bridge was followed by that of Blackfriars, by Mylne (1760-71), consisting of 9 semi-elliptical arches, the largest of which is 100 feet span, and 41 feet 6 inches rise. The total length of the bridge is 995 feet, and 45 feet wide. Here the elliptical arch was introduced about the first time in this country. Smeaton's bridges of Coldstream, across the Tweed, in 1763, composed of 5 circular arches, the largest of which is 61 feet span; that over the Tay, at Perth, in 1766, of 9 circular arches, the largest of which is 75 feet span; at Hexham, over the Tyne, in 1767, of nine circular arches, the largest of which is 52 feet span, and others, for that period, were works of considerable magnitude. These were followed by numerous smaller works all over the kingdom, more remarkable for convenience and utility than for any peculiarity in their construction worthy of notice, until in 1809-1817, when Waterloo Bridge, across the Thames, consisting of 9 equal semi-elliptical arches, 120 feet span each, and 35 feet rise, was built of granite, in a style of solidity and magnificence hitherto unknown. There, the elliptical arch, with inverted arches between them, to counteract the lateral pressure, was carried to a greater extent than in former bridges; and isolated coffer-dams upon a great scale in a tidal river, with steam-engines for pumping out the water, were, it is believed for the first time, employed in this country. The level line of roadway, which adds so much to the beauty as well as the convenience of the structure, was there adopted. The bridge across the Severn at Gloucester, in 1828, by Telford, is worthy of remark, as being the first with one arch, of 150 feet span, like those of the bridge across the Seine at Neuilly, near Paris, by Perronet, where the interior of the arch is elliptical and the exterior circular.

New London Bridge (1825-31), consisting of five semi-elliptical arches, viz., two of 130 feet, two of 140 feet, and the centre 152 feet 6 in. span, and 37 feet 6 in. rise, is perhaps the largest elliptical arch ever attempted. The roadway is 52 feet wide. This bridge deserves remark on account of the difficult situation in which it was built, being immediately above the old bridge, in a depth from 25 feet to 30 feet at low water, on a soft alluvial bottom, covered with large loose stones, scoured away by the force of the current from the foundation of the old bridge, the whole of which had to be removed by dredging, before the coffer-dams for the piers and abutments could be commenced, otherwise it would have been extremely difficult, if not impracticable, to have made them water-tight; the difficulty was further increased by the old bridge being left standing, to accommodate the traffic, whilst the new bridge was building, and the restricted water-way of the old bridge occasioned such an increased velocity of the current, as materially to retard the operations of the new bridge, and at times the tide threatened to carry away all before it. The great magnitude and extreme flatness of the arches demanded unusual care in the selection of the materials, which were of the finest blue and white granite from Scotland and Devonshire. Great accuracy in the workmanship was also indispensable. The piers and abutments stand upon platforms of timber resting upon piles about 20 feet long. The masonry is from 8 feet to 10 feet below the bed of the river.

* From Sir John Rennie's address to the Engineers.

I will conclude this division of the subject with the celebrated bridge across the Dee at Chester. It consists of a single arch, the segment of a circle 200 feet span, with a versed sine or rise of 42 feet, which is the largest stone arch upon record. The arch stones at the crown are 4 feet 6 inches deep, and 7 feet at the springing, and the abutments on both sides of the river are founded on the new red sandstone. The centre for building the arch was remarkable for its simplicity, strength, and rigidity, by which means the greatest effect was produced by the smallest quantity of timber, and any change of form, so prejudical in centres, was prevented. This fine structure is due (it is believed) to the combined talents and energies of the late Mr. Harrison, the architect, of Chester, who made the original design; Mr. George Rennie, who equilibrated the arch, and gave the proper dimensions of the voussoirs and form and dimensions of the abutments, the modes of constructing them, and designed the centre, the original model of which is now in our gallery; and to Mr. Jesse Hartley and Mr. Trubshaw, who worked out the details, and carried the whole into effect.

A proper theory of the equilibrium of the arch, which shall satisfy all the conditions of the question, when applied to practice, may be said to be still wanting, though much valuable information may be derived from the scientific works of Hutton, Attwood, Moseley, Gwilt, and others, on the subject.

Oblique or skew bridges have but recently obtained extensive use. Chapman built some in Ireland many years ago, and wrote an account of his mode of constructing them. On railways they were introduced by Stephenson, and are now generally employed. Buck's excellent treatise on the principles and practice of their construction greatly facilitated their execution.

## DESTRUCTION OF LUSK CHURCH, COUNTY DUBLIN.

A SCANDALOUS act of vandalism has just been committed on the ancient church of Lusk, and that by persons who should have been the first to protect this venerable relic of early days.

An effort has been made by some members of the "Council of the Celtic Athenæum," to stop the progress of destruction, but in vain. Several letters were addressed by the secretaries to the Ecclesiastical Commissioners, against taking down the old church, the site affording ample room for the new one. No answer being returned, *after a fortnight*, a personal interview was sought from the architect, who referred the matter to the secretary. At last the fact is announced, "the fine old abbey church that stood the test of centuries of wind and weather, is now one heap of ruins." Two curious monuments of the 16th century lie with the "*rubbish*." The Commissioners' secretary, 'tis true, gave the very polite hint, that "the monuments can be re-erected in the new church *at the expense of the parties interested*."

Lusk Church was an old fabric at the dissolution of religious houses, and seems to have been built adjoining a still more primitive structure,—the word "lusk" being derived from the Irish word *luska*, which signifies a vault. To shew the *notions* our architects hold in reference to these ancient churches, I shall merely quote a sentence from the contractor's specification for the new church of Lusk: "The old church is to be taken down, the materials to become the property of the contractor, and the *rubbish* to be removed or levelled."—I am, Sir, &c. J. K.

Gorey, 5th Jan. 1847.

## NOTES IN THE PROVINCES.

The Taunton people, albeit somewhat slow to move, even in the now pretty fairly worked and polished groove of municipal and sanatory reform and improvement, have at length summoned up activity and spirit enough to *resolve* on an "application to Parliament for an Act for repairing, lighting, watching, watering, cleansing, regulating, and otherwise improving this town, and for improving and regulating the market-place." Advertisements have been issued, and it is to be hoped that the Tauntonians will not break down beneath the accumulative weight of such a series of simultaneous resolutions, nor afford us any longer grounds for taunting them with the occasionally futile and retrogressive progress with which their long projected movements have hitherto dragged their slow length along. Attention, it seems, has of late, moreover, been pointed to the state of the drainage of the town; not that there is any want of common sewers alleged; for "there are plenty of them running underneath the street,"—but that "the inhabitants are not allowed to cut into them;" so that, in fact, they are like a colon without follicles,—a great gut without excretory ducts,—an organism much more characteristic, certainly, of the folly and absurdity of man himself, than of the wisdom and simplicity of nature in his own formation. —— It has been determined to advertise for contract tenders for either rebuilding or widening the West-bridge at Sherborne.——Mr. Lewis, the sculptor, of Cheltenham, has just completed for Lord Ellenborough, a column of Caen stone, for erection at Southam, to commemorate the achievements of the British forces in India, during the period of his lordship's government there.——An infant school, with a dwelling-house attached at either end, has been erected at Ilford, by Messrs. Curtis, the builders, of Stratford, from a design, in the Elizabethan style, by Mr. Mason, the architect, of Lime-street, city, and at the expense of a lady, Miss Ellen Thompson, of Ilford. ——A separate note from Birmingham will be found in our present impression. ——It is said that a new railway station is to be erected close to the west bridge at Northampton, so as greatly to increase a traffic already so much beyond what it was of old intended for, that the trampling, kicking, and over-running of pedestrians by horses is a thing of every day occurrence. A reverend vicar of the vicinity recommends a boarded pathway swung on chains or fixed to the wall, as the most effectual and cheapest plan of remedying the evil. A like case occurred at Stratford-on-Avon, where the traffic along Sir Hugh Clopton's bridge was accommodated, a few years since, by a path of open iron-work. There could be no difficulty, therefore, in adding to the exterior of the walls a footpath more substantial than any wooden one: even a stone flooring indeed might be laid down.—— Old Weston Church, says the *Cambridge Chronicle*, has been undergoing considerable repair according to plans designed by, and executed under direction of, Mr. Allen, the architect of St. Ives.——Alterations in Springfield Jail, according to the *Chelmsford Journal*, have been made, for which the contractor was lately ordered to be paid 2,000*l.*——It is proposed to erect a new bridge, as a substitute for the present temporary one, between Yarmouth and Southtown.——A chapel has been built at Aycomb, near Hexham, for the alternate use of Independents, Wesleyans, and Primitive Methodists.——The Earl of Carlisle has directed plans to be prepared of his land in the vicinity of the railway station near Morpeth, to be laid out in streets or villas.——The Commissioners of Woods and Forests, who are to be in Edinburgh on the 26th instant, are to have estimates and proposals for the new corn market there brought under their notice.——The *Cork Constitution*, speaking of certain abuses in the public work system says, that in some districts it is difficult to get even masons to do a day's work. In Mallow lately, when some small job was required at a public oven, which the relief committee had judiciously opened in order to provide the poor with bread, not a mason could be had. They were all employed as superintendents, &c., on the roads, and not one of them, though offered a day's wages for the work of a few minutes, would consent to go, and only that the committee succeeded in borrowing one (from a Government officer it is said) they would have suspended operations altogether, and have left the needy to "the regular course of trade." Complaints too still continue of the peasantry quitting their native employment on the land, for employment on the public works, so that the small farmers are abandoning cultivation altogether; and even, it is sherwdly suspected, following the example of their poorer neighbours, in many cases, applying for public work without much occasion.

## DALSTON INSTITUTION COMPETITION.

Sir,—When the advertisement for designs for the Dalston Institution appeared (on the 10th of October last, although it is dated the 2nd), I had some leisure; I therefore wrote to the secretary, Mr. R. Simons, for the requisite information, complaining, at the same time, that the time given (from the 10th to the 28th of October) was extremely limited. After some days' delay, I received his instructions, which included the size of the required building, the sum to be expended (which was not to exceed 1,500*l.*), and a remark, that an elaborate design was not required, and that it must be in the Italian style. I prepared a design in the Italian style, and forwarded it to Mr. Simons. It was designed in as simple and chaste a manner as possible, having an eye to the 1,500*l.* It was a design that would admit of considerable enrichment if it was thought requisite. As soon as it was received, Mr. Simons wrote to me to inquire what sum it would take to execute my design. I told him 2,000*l.*, or it might be reduced to 1,800*l.*, executing it in a plainer style. I told him, however, that no building of such a size as the one required, could be executed for a less sum than 2,000*l.*, if it had any pretensions whatever. My design was returned. I should not have troubled you with this letter, only I see a letter in The Builder of last week, complaining of the manner in which the committee have acted. For my part, I have determined never again to compete unless I know something of the respectability of the advertising committees. As "Alpha" states, the prettiest picture has no doubt been chosen, and a design to cost, not 1,500*l.*, but 3,000*l.*—I am, Sir, &c.,

J. Blenkarn.

Pellow House, Ollerton, Notts, Jan. 10, 1847.

Another correspondent has forwarded the following list of the tenders delivered *for the carcass only*.

| | Main building. | Theatre. |
|---|---|---|
| Brake | £1,765 | £1,243 |
| Dean | 1,693 | 1,312 |
| Plaskett and Shelton | 1,692 | 1,300 |
| Wood | 1,685 | 1,300 |
| Knight and Son | 1,677 | 1,247 |
| Wm. Smith | 1,660 | 1,333 |
| Trego | 1,660 | 1,273 |
| Glenn | 1,642 | 1,208 |
| Kebbell | 1,635 | 1,250 |
| G. J. Carter | 1,624 | 1,189 |
| Edw. Carter | 1,600 | 1,200 |
| Rider and Son | 1,584 | 1,170 |
| Yeoman | 1,579 | 1,183 |
| Wm. Higgs | 1,539 | 1,147 |
| Burton | 1,522 | 1,125 |
| Cooper and Davies | 1,600 | 1,000 |
| Elston and Son | 1,442 | 1,264 |
| Pegrum | 1,459 | 1,069 |

Quantities furnished by Charles Fowle.

The lowest amounts, in the whole, to 2,528*l.*, the highest to 3,008*l.*!

Brimington Church.—This church, which is now being rebuilt from designs and under the superintendence of Mr. Mitchell, architect, Sheffield, is in the decorated style which prevailed in the 14th century. The plan is a double rectangle, having a nave with clerestory 57 feet by 20 feet, side aisles 57 feet by 12 feet, and chancel 25 feet by 17 feet, with the old tower at the west end. From want of funds it was thought necessary to reduce the expenditure, by omitting the clerestory, thus materially injuring the effect of the design. It is now, however, hoped that a sufficient sum may be raised for retaining this part of the original plan.

## THREATENED REMOVAL OF WESTMINSTER BRIDGE.

A public meeting, numerously attended, was held on Monday evening last at the Westminster Literary Institution, to consider the proposed bill for the removal of Westminster-bridge. All were unanimous in condemning the monstrous proposition, in favour of which, indeed, we have not yet heard one voice raised.

The chairman, Sir de Lacy Evans, said, in the course of his speech, that a committee of the House of Commons had recommended the erection of a new bridge on the same site as the present. It was stated that no less than 20,000,000 of people, and from 4,000,000 to 5,000,000 of horses, passed over this bridge in the course of a year, and the numbers had greatly increased of late years. There was greater traffic over Westminster-bridge than over any of the others except London-bridge. Mr. Barry, the architect of the new houses of Parliament, had prepared the plan of an iron bridge, to cost 260,000*l.*; but the committee had recommended a stone bridge, the expense of which was estimated at 360,000*l.* The bridge estates were expected to furnish more than 170,000*l.* of that sum, so that the expense to the public would be comparatively small. To the general astonishment, it appeared that some parties had now got the Commissioners of Metropolitan Improvements to sanction the introduction of a bill to abolish Westminster-bridge, to stop up this means of intercourse, to annihilate all the important interests connected therewith. He had now been nearly seventeen years in Parliament, and had never met with any thing so extraordinary. He thought Lord Morpeth had been grossly imposed on, or he would not have lent his name to such a proposal.

The Dean of Westminster said he attended to oppose it, as well on account of the interests of the public as of the chapter, of which he was the head. Property would be ruined, improvements stopped, and the labouring classes greatly injured.

Mr. B. Hawes, M.P., said he would oppose the bill in every stage. As to the Woods and Forests, he did not believe they were promoters of it. It was a private bill for private interests.

The following resolutions were passed:—

"That the proposed abolition of Westminster-bridge, and the application of funds appropriated by Parliament for its maintenance, to the erection of another bridge near Charing-cross, is unjust and injurious to the public, to the parishes of St. Margaret and St. John, and to individuals, for the following principal reasons:—Because it would abruptly close the long-established thoroughfare from Surrey to the city of Westminster, St. James's Park, and the daily-increasing neighbourhood of Pimlico and Chelsea; and leave no communication whatever across the river west of Charing-cross, free of toll; and also, because the cost of approaches to a bridge on another site alone would suffice for the erection of a new bridge on or close to the present site. Because it will entirely put a stop to the opening of new streets through the notoriously crowded, ill-drained, and dilapidated portions of these parishes (one of which streets has already received the sanction of Parliament), and prevent all improvements therein. Because the streets in connection with the present bridge were laid out by commissioners appointed by Parliament, and a very large amount of property has been therein created, under an implied agreement that a bridge should be maintained by Parliament on this spot for ever, and that the substitution of a bridge on a distant site (involving an enormous depreciation in the value of such property, and almost ruin to many individuals) would be a breach of faith which ought not to receive the sanction of the legislature.

"That independently of the most important considerations contained in the former resolution, and of the question, financial, local, and architectural, involved in the proposal for erecting the bridge near Charing-cross, and making the approaches thereto, this meeting is of opinion that its substitution for a bridge on the present site would be productive of manifest public inconvenience, because it would throw the enormous carriage traffic of Westminster-bridge, a portion of that now using Waterloo-bridge, and ultimately the traffic from all the south of England railways, on a spot which is now at times impassable by reason of the immense traffic from the city to the west end and western suburbs of the metropolis.

"That a copy of the foregoing resolutions be forwarded to the Commissioners of Westminster-

bridge, and that the members of the city of Westminster and the borough of Lambeth be requested, both as members of the commission, and as our representatives in Parliament, to oppose the appropriation of the property set apart for maintaining the present bridge, to the erection of a bridge on a distant site; that a committee be formed to consider the best means of opposing the threatened measure, and if expedient, in concert with other opposing parties, that a subscription be commenced to defray the necessary expenses, and that a committee be appointed, with power to add to their number."

## NOTE IN BIRMINGHAM.

POLLUTION OF WELLS: PLANS FOR LUNATIC ASYLUM.

THE sanatory condition of the town of Birmingham is at present engaging the serious attention of the authorities there. It has been found, that fæcal and putrid fluids are constantly sinking into the ground, from innumerable privies of an improper or imperfect order; and that these must have so poisoned the very sources of the town-supply of water, that "in all the wells in Birmingham more or less of ammonia is to be found in consequence." And it would be well if nothing worse than ammonia could so penetrate; but, even independently altogether of the intolerable idea of the thing, there cannot be a doubt that the wells must be impregnated with far more deleterious matter than mere ammonia. Be this as it may, however, the subject is not only at present engaging serious attention, as we have just observed; but, strange to say, "a French Count with his Engineers" have gone to Birmingham, for the purpose of offering their services towards the effectual removal of the causes of this serious evil. The fact is, this French count has taken out a patent, both in France and England, for the chemical reduction of manure into dry and scentless solids; so that Mr. Higgs has need to look to his laurels and his patents. This enterprising nobleman proposes, for a consideration of course, to divide every privy in Birmingham, at his own expense, into two distinct receptacles, one for ashes, &c., and the other for the more valuable chemical manure; which latter he will then be ready to convert, "by a chemical process, into a dry, portable manure," within the "very privies" themselves; thus fixing the deleterious gases and fluids at once into innoxious matter, removable forthwith, without the slightest injury to olfactory sensibility or to health; but, on the contrary, with the expeditious and effectual annihilation of a fertile source of serious injury to both; and that, too, without awaiting the formidable obstacles in the way of the construction and establishment of any general system of drains or sewers. The "covering, dividing, and puddling, of the privies," and the erection of the "chemical manure factory," will, of course, be very expensive; but the count, although he has not yet come to terms with the Birmingham commissioners, counts, of course, upon a remunerative profit to himself, as well as to the community at large. The city of Paris, he informs them, reaps an annual harvest, from such fertile sources, of no less than 500,000 francs, or 20,000*l.*, even without the operation of the save-all chemical scheme proposed. The annual expense of the working of this new scheme at Birmingham, exclusive of the heavy expense to be incurred by the count in the establishment of his "factory," and the improvements of his depôts or privies, he estimates at 20,000*l.*, and he expects to be sufficiently remunerated for the whole of this Herculean or Augean labour and expense, by a mere "premium for extraction, either by a fixed price per ton, or by a yearly sum, to be paid by the town to the company," under a "contract of considerable duration."——The erection of lunatic asylums,—a subject at present engaging much interest and discussion in various towns and counties throughout the empire,—is, at Birmingham too, dividing the attention of the municipal authorities with the other sanatory measures just alluded to;—the *other* sanatory measures we say, since the restoration of the insane to a sanatory state is, of course, a subject deeply and most intimately connected,—as indeed, is the occurrence of insanity itself,—with the general question of the sanatory state of towns. The architect's plans for the proposed asylum at Birmingham have been presented to the council. They were prepared, say the committee, without an existing asylum as a model; but there is good reason to think, they add, "that, if approved by the council, the asylum would be recommended as a model for the kingdom." They "forbear, however, to append the architect's estimate to their report, until the tenders for the execution of the work have been supplied." A member of council, in expressing his surprise that the probable cost of the building had not been stated, remarked that the towns of Liverpool, Manchester, Leeds, and Sheffield, had not decided upon erecting an asylum; and that the county of Hereford, and the city of Hereford, had agreed with three other counties to erect one jointly. The Birmingham plans have been approved by the Commissioners in Lunacy.

## THE DECORATION OF RAILWAY STATIONS.

FELIX SUMMERLY has addressed a letter, through the columns of the *Athenæum*, with the purpose of shewing "how the patronage of art may come legitimately within the scope of railways." He says:—"Already, the great railway stations now in progress of building or in contemplation—at Euston-square, at Birmingham, at Liverpool, at Hungerford-bridge, at London-bridge, at Shoreditch, at Oxford, at Carlisle, and elsewhere—are destined to rank among the most marked architectural features of our times, provided the natural wants of the buildings are permitted to direct the expression and sentiment of their architecture. A railway station, it must be admitted, is as susceptible of architectural character as a church, a palace, a clubhouse, or any other building. The ability of the architect may make stations at once symmetrical and beautiful; and if he be a true inventive genius, he will not be discouraged by the seeming difficulties of dealing with the apparently awkward proportions of railway stations. But the architectural forms of stations are not my special theme. My purpose is to shew what a noble opportunity these great halls of meeting afford for promoting the decorative arts of painting and sculpture: an opportunity for reviving that natural union of decoration with architecture, which we find to have existed in the public buildings of all nations,—among the Egyptians, the Greeks, the Romans, and throughout the middle ages in our own country, until the advent of puritanism."

"Decorate the principal railway stations with paintings and statues,—coloured windows and mosaic pavements; and the multitudes awaiting the arrivals and departures of the trains, will thus be educated in art with the least possible parade of being so taught. An opportunity will be afforded to gratify and improve busy, hard-working thousands, especially of the manufacturing class, who have no means of access to private picture collections, and little leisure or opportunity to visit our one National Gallery."

"What a noble work it would be to have a series of frescoes, illustrative of communication and commerce, adorning the walls of the waiting rooms of Euston-square or Birmingham,—the windows resplendent with stained glass, and the floors decorated with mosaic pavements! But the cost?—some may ask, hesitatingly. At once let me say, that a railway should not be asked to decorate its stations with high art until it pays a dividend of 10 per cent.

The cost, in fact, would fall upon the public itself,—and be by them contributed welcomely for their own benefit; though the work would be instigated and promoted through the liberality of the shareholders, who would obtain all the credit justly due to the enterprise. Suppose 20,000*l.* were so applied,—spread over a period of three years, if necessary. This amount would be much less than 1d. in the pound on the gross receipts of the London and North-Western. It might, I think, be proved, if it were necessary to do so, that a station made highly attractive for its art would directly benefit the traffic. The passport to the picture hall would be the passenger's ticket. Railway shareholders are proverbially most liberal and generous, in spite of the idle imputations of Mr. Morrison or the taunts of "Cato;" and if Mr. Glyn thought it necessary to say to his brother shareholders at the next general meeting, "We propose to adorn our principal stations in the best manner of which British art and skill are capable—to give to our customers such architecture, paintings, sculpture, and decoration, as shall not be surpassed in England, and shall rival those of the stations in Germany"—I believe the meeting would welcome the proposal with cheers.

What corporation in the past history of the world can boast, like the London and North-Western, of an annual receipt of more than a million and a half of pounds sterling? Surely, the King of Bavaria, with his Glyptotheca—or Leo the Tenth, when he caused Raffaelle to decorate the Vatican—or the Doges of Venice—had no such resources at their command. And surely we have painters equal to the work—Mulready, Maclise, Eastlake, Edwin Landseer, besides Etty, Cope, Herbert, Dyce, and others. If railway companies would enter upon this noble course, we should soon have our public buildings rivalling those of modern Germany and ancient Italy. It would only be following the example of the church and of the ancient guilds."

## ARCHÆOLOGICAL MEETINGS.

ON Friday, the 8th inst., the *Archæological Institute* met at four o'clock in the afternoon, at their rooms in the Haymarket, and the *British Archæological Association* at half-past eight, in Sackville-street.

At the *Institute*, Mr. Stapleton was in the chair, and the subject fixed for discussion was "The works of the early goldsmiths." Mr. Hudson Turner, secretary, introduced it by some interesting remarks, shewing, among other points, the effect of the early goldsmithery on the artistical work of the period, on which a discussion followed. Mr. Newton read a description of some extensive Roman remains recently discovered at Gatterly Grange, near Catterick Bridge, Yorkshire.

At the *Association*, Mr. Pettigrew was in the chair, and the attendance numerous. Mr. Roach Smith read a communication from Matthew Bell, Esq., on the excavations recently made at Bourne Park, near Canterbury, where numerous discoveries, from time to time, have been made, of high interest, under the direction of the president of the association, Lord Albert Conyngham.

Mr. Wansey exhibited two querns, or hand-mill stones. They were found about twelve feet from the surface in excavating on one of the estates of the Fishmongers' Company in Ireland. An elaborate paper, by Mr. Jones, followed, on the Eumenides of Æschylus; a subject closely connected with the singular piece of sculpture discovered some months since in the City stone-yard, by Mr. Prine, and which, notwithstanding the exertions of the association, is in danger of further mutilation or entire destruction. The fragment in question represents the three mythic personages often found represented on works of art of that period, particularly in Germany. The remainder of the evening was occupied with discussions relative to cromlechs, and other early sepulchral remains found in England; in which Messrs. White, Wright, Keets, Fairholt, and Godwin, joined.

A question of considerable importance was mooted, as to the asserted sale from the British Museum, of metal copies of medals and coins, so closely resembling the originals, as not to be discriminated by the best judges. This certainly ought not to be permitted.

THE DRY DOCK, MALTA—commenced by driving the first pile May 10th, 1842, under the plans of Mr. Scamp, carried out by Mr. Walter Elliot, is fast approaching towards completion. The extreme length, from the gates to the centre of the bow, is 274 feet, and to the square 222 feet; the width 82 feet; and the depth from the level of the water 25 feet. It is constructed of limestone, principally from Gozo, being less porous than any other stone found in these islands. Until recently, there were about 2,000 persons at work in the quarries or elsewhere connected with the dock, having in their families about 5,000 souls. Now, however, there are only 300 employed. The first class masons receive 1s. 4d. a day; second class, 1s. 2d.; third class, 1s. 1d.; labourers, first class, 1s.; second class, 10d. The cost of the dock, it is estimated, will be about 90,000*l.*, independently of factories, &c., which are not yet estimated.

### THE IMPERIAL ASSURANCE OFFICE COMPETITION.

We mentioned some time ago, that certain architects and *others*, had been invited to submit plans for a new building for the purposes of this company, on a site adjoining the Hall of Commerce in Threadneedle-street, City. Eight designs were, we believe, submitted; and Mr. John Shaw being called in to assist the directors in the selection, the first premium was awarded to Mr. Gibson, and the second to Mr. Christian.

### PREMIUMS FOR INVENTIONS AND DESIGNS.

The council of the Society of Arts offer the following premiums, amongst many others:—

1. A prize of ten guineas, with the Society's medal, for the effective ventilation of private rooms or buildings designed for large assemblies.

2. *The same*—for an improved method of preventing the emission of noxious vapours from the gratings of sewers, which shall permit a free passage of the sewerage, and provide against bursting the drains.

3. *The same*—for a specimen of printing in distemper by blocks, so as to "keep register" more perfectly, and produce finer specimens of art in paper-hangings, than by the ordinary methods.

4. *The same*—for the best application of glass in the construction of roofs.

*The same*—for the invention and application of a cheaper kind of glass than any now in use.

5. A prize of five guineas, with the Society's medal, for the best original pattern of a paper-hanging for an ordinary sitting-room, to be printed with not exceeding four blocks. The design to be full size.

*The same*—for an ornamental design, of a geometrical character, suitable for a roller window blind.

6. The Society's gold medal—for the finest specimens of Irish marble suitable for decorative purposes.

They also offer their gold and silver medals for original designs in architecture, and of architectural ornaments or details, and drawings of existing buildings, including geometrical elevations.

## New Book.

*Old England's Worthies; a Gallery of Portraits from authentic sources.* Cox, King-William-street, Strand.

The twelfth number of this very cheap book, published on the 1st of the present month, completes the work. It contains in the whole 72 portraits of eminent statesmen, lawyers, warriors, men of science, and artists; with twelve illustrative engravings in colour, and well-written biographies, with head-pieces. It makes a handsome as well as interesting volume, well deserving of a large circulation. It was originally published by Mr. Knight, but by a recent arrangement has passed into the hands of Mr. Cox.

Projected Works.—There are advertisements in the current newspapers, for contract-tenders for building an extensive carriage bazaar and coach manufactory at Southampton; razing and rebuilding a house at Gravesend; constructing two reservoirs, part of an aqueduct and branches, and other works of the Bristol Water Works; repairing roads in Staffordshire; and (175 miles) in Herefordshire; rebuilding and repairing 5 bridges in Haddingtonshire; also, for the whole railway works, in separate divisions, of 5 and 6 miles, of Bristol and South Wales Junction; 5 and 11 miles of Oxford, Worcester, &c.; 5, 8, and 13 miles of South Wales; 2, 7, 1, and 4 miles of Monmouth and Hereford; 20 miles of Newcastle and Berwick (Kelso), in two divisions; 6 miles of Edinburgh and Bathgate, in two divisions; 19 miles of South Eastern; 2nd and 3rd contract of Rugby and Stamford; portion of Fleetwood and Preston Junction, and widening Preston and Longridge at Fulwood; also, for widening 600 yards of Greenwich, and enlarging London Station; building and finishing stations at Monkwearmouth and Newcastle; 5,700 square yards platform, and 10,000 super. yards roofing, at Leeds Station; and for 2,000 coal waggons with wooden bodies, for Midland Railway, &c.

## Correspondence.

### THE BUILDINGS ACT "CONVENIENCES,"—THE DALSTON COMPETITION.

Sir,—"An Old Architect" complains, in his letter in your number for this week, of the want of urinals in our streets. I beg to say, that I think the Official Referees have endeavoured to remedy this evil; I mean by the interpretation they have lately put on the portion of the Act relating to projections from the fronts of houses, as it is quite clear that, if their decision on this point is to be abided by, whenever one person building wishes for cornices or other projections, and sets back his front from the general line of building to obtain them (which he will have to do, supposing his neighbours value the space more than appearance), a corner will be obtained, which will be extensively used for the purposes alluded to.

While addressing you, allow me to mention that, like your correspondent "Alpha," I applied for the particulars issued by the committee for the Dalston Literary Institution, but, unlike him, I did not send in, as I was quite convinced that what they were asking for could not possibly be done for the money proposed to be expended.—I am, Sir, &c.

Jan. 8, 1847. G. R. W.

### ELECTRIC TELEGRAPH.

Sir,—Your correspondent, A. D., has directed your attention to an ambiguous sentence, which has accidentally crept into the account of the electric telegraph, given in the "Engineers and Contractors' Pocket Book." As it was the intention of the writer of that little article to convey correct ideas on the subject of electro-telegraphy, so it is now his wish to remove any misapprehension which may have been caused by an unguarded expression.

The passage in question would have been more correctly worded, had it stood thus:—"If he *move* half round *the needle*, so as to present his back to it," &c. In this case, no wrong conclusion could have been formed. All that was intended by the introduction of this passage was, the explanation of the fact, that the position of the wire, whether above or below the needle, and the reversal of the electric current, would have equal influence in determining the side to which the needle would be deflected.—I am, Sir, &c.

London, Jan. 12, 1847. E. C. P. B.

### TO OPEN CARRIAGE GATES.

Sir,—I should be glad if some of your numerous correspondents will inform me, as to the best and cheapest method of opening a large carriage gate (made of wood) from a lodge, without coming out of it. I have thought of several methods, but none seem to be quite the thing I could wish.

I am, Sir, &c., Henricus.

The Wood Trade.—Churchill and Co., in their annual circular, just issued, say the trade in wood for 1846, after much vacillation during the spring and summer, has closed in an improved and healthy state, with ample evidence that the consumption of the United Kingdom continues on the high scale of 1846—which had far exceeded all previous years. They estimate the comparative annual importation and consumption as follows:—

| Importation of wood to the United Kingdom For the years.... | 1843. | 1844. | 1845. | 1846. |
|---|---|---|---|---|
| In loads ..... | 1,375,238 | 1,558,612 | 2,054,528 | 2,041,000 |
| Entered for home consumption in the same years. | 1,365,025 | 1,543,060 | 2,009,731 | 1,958,000 |

It appears that the colonial wood trade is not curtailed by the abatement of protective duty, but, on the contrary, is progressively increasing. The quantity of square timber of all kinds brought down to the port of Quebec during 1846, is found to exceed all former periods, amounting

In 1846 to 37,404,409 cubic feet
„ 1845 „ 27,749,094 „
„ 1844 „ 17,850,891 „

Monument to Sir Charles Morgan.—A considerable number of designs were submitted to the committee in competition; from these they selected a model by Mr. Evan Thomas, of London. It consists of a sitting figure of the baronet, on a tasteful pedestal, the sides of which are decorated with agricultural emblems in high relief.

## Miscellanea.

Public Cooking Ovens for the Working Classes.—We derive the following description from a recent Austrian publication. "Public cooking ovens have been established amongst the Jewish community at Prague for years past: this sect of religionists deserve the credit of everywhere maintaining their own poor. The construction and working of these ovens is the following:—They are common baking ovens, of round or oblong form, as best suits the locality. Their external wall, however, is furnished with a number of moral shelves and niches, the use of which shall be presently explained. They are heated and open to the public at a very early hour, when (at Prague, at least) the working people go to their work. Hither, therefore, they bring their meals, either for breakfast, but most usually dinner or supper, after the work of day has been performed. The cook receives their dishes, and places on them a label, whose utility is particular, and must be briefly explained. The people bringing their meals for preparation, may have them returned at any reasonable hour; some even wait for them. But suppose a person brings a dish early in the morning, which he does not want but at night, then the cook places in it one of the many tin labels at hand, on which all hours of day and night (with their fourth divisions) are inscribed. Thus, a person wanting his meal at a quarter past nine P.M., a label to that effect is placed on the vessel. The charge is from one to four farthings per dish, according to size and trouble required. If the person does not call at the appointed hour, the meals are kept warm in the above shelves."

Norfolk and Norwich Archæological Society.—The annual general meeting of this society was held at the Museum, Norwich, on Thursday last. The Venerable Archdeacon Collyer was unanimously called to the chair. —The Reverend R. Hart read a paper descriptive of the wood carvings exhibited by Mr. Back. They had been brought from Belgium some time ago, and Mr. Hart read several descriptions of similar carvings in some of the continental churches, in order to identify the position they had occupied, and the purposes for which they had been intended. He was of opinion that they had been used as ornaments to the pulpits. He could not assign a later date to them than the end of the 17th century. Four of the carvings represented an angel, lion, lamb, and eagle, typical of the four Evangelists. Others represented St. Ambrose, with his symbol, a bee; St. Jerome, with a lion; St. Augustine, with burning heart, and St. Gregory the Great with a triple crown and a dove; St. Dorothy, bearing the flowers of Paradise; the Empress Helena, with the true cross; St. Dominic the founder of the order of preaching friars; and a monk, bearing the sacred monogram, supposed to be Ignatius Loyola, the founder of the order of Jesuits. In conclusion, the rev. gentleman pointed out the value of a knowledge of symbols, by the aid of which antiquaries were enabled to ascertain the subjects of these ancient carvings. Various other communications were read.

Railway Works.—The Eastern Counties Railway Company are about very large works at Stratford, comprising almost a new town. We learn that no fewer than 300 houses are to be at once erected, at a cost of 200,000*l.*, the contract having been taken by Messrs. Curtis, of Stratford. It is also contemplated to erect a church at the same spot, and provide other institutions for the moral welfare of the inhabitants.

Defective Works: Fall of a Bridge.—On Friday week, a bridge over the Bishopstoke and Salisbury branch of the South Western Railway, at Timsbury, Wilts, fell in with a general crash, obstructing the way for a considerable space, and again delaying the frequently announced opening. By chance, the workmen were found, on calling over the roll, to have all escaped.

Our Obelisk.—We learn that in the course of the alterations now making in Alexandria, under a French engineer, the prostrate obelisk, known as Cleopatra's needle, which was presented to the English Government some time ago, has been buried in the sand, so that no trace of it remains.

To Prevent Iron from Rusting.—Zeni recommends, for this purpose, eighty parts of pounded and very finely sifted brick-dust, which is to be mixed with eighty parts of litharge. The mixture is ground upon a slab with linseed oil to a thick paste, and diluted with oil of turpentine. Before use, the iron, even when it is new, should be rubbed quite clean. M. Zeni asserts that iron, which had been twice painted with this and exposed for some time daily to the action of the sea, had remained entirely free from rust.—*Chemical Gaz.*

Improvement of the River.—On Saturday, a notice was posted at Guildhall announcing the intention of the Corporation of the City to apply to Parliament for leave to bring in a bill to extend the powers of the Court of Conservancy of the river, over the River Thames and Medway from Staines to Yantlett Creek. The powers sought for are to pull down and rebuild bridges, erect steam-boat and other piers, to cut canals, to deepen the rivers, and to erect or form embankments, docks, harbours, jetties, and quays.

Terminus in Paris.—The Council-General of the Roads and Bridges have submitted to the Minister of Public Works, its decision respecting the site of the grand terminus of the Paris and Lyons railroad. It is to be established on the Boulevard Contrescarpe, near the Place de la Bastille, and will require the construction of a costly viaduct over the streets Moreau and Traversière and the grounds of the new prison of La Force.

Baptistery.—A novel feature has been lately introduced into Trevethin Church, under the sanction of the bishop of the diocese. A baptistery, measuring 8 feet by 3 feet 6 in., and 4 feet deep, has been placed near the south door, wherein it is intended, should any person have conscientious objection to the sacrament of baptism by sprinkling, to perform the ceremony by immersion.

Cast Marble.—A discovery is stated to have been made at Charlottenburg, by which marble may be cast in moulds of any size, the marble being equal in quality to the purest Carrara marble. Several figures have already been cast of the size of life. The cast is stated to be one dollar a foot.

## TENDERS

For additional Wing to the Surrey Lunatic Asylum.

| | |
|---|---|
| Grissell | £41,472 |
| Lee | 37,700 |
| Little | 37,600 |
| Hicks | 37,400 |
| Bird | 37,375 |
| Baker | 36,400 |
| Kelk | 35,500 |

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, Jan. 18.—Statistical Society, 12, St. James's-square, 8 P.M.

Tuesday, 19th.—Institution of Civil Engineers, 25, Great George-street, 8 P.M. (anniversary).

Wednesday, 20th.—Society of Arts, Adelphi, 8 P.M.; Association of Architectural Draughtsmen, 33, Southampton-street.

Thursday, 21st.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*M. J.*" (Brixton).—We are unable to give any account of Langham Hall. A memorandum of the descent of the lands will be found in Hutchin's Dorset, second edition.

"*W. C.*"—The subjects named are not quite what we want.

"*J. B.*"—Could not recover from the Insurance Company.

"*J. M.*"—We are not aware that any drawback is allowed "on materials used in the building of schools connected with the Established Church."

"*Stations on Leeds and Bradford Line.*"—A correspondent asks for a list of the tenders delivered last month, for building there.

"*G. R.*" (Wolverhampton).—Shall be engraved. We wish the exact form of the upper (oval?) panels was clearer.

"*A Subscriber.*"—It is not within our plan to furnish prices.

"*G. H.*"—The communication shall be forwarded to Mr. Higgs when we obtain his address.

"*J. C.*"—Tupper Carey, Esq., Secretary to the Committee, Guernsey. Designs to be sent in on or before Feb. 15.

"*J. J.*"—We fully admit "the importance of having the eye instructed by correct examples of mathematical lines." So many matters, however, press upon us, that we are quite unable to attend to all.

"*G. R.*" (Hampstead).—We will inquire.

*Received.*—"A Subscriber" (Dalston), "G. R. F.," "A. G." (Soho-square), "Rev. E. C.," "J. J.," "W. D. L.," "G. W.," "Observations on Steam Ships and the use of Iron in their construction. By Christopher N. Nixon (Effingham Wilson).

NOTICE.—Covers for Volume IV. of The Builder, may be obtained at the Office, 2, York-street, price 2s.; or the publisher will bind sets at 3s. each.


## ADVERTISEMENTS.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

3d. 4d. 6d. 8d. 10d. 20d.
6d. 7d. 8d. 1s. 1s. 6d. 2s. per 1,000.

Best Sheet Floor Brads [illegible] per cwt.
Best Town Glue [illegible] per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

1 2 3 4 5 6
4s. 3d. 5s. 6s. 6d. 7s. 6d. 10s. 12s. per gross.

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch. Self-acting Kitchen Ranges with Oven and Back Boiler.

Wrought Bars and Bright Fittings.

3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4. [illegible]

Lists of Prices had on application at the Warehouse; if by letter pre-paid, enclosing stamp [illegible]

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 150, Blackfriars-road, and 117, [illegible] street, [illegible]

[illegible] Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft. 3 ft. 3 in. 3 ft. 6 in. 3 ft. 9 in. 4 ft.
[illegible]

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven.

3 ft. 3 ft. 3 in. 3 ft. 6 in. 3 feet 9 in. 4 ft.
£5. [illegible] £6. [illegible] £6. [illegible] £7.

Best Register Stoves, at [illegible] per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLLASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks [illegible] pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney bars, [illegible] and Ash-pit, Doors and Frames, Boilers and Frames, Lamps, &c. [illegible] at very moderate prices. CAST IRON [illegible]

ORNAMENTAL STOVES.

JEREMIAH EVANS and Company respectfully invite the attention of Noblemen and Gentlemen furnishing or refitting their mansions, to the most extensive and varied Stock of DRAWING ROOM and other STOVES in the kingdom, which combine many recent improvements, producing great heat with small consumption of fuel, and are manufactured of every description of pattern, including the Gothic, Grecian, French, and Elizabethan; also fenders and fire-irons en suite. Improved Kitchen Ranges with or without steam apparatus. Hot and Cold Baths [illegible] Improved Hot-water Apparatus for warming buildings, conservatories, &c.—Manufactory and Show-rooms, 33, King William-street, London bridge. Established in 1815.

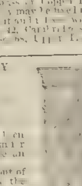
HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S [illegible] heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction [illegible] BENJAMIN FOWLER, 63, Dorset street, Fleet-street.

TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and [illegible] Address, 42, Cambridge-street, Birmingham; [illegible]

SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S
PATENT
VENTILATING CHIMNEY POT.



For the cure of smoky chimneys, [illegible] Cement.

The trade supplied with them at the Manufactory, VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. [illegible]

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of [illegible] KINGSTON [illegible] BITUMEN PAVEMENT OFFICE, [illegible] WHARF [illegible] CITY ROAD. N.B. Country Agents and [illegible]

FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of [illegible] apparatus, which are easily applied to [illegible] tion from servants, and never get out of order. [illegible]; Office, 33, Conduit street, Bond street.

TO ARCHITECTS AND BUILDERS.

THE attention of Architects and Builders is directed to the Patent Architectural Works for CARVING IN WOOD, [illegible] STONE, and MARBLE. [illegible] "Architectural Carving Works, Ecclestone place, Pimlico," having no connection with any other establishment.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, and at Hy. Castle's, Ship-yard, Millbank street, Westminster, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as [illegible]

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, [illegible] SEASONED FLOORING, MATCH BOARDING, &c. FOR IMMEDIATE USE, and MOULDINGS [illegible] Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, [illegible] Very extensive Drying Sheds.

TO BUILDERS, &c.

JOHN NEWSON having now completed his machinery for preparing floor-boards with the smallest possible waste, and as cheap as heretofore, is enabled also now to complete every kind of sawing and grooving at the same mills. A good assortment of planks, deals, battens, cut boards, match boarding and mouldings; oak and deal sash sills, mahogany, oak, [illegible] extensive drying sheds.—Also single [illegible] for sale at his Timber Yard, Grosvenor-row, Pimlico.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Grass Pantiles.

SILCOCK and Co.'s PATENT PLANES may be had at the following places:—

Archer, 45, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cock, 424, Oxford street; Dean, 46, King William street; Fenn, 105, Newgate street; Holtzapffel and Co., 64, Charing cross; and of all ironmongers and tool dealers in the United Kingdom.

MUIR'S PATENT PLANING MACHINERY.

SAW MILLS, GILLINGHAM STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. [illegible] from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.

N.B. Estimates given for Sawing and Planing.


HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS [illegible] of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek street, Soho square.

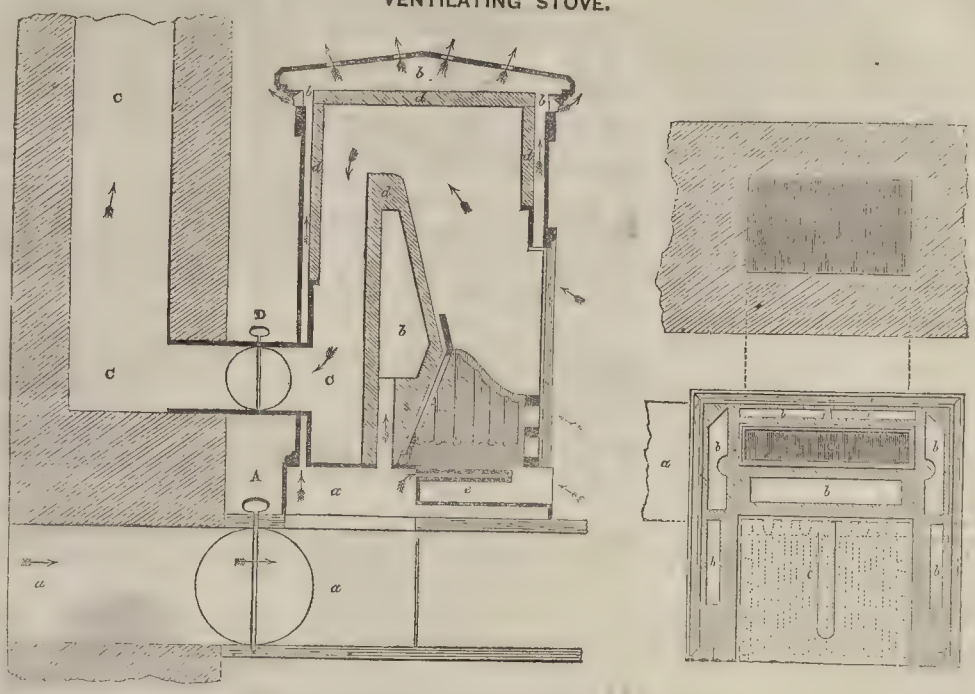
TO BUILDERS and Others interested in buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by water-courses [illegible] between the city of London and the parish of Fulham.

[illegible] vated at too great a depth, the [illegible] of any sewers or drains within this commission, nor relieve the parties making them from the [illegible] mentioned.

By order of the Court,
LEWIS C. HERTSLET, Clerk.


STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation [illegible] when compared with the [illegible] natural [illegible] whole interior of a house, which would take a month or six weeks [illegible] prepared and sold by HENRY STEPHENS, [illegible] road; sold also at the office of [illegible] Covent Garden, London; Hodges, [illegible] Hereford; [illegible] Wells, 39, High-street, Lynn; and in Manchester [illegible] The oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.



*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same.

Yours truly,
ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my churc is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,

WILLIAM GARRATT, Minister of St. John's, Fulham.

Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell.

MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

Letter from Professor BRADLEY.

King's College, London, July, 1846.

SIR,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant,

THOMAS BRADLEY.

*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at MESSRS. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

**MONEY to any amount immediately AD-** VANCED in large or small sums, for long or short periods, by way of MORTGAGE on the above, the interest varying from 4 per cent. upon Freeholds, Copyholds, or Long Leasehold Property being direct from the such lender, upon Life Interests, Money in the Funds, in the Funds, Sums on Appeal, Life Interests, Contingent Reversions and upon Life Policies, the security of Parties of Responsibility; it is requested that applicants be prepared with full particulars of the security proposed. Apply personally between Twelve and Three, or by letter, prepaid, to C. P., 6, Salisbury-street, Strand.

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**STOCK BRICKS.—300,000 of Superior** Old Stock Bricks for SALE, at the Townley Gallery, British Museum. Entrance at Montague-place. For further particulars, inquire of J. COX, on the premises.

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**HOUSES TO BE SOLD.—One Six-**roomed and one Eight-roomed House, together or separate, let to very respectable tenants.—Apply to Mr. MACKRORY, 8, Milton Terrace, Vauxhall-bridge Road, Pimlico.

BUILDING MATERIALS.—LOCK HOSPITAL, HARROW ROAD.

**TO BE SOLD by TENDER, the internal** fittings of the old Chapel, consisting of sound Oak and Fir Fittings, Framing, &c., large Copper, Water closet Apparatus, brass work, &c. Sealed Tenders to be delivered to the Secretary, at the Hospital, on Wednesday, 20th January, 1847. To view, apply to the Porter on the premises.

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**PATENT KAMPTULICON COM-**PANY, Office, 18, Cornhill.

STOCK ON SALE: 3,000 feet super. Kamptulicon Pavement, similar to that laid under the portico of Buckingham Palace, Norman Gateway, Windsor Castle, Admiralty Court Yard, Lord Radnor's stables, &c.; 2,000 yards of Floor-cloth, for preventing damp, noise, &c., similar to that used in numerous churches, public offices, banking houses, railway carriages, buffers, &c.; 3,000 feet Planking, similar to that ordered for her Majesty's riding-house at Windsor Castle.

Two LIFE BOATS, one capable of saving 110 lives at a time, built of a material that cannot be destroyed by rocks, shot, or by being thrown against a ship's side.

Samples may be seen at the Office as above.

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**A FEW Statuary Marble Chimney Pieces** FOR SALE, at the following low prices:—Three 2 ft. 6 in. Openings, 8 in. piers, 35s. each, two 2 ft. 10 in. Openings, 10 in. piers, 50s. each; several larger Openings, 11 in. and 12 in. piers, 60s. each, worth £6, and some with carved blockings, from £5 to £7, worth £12. Approved bills, if required, at three or six months, according to the amount. Apply at 34, Chichester-place, King's-cross.

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TO CARPENTERS, AND OTHERS.

**TO LET ON LEASE for Ninety-eight** Years, or to be Sold at a Low Ground Rent, Two well-built Carcases, near Haverstock Hill, Hampstead Road. Inquire of Messrs. QUICK, 70, Great Titchfield-street.

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TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS.

**TO LET, a Compact and Convenient Wharf,** between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of the above Trades, having excellent water and land carriage ways.—For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace-road, Lambeth.

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TO CARPENTERS, BLIND MAKERS, AND UNDERTAKERS.

**TO BE LET in the above line, a Good** Business, in one of the first business neighbourhoods of London, at a Low Price.—For cards of address, apply at the office of "The Builder," 2, York-street, Covent-garden.

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**TO BE LET.—Brick Earth. One Acre** or a larger quantity, on the South Western Railway, one and a half miles from Kingston, on the Thames, and twelve from London, adjoining the road leading from Walton to Malden. For a view, apply to Mr. RAYNES, West Barnes, Merton, Surrey; and for further particulars, to Mr. MATTHEWS, Laleham, near Hertford.

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TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situate in streets leading from the Queen's-road, Dalston, to Lansdowne-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

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ST. JOHN'S WOOD PARK !!! IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET in this** most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City!—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

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TO BUILDERS AND AUCTIONEERS.

**TO BE DISPOSED OF.—A first-rate** and very compact Business, in the above line, in a good market town, about two hours' ride by railway from London. The owner is about to retire. Twelve to twenty hands are constantly employed on reparations and buildings, having a good private connection. Stock and Fixtures to be taken at valuation. Premises may be purchased, or rented on lease. Stock is reduced to about £400, part of which may be left on approved bills at long dates. A moderate premium is expected, or additional rental. For further particulars, address, C. D., the Office of "The Builder," 2, York street, Covent Garden, London.

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## SALES BY AUCTION.

TO STONE MERCHANTS, BUILDERS, AND OTHERS.—CAEN STONE, now lying off the CUSTOM HOUSE.

**MR. MARSH (Late Fuller and Marsh),** has received instructions to SELL by AUCTION, without reserve, in the Barges now moored off the Custom House, to meet Freight and other Charges on THURSDAY, January 21st, 1847, at Twelve o'clock, in Lots, TWENTY BLOCKS of CAEN STONE, varying in dimensions from 10 to 70 cubic feet. May be viewed the day prior and morning of Sale, and Catalogues obtained of Mr. MARSH, Auctioneer, Surveyor, &c., 27, Bucklersbury, Mansion House.

TO PAPERHANGERS, BUILDERS, HOUSE DECORATORS, AND OTHERS.

**MR. BRAY, Jun., has received instructions** to remove for Peremptory Sale, to his Rooms, 259, High Holborn, on WEDNESDAY, January 20th, at Twelve o'clock, an entire new stock, comprising upwards of 3,700 pieces of paper-hangings of excellent workmanship and modern designs, including drawing, dining, parlour, bed room, staircase, and other papers in rich crimson flocks, embossed satins, marble, Elizabethan scarlet, and other patterns. The stock is well suited to suit the trade and private buyer. May be viewed the day prior and morning of sale, and catalogues had at the rooms.

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To Builders, Timber Merchants, Carpenters, Pianoforte and Cabinet Manufacturers, and Others, the Trade, &c.—Early Sale, Curtain-road, Shoreditch.—Mr. JAMES GOUGH'S extensive and well assorted stock of about 20,000 deals, battens, timber, &c., at the timber yard, extending from the Curtain road to Shoreditch.

**MR. DEACON will SELL (unreservedly)** next TUESDAY, 19th inst., and following days, at Eleven for Twelve, by order of Mr. GOUGH, the capital seasoned stock, comprising white and yellow deals, ditto in plank and battens, Memel and Dantzic timber, yellow pine, cut deals and plank, dry wainscot boards and slabs, best and second dry pine plank, spruce deals, a few scaffold poles, fir quartering, &c. &c.—The stock may be viewed until the sale, and catalogues had upon the premises, and of the Auctioneer, 2, Berners-street, Oxford street.

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TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS.** and WRITERS to the Trade only.

62, WATERLOO-BRIDGE-ROAD.

An Apprentice wanted, to board and lodge with his friends. Premium, £30.

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TO PLASTERERS.

**LIME FOR PLASTERING, that may be** used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORREST'S WHARF, Earl-street, Blackfriars. Sheds for the slacking and boxing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

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TO BUILDERS.

**W. W. RAWLINS, Bangor Wharf, King's** Road Bridge, Camden New Town, begs respectfully to inform builders and others, that he continues to supply grey stone, and chalk lime, blue lias lime, Roman cement, plaster of Paris, plasterers' hair, Thames ballast, sand tiles, cement chimney pots, Welsh bricks, and all kinds of building materials, this being the nearest Lime Wharf to the North of London. Yorkshire paving slabs, sinks, &c., Thames ballast, and sand delivered per Barge, in the river or on any part of the Regent's Canal.

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TO BUILDERS AND OTHERS.

**MESSRS. H. G. and E. ROSHER, having** closed their Lime Wharf at Montague Close, Southwark, have removed their business to Albion Wharf, Holland street, Bankside where they intend keeping a constant supply of Greystone, Flame-burnt, and Plasterers' Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland-road.

*** Ground Lime for Concrete.

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**FIRE BRICKS.—STOURBRIDGE (Ruf-**ford's and other best made BRICKS, at WARD'S, Honduras Wharf, Bankside, London, to be SOLD for arrival. This is a great advantage to the purchasers, saving all the expenses of unshipping, lighterage, landing, reloading, &c. An immense stock of all the best made Stourbridge, Welch, and Newcastle fire goods at summer prices, although freights and other expenses have considerably advanced. Shippers, gas companies, engineers, builders, and large buyers supplied at lower prices than they can import, besides the advantage of having an immediate supply without waiting the uncertainty of ships arriving at this season of the year.

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**ARCHITECTS, BUILDERS, and the** Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, bed moulds, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing. Centre flowers fixed complete 33 per cent. cheaper than papier mâché.

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**PORTLAND CEMENT does not vegetate** in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, and the public are thereby enabled to avail themselves of these distinct advantages.

Manufactured by J. B. WHITE and SONS, of Millbank-street, Westminster; and sold at their warehouses Earl-street, Blackfriars; Druce's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; at Seel-street, Liverpool; and Salmon and Co.'s Dublin.

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**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel street, Liverpool.

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MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble), NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

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TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced. It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden lane, Queen street, Cheapside, London; of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, produceable by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

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# The Builder,

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LEWIS SLIGHT, Clerk.

Clerk's Office, Town Hall, 12th January, 1847.

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"Herapath's Journal," Nov. 28th, 1846.

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"Sunday Times," Dec. 6th, 1846.

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20th January, 1847.

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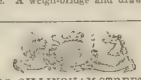
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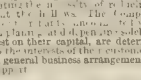



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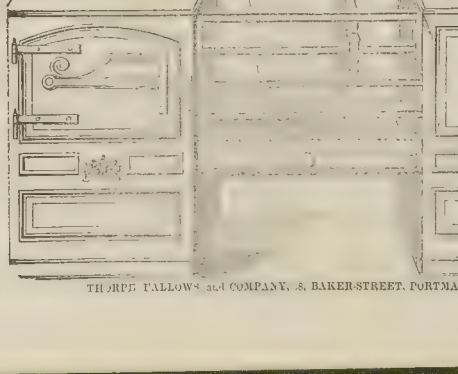
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The Builder.

No. CCVII.

*SATURDAY, JANUARY* 23, 1847.

A STATEMENT having been circulated to the effect, that an accident had occurred to the walls of Covent Garden Theatre, and that another architect had been called in, to examine the extent of the mischief and remedy it,—a confirmation or denial of the assertion was asked for from us by correspondents, and we were led to inquire into the circumstances and look through the building. The result of this is, that we can confidently pronounce the report a fabrication without the least foundation: no accident of any sort has occurred, and no fresh architect has been called in or hinted at.

In making the examination, a fact became known to us which requires to be stated, having especial interest at this moment, when the propriety of preventing the use of wood-bond in brickwork is a matter of question. The whole of the wood-bond in the lower part of the walls of the theatre had decayed entirely, and being of considerable size, 9 in. by 6 in., and even larger, had left the building in an evidently insecure state, only made known by the stripping consequent on the present reconstruction of the interior. In one wall, five bricks thick, it appears that bond on either side of it occupied a thickness equal to three bricks, and was quite rotten! The whole of the timber in this position has now been removed, and its place supplied with *brickwork in cement* to an extent of 800 feet, running measure, so that the building is now considerably stronger in this respect than it ever was before.

The cause of this entire decay within a comparatively short space of time, deserves investigation. Although perhaps, no other reason need be looked for than the effect of the wet mortar and damp brickwork in which the timber was set. The building was of course hurriedly carried up, and the bond (which was in the face of the wall) cased in at once by framing or otherwise, so that the moisture could not evaporate. When timber is placed in the centre of a wall, and so encased that the atmosphere is totally excluded, decay seldom takes place; nor is it likely to do so if, when placed in the inner face of a wall, it is first allowed thoroughly to dry, and then covered by the plasterer: provided, of course, that it be sound timber of a durable sort, and that the insidious access of moisture be prevented.

That it is desirable in the majority of cases to avoid the use of wood bond cannot be doubted. Apart from its shrinking, when not properly seasoned (and so leaving apertures and weaknesses in the walls), and the probability of decay in many situations, its use has often entailed the rebuilding of the walls of structures destroyed by fire, which otherwise might have been kept up. By the substitution of hoop iron bond, as the majority of our readers know, the evils in question may be avoided, and better work obtained, provided that the bond be properly fixed with occasional courses of brickwork in cement. The hoop iron (if pitched and sanded so much the better) should be strained tightly, the whole length of each wall in one piece if possible, and secured at the end by turning it up at right angles, and lapping it over the upper courses; connection at the angles ought not to be forgetten.

Bond timbers are valuable in new work by distributing the various weights, and preventing irregular settlements. The front and back walls of ordinary dwelling-houses, consisting for the most part of slight piers, indifferently executed in too many cases, are more likely to remain sound and unshaken when bond timbers pass through piers and openings (afterwards to be cut out), and so hold the whole together, until the work gets its bearing and consolidates.

An equivalent for this is not provided by the hoop iron *alone;* a cement bond is necessary; but unluckily the additional cost of this, small as it is, is sufficient to prevent the use of it, and so in many cases where wood bond is prohibited, the stability of the structure is made to suffer.*

A correspondent wished to be informed last week if we considered he might use bond-timber in 9-inch external walls; and he said further, that the district surveyor had told him he might not do so.

The second part of schedule D, which treats of external walls, says: — "With regard to other substances than the component materials of external walls,—there may be such *wood* and iron as may be necessary;" and recognizes the necessity of plate, lintel, and bond, by providing that they "must be fixed at a distance from the external face of the wall of four inches at the least." At the end of the clause, however, it says, — "But no timber must be laid into any external wall in such manner, or of such length, as to render the part of the wall above it wholly or in great part dependent upon the wood for support, or so that any such wood might not be withdrawn without endangering the safety of the superincumbent structure, except in the case of breast-summers."

The district surveyors do not consider this provision binds them to prevent the use of wall-*plates*, even in a 9-inch wall, because of the difficulty of doing so; but they feel themselves not merely authorized, but bound by the spirit, as well as letter, of the clause, in the case of bond, when other expedients may conveniently be resorted to, to object to the use of timber in such a situation.

As to a 14-inch external wall, we are disposed to think there is nothing, strictly speaking, to prevent the use of timber bond as formerly; nevertheless, we strongly advise all builders to avoid it, and adopt, as indeed is now almost universally the case, hoop-iron bond and Roman cement.†

After the above remarks were in type, it occurred to us to inquire at the Metropolitan Buildings office if the referees had expressed any opinion on this subject, although we knew that they had not published any award conveying it. We found that they had done so as far back as May last, in the shape of an award on a joint requisition from Mr. C. Oldfield and the district surveyor of St. Pancras, which the former gentleman had afterwards refused to take up. The matter being one of some importance, and the referees having taken a different view of the question from that which we have expressed above, we are glad to be permitted to bring their decision before the public.

The requisition required "the determination of the official referees as to the legality of inserting continuous wooden plates and bond along and in external walls, to carry the joists and timbers of the building; and whether such plates should be limited in size according to the thickness of the wall, for instance, 4 inches by 3 in a 9-inch wall, 9 inches by 4 in a 14 or 18-inch wall, or 4 inches by 4.

The said referees determined "first as to walls 9 inches thick, that inasmuch as continuous wooden plates 4 inches by 3 inches laid into such walls, would render such walls dependent on the said woodwork for support, and that such woodwork might not be withdrawn without endangering the safety of the superstructure, such construction would not be conformable to the rules as to the construction and materials of external walls in part 2, of schedule D, of the first-mentioned Act.

And secondly, as to walls 14 inches or 18 inches thick, inasmuch as continuous wooden plates 9 inches by 4 inches, or 4 inches by 4 inches, laid into the face of such walls, would render the said walls in great part dependent on such wood for support, and so that such wood might not be withdrawn without endangering the safety of the superincumbent structure, such construction must be deemed contrary to the rules of the said Act."

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* In the majority of speculative buildings erected within the jurisdiction of the Act, we fear no bond of any kind is now used.

† The following extract from General Pasley's work on "Limes and Calcareous Cements" will serve to shew the strength of hoop-iron in opposition to a tensile force:

"The extraordinary resistance communicated to brick beams by longitudinal hoop-iron bond, the value of which has exceeded our expectations, induced us to try a few experiments on the actual strength of the hoop-iron alone, in opposition to a force tending to tear it to pieces in the direction of its length, and acting from one end, the other being fixed.

*First, with 1¼-inch hoop-iron.*—Its thickness being what is described as No. 15 wire gage, or one-sixteenth of an inch nearly, and its weight per foot being 2,520 grains, or 5·6 lbs. Having fixed a piece of this hoop-iron in a vertical position, and suspended weights to the lower end of it, which we gradually increased, it broke down under a total weight of 6,163 lbs., after the iron had elongated thirteen sixteenth parts of an inch in the length of about 18 inches.

*Secondly, 1-inch hoop-iron.*—We next broke down a piece of hoop-iron 1 inch wide, of No. 18 wire gage, weighing 1,220 grains to the foot, by a total weight of 2,961 lbs., which produced a previous elongation of half an inch.

*Thirdly, ¾-inch hoop-iron.*—Finally, we broke down a piece of hoop-iron three-quarters of an inch wide, of No. 20 wire gage, and weighing 540 grains to the foot, by a total weight of 1,842 lbs., which produced a previous elongation of one three-eighths of an inch.

The results of these experiments agree very nearly with the statements of the strength of iron of this description in the works of Professor Barlow and Tredgold; and as the strength of iron has been fully investigated, and accurately stated, by these and other authors of reputation, we did not think it worth while to pursue this subject any farther."

It has been suggested, that straps of 1¼-inch hoop-iron would be strong enough for connecting the rafters and tie-beams of roofs of moderate span, instead of ordering wrought-iron straps for the purpose.

## SOME ACCOUNT OF THE ANCIENT CITY OF SYRACUSE.

THE ancient Syracuse occupied the first rank of all the cities of Sicily, or Magna Græcia, in point both of extent and political importance; and there are few remains of ancient cities, even in Greece herself, which are more interesting to the scholar or the antiquary.

I visited the ruins and the modern city in company with some fellow-students in the summer of 1822. The classical interest of the spot, the beauty of the situation, and the splendour of the climate (noted by Cicero for its sunshine in every day of the year) were such, that not even a week's painful imprisonment in the quarantine, on a subsequent occasion, could diminish my feelings of admiration for this renowned spot.

The present paper being principally devoted to the architectural description of the ancient city, I will not occupy the time of the meeting with a long account of its history; it will be sufficient for our purpose merely to refer to the tradition of its having received its inhabitants, in very early ages of the world, from Egypt and Phœnicia; that they were driven out by the Siculi, who, in their turn, were replaced by a colony from Corinth, led by Archias, one of the Heraclidæ, in the second year of the eleventh Olympiad, or about 732 years before the Christian era. The city was named by them Ortygia, or the island of quails (the same name was originally given to the island of Delos).

We have the united testimony of ancient historians and poets to the effect, that the city rapidly increased until it arrived at so great an extent, and to such a degree of splendour, that Thucydides (long before it reached its summit of prosperity under Dionysius) acknowledged it to be equal in size to Athens; and Cicero mentions it, in one of his orations, as the *largest* and most magnificent city in Greece.*

The city was under different governments until freed from the tyranny of Thrasybulus, 446 B.C.; and sixty-one years afterwards it was usurped by the Dionysii, who were expelled by Timoleon 343 B.C. The celebrated part it took in the wars with Carthage, its memorable conflicts with the Athenians, and its sad and mighty fall, after enduring a three years' siege by the Roman conqueror, Marcellus, are events so well known to every scholar, as to require no further allusion to on my part at this meeting.

In after years, the Saracens completed the ruin the Romans commenced; and A.D. 827 Syracuse resigned to her rival, Palermo, the proud title of Capital of Sicily. From that time the city has dwindled into comparative insignificance. Her population at the present time does not exceed 12,000; and that commerce which once filled its glorious harbours with the ships of Rhodes, Alexandria, and Carthage, is now confined to a few speronaras engaged in a miserable coasting trade.

Syracuse is said to have derived its name originally from the neighbouring Marsh Syraco (now called *Il Pantano*), and situate on the right bank of the Anapus; it was afterwards called *Tetropolis*, a city formed of *four* distinct quarters, and these were named *Ortygia*, *Acradina*, *Aycha*, and *Neapolis*.

According to Strabo, the circuit of the ancient walls was 80 stadiæ, or 22½ miles, including the suburb of Epipolæ, which was to the westward of Neapolis, and commanded the whole city. At the extremity of Epipolæ was an almost impregnable fortress, called Euryale, mentioned by Livy, and other historians.

The great port of Syracuse—one of the finest in the Mediterranean—is about five miles in circumference. As you enter from the ocean, to the left hand is the rock Plemmyrium, distant from the opposite shore of Ortygia about half a mile. It was across this entrance to the port that the Syracusans, by advice of Hermocrates, threw a strong chain, and thus blockaded the Athenian fleet.

In modern times, the great port of Syracuse has its name connected with a glorious event; for it was here that Nelson revictualled his fleet previous to the battle of the Nile. The lesser port is on the other side of the island Ortygia; it was called Portus Marmoreus, according to some authorities, from the bottom having originally been paved with marble; but perhaps with more probability from the costly buildings which lined its shores.

I will now endeavour briefly to describe the four quarters of the city, commencing with the most ancient one. Ortygia was formerly considered the most important part, in consequence of its commanding the entrance to both the ports. The tyrants established their residences in this division, and added, from time to time, to the fortifications. The Romans also, when masters of Syracuse, regarded the situation of Ortygia in the same important light, and prohibited any native citizen from residing in that portion of the city.

The Temple of Minerva was the most sacred and important building in Ortygia: it now forms the cathedral, or duomo, to the modern city, to which purpose it was converted during the 12th century, when the Goddess of Wisdom was obliged to resign her shrine to "Our Lady of the Columns;" for such was the change in the dedication of this edifice.

The temple was of the Doric order, peripteral and hexastyle, with fourteen columns on the sides. The lower diameter is about six feet seven inches, and the height twenty-eight feet ten inches. The character of the order resembles the Agrigentine examples.† Twenty-one columns of the Peristyles, with portions of the entablature, are still standing; but, unfortunately, they are built up in the outer walls of the duomo. The two columns of the Posticum also remain. The columns, unfortunately, have been disfigured with modern plaster and additional mouldings; and it is much to be regretted that these, by some oversight, have found their way into an important work on Magna Græcia, and are there shewn as part of the ancient work. It was only after much entreaty and persuasion, and offering ample security, in case of injury, that the church authorities (who, unfortunately, in Sicily, are not so devoted to archæological pursuits as the clergy in this country) gave us permission to raise a scaffold, and clear away these unseemely encumbrances.

Cicero has given us an excellent description of the gorgeous magnificence of this temple, which, spared by the piety of Marcellus, was stripped of every thing but the roof and walls by the rapacious Verres. "Its doors," says the Roman orator, "were the theme of universal eulogy, exhibiting the labours of Hercules, curiously wrought in ivory, the angles of each separate panel being adorned with golden bosses of exquisite workmanship, while a Medusa's head, formed of the same rich material, shone above the portal, surrounded with its bristling snakes." We learn also from Athenæus, that upon the exterior summit of the roof was elevated an enormous shield, consecrated to Minerva, and visible to a great distance by the reflection of the solar rays. A custom prevailed among the Syracusan sailors, to secure a safe return from their voyage, of carrying from an altar near the Temple of Juno some ashes in a chalice, which, with flowers, honey, frankincense, and other aromatics, they cast into the sea as soon as they were about to lose sight of this shield. The interior of the walls of this temple were covered with paintings, amongst which was an equestrian combat of King Agathocles, one of the most esteemed works of Syracusan art: this, with twenty-seven other admirable pictures, did the unscrupulous Verres carry away. According to tradition, Archimedes drew an equinoctial line in this temple, and Mirabella says that in 1582 the commissioners appointed by Pope Gregory for the correction of the calendar came to Syracuse for the purpose of examining it. This building has suffered much from earthquakes, but I strongly suspect the hand of man has been the great destroyer: the modern façade of the Borromini school forms a strange mixture with the rigid Doric of the ancient peristyle.

Of the Temple of Diana, two Doric columns with a small portion of entablature alone remain. To judge of the effect of them is no very easy matter, for the columns are unfortunately encased by the walls of a modern dwelling, and the capitals are absolutely inclosed in a wretched closet. Notwithstanding this sad modern degradation of the great Diana's fane, these scanty remains possess considerable degree of interest, as belonging to the most ancient temple of Ortygia; and it is a curious circumstance, that the style of the columns, with the bold swelling capital, strongly resembles the order at Corinth, the mother city. The Selinus and Pæstum examples have also a great resemblance to it. The intercolumniation must have been very small, there being only 1 foot 6½ inches between the abaci of the two capitals. I am happy to state, that since my visit to Syracuse, the Duke of Serradifalco (a nobleman so well known to us all for his successful architectural researches in his native country, and for his contributions to the library of the Institute), has discovered the lower portions of these columns. Near this temple stood the celebrated Baths of Daphne, so named from a laurel grove sacred to Diana: the spot is now called Bagnara, and many remains have been discovered near it.

The celebrated fountain of Arethusa next claims our attention. This classic spot, sacred to the nymph to whom divine honours were offered, and upon whose shrine even Hercules sacrificed, still pours forth its abundant supply of fresh water as of old, but alas how different its present state! It is now the public washing place of the town; and when I saw it, a number of Hungarian soldiers were lounging around it, enjoying their merschaums, quite unconscious of the fame of the spot, or of the gibes and wit that the Syracusan laundresses were indulging in at their expense.

According to Diodorus, the celebrated building, the palace of sixty couches, which in magnitude and splendour was so superior to the temples, that the Gods, from jealousy, are said to have destroyed it by thunder, was situate in Ortygia. This, together with the palace and gardens of Dionysius, the citadel surrendered by Dionysius to Timoleon, the Palace of Hiero, afterwards the residence of the Roman prætor and proconsuls, and the workshops of the infamous Verres, have all disappeared, and their sites are now occupied with modern fortifications, and narrow streets of miserable dwellings.

I now proceed to the adjoining quarter of the city, called Acradina, described by Cicero "as the second city, containing a spacious forum, a beautiful portico, and an ornamental prytaneum, or public hall, from which Verres stole the inimitable statue of Sappho, the great work of Silanion!" Of these buildings there are now no existing remains. It is, however, probable that the Church of San Giovanni occupies the site of an ancient temple; and Mr. Hughes, in his admirable and elaborate description of the city, supposes it to have been the Temple of Jupiter, in which Hiero suspended the Gallic and Illyrian spoils presented by him to the Roman senate; and from a passage in which Cicero upbraids Verres for allowing a piratical corsair to sail into the port, and penetrate up to the very forum, we may infer that the forum was placed near the Isthmus.

In this quarter of Acradina are several of those Latomiæ, or stone quarries, which are so numerous in Syracuse. The most remarkable one is perhaps the one attached to the Capuchin convent, and now converted into a garden, forming one of the most beautiful and retired spots that possibly could be selected for devotional study.

There are also various subterraneous remains in this quarter, with vaults constructed of earthen pots, and the ruins of a bath excavated by Landolina, in 1804, in which was found the beautiful Torso of Venus, now forming the most valuable specimen of ancient sculpture to be found in the museum of the modern city.

The celebrated catacombs are in the quarter Acradina, and whether they are the works of the Syracusans previous to the Roman conquest by Marcellus, or subsequent to that period, is still a matter of conjecture. Mr. Hughes is inclined to attribute them to the Romans. At all events they are prodigious works. Denon describes them as a perfect subterranean city. The principal street or avenue in the catacombs is about eighteen feet wide and ten high, with numerous recesses and chambers on either side, with separate receptacles for the bodies, in one of which I counted no less than fifteen divisions. Swinburn relates that he saw a gold coin of the time of Icetas just taken out of the jaws of a body found in a tomb here: this must have been the *Naulon*, or Charon's fare.

Along the main street, at intervening distances, are transverse streets, forming at their intersections square and circular apartments, which are generally vaulted, and in some of them are conical apertures for light and air. Around these chambers are numerous recesses symmetrically formed. In some parts the walls are covered with fine stucco, and there are the remains of painting, with monograms and symbolical devices, the works probably of the early Christians. An old Capuchin monk acted as our cicerone in going through the catacombs, and the effect of his slow and solemn step, and the glare of the torches through this city of the dead, will not be readily effaced from my memory.

Of the walls of Acradina there are still remaining considerable vestiges, and the rock itself is in some places formed into battlements.

Not far from a gap in the rock, called Scala Græca, where the quarter of Acradina terminated, and that of Tycha commenced, may be traced one of the principal gates of ancient Syracuse, and which, like some of the other gateways, was admirably contrived for defence, the assailants being forced to expose their *right* side, which was unprotected by the shield, to a great length of wall, and the missiles of its defenders.

From Scala Græca a broad road traversed the city to the point Ortygia, lined on each side by strong walls and towers. Fazello states, that a little beyond it, in the quarter of Tycha, stood the town called Galeagra, wher

* Urbem Syracusas maximam esse Græcarum urbium pulcherrimamque omnium sæpe audistis.—Cic., Orat. 2, *in Ver.* lib. iv.

† I have shewn the capitals half the real size. The anta cap may be considered as a good example of the favourite Becco di Civetta, or Owl's Beak moulding of the ancients.

a Roman soldier, during the conferences of Epycedes and Marcellus, by numbering the courses of stone and computing their height, found the wall much lower than common opinion, and scalable by the ordinary ladders. By these means Marcellus took the city in the night, during a festival of Diana, when the inhabitants, more attentive to their superstitious observances than the means of defence, were in a state of great intoxication.

The quarter, Tycha, is described by Cicero as the third city; and he says it was so named from a Temple of Fortune within its precincts, and that it contained a spacious Gymnasium, and many sacred edifices. Of this once splendid quarter of the city little now remains, excepting large sepulchres cut in the rocks, channels of aqueducts, and vestiges of the city walls. To account for so large a space being so completely cleared of the remains of the numerous buildings which formerly occupied it, one is almost led to the supposition that, from the facility of transport given by the immediate vicinity of the port, the materials must have been transported to other shores.

Neapolis is the fourth quarter of the city mentioned by Cicero, and, as its name implies, was the last built. It was adorned with a theatre of vast dimensions, two superb temples—one of Ceres and another of Proserpine—and a very beautiful colossal statue of *Apollo Temenites*.

The theatre is perhaps the most perfect of all the ancient buildings of Syracuse. It was the largest in Sicily, and is computed to have contained 30,000 persons. Its situation, on a rising ground, commands a magnificent view over the ports and surrounding country. The greater portion of the seats are cut out of the the living rock.

In my examination of this edifice I had the great advantage to possess the elaborate and careful studies made in the previous year by Professor Donaldson; and as these have been given in so admirable a manner by that accomplished architect, in the supplementary volume of "Stewart's Athens," it is unnecessary for me to attempt a further description of a work already so familiar to the members of this Institute.

Above the theatre are numerous excavations in the rocks, remains of water courses, streets, and sepulchres. One, more perfect than the rest, is called the Tomb of Archimedes; and although the sepulchral stele, with the sphere and cylinder carved upon it, are no longer to be found to authenticate its identity, one feels unwilling to doubt that this must be the very monument discovered by Cicero, and pronounced by him as the sepulchre of the immortal Archimedes.

Not far from the theatre are the remains of an amphitheatre, which was also in part excavated from the platform of living rock. The arena, seats, corridors, podium, subterranean cells, and water-ducts are still easily traceable. The construction is evidently Roman.

The extensive quarries, or Latomiæ, are principally in this quarter of the city. They are said to have been excavated by the Athenian prisoners, and afterwards used as places of confinement. No greater contrast can be imagined than their former with their present state; for those once gloomy abodes of the victims of Dionysius are now flourishing with the luxurious vegetation of the pomegranite and the orange, and are watered by the transparent streams which still flow along the ancient channels; and the spot where the infamous Verres incarcerated not only Syracusans, but Roman citizens, is now termed "*Il Poradiso*." In this Latomia is the church of San Nicolo; under which is a chamber excavated from the rock, 64 feet 6 inches long, 22 feet 6 inches wide; and from the remains of a water-duct at one end it was probably used as a reservoir.

I must not pass by the curious cavern called the ear of Dionysius, which is about 170 feet in depth, 35 feet in width, and 60 feet in height. It is stated that Dionysius constructed this cavern on acoustic principles, for the purpose of overhearing the conversation of the prisoners confined within its walls. There is beyond doubt a wonderful power of conveying and increasing sound in this curious vault; but an examination of it, including the somewhat hazardous ascent with ropes and pullies to the cavity near the top, impressed us with the notion that this power, as is the case with most echoes, is more to be ascribed to accident than to art.

Neapolis was also adorned by a colossal statue of Apollo Temenites, which stood proudly pre-eminent on a rising ground, and was preserved, says Cicero, by its magnitude, from the sacriligious grasp of Verres. Suetonius states, that it was contemplated by the emperor Tiberius to place it in the library which he had built, or restored, in honour of Augustus; but that he was prevented by the Deity in a vision.

The ruins of the Temple of Jupiter Olympius are situate on a gentle eminence on the right bank of the Anapus, overlooking the great port. Portions of the shafts of two Doric columns alone remain standing; but I am rather doubtful whether these are in the the original position. It is to be much regreted, that so little is left of this temple, which, in its original state, was described as the richest monument in Syracuse. In its adytum was placed the famous statue of Jupiter, esteemed one of the three* most noble representations of that deity ever produced, and from which Dionysius stripped off the golden mantle, replacing it with one of wool, accompanying his robbery with the impudent apology, that gold was too heavy in summer and too cold in winter for the king of the gods, but that wool was adapted for both seasons.

I believe I have now generally, though I fear very imperfectly, described the principal remains of the four quarters of the ancient city; and I will trespass for a few minutes longer only upon the attention of the meeting by making some short observations upon the suburbs and outworks.

*Epipolæ*, so celebrated in the sieges of Syracuse, is to the westward of Neapolis, on a spot (as its name imports) commanding the whole city. It was inclosed by Dionysius within those remarkable fortifications and walls said to have been constructed by him in the incredible short space of twenty days, and upon which he employed 60,000 workmen and 6,000 yoke of oxen.

It was also defended by a fort, which, according to Fazello, was called by the Greeks Labdalo, but Mr. Hughes is of opinion (judging from the descriptions of Thucydides and Diodorus) that Labdalo was considerably lower in the descent, and that the fort in question was the celebrated Hexapylon, a work constructed with extraordinary military skill and art. Mr. Cockerell (and I cannot appeal to a higher authority in these matters) states that he considers the remains of this fortress to be the most admirable specimen of ancient military architecture he had ever met with in all his extensive travels.

The principal entrance is admirably constructed for defence, with flank walls, from which the assailants were exposed to the attack of the defenders. Some of the walls are of solid masonry, 12 feet in thickness. Others, of that species of construction termed *Emplecton*,† are fifteen feet thick. At two of the angles of the walls are square towers of solid masonry, and there are several remains of fosses, twenty-five to thirty feet deep, cut in the solid rock, and defending the accessible approaches to the castle. In one part is a subterranean passage, nine feet wide and twelve feet high, leading in an inclined plane from the castle to the fosse, probably for the use of cavalry; and in other parts of the walls are small openings, about two feet in height, and sufficient to allow a man to creep through, by which the sorties were probably made.

The suburb of Epipolæ was terminated by a second almost impregnable fortress, called Euryale, mentioned particularly by Livy in his account of the siege of Syracuse, by Marcellus. In the seventeenth century the village of Belvedere was built on this spot, but no vestige of it now remains.

The river Anapus, so much vaunted by the poets and historians of old, is now a small stream, and its banks covered with lofty reeds and aquatic plants, growing so luxuriantly as almost to impede our progress in a small boat. We contrived, however, to reach the beautiful fountain of Cyane, a natural basin of about fifty feet in diameter, and celebrated by the poets as the spot where Pluto made his descent with Proserpine. We here saw the elegant Papyrus plant growing in great perfection, and it is said to be the only spot in *Europe* where this rare plant flourishes.

It has been remarked that there is no ancient example of any state so circumscribed in territory, extending so far and wide its influence, as Syracuse. In military fame she was equal to Lacedæmon, and contested successfully with the Athenians for naval pre-eminence! Her laws excited the admiration of Aristotle. The great Theban bard sung the victories of her conquerors in the games of Greece. From her power emanated the colonies of Acræ, Casmenæ, and Camarina. Her resources were so great, that Gelo offered to assist the Grecian states in their armament against the Persians with 28,000 troops and 200 *Triremes*, and, in addition, to supply provisions for the entire army of Greece, during the continuance of the war; and the perfection she had attained in the fine arts was such as to soften the hitherto rigid habits of her Roman conquerors, to refine their taste, and to excite and ensure their clemency.

Fazello tells us that her skill in works of gold, silver, and embroidery, was proverbial! The extent and magnificence of her buildings we have already adverted to. The superb medallions of Philistides sufficiently testify the superiority she had attained in the numismatic art; and of the extent of her sculptural embellishments we may form some idea from the remark of Cicero, that the Syracusans lost more *statues* by the rapacity of Verres than they did *men* by the *victories* of Marcellus.

The indefatigable Capodieci† presents us with a glorious list of warriors, statesmen, poets, philosophers, and men of science, whom he claims for Syracuse; and proud indeed must that city be which could produce Agathocles and Dionysius as commanders, Philistus as an historian! the poet Theocritus, and, greater by far than all these, her own Archimedes!

The achievements of the great Timoleon took place at Syracuse; within her walls the divine Plato for some time resided; the eloquence of Cicero was heard within her senate; and in later times the great apostle of Christianity tarried there on his way to Rome.

I trust this feeble attempt to describe the ancient Syracuse, will be excused, with all its imperfections; and most amply shall I be repaid if the interest of this meeting has been in the least degree promoted by a short account of that city, where the friendship of Damon and Pythias was fostered, and whose inhabitants derived their greatest pleasure in listening to the verses of Euripides!

SAMUEL ANGELL.

* One, in the Roman capital, from Macedonia; a second at Pontus; and the third at Syracuse.—*Cic. in Ver.*, 2, lib. iv.

† Plin, Nat. Hist., lib. 36, c. 22.

* Herodotus, lib. 7, cap. 157.

† The compiler of forty folio volumes on the antiquities of his native city.

## THE DISADVANTAGES OF BUILDING COMMITTEES. ‡

MANY causes there are which operate to the continuance of existing evils; but if, on my own individual responsibility, I were called on to state the one which most of all conduces to hinder the advance of improvement in ecclesiastical architecture, I should attribute it to that monstrous anomaly usually known by the name of building committees. It is no theory which prompts the observation, nor is it any jealousy which would wish to confine to this society the care or the credit of architectural supervision, but it is the plain experience of many years which makes it almost a matter of truth to declare this opinion.

We may suppose that the type of these committees exists in the Metropolitan Church Building Association and the Church Building Commissioners. Now constituted as these bodies are of our superiors in the church, and with zeal and intention the most devoted and right minded, I am constrained to speak of them in no other terms than those of the profoundest respect; but what service they have done to the cause of church architecture every one who has had any experience of the matter very well knows. But why building committees are now to be formed in the country for building or restoring churches, one is quite at a loss to understand, for it is quite plain that they are the means of retard-

‡ From a paper by the Rev. Eccles Carter, read before the "Bristol and West of England Architectural Society." Although agreeing with it in the main, we are bound to say we have acted under committees, on more occasion than one, with the greatest satisfaction to ourselves.

ing the very objects they are professedly formed to promote.

It almost invariably happens that the persons composing them are selected from no knowledge of the subject, but from wealth or importance in other respects; and it is not unfrequently the case, that various and conflicting interests tend to promote disunion amongst them, and to nullify the effect of consultation. Consequent upon this system is that most pernicious one, putting up churches to competition, both as regards architects and builders; and when it comes to the choice and decision of plans and estimates, it very generally, and not unnaturally, happens that the cheapest is considered the best; the cheapest, that is for the present time, though posterity will have to mourn over the false economy of their ancestors.

It is enough to assert, that it is impossible for any architect to act under such influence, or to do himself or his cause credit, when he is canvassed and advised, cut down and perplexed by the contradictory statements of such a body. He is driven to the alternative of manfully refusing to listen to suggestions and alterations in his plans which he knows to be wrong, and so losing his employment; or of compromising his character as an architect, by perpetrating enormities suggested by the committee for cheapness or conveniences, but of which he has to bear the discredit. A good architect therefore becomes dispirited or disgusted; an indifferent and careless one becomes reckless.

It might be some evidence against a system, that I believe if every architect in England were canvassed on the subject, not one would be found to hold up his hand in favour of these building committees, constituted without reference to architectural or ecclesiological knowledge, and, in fact, without any further responsibility than their own consciences may suggest. It is a still stronger evidence against it that I have hardly known one man who had any knowledge of the subject, who did not bitterly lament having joined such a committee, and in very many cases has found it necessary to save his own credit by refusing to act upon it; and, moreover, if we may judge of causes by their effects, it is a staggering fact that the best instances of restorations of old churches, and the building of new ones, have been where no committee has acted, but one person has been responsible, though aided of course in his opinions by persons competent to give it.

If I am wrong as to fact, I beg I may be presently corrected. In place, then, of these numberless committees, rent by conflicting interests in themselves, and each one differing in opinion and knowledge of fact from the other, laying out for plans of designs by competition, and sitting in judgment on things by which the most experienced, under the same circumstances, might be easily deceived (for drawings and designs are very different from realities), instead of such a disjointed and cumbrous machinery as this, it would seem the most rational plan to have, when required, one body of men who should decide on the propriety of each particular church within its own district. And what body more proper than the committee of an architectural society, composed, as it is, of professional architects, clergymen, antiquaries, and others, whose business it is to make themselves acquainted with the facts and details of church architecture, and who, having no interest to serve, can have but one single object in view, viz., to rear a temple fit for God's service, the best that can be reared with their present means?

There is no occasion, then, for competition; an accredited architect can be fixed on for the work; and if, by the advice of the committee, any thing is done wrong, there is a responsible body, and every one knows who they are and where they are. The clergymen and churchwardens in each parish are the committee to whom the law has entrusted the care of the church. It is reasonable that they should discharge their responsibility by getting the best advice they can on the subject. But if they are not competent to fix on an architect, and to judge of the correctness of his proposals, they certainly are not competent to decide amongst a number of different plans and conflicting opinions. And as to their calling in indiscriminately, the opinions of persons no better qualified than themselves to give it, it would really seem as reasonable to send, in sickness, for a physician, and then to summon four or five of the worthiest friends one could find, to sit in judgment on his prescription. If, then, in any parish where a church is to be built or restored, the clergyman would seek the advice of an architectural, instead of a heterogeneous committee, and if any committee be required to act, let them be the responsible body. We should then see what is the use of architectural societies, not by the talk and noise they make in the world, but by the solid and substantial temples which would silently be reared for the service of God.

## THE NEW CHURCH IN THE CITY ROAD.

### EFFECTS OF THE WEATHER ON MASONRY.

The church, now in progress in the City Road stands within a crescent, which is on the north side, about an equal distance between the Angel and the Eagle Tavern. The style may be considered as late early-English, and though plain, is ably treated in all points, particularly in the mouldings. The plan consists of nave and aisles, chancel, a north chapel to the chancel, continuous with the aisle, and a tower in a corresponding position on the south. The north chapel is only to be distinguished externally, by a broader buttress of separation; but the tower projects a little in advance of the north aisle. The lower part of the tower will be groined, and this, and the north chapel open into the aisles, and the chancel, by large arches. A sacristy is placed in the angle between the north chapel and the chancel, the latter projecting some distance eastward. There is a turret staircase to the tower, and also one at the west, probably for an approach to the organ loft. The houses of the crescent approach so near to the walls of the church, that it has been necessary to cut off the angle of the sacristy—the door now being in the splay. The architect has also had to omit buttresses at the angles of the church, and to substitute a splay, the angle being corbelled out above. It is precisely such points as these, which become fortunate opportunities in the hands of an able architect; but they require a more than ordinary insight into the principles of the art. One who had a very moderate knowledge of the style he had chosen, or a partial acquaintance with examples, such as he had been accustomed to copy, relying only on such aids, assuredly would under such circumstances, fall into some glaring error, and such an example as that in question, furnishes a fitting, though slight illustration, of what we have often endeavoured to inculcate, in urging the importance of a perfect knowledge of examples, combined with the desire to learn their principles, and to use them as the materials, out of which to originate really new productions. The great sameness of character in many of the designs for cheap churches, already commented on, is a proof of the imperfect state, in which our knowledge of Gothic architecture still remains.—The piers of the nave are varied in plan, and will have alternately, moulded and foliated capitals. The entrances are one at the west, and a south door projecting with a gable head, so as to afford room for deeply recessed mouldings and shafts. The east end is lighted by five lancets. The windows of the aisles are of two lights, the space above the mullion being pierced with a quatrefoil. They are splayed out to a great width in the interior, after the manner of old examples. The materials used are Bath stone for the mouldings, and Kentish rag for the walls. The latter material has been disposed in irregular courses, this church being one of the few new ones, in which the material has been employed in the manner, recommended in a recent article published elsewhere. An opinion as to the comparative effect of this method, and that where stones in the courses, are used all of equal height, can hardly be formed till the work is pointed, and complete. Mr. Scott is the architect.

The severe frost, about ten days ago, did great injury to this building, as to many others in London. Every arch in the arcade which is erected, has suffered, the voussoirs being split, so that it will be necessary to replace them with new stones. The wall had been in a very damp state, not only from having been recently erected, but from the previous rain, which seems to have run down, and gained entrance at the top of the label. Two adjoining voussoirs have failed, in most cases, through the expansion of one, against the other. Too great care cannot be taken in protecting walls from the weather at this season, for although ordinary precautions be employed, serious injury may be done, as in this case, in a single night. It may be remarked, that the north side of the arches, that next the quarter from which the wind blew, is the only one in which the fissures are apparent.

## ON STAINED GLASS WINDOWS.

At the Decorative Art Society on the 13th inst., Mr. C. Cooper read the first portion of a paper "On Stained-glass Windows, chronologically considered," noticing such as were executed before the 16th century. He introduced the subject by stating, that his observations would have reference to stained-glass as a pictorial and decorative adjunct, classifying the principal features which characterized the works of several periods in ecclesiastical and public buildings. A brief description was given of the various properties of glass in use, such as *painted glass*, *pot metal*, *and flashed glass*, and it was said that England during the middle ages was not celebrated for manufacturing the more costly and beautiful tints, it being usually stipulated in the contracts of those times, that for the more precious colours none should be used "but glass from beyond seas." Painting upon white-glass was pointed out as producing muddy opaque effects of a perishable nature,—*pot-metals*, as being essentially brilliant and durable, and *flashed glass*, as allowing the partial removal of the coloured surface by grinding, as practised in the examples during the 15th and 16th centuries, or by the more economic action of the fluoric acid. The greater brilliancy and depth of colour produced by the two latter kinds beyond that in which the colours are painted on the glass, and subsequently burned in, was demonstrated, and it was said that a prejudice in the public mind as regards the decline of the art, might be attributed to the practice in later times, of using painted glass when attempting pictorial display.

The reader said, that the earliest notice of glass being employed for windows occurs in Bede's account of sending to France to procure glass manufacturers, and to bring them over to glaze the windows of the monastery at Weremouth in the 7th century, and which mission was successful. The artisans then brought over gave instructions to the English in the art of making glass for window-lamps and other works. Although the account given was not clear, as to the nature of the glass, made, he would infer that it was *coloured* glass from Walpole's having ascribed the introduction of painting into this island to Bede. The examples of the 9th century were said to exhibit barbarous attempts in delineating the human figure;—the Norman and Semi-Norman windows, as having considerable merit;—the 13th, 14th, and 15th centuries present progressive improvements in the art, with admirable fitness of design; but the 16th century, in the reader's opinion, witnessed the decline of the art, at least in the suitableness of the design to the material; which he explained to arise from attempts to produce perspective effects in which the drawing and foreshortening are accurately represented, but the figures and objects at various distances are of an uniform depth of colour. From the unsuitableness of the material, aerial perspective was never attained.

Mr. Cooper next entered upon an analysis of the designs and colours peculiar to the several centuries. Previously to the 11th century, representations of the human form were attempted in a rude manner, without any shading or pencilling; the colours being pot-metal, and the outline formed by the leading. The flesh and features were sometimes left in clear white glass. The subjects usually consisted of three or more figures—saints, kings, attendant angels, &c.—on a deep blue ground, and the colours were nearly always restricted to the primaries. With reference to the 12th and 13th centuries it was stated, that the general design is composed of geometrical forms in panels, either squares or circles, or portions of them. The vesica piscis being frequently met with (formed from the intersection of two equal circles at their centres), and also the

square, placed lozenge-wise. Although the design may be sometimes complicated, the ground-work will be formed by the square and the circle; and several diagrams were shewn in explanation of this view. Another peculiarity was adverted to: every geometrical compartment exhibits a complete picture; thus, a single window may contain from twenty to fifty perfect tableaux, chiefly scriptural, and sometimes presenting a complete and consecutive history. No perspective is attempted; and the background is usually deep blue, and sometimes red, black, or yellow. Letter inscriptions are to be met with, forming the base line, and surrounding the subject. The predominant colour, in effect, is a glowing purple or violet tone; blue and red glass being freely used, and the detail of the design, from the minuteness, being subordinate to colour. A great similarity was said to be observable between the works of this period, executed in this country, and those on the continent. Designs of windows in Canterbury and Lincoln cathedrals, and others at Bourges, Lyons, and Strasburg, were described and compared. He thence inferred, that the examples we possess were not executed in this country, or if so, that they were designed by Norman or French artists.

In the fourteenth century single figures and heraldry were more frequently introduced, other parts of the windows being filled by quarries, with foliage painted black, or partly yellow. A continuous pattern, with rosettes, pateræ, fleur-de-lis, &c., in full colours, and a surrounding border in rich colours, are peculiar to this period. Towards the end of this century, large canopied figures, occupying the whole light, are met with (as at Tewkesbury). These figures were treated in two distinct ways as regards the colouring, some having the whole background in rich colours, generally blue, and sometimes red, but no white glass appearing. In the other case, the backgrounds are clear glass and devoid of colour. The designs are in other respects similar. The reader supposed that the former were adopted in buildings having no painting on the walls, while the latter would, by admitting a considerable portion of pure light, be essential to the proper effect of mural decorations, tapestries, &c.

Pot-metals, it was said, were principally employed for all the coloured portions, and some curious accounts of expenses, &c., for preparing the tables on which the design was set out the full size, and for breaking, joining, and painting the glass, were quoted.

The paper will be resumed (and the remarks continued to the present time) at the next meeting of the society, on the 27th inst.

## TERRA-COTTA.

Sir,—I beg to make a few remarks on the subject of terra-cotta, in reference to a quotation from a contemporary, which appeared in The Builder of September 5th, 1846, depreciating this valuable and efficient material; stating, that it is unfit for interior use, and that it is very expensive. Now, I beg to say that this is quite a mistake; for it is from thirty to fifty per cent. less expensive than stone, and more durable than any building stone when the proper ingredients are used in mixing it, and well burned; for the high degree of heat to which it is subjected causes it to become a semi-vitrified substance, and renders it quite impervious to the weather. Frost or damp has no effect upon it; consequently, it retains a sharpness and surface unimpaired by atmospheric changes. The fragments of terra-cotta in the British Museum, upwards of 2,000 years old, will fully bear out this remark.

Nearly a century has elapsed since the introduction of terra-cotta into this country; and many works executed in it may be now seen unimpaired and as perfect as when first executed; while the natural stone in and about the same building, will in many instances be found to have gone to decay.

It is a material capable of high finish and good relief, and admirably adapted for all kinds of architectural decorations. I here give a few names of places where it has been used:—the gateway, &c., of King's College, and various works at Cambridge; the frieze, capitals, trophies, figures, fountains, &c., Buckingham Palace; the caryatidæ, and the whole of the architectural decorations at St. Pancras Church; the frieze and capitals of St. Paul's school; the capitals and other enrichments of All Souls' Church, Langham place; the colossal statue of Britannia on the Town-hall, Liverpool; the pediment (subject, death of Nelson), statues, &c., Greenwich Hospital; the vases on the terrace—front of Somerset House; the statue of Britannia, 12 feet high, and all the figures, &c., on the Nelson Monument at Yarmouth, facing the sea, the *stone* of which is *rapidly* decaying; the statues, &c., at the Bank of England; the rich Gothic screen at St. George's Chapel, Windsor; and other works too numerous to mention.

As you are a professed and able advocate for the advantage of the arts in architecture and building, I trust you will give this subject space in your valuable journal, rather than encourage the depreciation of a material that is really good, useful, and economical.

I am, Sir, &c.,

Hoddesdon. James Pulham.

## AWARDS OF OFFICIAL REFEREES.

### SMALL DETACHED OFFICE BUILDINGS.

In the case of a closet building erected without notice at Forest Hill, Sydenham, in the Lewisham district, the district surveyor laid information against the builder for the following irregularities:—

"The south wall of said building, being carried over soil pit on old wood bearer (without counter arch, and the floor-joist-ends also *bearing* on such wood bearer); also portion of back wall returning from quoin at south side, built on dry brick steining of four inch thickness for foundation thereof. The roof parapet walls not being of sufficient height, schedule D part 2."

The referees' award was: "that inasmuch as the building in question comes within the modification made under the authority of the Commissioners of Works and Buildings, dated the 5th September, 1845,* relative to small office buildings detached from any other building and from ground not in the same occupation to an extent equal to the height thereof above the ground, and not exceeding eight feet in height and half a square in area,—the said building is not subject to the rules of the first-mentioned Metropolitan Buildings Act, cited in the said notice of irregularity."

Costs, with the exception of those attending a bearing on the premises, required by the builder, to be paid by the district surveyor.

### THICKNESS OF INCLOSING WALLS.

With regard to four buildings of the first-rate, and four buildings of the extra first-rate, of the dwelling-house class, proposed to be built in Platt-street, St. Pancras, for the Association for Improving the Dwellings of the Industrious Classes,—the said buildings were to contain five stories, inclusive of the rooms in the roof thereof, and were in effect buildings of the third rate.

A requisition from Mr. Moffatt, on the part of the society, stated that,—"by schedule C, part 2, of the said Act, it is required that the external walls of the said first-rate buildings be of the thickness of 17½ inches in the three lowest stories, and thirteen inches in thickness, in the two topmost stories; and that the external walls of the said extra first-rate buildings be of the thickness of 21½ inches in the lowest story, and of the thickness of 17½ inches in the four remaining stories.

And whereas it is prescribed under the rule in schedule D, part 1, of the said Act, headed, "Thicknesses of inclosing walls to stories of buildings of whatever rate," if any such wall (i. e. an external wall) be abutted by cross or return walls within a length of 12 feet, and if not more than one aperture or recess occur within such length of 12 feet, and not more than one-half the quantity in length be taken out of such compartment of a wall by any such aperture or recess, then such external wall may be built of any thickness not less than 13 inches, notwithstanding the rate of such wall may require a greater thickness."

And whereas it is desired by the said W. B. Moffatt to build all such of the external walls, of all the said buildings as do not exceed 12 feet without cross walls, of the thickness of 13 inches, and, as the said W. B. Moffatt considers, in conformity with the said Act.

And whereas a difference of opinion has arisen between the said W. B. Moffatt and the district surveyor, touching the applicability of the last rule herein before quoted, the said surveyor being of opinion that the thicknesses prescribed for external walls in sched. C., part 2, are the minimum thickness for the rates of buildings to which they respectively apply, and that no departure may be made therefrom, other than such recesses in the said walls as the surveyor may authorize under the rule "construction and materials," in schedule D., part 2, of the said Act, and that the rule hereinbefore quoted applies only to any additional height of story beyond the usual height."

The referees were accordingly requested "to declare the true intent and meaning of the herein before quoted rule, and also whether the same may be applied, and does apply, to the external walls of the buildings in question, and to determine whether the said external walls may be built of the thickness of 13 inches only throughout, or in case the said W. B. Moffatt should think fit, of the thicknesses prescribed by schedule C., part 2, of the said Act for external walls of dwelling-houses of the third rate."

At the hearing, the following further question was also referred to them:—"Whether, inasmuch as there is to be no basement or under-ground story to the proposed buildings, and there is to be no kitchen fire-place and range, it will be necessary to build the backs of the fire-places on the ground, or lowest story, of the thickness of 13 inches."

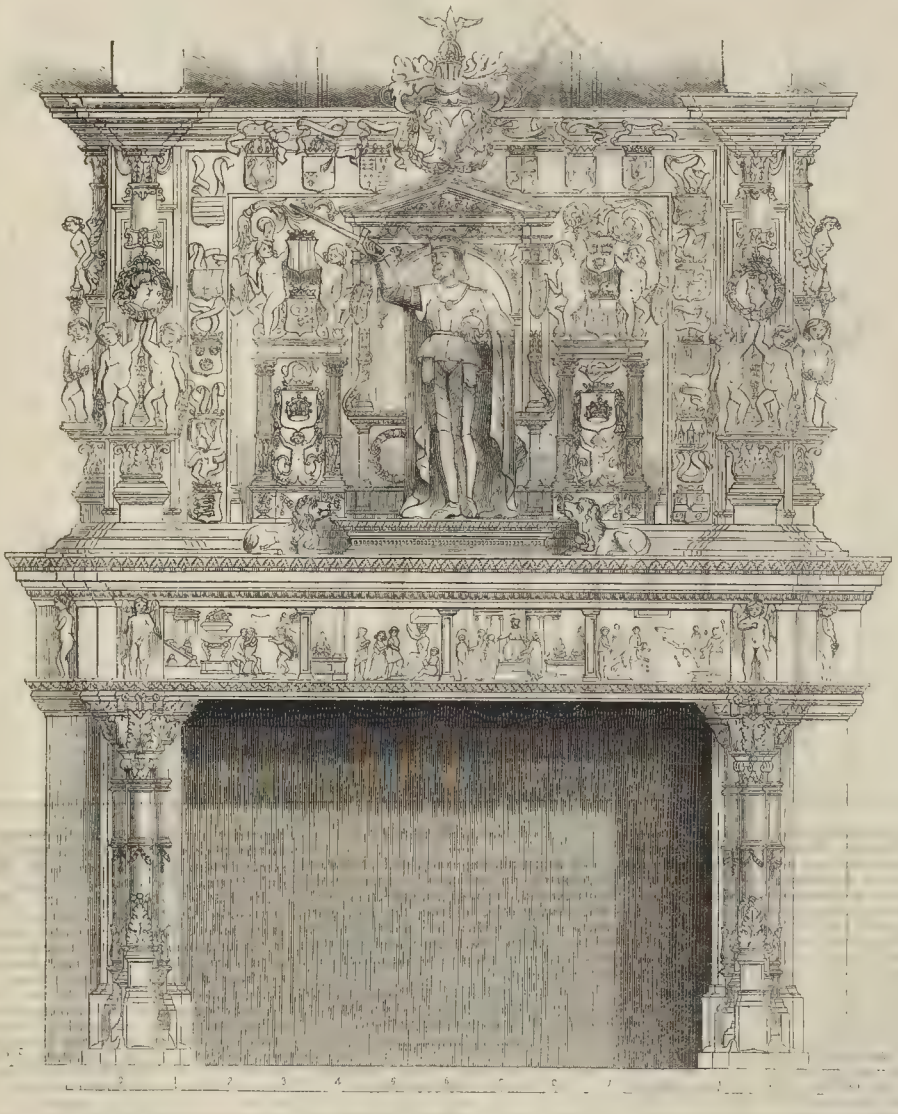
The referees awarded:—"That the rule in question (that is to say, the last of the rules in schedule D, part I, headed, 'Thickness of inclosing walls to stories of buildings of whatever rate') does apply, and may be applied, to the external walls in every story of buildings of the first class, where such external walls are abutted by cross or return walls not less than 8½ inches thick, coursing and bonding therewith within a length of 12 feet; and that, if any external wall of the building in question be so abutted, and if not more than one aperture or recess occur within such length of 12 feet, and not more than one-half the quantity in length be taken out of such compartment of such wall, then such wall may be built of the thickness of 13 inches—so, nevertheless, that in the buildings of the central portion, the cross walls be carried up to the ceiling of the story next but one below the topmost story, at least 8½ inches in thickness; and so that in the wings (these buildings being of the extra first-rate) the cross walls be carried up to the ceiling of the story next below the topmost story, at the least 8½ inches in thickness. And as to the matter of the chimney backs, we do hereby further determine and award, that, notwithstanding the circumstances stated at the hearing of this matter, it will be contrary to the rules of the Metropolitan Buildings Act to build the back of any chimney in a party wall, in the lowest story, of the thickness of 8½ inches, or of any less thickness than 13 inches; and that it is not competent to the official referees to dispense with such rules."

Expenses to be paid by the society.

* See The Builder, Vol. III., p. 446.

Martin's Cement.—An injunction has been applied for by Mr. Stevens, in the Vice-Chancellor's Court, against Mr. Keating, to restrain him from infringing the original patent granted in 1834, for the manufacture of this cement. The specification of the patent now vested in the plaintiff claimed a right of manufacturing powdered chalk or gypsum, and a strong alkali, by neutralization with an acid, into a good imitation marble or cement, capable of receiving a high polish; and by another patent in 1840, alum, &c., were specified for mixing the materials in a solid state. The defendant in 1846, however, took out a patent for a cement, treating the mixture of gypsum with an acid and alkali as an old thing; claiming the use of borax instead of alum; and stating that he had obtained a contract for supplying the new Houses of Parliament with his new cement. The Vice-Chancellor held that the plaintiff had a *prima facie* right to the injunction; but that he must be put on terms to bring an action forthwith to try the validity of his patent.

CARVED FIREPLACE IN THE "PALAIS DE JUSTICE," BRUGES.



## THE PALACE OF JUSTICE AT BRUGES.

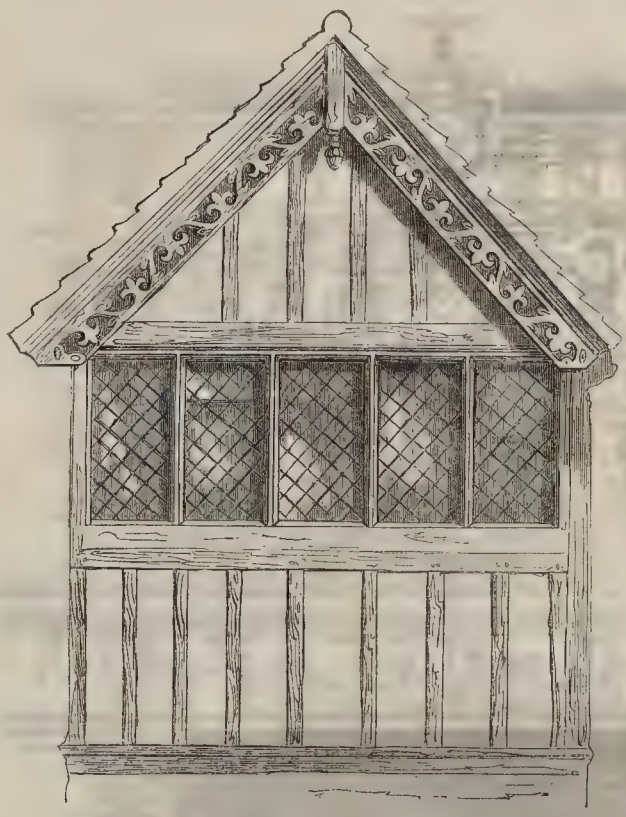
The appearance and condition of this interesting town must now be strangely different from what it was in the middle ages, when it bore the title of the Florence of West Flanders, and was well spoken of by Petrarch and other writers of the period, whether as regards historical associations, public institutions, or the succession of great men, Bruges has sent forth throughout Europe. She has fallen into comparative obscurity; still it is a place that must not be passed over lightly; there are still objects of no mean interest to command attention, and to my mind it still retains a more general air of antiquity than any other town in Belgium, and a ramble through its narrow streets, with the lofty and steep gables on either side, with here and there a house more richly decorated than its fellows, will bring to recollection some of Prout's finest drawings. No buildings will be found here comparable either as to extent or beauty with those of Brussels, Antwerp, or Ghent, yet the few that are remaining will well repay an attentive examination.

The grandest monument remaining of this once far-famed place is the church of Notre Dame, which is thus spoken of by Roscoe. "It rose to its present state from a small chapel, built by St. Boniface in 745, and dedicated to the Virgin; its length is 300 feet, and in breadth and height it is equally grand and imposing. The extent of the nave of the four lower aisles or wings, and of the swelling dome, presents a magnificent *coup d'œil*, and gives it an air at once picturesque, and of peculiar grandeur. The grand choir, in its dim religious light, the two magnificent aisles illumined by the splendour of the variegated and deep stained glass, all possess an absorbing charm to extort admiration from the coldest mind."

In this church is the monument of Charles the Bold and his daughter, Mary of Burgundy, the two last sovereigns of Flanders: it is a very rich and elaborate composition, but not equal in purity of design to many works of the preceding century. In the nave, near the entrance to the choir, stands a pulpit carved in oak, and in the same style as those generally found in Belgium.

But it is in the Palace of Justice that the most elaborate specimen of wood-carving is to be found. The exterior is modern, and presents little worthy of notice; but the room, known as the chamber of Charles the Fifth, well deserves attentive study. The whole of one side is covered by the most elaborate carving. The centre is occupied by the chimney-piece, shewn in the engraving, the lower stage of which is worked out of black marble, with the exception of the cupids and bas-reliefs (representing the history of Susannah), which are of statuary marble. The figure in the centre is intended to represent the Emperor Charles the Fifth; above him are

GABLE AT IGHTHAM, KENT.

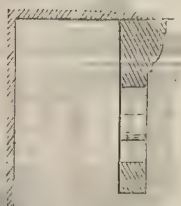




SECTION OF MULLION



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SECTION OF CIRCLE BOARD

placed the imperial arms; and around those of Spain, Flanders, Brabant, and the different members of the ducal house of Burgundy; on the right of the chimney-piece are statues of Charles the Bold and his wife, Margaret, sister to Edward the Fourth of England; on the left, the figures of Mary of Burgundy and her husband, Maximilian, of Austria. A very faint idea can be given by any engraving, of the exquisite manner in which the whole of the carving is executed. From a date on one of the sides, it appears that this elaborate work was done in the year 1529. At the time of my visit the whole was undergoing the most careful repair; and it was easy to perceive, that the men engaged on the work had fully entered into the spirit of it, and were anxious to make it as perfect as their skill would permit.

It is merely repeating an oft-told tale to say, that the same encouragement is here given to every branch of the fine arts, as in every other town in Belgium. There is a Royal Academy supported by Government, which contains schools of painting, sculpture, and architecture, besides numerous private collections of great merit.

Surely the attention of our own Government should be called to the fact, that in every considerable town of Belgium there are means of study provided and superintended by the Government authorities; while in England, with the exception of schools of design (not too well conducted) in a few of our large towns, there are no means provided by which the people may cultivate a taste for the arts. Still, we are rather better off than we were a century back, when some of our finest works in sculpture were executed by foreign artists. Upwards of twenty of the noblest monuments in Westminster Abbey are the work of two sculptors from Antwerp — Sheemakers and Rysbrack.

W. C.

## OLD ENGLISH GABLES.

The accompanying example of a gable and barge-board will probably be found useful. Those generally supplied in architectural works being usually selected from the most costly examples, can seldom be imitated by the builder, yet the small unpresuming cottage gable is often as effective as the one of more elaborate design.

It is from a cottage at Ightham, in Kent. The construction is perfectly simple, and is explained by the accompanying sections.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Polychromism in Mediæval Buildings and Sculptures.*—At the restoration of the fine church at Reutlingen, Würtemberg, erected in the 14th century, a series of wall-paintings were discovered, and freed of the whitewash which overspread them. They are legends of St. Catherine, and a Passion, without much art-worth; still, interesting for German art-history. The Germans used, at this period of art-development, those colours still stronger, more brilliant and varied; and were compelled, therefore, for the sake of making somewhat apparent the effect of architectural form, which was *vanishing* under the colour, to use more sharp outlines and pronounced angles. Still, even then (in the 14th century), German art was exempt from those distorted shapes and broken-up forms, which disfigure its later periods, and would appear nigh impossible, if their deterring specimens were not before our eyes. The church of Reutlingen, and the adjacent castle of Urach, contain valuable specimens of German architecture and art of the 15th century, as the Saint Sepulchre and the font of the former, the oratory of Count Eberhard, at the latter place; some of which have been figured in Mr. Heidelof's "Ornaments of the Middle Ages."

*Mr. Hübsch's Architectural Ideas.—Karlsruhe—The New Museum.*—This capital of the grand duchy of Baden is adequately progressing in its art-tendencies, and the new museum of fine arts belongs to the most prominent buildings of Germany. The architect, Mr. Hubsch, has therein put forth a sort of *art-credo*, having declared, that he is seeking for new paths in architecture, as Cornelius, Thorwaldsen, &c., have found for painting and statuary. Mr. H. thinks, that the monuments of high mediævity (*hohen Mittelalters*) and especially the basilicas, are *autochtonic*—and prototypes of form and the laws of construction, while other modern art-thinkers and critics consider them (conjointedly with their painting and statuary) as the last impairing eradiations of antiquity, from which, perhaps, only the huge structures of the times of the crusades may be excepted. However this may be, the museum has a decidedly monumental character, whose scope is perceptibly indicated by the statues and relievos of its porch. The front exhibits a perfect working out of the principle of *Trylogism*, and the different chief compartments, like portals, windows, &c., are arranged according to a certain consequential grouping. The chief cornice rises in the middle of the *façade* to a flat gable, but without any defined pediment, in the manner as we see it in ancient churches, as well as in the relievos of the ancients. Splendid and bold is the vestibule, with double ascent stairs, and large compartments ornamented by the frescoes of Schwind. The lower rooms contain casts of important sculptures of ancient and modern times, and some antiques. On the ceilings are depicted a series of mythologic subjects and allegories,

mostly after the hints of Goethe on the picture collection of *Philostrates* of old. Very pleasant to the eye, and well matched with the light colour of the sculptures, is the light tint of the walls,—but the glaring contrast of the pedestals, a dark porphyry or sienite, does not deserve equal commendation. In the upper rooms pictures and drawings are exhibited, and the works of Overbeck, Schnorr, Veit, Hess, &c., are great ornaments of this collection. Amongst the cartoons lately exhibited, that of the four *Facultates* for the great Aula of the university of Bonn, is most remarkable. Amongst the pictures of ancient times, a portrait of a man and his wife, by G. Peecz, another portrait of a man, said to be of Hubert Van Eyck, a Holy Family, by Lorenzo Credi, &c., are worthy of attention. Especially interesting to our German neighbours is a portrait of Newton (wrongly, though, ascribed to Peter de Witte), as they say that its resemblance to Goethe is quite astonishing!

## SHALL ARCHITECTS MEASURE?

'SIR,—I am induced to offer you a few observations, in consequence of reading the report, in your last number, of the meeting of the Institute on the preceding Monday, and the remarks made by Mr. Tite on that occasion on the subject of measuring. I quite agree with Mr. Tite as to the importance to architects of a knowledge of measuring, but I would ask how architects are to attain this very useful and important branch of the profession, while any person professing measuring is excluded from the Institute (albeit many of the most valuable members of the Institute have been what many of the architects are pleased to call "measurers" in their early days), and while even Mr. Tite himself considers that any change in the mode of measuring should come from the "operatives rather than the profession." It should be remembered that measuring does not merely consist in the expert use of two five feet rods, or the adding together of two and two to make four, but that in order to measure and *value* correctly the different descriptions of work contained in a building, it is necessary to acquire a knowledge of the different operations which have to be performed in order to attain certain results—of the different kinds and amount of labour in an elaborate piece of joinery; or to produce a Corinthian capital or cornice, or a piece of Gothic tracery from a rough block of stone. And here I would venture to suggest to Mr. Tite to ask some of the "operative" authorities in measuring, how they would fix a price to stone per foot cube, which should apply in such a case as I have alluded to, and at the same time to stone, as used by engineers in railway work, &c.

Returning, however, more immediately to my subject, I would observe, that the information thus gained is that which an architect requires in order to prepare a proper specification, and working drawings, for any work he may have to execute; and without which, instead of being able properly to superintend and direct others, he must always be at the mercy of his clerk of works, or other people. It is the want of this sort of knowledge which leads to the grievous results which we too often see in cases of competition (witness, as recent cases, the Kensington workhouse and the Dalston Literary Institution), where the real estimates are so much at variance with the amounts proposed to be expended in the first instance, and which tend to throw so much discredit and excite so much prejudice against the profession generally. I could enter much further into this subject but for fear of trespassing too much on your space and your readers' patience; but at some future opportunity, should you deem this worthy of notice, I hope to resume the subject.

In conclusion, I should like to be informed whether any of the candidates for district surveyorships have been examined on this branch of their profession. I know that in the list of subjects upon which it was proposed to examine the candidates this was included; but I am quite sure that some, had they been questioned as to measuring, would have been sorely puzzled, though in other respects taking, and deservedly so, a high standing.

I am, Sir, &c., G. R.

## RAILWAY JOTTINGS.

A NEW and rather an odd point of law was decided on Thursday week in the Court of Exchequer, in the case of Wilson *v.* Lord Curzon, to wit, that the only person whom the secretary of a provisionally registered company can sue, for arrears of salary due to him, is himself, if he happens to have taken a leading interest in the promotion of said company; for the plaintiff, in such a suit against Peter to pay Paul as this would be, is not unreasonably, perhaps, supposed "to have appointed himself," as the official main-spring of the incipient company.——The question of warming railway carriages, lately recommended by us to the notice of our readers, is still kept astir by the continued frosty cold of the present season. The *Liverpool Journal*, reverberating the echo, asks why our railway carriages are not yet warmed, although it is now nearly two years since the question was first propounded; and although, since that time, railway carriages in America have been heated, and some of the Belgian and French companies also have, during the present winter, adopted means to warm their carriages. "Have any English companies taken up the scheme? No, not one that we know of. Some may ask, is the thing practicable? or will it pay? It is easily practicable, and it will pay better than other outlay on any line adopting the plan. The swift boats on the several canals have long had the scheme in operation—to warm their best cabins. [We can not only testify to the fact, and the comfort, of this practice, on canals through routes where railways had not penetrated, but that respectable parties have often preferred travelling by canal on this account alone, even where railways have now penetrated. On the canal between Edinburgh and Glasgow, the worst cabins, no less than the best, are comfortably heated, as others are, somewhat in the following way:] Copper tubes, about 4 feet long and 6 inches in diameter, are filled with hot water, and laid on the cabin floor; these will preserve and give out heat quite sufficient for comfortable warmth during a space of five or six hours. Indeed," adds the journal, "we have travelled with one for eight hours, the water unchanged, and there was a comfortable heat at the end of the journey. How, you may say, can this plan be applied to carriages? Nothing easier. In all carriages a narrow recess or box may be made across and under the floor where the passengers' feet rest, betwixt the seats, but parallel with them; and if the make of the carriage frame will allow of an outside opening to put in the hot-water tubes, they may be fitted with doors. If this is not practicable, let the door be in the floor, and be perforated, shutting over the door, and then covered with the mat or carpet; this will equalise and diffuse the heat. One or two stations will require a boiler to heat the water; there must be tubes to hold it, and the present staff of porters would place them in the carriages in a few moments, even in the longest train. Think of going to London, or elsewhere, this cold weather, warm all the way, and with warm feet at the end. Reader, would you not give an extra shilling for such a luxury?" The great and universal importance of this subject in a sanatory point of view, no less than for the sake of mere comfort, on which health often so much depends, will be our excuse for devoting so much space to this section of our present jottings.——The London and North Western Company, it is said, realize no less than 20,000*l.* a year in rents from restaurants alone upon their various lines.——The grand central station about to be erected by this company at the Chester terminus of the Chester and Crewe branch is estimated to cost 80,000*l.*——The platforms for the Britannia and Conway bridges, on which the tubes are to be constructed, according to a contemporary, "are now in course of erection, and a considerable quantity of the iron is already manufactured. The platform at the straits will be 1,000 feet in length, with wharfs and sheds to protect the workmen. In a few weeks the construction of the tubes themselves will be commenced and rapidly proceeded with. The apparatus for raising these ponderous structures is also in a forward state, under the direction of Mr. Edwin Clark, the engineer appointed by Mr. Robert Stephenson to superintend the operations, and in a short time the aerial gardens of ancient Babylon will be more than rivalled by this modern monument of enterprise and ingenuity."——At the opening of the Lancaster and Carlisle line, the following statistical facts were stated by Mr. Mould, the contractors' superintendent, at the banquet given by his employers, Messrs. Stephenson, Brassey, and Mackenzie.——In the blasting of rocks no less than 4,800 barrels, or 200 tons, of gunpowder had been used. The patent fusees alone, if put on a line, would reach 400 miles. The number of nights during which the men worked was 152,147. The number of horses employed was 10,500. No fewer than 400,000 yards required blasting, as it could not be removed by any other means. The number of bridges on the line was 219; of culverts, 230; and of viaducts, 500, The greatest number of men employed was about 10,000, and the number of workmen altogether was equal to 3,000,000 in one day; whilst the excavations averaged 100,000 cubic yards per mile. The number of waggons employed was 2,200, which, if extended in a line, would reach nearly five miles; and the temporary wheeling planks, placed end to end, would extend to thirty-five miles.——The inhabitants of Penrith are beginning to reap the benefits of railway transit. The price of coal in that town, which has long been 1s. per cwt., is now reduced to 8d. per cwt., a saving of 33 per cent. to the consumer.——Galignani cites a letter from Bordeaux, in which it is stated, that dilapidations have been observed in the tunnel of the Paris and Bordeaux Railway, under the quarries of Bel Air, at Lormont. Some of the supporting piers have given way, and fissures are perceptible in the vault. The director of the works took immediate means to prevent the damage from extending; and information of what had occurred was sent to the board of directors.——The following matter-of-fact railway romance is from a sketch by Elihu Burritt, the learned, and something more than merely learned, American blacksmith:—During a storm and violent gale, the long railway bridge across the Connecticut, between Hartford and Springfield, was, *en masse*, lifted by the wind and thrown into the river beneath, which is here 200 yards in breadth, with a powerful current, at this time swelled to a dreadful height by an unusual flood of rain. The line here crosses by the bridge at a height of 50 feet above the river, and after an abrupt curve has been passed. The train left Springfield at the usual time on the present occasion, when there were no electric telegraphs, we suppose, to announce the peril in the way. "The storm raged violently without," says Elihu, "but the passengers within congratulated themselves on their comfortable situation, thinking of the pleasant homes and firesides which they soon expected to reach. On came the train—the engine blowing off its head of steam—breasting its way nobly against the gale, which almost threatened to check its progress, and the hot iron hissing furiously in the falling rain. No one knew or even suspected that the bridge was gone. For two years, by day and night, the trains had passed and repassed, until safety had obliterated a thought even of the possibility of danger. But no bridge was there to receive them, and the long train, with its precious freight, rushed swiftly on to this precipice of destruction! It was not customary to stop there, except to check the speed for the landing of passengers; but the people there had learned the loss of the bridge, and kept a sharp look out for the approaching train. It comes! The word is given, and—they are safe. Every heart leaped from its place, and the head swam giddy with fear, as the thought came of that fearful leap in the dark, and long will the passengers remember that dreadful ride, and the friendly, yet fearful cry, 'The bridge is gone.'"

LABOURER'S COTTAGE: PREMIUM FOR DESIGN.—In addition to the list already published, the Society of Arts offer a special premium of thirty guineas for the best design and working drawings of a labourer or workman's cottage, to combine cheapness with convenience, comfort, wholesomeness, and neatness. To be accompanied by a specification of the works and internal arrangements, and an estimate of the cost in the district where the designer lives. The drawings are to remain the property of the designer, with the condition only of their immediate publication.

## HAYDON'S VIEWS AND OPINIONS.*

*Public Taste.*—The people of Britain are often blamed for not having taste for this style or that. First they are told, they have no taste because they perceive the extravagance of the German school; then they have no taste because they abhor the false view of nature in the French school; but you never find them having these objections to Titian, to Raffaelle, or the Greeks. Believe me, to me these are evidences that my countrymen are organized to receive true impressions from nature, and not false ones; I believe the people, and know them to be in advance of the production; and if our statesmen would back their sympathies for good works, we should soon see productions which would put a stop to this calumnious and offensive censure.

*West, Fuzeli, Flaxman, and Stothard.*—Never were four men so essentially different as West, Fuzeli, Flaxman, and Stothard. Fuzeli was undoubtedly the mind of the largest range;—West was an eminent *macchinista* of the second rank;—Flaxman and Stothard were purer designers than either. Barry and Reynolds were before my time, but Johnson said, in Barry's Adelphi, "there was a grasp of mind you found no where else;" which was true.

*Imitation.*—I hope I have impressed you all with this leading truth, viz. in an imitative art, the knowledge of how to imitate is as important almost as how to invent; and the man who affects to despise the means to imitate, does not see farther than the great men before him, but not half so far. It cannot be too often repeated in the British school, that none of the elements of design must be neglected; if you cannot draw, or colour, or invent, or light and shadow, or compose, you are not a painter, and never will be entitled to the name. The great men before us did not obtain their fame by such conceited folly; and if such folly be not held up to eternal reprobation, it is a disease which will return like any other epidemical tendency, till entirely branded out of the art.

*Discontent in Artists.*—This disposition to hope for the future, regret the past, and despise the present, is innate in human feelings; and has always been the characteristic of men whose imagination predominated over their reason in all things. No genius was ever encouraged to the full extent of his own desires, and all men attribute their failure, or their obscurity to every other cause but their own want of conduct, their own want of talents, or their own deficiencies of understanding. The seeds of discontent must ever exist in a nature which lives for ever in a vain struggle to realize the visions of an unlimited conception! What, after all, were the chambers of the Vatican?—the Sistine Chapel?—or the Lesche at Delphi, with what their great inventors could have done, or did imagine, in a state of being unlimited by space, unchecked by the depravity of crime, the feebleness of disease, or the wretched limitations of a miserable earth, but twenty-four thousand miles in circumference?

*High Art in England.*—The people are decidedly alive to the importance of grand art here in England, and have always crowded to where any grand works of art are to be seen; but the enthusiasm of the people has never been seconded by the state; and the great works successively produced these last fifty years, which have rescued the country from the stigma of incapacity, are hidden from the public eye after the first ebullition, rotting, forgotten, and neglected, till a new season, and a new subject, a cow with two heads, or an ass with three legs, obliterate the recollection of either. Within my own time, works of all classes of art, which, if collected in one gallery, would inevitably set British art in its true colour before the world, have been shewn and decayed. In fact, I am quite correct in stating, that in no two schools in Europe could an equal number of works be shown, with all their faults, containing so much genuine and native excellence; and yet, owing to our want of a local habitation, a native resting-place for the *élites* of our productions, we have no decided character in Europe, and, till we have such gallery, we never can. Every illustrious foreigner goes away with contempt, on the whole, for the genius in England in the arts; when at this very instant there are works in cellars, or lost in the obscurity of private collections, which, if centralized in a National Gallery, would place English art for ever on a basis of the proudest hope; and prove, if such were her productions in spite of her obstructions, what might reasonably be expected from a condition of liberal and annual state support. It naturally occurs to every foreigner, what is the reason? The reason is naturally found in the various influences of our social condition. To the various number of our influential societies, each acting on the other, and all combined, like Freemasons, to assist each other, in opposition *rather* to all independence of thought, or abstract principles of conduct, than in support of it.

* Lectures on Painting and Design. By B. R. Haydon. Vol. II. London: Longman and Co. A volume of great value and interest.

## NOTES IN THE PROVINCES.

The tenders for the erection of the Warstone cemetery chapel, cloisters, and other buildings, of the Church of England Cemetery Company, were examined on Tuesday week, according to *Aris's Birmingham Gazette*, and the successful competitor was declared to be Mr. Barton, of Lambeth. The other works at the cemetery have been carried on as rapidly as the late severe weather would allow, and the completion of the whole establishment towards next autumn, is anticipated. "The style of building," says our authority, "is Gothic, and what is termed the decorated English, but with a strong tendency, in its profuse ornaments, to the florid, or perpendicular style of the 14th (15th) century. The building itself is cruciform, and consists of a chapel, with a long range of open cloisters running north and south, and a tower and lofty spire projecting in front from the centre of the cloisters. The length of the chapel, &c., from east to west, is about 90 feet; the cloisters, from north to south, upwards of 150 feet; and the height of the tower and spire 116 feet. Below these buildings are a crypt, and a range of catacombs for the reception of corpses, and a tunnel communicating with a double row of circular catacombs. On the west front the main buildings will be of white Derbyshire stone; and the circular catacombs in front of red sand-stone, in keeping with the nature of the ground in which they are made. The cloisters are pierced on the west side with highly decorated windows, but have the east wall blank, for the reception of monumental tablets to the memory of the dead. The levelling and preparation of the ground are now nearly complete, and ready for planting, as soon as the weather permits."——Among other improvements talked of, as likely to be carried out in Dorchester, is that of a new street, to throw open the hospital from the County-hall, by the removal of the dilapidated property opposite; and the building of a fashionable crescent, to be called, "Colliton Crescent," with a north-west view of the scenery around.——The Earl of Verulam has given the munificent sum of 1,500*l.* towards the endowment and building of the proposed new church at Lavistock-green, St. Albans. His lordship has also given a piece of land as the site for the church.——At Bristol, meetings of operatives and of rate-payers have resolved to recommend the town council to postpone all furtherance of the Street Improvement Bill, until the dock question has been pushed onwards to a settlement in the anticipated negotiation between the Dock Company and the Free Port Association; means for completing which would require to be provided by the citizens, while it is admitted that the contemplated improvements,—one of the first of which is the formation of a new street from Bristol bridge to the railway terminus, a sort of Bristol Piccadilly, will in all occasion an expense of 3,000*l.* a year, which it would be inconvenient to incur simultaneously with the raising of the anticipated resources necessary for the Free Port Association scheme. And besides, as observed at one of these meetings, "a lunatic asylum, to be erected at an expense of 20,000*l.*, was hanging over their heads."——A "Bristol and Bath Economic Conveyance Company," announces the not now altogether unprecedented advantage of transit for the million at one penny per mile, by omnibuses, or, rather, by omnibi, as classical reporters, by a somewhat singular sort of double plurality, prefer to term it.——A separate article on "Liverpool" appears in our present impression.——The solicitors' bills for obtaining the Bury Improvement Act alone amount to the sum of 3,695*l.*——A sanatory committee has been appointed at Doncaster to discuss the subject of the sanatory condition of the town.——The sewage of Aberdeen is valued at 300*l.* to 400*l.* per annum, and doubtless, under the economical superintendence of sewage or chemical manure companies may be made worth a great deal more. Arrangements are being made for its application to agricultural purposes.

## NEW ROMAN CATHOLIC CHURCH IN SHEFFIELD.

A church of considerable size and pretensions, dedicated to "S. Marie," is about to be built in Norfolk-row, Sheffield, from the designs of Messrs. Weightman and Hadfield, of that town. The *Sheffield Times* gives an engraving and description of it, from which we learn that the plan consists of a nave and aisles, a transept, a chancel with two side chapels, and a loft at the south side, in the transept aisle, for the organ; a second aisle on the north side of two bays for a requiem altar, and a tower, in which will be placed the font and baptistery. There will be an entrance porch at the south side, in Norfolk-row; and there will be a portal near the transept for the clergy and church officials. There will also be entrances at the west end and north side. A large vestry will be placed at the south side, east of the transept; and a cloister will be formed from this part of the building to connect it with the church.

The dimensions of the church are to be as follows:—

| | Feet. |
|---|---|
| Length of the nave to the chancel arch | 105 |
| Width, including the aisle | 61 |
| Transept, from north to south | 85 |
| Chancel up to the arch | 40 |
| Whole length of the church, from east to west, externally | 154 |
| Whole width, with the transepts | 92 |
| Height up to the ridge of the nave | 60 |
| Height in the aisles | 20 |

The architectural style of the church is designed after the cross church of Heckington, in Lincolnshire, a specimen of the decorated style.

The south part, towards Norfolk-row, is very interesting. The tower, which stands at the south-west corner, is buttressed in stages with canopy heads, having windows in the south side to light the baptistery. In the next stage is a tabernacle and statue of the Virgin. The next stage has four windows of two lights for the belfry story.

The tower is crowned with a coronet and battlements, and has four hexagonal pinnacles, crocketted and engaged to the spire, with an opening through the *arc boutant*. The spire has crocketted openings in alternating stages, and is surmounted by a cross and weathercock. The total height, from the pavement in Norfolk-row, is 200 feet.

The south porch has canopied buttresses, with niches for the four Doctors of the Church. The parapet is panelled in wavy lines. The gable will be surmounted by a cross. The doorways will be moulded, and the porch will have stone seats. The south aisle has two windows betwixt the porch and transept, separated by a buttress, niched for a statue of S. Paulinus, first archbishop and apostle of Yorkshire. The transept will have a four-light window. The chancel window will have seven lights, the head filled with tracery. It is intended to represent the principal events of the life of the Virgin in stained glass. The clerestory will have large three-light windows.

The north side of the church, though not much seen, will be properly carried out in all details; and the same remark applies to the west end, in which there will be an entrance doorway deeply splayed, and a window of four lights rising into the gable.

The north entrance doorway will be under the second window of the north aisle, running into it, having a sunk niche and bracket for a statue of S. Michael.

The chapel on the north-east side of the chancel will be for the reservation of the sacrament. A turret-stair ascends from this chapel to the rood loft, and it is crowned with a crocketted spire for the angelus bell.

## LIVERPOOL.

THE local sanatory Act is already doing its duty. "Steamers, instead of vomiting forth huge columns of black smoke, have been compelled to bring science to assist them in its consumption, and while the atmosphere on the river and about the pier heads is much purer, the unsightly nuisance which reflected such odium on this community has disappeared," and, together with it, the waste of a full third of all the fuel hitherto not consumed, as it now is, to the profit of those compelled thus to act no less without both annoyance and evil to others, than with both profit and good to themselves.

Besides the smoke nuisance, the Act contains various clauses respecting other nuisances and improvements, an abstract of which, though at some length, and from a merely local Act, we shall give without deeming any apology requisite, since doubtless, such provision for health of towns in general will be ere long no more merely local, but made generally applicable, either by the passing of numerous separate Acts or by the enaction of some one comprehensive measure, of a similar description, for the sanatory regulation of towns throughout the empire.

The Act in question, then, contains effectual and summary provision for preventing nuisances and annoyances in streets, or near thereto, and effecting cleanliness therein;—for registration and inspection of slaughter-houses and knackers' yards, and for removing filth therefrom at least once in every twenty-four hours, and keeping a sufficient supply of water in them;—for regulating the manner of keeping swine, and preventing the keeping thereof within any dwelling-house or knacker's yard, and for describing the limits within which it shall be lawful to keep the same;—for regulating the duty of scavengers, and the management of public privies and urinals;—for regulating the removal of the contents of midden steads and privies, and for preventing foul water soaking from any premises, and also for preventing any such middensteads or privies, or any hog-sty, dunghill, or manure heap from being a nuisance;—for registration of lodging-houses, and maintaining cleanliness therein under a penalty of 40s., and in case of a continuing nuisance, of 5s. a day. Similar penalties are to be inflicted for other nuisances. A medical officer of health is to see to the healthiness of dwellings, and the purification and white-washing of houses; and an inspector of nuisances is to act in his own proper province. The escape of gas is to be visited with a penalty of 5*l.*, a day after twenty-four hours' notice, existing gas companies to be relieved from previous double penalties. In future, no house to be erected shall have any rooms less than 8 feet in height, except cellars, 7 feet if to be inhabited, or otherwise 6 feet. Every inhabited room must have one window 5 feet by 3 feet, or 15 feet in area; attic and cellar windows 3 feet square, or 9 feet in area; all to be casements opening on hinges or pivots, or double opening sashes. Every new house must be provided with an ash-pit, and a properly constructed privy, with a funnel or flue to carry off any offensive stench. The council may enter premises to cleanse or repair privies, cesspools, or drains, and recover the expenses. House drains, at a proper level, must be made on twenty-eight days' notice, wherever a sewer of sufficient size and proper level passes within 30 feet of any part of the house, and all gully holes of sewers or drains must be properly trapped, to prevent escape of noxious effluvia; a penalty of 5*l.* to be incurred for intringement of provisions for proper construction, stopping, or unstopping, of drains, &c. A map of all existing sewers, drains, water pipes, gas pipes, &c., on a scale of 60 inches to the mile, is to be kept at the Town Hall for inspection by owners of property. No street, being a carriage road, shall be made of less width than 30 feet, including footways of 5 feet clear on each side; and no house shall be built in any street of greater height than the width of such street; no court shall be built of less than 15 feet in width, with an open entrance the full width of the court; these latter provisions all under penalties of 20*l.* a day.

The *Liverpool Journal* states, that there were "some seventy candidates for the office of superintending the levelling and making of sewers, that each and all of these sent testimonials of capacity and character from authorities competent to recommend, but that the sub-committee resorted to a very summary mode of disposing of their claims: that the question was not "What are they?" but "Who knows them?" A. B.—"Does any gentleman of the committee know him?" "None." "Knock him off?" C. D.—"Does any one know him?" "None." "Knock him off." Seventy were thus "knocked off," in the "twinkling of a bed post," and the remaining "five" would have shared the same fate, were it not for the prudent apprehension of Mr. Alderman Nicol, who apprized the committee that they ought to recommend some one. With characteristic facility they recommended the last, or nearly the last, five; but, on re-examination, it was discovered that none of these five would do, and the talk is, that on Thursday, Mr. Hartley was written to, to recommend a suitable engineer."

A report of the progress of the New North Docks shews the operations to be of much greater magnitude than is generally supposed, and that the whole of the nine new docks are in course of rapid completion. They cover an immense area, nearly the whole of which has been reclaimed from the strand of the Mersey. At the south end of this new range of docks there are three of them running eastward from the river; and these will form a chain communicating with the Leeds and Liverpool Canal. The eastern dock of this range is on the east side of Regent road; and it is probable that another may be formed between it and the canal on the east side of Great Howard-street. According to the *Liverpool Standard*, the walls round some of the docks are nearly at their full height from the bottom of the excavations, out of which, however, large masses of material have yet to be removed, chiefly of red freestone, the quarrying of which will, it is thought, go far to meet the expenditure. The walls are built up, to about the level to which the water will rise, of this stone; and above this they are of grey granite, in irregular blocks and pieces, presenting a patch-work appearance, like the outside wall of the Albert Dock, but of great strength, the mortar being milled, from the Halkin Mountain limestone, which sets rapidly, and becomes as hard as the rock itself. The discovery of the properties of this cement has already, it is said, saved much expense to the Dock Estate, as it appears that it is not requisite to hew the stones into square blocks as heretofore—pieces of any size or angular shape being applicable, provided they shew a smooth outward surface. The landing steps in the outward wall and the tops of the quays are of chiselled granite, and there is a vaulted or tunnelled passage at one of the landing-places for the conveyance of cattle, sheep, &c. The quays can scarcely be said to be yet formed, but on the sites which they will occupy, there are paved and macadamised roads, over a great length of which, including the margin of the sea-wall, a carriage may be driven. There are several large mortar-mills worked by steam. The lime is ground with fine clean sand, in circular revolving iron troughs, beneath huge circular grindstones, and the well-tempered cement is rapidly carted off, in a smoking state, to the several parts of the works where the masons are employed.

The site of the first of the new churches for Toxteth Park having been fixed on, the building committee have selected for its design one furnished by Mr. Hay. The style is middle-pointed. The building will consist of a nave with spacious aisles and clerestory. The roofs are high-pitched and shew all the interior timbers. In lieu of pews there will be open-benches for 1,100 people.——The amount already subscribed to the Church Building Society, which now exceeds 12,600*l.* was recently augmented by a donation of 500*l.* from the "Society for B. C. P. per J. B. Treasurer," into the secret of which somewhat cabalistic cyphers the *Express* thinks, it has "some inkling" though we confess our own darkness on the subject of this "kindly association in first-rate hands," who at all events evidently prefer doing good by something like stealth, rather than by that ostentation which is in truth the real motive of many charitable doings.

During the past year, the following houses and warehouses have been erected or in course of erection within the limits of the municipal borough. Mr. Rishton, the Town Surveyor, has supplied these statistics. A vast amount of building, however, has also been going on in the outskirts, at Bootle, Walton, West Derby, Old Swan, Aigburth, &c.—Under 12*l.* per annum, 710; from 12*l.* to 25*l.*, 2,328; from 25*l.* to 35*l.*, 236; from 35*l.* upwards, 186; total, 3,460; warehouses, 44. Comparative statement of the number of houses erected in each year since 1837:—1838, 1,052; 1839, 997; 1840, 1,576; 1841, 1,761; 1842, 2,027; 1843, 1,390; 1844, 2,450; 1845, 3,728; 1846, 3,460; total, 18,441. ——The following churches are now in course of erection at Birkenhead:—St. John's, at the cost of Messrs. J. Mallaby, J. S. Jackson, and W. Jackson; St. James's, at the cost of Messrs. W. Potter, W. Jackson, and J. W. and M'Gregor Laird; St. Anne's and another at the cost of Mr. W. Potter; and St. David's, by public subscription, originated by the Rev. J. Baylee, for the Welsh inhabitants. There is also a new church building at Seacombe. These, with the churches of St. Mary and the Holy Trinity, and a chapel at Oxton, lately opened, will comprise nine churches for the present population of 25,000, and Mr. W. Jackson and Mr. Potter have signified their intention to erect each an additional one next year.

## ON BRICK MOULDINGS.

A CORRESPONDENT of the *Bury Herald* says:—

"In a county like ours, where there are no quarries and so many clay pits, and where consequently stone is so dear and scarce, and bricks, both red and white, so common, I rather wonder that brick is not more used for the finer mouldings in the place of stone. In former times, and it might be equally so now, mouldings of all kinds were highly ornamented, frames to windows, porches, chimneys, &c., were made of brick. Besides being much cheaper, and quite as durable as stone, they had this advantage,—that the most intricate patterns could be made nearly as cheap as the plainest; and also, that any colour might be used, if not in the brick itself, yet on the outside and burnt in. White brick round the windows, or at the corners of houses, proves a good foil to shaped flints; red brick to white, and *vice versa*.

I shall mention one or two instances of the use of moulded bricks. Westhorpe Hall, one of the first buildings of this class, was erected by Brandon, Duke of Suffolk, about the year 1500, who resided there with his wife, a king's sister and widow. Though hardly a remnant even of the ruins remains, yet fragments turn up which shew the beauty of the brick mouldings. They are of a very hard and compact white brick, which retains its original sharpness, and some of them, having the duke's crest in relief upon them, still ornament a bridge of the same date as the hall. The other example is West Stow Hall, built by the same duke, the gatehouse of which is a noble specimen of brick building. As an example of the use of brick mouldings in churches, I may name Ixworth Thorp, a doorway of which church has its mouldings and circular (Saxon?) arch, formed of red brick."

The duty on bricks, levied as it now is, prevents any attempt at improvement, or experimental endeavours.

ENGLISH BUILDINGS IN CHINA.—The *Edinburgh Register*, in noticing a "Club-house, Victoria, Hong Kong," executed by Mr. George Millar from designs by Mr. George Strauchan, architect, Edinburgh, remarks, that though, five years since, on "Hong Kong," the "Island of Fragrant Showers," the only buildings were a few fishermen's huts and a low mandarin's house; already large and elegant merchants' houses and gardens extend a couple of miles along the sea beach; commodious barracks, and Catholic, Episcopalian, and Presbyterian churches, are to be seen, with colleges for Chinese youths, and a mosque for Mussulman natives. Bungalows adorn the hill sides, with thriving plantations, and a drive equal, in picturesque, to our own, "Queen's Drive" [round Arthur's Seat, from Holyrood] encircles the island, commanding views of the mainland of "Quang Tung," the estuary of the Canton river, with its hundred islands, and a wide expanse of ocean.

## BRISTOL AND WEST OF ENGLAND ARCHITECTURAL SOCIETY.

On Monday, the 18th inst., a general meeting of this society was held at the Institution, in Park-street, Bristol, the Venerable the Archdeacon Thorpe in the chair. The Rev. Eccles Carter, honorary secretary, read the Report of the committee for the past year, from which it appeared, that the society was in a satisfactory condition, and that its usefulness was recognized by application for advice in respect of St. Andrew's Church, Chippenham; St. Luke's, Brislington; Marlbury Church; Two Mile Hill Church, and others; they had occasion to regret, that at St. James's Church, Bristol, some suggestions made by them had not been carried out.* At Two Mile Hill Church, the ringers were admitted to the loft by a door not connected with the church; to which the committee was opposed, as tending to separate the ringers from the services. The restoration of the upper part of Dundry Church was in their hands, but was stopped by the weather.

The chairman having addressed the meeting at some length on the topics mooted in the Report, a committee for the new year was elected, and other routine business transacted. After this, Mr. F. Niblett read a paper on the architecture of fonts.

Before the meeting broke up, it was resolved, that a paper, by the honorary secretary, on architectural societies, and the hindrances in the way of their successful operation, read at a previous general meeting, should be printed and distributed. A part of this paper will be found on another page.

## OXFORD.

Strong efforts are being made here, in favour of a national measure for the establishment of general cemetries. At a meeting of the town council, held on the 14th, a form of petition was brought up, and after some opposition, agreed to. Those who opposed it, did so on the ground, that it was "an attempt to agitate the people against the clergy, and to oppose those who ought to be treated with respect and love;" and said, they thought that those to whom they looked for religious solace and support ought not to become the objects of a *quasi* political warfare. And so think we too; but the fact is, no such feeling actuates those who would get rid of burials in towns. Existing interests must of course be protected.

At the same meeting, the following report from the Sanatory Committee was read: At a meeting of the Sanatory Committee held on the 13th inst.—Resolved, "That Alderman Butler be chairman of this committee. That this committee desire their chairman to call the attention of the next council to the present inefficient supply of soft water; to the imperfect sewerage and house drainage; and the greatly increased mortality, which the committee believe to be chiefly consequent upon these evils. That the individual members of the council be requested to report to the sanatory committee all nuisances which they may be cognizant of, and which they consider to be prejudicial to the health of the town, in order that the same may be registered, and the proper steps taken for their abatement. The chairman is requested to summon this committee on an early day, to take several matters into consideration."

The drainage and sewerage of Oxford is exceedingly bad, and, with the defective supply of water, sufficiently accounts for the greatly increased mortality.

Monumental Sculptures.—There seems to be a want of invention amongst our modern sculptors, not so much in the mere outline of monuments (their forms are numerous enough) but a want of something that would at once speak to the imagination. It is yet left for some man of mind to illustrate death from the history of our holy religion—to sculpture that sleep after life's long storm, and call from the marble such forms as we believe we shall meet with in heaven.—*Miller's Country Life.*

* The restoration of this Norman church, to which we alluded some time since, is now completed. Two ponderous and discordant galleries at the west end, have been put up without the good will of the architect employed.

## New Book.

*The High Pressure Steam-engine Investigated.* By Dr. Ernst Alban. Translated by W. Pole, F.R.A.S. Parts I. and II. Weale, London, 1847.

Some may perhaps wonder, the translator says, at being referred to the writings of a foreigner, and to the results of foreign experience, for information on a subject so essentially English as that of the steam-engine. One reason, however, is at once apparent: "ever since the time of Newcomen, the attention of the English has been almost exclusively directed to that modification of the steam-engine which depends for its source of power principally upon the condensibility of steam, namely, the low pressure condensing engine, in which a very moderate elasticity is used. The other great class, comprising that variety of engine which owes its efficiency principally to the elasticity of the steam,—the high-pressure engine,—is (or at least was a very few years ago) scarcely known among us in comparison. While we find the condensing engine studied carefully, treated of most voluminously, and manufactured by wholesale, we deplore the neglect which the high-pressure engine has suffered;—we look in vain for information upon it; and we are scarcely able to point, even in the present more cultivated field of locomotives, to a solitary specimen deserving the name of an economical producer of steam power."

The author maintains, that the high-pressure is more safe and more economical than the low-pressure condensing engine. He proceeds first to examine the objections brought against the former, dwelling especially on its alleged danger; discusses the causes that tend to produce explosions, and shews the errors often committed in the manufacture of vessels for the generation of high-pressure steam. He then points out what he considers the advantages of the high-pressure engine; and afterwards treats in detail of the boiler and the furnace. The third and fourth parts, to conclude the work, will contain, the translator says, the author's views as to the construction best adapted to secure the ends proposed, namely, safety and economy.

## Correspondence.

### THE ROYAL MEDAL FOR ARCHITECTURE.

Sir,—Having observed your willingness to make public any remarks that are conceived with an intention of increasing a knowledge in "*Fine Art* Architecture" perhaps you would kindly insert the following ideas in your valuable journal:—

Being a competitor for the Royal Gold Medal for 1846, given by her Majesty through the Institute of Architects, and appropriated by them as a stimulus for the juvenile branch of the profession of architecture, I would humbly suggest that (after the gentlemen to whom they may be referred for selecting the best design have pronounced their decision), the whole of the designs would be exhibited, *at least* to the competitors themselves. This would, in my opinion, and to speak for myself, be a kind of reward to the unsuccessful, for the labour they may have bestowed on their respective drawings, and would in very many ways be productive of good results to the rising members of the profession. I am totally ignorant as to the course the institute may think it right to adopt, but if I may be allowed to make a suggestion, would suggest that the committee of selection should point the *principal* objections to, or defects in the designs generally, embracing not only the elevations, but the arrangement and construction, &c.: this would make the awarding of the Royal Gold Medal a source of instruction and profit even to the unsuccessful, and in some instances might be better in after life than even gaining the prize.

I am, Sir, &c.,
London, Jan. 19th, 1847. "Nemo."

### DALSTON INSTITUTION COMPETITION.

Sir,—Referring to the communication you have already published on this subject, I can state that the commissioners were distinctly told at the time of their receiving the drawings sent in competition, that a building such as their *written* instructions set forth could not be built in the vicinity of the metropolis for twice the outlay (1,500*l.*) to which they judged right to restrict the competing architects.

A building such as their printed prospectus described might possibly have come within their mark, but that one required by their pen and ink instructions and outline plan was plainly far beyond the scope of their so described intended (?) outlay, of which fact they were advised to assure themselves by reference to similar institutions of recent date, whose names were also placed before them.

Let us hope that for their own credit they have erred through ignorance rather than through design; be that as it may, somebody must pay for the trouble given in furnishing quantities and making out the dozen and a half estimates for the carcass only, given in your number of last week!—Your constant reader,
Tuesday, Jan. 19th, 1847. Q.

Sir,—I observed a letter from a correspondent of yours, calling himself "Alpha," in reference to the Dalston Literary Institution competition, and complaining of the result. But I would ask him what else he could expect from a committee so utterly ignorant of what is due for professional exertion, as to suppose that any architect could be paid even his necessary expenses for such an object by the paltry premium of 10*l.*, which they offered through your columns? "Alpha" should have known, that in the first place he was rendering himself amenable to the decision of men without one idea of that upon which they pretended to judge, and in the next, that he would have to contend with no member of the profession of any respectability, and would therefore expose himself to all sorts of tricks and chicanery.

Are not rumours afloat of a similar transaction in the competition for a new church at Battersea? This was, I believe, a "close" competition, and it is therefore more difficult to reach the facts of the case.

It is to be hoped, however, that continued exposure will, in time, put a stop to these nefarious proceedings.

I am, Sir, &c.,
Jan. 14th, 1847. An Architect.

## Miscellanea.

Stained Glass in Leeds.—At the parish church of Leeds two new lights at the east end, each consisting of three long openings, have been filled with stained glass, executed by Mr. Wilmshurst. These occur on each side of the centre, or original window, which is filled almost entirely with ancient glass. The new light, on the north side, contains some of the principal events in the life of our Saviour, each composition being under a canopy. The subjects are; "The offering of the Wise Men," "Christ disputing with the Doctors," "Blessing Little Children," "The Tribute Money," &c. The south light exhibits some of the principal events in the life of St. Peter, in whose name the church is dedicated; as, "The Deliverance from Prison," "The Charge," "The Draught of Fishes," &c., in all, nine subjects. The tracery of the windows is filled with the representations of angels, scrolls, &c. There are also six panels, one at the bottom of each opening. Those at the four sides contain emblems; and in each of the central panels is an inscription upon a scroll, intimating that the windows are the gift of Mr. Blayds, and sacred to the memory of his two elder sons, who respectively died in the years 1842 and 1845. The colours, especially the blue, red, and ruby, are very brilliant; and the whole is creditable to the taste and execution of the artist.

The Morgan Testimonial.—The statue by Mr. J. Evan Thomas, selected by the committee, as we mentioned last week, is to be executed in bronze. The premium of 30*l.*, offered for the second best design, was awarded to Messrs. Haines and Co., builders, of Southampton.

Competition.—Designs are wanted for a club-house for the Army and Navy Club, as will be seen by advertisement in our present number.

Holborn Hill Viaduct.—The company formed to effect this important improvement, have postponed their application for an Act till next session.

PROJECTED WORKS, &c.—Advertisements have been issued, through the past week's newspapers, for contract tenders for the erection of new buildings at the Hackney Union Workhouse; the various works to be done in rebuilding Ince Hall, near Chester; the repair of about 50 miles of the Bromyard roads, in 8 districts; the supply of about 2,800 tons of broken granite at Leicester; of 5,000 tons of malleable iron rails, 1,800 tons of cast iron chains, 120 tons of spikes, and 77,000 Memel or larch sleepers, for the Leeds and Thirsk Railway; and 750 tons of iron rails, for the Taw Vale Railway and Dock Company; also for the whole works, in separate tenders, of about 6 miles of the Bristol and Exeter; a portion of the Sheffield and Goole, &c., near Barnsley; 8 miles of the Birmingham and Stour Valley; 6¾ miles of the Ambergate and Boston, &c.; 5 miles (the remainder), of the Edinburgh and Northern; and 11 miles of the North British, at Dunse, Tranent, and Cockenzie; also for 125 tons of spermaceti and other oils for light-houses at Dublin, &c.

KAMPTULICON.—We understand that the Kamptulite Pavement is ordered to be laid down for the carriage drives at Buckingham Palace and Osborne House. The walls of the riding house at Windsor Castle are also to be lined about 6½ feet from the ground, with the Kamptulicon Planking, as a protection from injury in case of accidents. This material would seem to be applicable for many useful purposes. It is composed of cork and India-rubber.

THREATENED REMOVAL OF WESTMINSTER BRIDGE.—We need scarcely say, that we have heard the announcement, that the bill for the removal of Westminster Bridge *will not be proceeded with*, with great satisfaction. The secret history of this extraordinary proposal would be amusing if not instructive.

A TRIFLING DIFFERENCE OF OPINION.—Three tenders were delivered the other day for rebuilding parts of two houses in Clare-court, Drury-lane. The highest, Chesterman, was 318*l.*; the second, Dean, 235*l.*; and the third, Hooper, 138*l.*

THE WELLINGTON STATUE.—Now that Parliament have met, it is to be hoped that the western entrance to London will no longer be disfigured, but that the statue will be immediately taken away, and that the architect of the arch will be commissioned to make that structure complete, in accordance with the original design.

NATIONAL GALLERY.—We learn with much regret, that Mr. Eastlake, R.A., has resigned his appointment in the National Gallery.

## TO CORRESPONDENTS.

"*N. M.*"—If the "fire bricks" be carefully set in cement, on a sound foundation, the floor will be less penetrable by moisture than if pointed with lime. A sound foundation, however, is of the greatest consequence. If asphalte be procurable for setting the bricks, we should recommend it. A thin bed of concrete with a layer of broken glass in it, to keep back the rats, would make the whole perfect.

"*Naves of Wheels.*"—Although somewhat out of our path, we have, in consideration of the position of the inquirer, taken some pains to ascertain if cracks in wheel naves can with *certainty* be prevented; and we find, in the opinion of those best informed, that they cannot.

"*G. G.*" (Portsmouth.)—Write to the Secretary, Great George-street, Westminster. The Number is out of print.

"*G. B. J.*"—We formerly published lists of prices of materials regularly, but found reasons for discontinuing them. The other suggestion shall be considered. We shall be happy to see the lithograph.

"*Subscriber.*" (Bedford.)—To prescribe for a smoky chimney without seeing it would be useless: take a good pinion on the spot.

"*Rex.*"—The houses cannot be built as shewn on the lan sent.

"*A Measurer.*"—Next week.

"*E. W. F.*"—We avoid giving recommendations.

"*Gamma.*"—Write to Secretary of Society of Arts, Adelphi, and he will return full particulars.—"Orders" may be drawn in name of the publisher, Mr. Charles Wyman.

*Received.*—"Philocrome," "A friend to fair and impartial competition," "W. H." (Maningtree), "Mr. P." (Pimlico), "E. C. S. B.," "Lithographed View of the Priestwood Church, Bucks: with Schools and Parsonage House," by Mr. E. B. Lamb, Architect; "Report on Cordes and Locke's Condensing Rotary Steam Engine," by Mr. Josiah Parkes, C.E.; "Punctuation reduced to a System," by William Day. Olliver: Pall Mall; "Railways for the Many, and not for the Few; Second Edition, with some Remarks on Building Societies;" by James Ward, Esq. Smith and Elder: Cornhill; Prospectus of the "Amatuer Musical Society," Mr. Henry Leslie, Honorary Secretary. The object of this society, is the formation of a full orchestra, to meet weekly during February, March, and April, for the performance of classical composition. With Prince Albert, the Duke of Cambridge, the Earl of Westmoreland, &c., among the members; the Earl of Falmouth one of the violins; Lord Arundell, the trumpet; the Hon. George Cadogan, the bassoon; Lord Fitzgerald and the Marquis of Kildare, among the violoncelli; and the Duke of Leinster and Sir Alexander Macdonald, two of the bassi,—this may justly be called, *the* "Amateur Musical Society," and be placed among the "events" of the day.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

NOTICE.—CHEMISTRY AS APPLIED TO CONSTRUCTION.—The Builder of next week will contain the first of a series of papers on this important subject, by Professor Griffiths, of St. Bartholomew's Hospital.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, Jan. 25th.—Royal Institute of British Architects, 16, Grosvenor-square, 8 P.M.

WEDNESDAY, 27th.—Society of Arts, Adelphi, 8 P.M.

THURSDAY, 21st.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## ADVERTISEMENTS.


TO BUILDERS, DECORATORS, PAINTERS, &c.

DEPOT of FRENCH Paper-Hangings.—M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock in warehouse. The patterns will be found most suitable for this market, and the prices very moderate. S. BARLOW, Agent, 71, Great Russell street, Bloomsbury.

MORTGAGE AND ANNUITY OFFICE, No 121, CHANCERY-LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N B To expedite the preparation, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

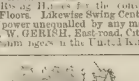
TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Gentlemen's Squares, Manor Places, Roads, Parishes, &c. Also Pumps and Main for BRICK-MAKERS PURPOSES, in Wrought and Cast Iron. HYDRAULIC RAMS, LIFTING and FORCING PUMPS for Works of any depth. SINGLE and DOUBLE PUMPS up to twelve inch bore, Kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

TO ARCHITECTS AND BUILDERS.

DOOR SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, on each of single and DOUBLE ACTION BUTT HINGES, for Rebate and Inside Doors to open one way only, and Spring Hinges for the convenience of Doors opening on uneven Floors. Likewise Swing Centres, which consist of a combination of power unequalled by any made at present.—Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.



TO ENGINEERS AND BOILER MAKERS.

LAP-WELDED IRON TUBES FOR STEAM BOILERS

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 32, Camden-street, Birmingham, and South Side Wharf, Paddington, London, respectfully invite the attention of Engineers, Boiler Makers, and others to their Patent Lap-Welded Iron Tubes for Steam Boilers, which are now being extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, and are allowed by Practical Engineers and Boiler Makers to be of superior Tubes, combining lightness with great strength. These Tubes are manufactured by patent machinery, and are supplied to any length required, and can be bent to any form without the slightest injury to the Tube, and are proved and delivered free from defect, and without additional trouble or expense.—Address, 32, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames street.

JOSEPH FENN, 105, Newgate Street, London, Manufacturer of Turning Lathes, Planing Mills, Slide Rests, Dividing and Screw Cutting Lathes, Tools, and Machinery for Engineers, Millwrights, Iron Shipbuilders, Wood and Metal Turners, &c. Also Manufacturer of Improved Locomotive and Stationary Steam Engines, Patent Governors, Steam Cranes, Pumps, Lifting Jacks, Letter Copying Presses, Rolling Mills, Screw Presses, Coining Presses, Machinery for Making Wood Screws, Gimlets, Bradawls, Rivets, Nails, Spikes, Bolts, Nuts, Washers, Hinges, Locks, Latches, Bells, Cocks, Valves, Gauges, Sash Fasteners, Locksmiths, Lamp Makers, Pianoforte Makers, Plumbers, Wood and Metal Turners, Engineers, Shipbuilders, Wheelwrights, Clock Makers, Jewellers, Gold and Silversmiths, Saddlers, Curriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c.

Another Machine, whereby can be supplied with every description of Material required, viz. Wheels and Pinions, Rack and Segment Wheels, Screws, Worms, Spur Wheels, Bevel Wheels, Wood and Lignum Vitæ Pulleys, Iron Pulleys, &c., in the most complete and perfect manner, and at the shortest notice.

Locksmiths, Lamp Makers, Pianoforte Makers, Plumbers, Wood and Metal Turners, Engineers, Shipbuilders, Wheelwrights, Clock Makers, Jewellers, Gold and Silversmiths, Saddlers, Curriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c.

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TO BE SOLD BY PRIVATE CONTRACT, THE WHOLE OF THE MATERIALS OF THE MANSION HOUSE, Stables, Coach-house, Lodge, Entrance Gates, Walls, Fences, and Outbuildings, at Hackney, in the County of Middlesex, the property of the Right Hon. the Lord Mayor, who is about to rebuild the same.

The Materials consist of Bricks, Stone, Timber, Lead, Iron, Slates, Tiles, Paving, Flooring, Doors, Sashes, Frames, Shutters, Fittings, Grates, Stoves, Ranges, Boilers, Cisterns, Pipes, Pumps, Gates, Rails, Posts, Chains, Palisades, and other Materials.

The Materials may be viewed on application to Mr. Thomas Cubitt, Builder, Gloucester-place, Pimlico, who will receive Tenders for the same, sealed up, and marked "Tenders for Materials," on or before Wednesday, the 27th instant, at which time the Tenders will be opened in the presence of the Lord Mayor, or his Solicitor, and the highest Tender accepted.

The Purchaser will be required to pay a deposit of 10 per cent. on the amount of his Tender, and to enter into a Contract for the completion of the purchase and removal of the Materials.

BRICKS and MONEY.—About 300 feet of FRONTAGE TO LET at 8s. per foot, for Building either thirty or five-sized fourth-rate houses of the value of £600 per pair, very pleasantly and respectably situated in Sommerford-grove, Stoke Newington-road, within a few minutes' walk of Hackney Downs. Omnibuses passing every ten minutes. Bricks are on the premises, which, with money, will be advanced to respectable builders, giving good references.—Apply, on the premises, to Mr. GWYNN, or at No. 2, Claremont-terrace, Stoke Newington-road.

DEANE'S TWO-HOLE BLACK PENS, which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal banking, mercantile, and public companies of the city of London, (as per record of her Majesty's packet, the most eminent counsel an, the record of the clergy. Their cheapness and popularity have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser, and unsuccessful to the maker. The public are therefore cautioned, and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

JENNINGS'S SHUTTER FASTENER.

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and tend to destroy the paint. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the sill-board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the neighbourhood. A Pair, comprising eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce the new notice of persons whose shops they decorate.—To be had of the Inventor, 23, Great Charlotte street, Blackfriars-road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual injunction to restrain all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering is now so improved as to afford a proof that this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years practical experience (during which they have always had every real improvement added to the Patentees to challenge comparison with any others. They will guarantee all shutters put up by them to keep in order, and last twice as long as any other shutter as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

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Bunnett and Corpe's REVOLVING WOOD SHUTTERS are the cheapest, formed by the same principle as the iron, and are made by makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, with out which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, AND IRON, FOR PRESS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Sash-bars fitted with Iron Sashes, Patent Brass or Zinc Sashes, Iron or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Patent Safes taken in Trade or Country.

Metal Drawing and Stamping for the Trade.

Offices, No. 24, Lombard-street, London. Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark bridge and the Grave, Southwark. At these Works, the Public are secure in having the superior make, and by the Patent process only, which can be had in this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron Work, of the best finish and quality. Galvanized Iron Pipe and Hurdles always on hand. The Trade Supplied.

By Her Majesty's Royal Letters Patent.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED METAL. This article was at first sold under the name of Galvanised Tin Plates, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the Galvanised Iron, and that Tinned Iron, a metal by the bye, sustains injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON, by the yard, or the cwt., and by the cask ready cut at first sight to a standard size, in the two lengths, it may be well to inform them, that Galvanized Iron has a plain, zinc-like appearance, and Tinned Iron, that old fashioned Tinned Iron has a smooth crystalline surface.

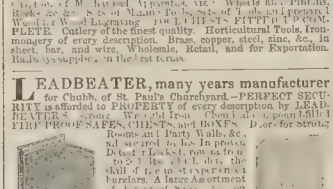
MOREWOOD and ROGERS PATENT GALVANIZED TINNED IRON, Patronized by the Admiralty, and the Honourable Board of Ordnance, being extensively used in her Majesty's Dockyards, at home and abroad, for every variety of Roofing, Gutters, Spouts, Flats, Sheds, Hot-houses, and Fences, cheap, and durable material required.

It has been fully proved by actual trial, that this article is beyond all comparison superior to zinc, possessing, as it does, all the advantages arising from strength and lightness of iron, combined with perfect immunity from rust; whilst it is free from those very serious objections to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance it is frequently rendered useless.

The metal is rolled in sheets of any length by the yard, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes above named, and is decidedly superior to either in the possibility of fire. Its advantages over wood, in the case of roofs, gutters, spouting, &c., are self-evident, possessing the strength, from which alone it derives its value. It is by far the most economical material in the market for covering large pieces of its strength, as it may be laid with at least 2 lands, and upon the lightest rafters.

This kind of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.



LEADBEATER, many years manufacturer for Chubb, of St. Paul's Churchyard.—PERFECT SECURITY is afforded to PROPERTY of every description by LEADBEATER'S strong Wrought Iron Chests and Doors, and FIRE PROOF SAFES, CHESTS, and BOXES. Doors for strong Rooms and Party Walls, &c., and secured to his Improved Detector Locks, constructed on the principle of the Strongest Parliament Lock, which defies the skill of the most experienced Burglars. A large Assortment of Japanned Safes, Deed Boxes, Cash Boxes, Writing Desks, Tea Chests, Dressing Cases, and Tea Urns, Fenders, Fire Irons, Kitchen Ranges, Stoves, Grates, Register Stoves, Hot Plates, Oven Doors, Iron Bedsteads, Mangles, Cisterns, Pumps, Pipes, Gates, Palisades, Iron Hurdles, Wire Work, Iron Shutters, Iron Doors, Sashes, Frames, Fittings, Shop Fronts, Shop Shutters, Shop Fastenings, Wrought Iron Girders, Joists, Columns, Pillars, Roofing, Flooring, Plates, Bars, Rivets, Nails, Spikes, Bolts, Nuts, Washers, Hinges, Locks, Latches, Bells, Cocks, Valves, Gauges, Sash Fasteners, Locksmiths, Lamp Makers, Pianoforte Makers, Plumbers, Wood and Metal Turners, Engineers, Shipbuilders, Wheelwrights, Clock Makers, Jewellers, Gold and Silversmiths, Saddlers, Curriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c.

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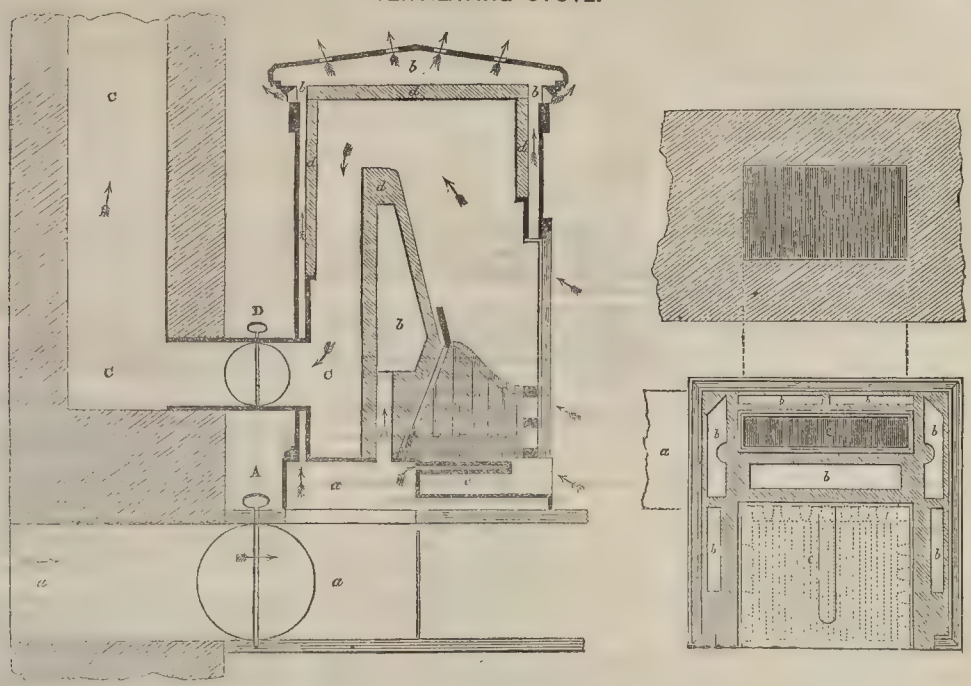
TO BE SOLD BY PRIVATE CONTRACT, THE WHOLE OF THE MATERIALS OF THE MANSION HOUSE, Stables, Coach-house, Lodge, Entrance Gates, Walls, Fences, and Outbuildings, at Hackney, in the County of Middlesex, the property of the Right Hon. the Lord Mayor, who is about to rebuild the same.

The Materials consist of Bricks, Stone, Timber, Lead, Iron, Slates, Tiles, Paving, Flooring, Doors, Sashes, Frames, Shutters, Fittings, Grates, Stoves, Ranges, Boilers, Cisterns, Pipes, Pumps, Gates, Rails, Posts, Chains, Palisades, and other Materials.

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The Purchaser will be required to pay a deposit of 10 per cent. on the amount of his Tender, and to enter into a Contract for the completion of the purchase and removal of the Materials.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.




*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same. Yours truly,

ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my churc is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,

WILLIAM GARRATT, Minister of St. John's, Fulham.

Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell. MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

Letter from Professor BRADLEY.

King's College, London, July, 1846.

Sir,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant, THOMAS BRADLEY.

*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

# THE BUILDER.

LIGHT LARGE WORKSHOP AND DWELLING-HOUSE.

**WANTED, a DWELLING-HOUSE, with a LARGE LIGHT WORKSHOP at the back, with a back entrance thereto, situated in the neighbourhood of Oxford street, Holborn, or the Strand.—All letters addressed A. K., office of "The Builder," will be immediately attended to.**

TIMBER SAWING FRAME FOR SALE.

**WELL Manufactured, and in complete working order, and only sold in consequence of the room being required for other purposes.—Apply to W. G. WARDLE, Stamshaw new Mills, Palace road, Lambeth.**

BUILDING GROUND.

**TO LET, some Excellent Building Ground, money would be advanced equal to the prime cost of the proposed houses. No party who cannot give most satisfactory references need apply.—FRANCIS E. H. FOWLER, Architect, 28, Sackville street, Piccadilly.**

TO BUILDERS AND OTHERS.

**LAND TO BE LET, on advantageous terms, on Building Leases, at West Ham, Middlesex; Streatham and Carshalton, Surrey; Boxmoor, Herts, and Tunbridge Wells, Kent. For particulars, apply to Messrs. BROOKS and GREEN, Estate Agents, Surveyors, and Auctioneers, 38, Old Bond-street.**

**BUILDING GROUND, PUTNEY.—To be LET on Lease, sundry Plots of Building Ground, delightfully situated near Putney Bridge, the Steam-boat Pier, and the Richmond Railway; suitable for the erection of Villas and other Residences, having a View of the River Thames, with convenient and cheap communication to all parts of the Metropolis.—A MAP and GRANT upon the Premises for SALE. Apply to Mr. J. B. SHEPHERD, Surveyor, 14, Bucklersbury, City.**

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**TO BE LET, on Lease, for 21 Years, Excellent BUSINESS PREMISES, with Residence attached, eligibly situated, No. 4, Albion-place, on the Hull-road, Holloway, near the Chapel of Ease. Rent, £70 per annum.—Further particulars may be had of Messrs. OVERTON and HUGHES, 23, Old Jewry, and of Mr. LLOYD, on the premises.**

HIGHBURY GROVE, HIGHBURY BUILDING LAND

**TO BE LET, a valuable piece of Building Land, situate on the west side of Highbury Grove, being the most delightful part of Highbury, with beautiful pleasure-grounds in the rear for the erection of a Villa Residence. £600 on each house will be advanced (if required), as the works progress. Term, Ninety-Nine Years from 29th September, 1844; Ground-rent, £12 12s. Particulars may be had of Messrs. OVERTON and HUGHES, Solicitors, 25, Old Jewry, and of Mr. LLOYD, No. 4, Albion-place, Holloway-road.**

TO BUILDERS.—MATERIALS AND MONEY ADVANCED

**TO BE LET, on BUILDING LEASES, for ninety-six years, several very eligible plots of Freehold Building Ground, land tax redeemed, for fourth rate houses, situated at the Cross Roads, Queen's-head, Thatcham, a rising and improving place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts, until the new railway approach, from which it is only a quarter of a mile distant. Apply to Mr. PALMER, on the premises.**

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TO BUILDERS AND AUCTIONEERS

**TO BE DISPOSED OF.—A first-rate and very compact Business, in the above line, in a good market town, about two hours' ride by railway from London. The owner is about to retire. Twelve to twenty hands are constantly employed in excavations and buildings, having a good private connection. Stock and Fixtures to be taken at a valuation. Premises may be purchased, or rented on lease. Stock is reduced to about £400, part of which may be left on approved bills at long dates; a moderate premium is expected or additional rental. For further particulars, address, C. D., the Office of "The Builder," 2, York-street, Covent Garden, London.**

TO TIMBER MERCHANTS

**MESSRS. BEADEL and FOULKES are instructed by the Worshipful Company of Haberdashers, to SELL by TENDER, a portion of the useful Timber now growing upon the Hatcham Park Estate, immediately contiguous to the Station at New Cross, on the Croydon Railway. The Timber, which is being cleared for Building purposes, comprises upwards of 400 Ends—Consisting of Elm, Ash, Chestnut, Sycamore, Vegetable Elm and Carol no Poplars many of the latter of large dimensions, a quantity of useful Seconds and other Timber. Mr. Crowhurst, of No. 4, Monmouth Place, Old Kent Road, or the Gardener at the Mansion, will shew the Trees, which are marked with white paint. The Timber is to be removed, and the ground levelled within three weeks after acceptance of Tender; and the Purchaser will be allowed to stub such of the trees as can be so removed without damage to those remaining. Sealed Tenders will be received by Messrs. BEADEL and FOULKES, Timber Merchants, Old Swan Wharf, Queen-st., Gresham-street, City, till the 7th of February next, after which the Person whose Tender shall be accepted, will have due notice.**

SEWERS, MIDDLESEX HOLBORN AND FINSBURY DIVISIONS.

**NOTICE IS HEREBY GIVEN, that a Court of Sewers for Holborn and Finsbury Divisions, in the County of Middlesex, will be holden at the Sewers' Office, No. 7, Hatton Garden, on FRIDAY, the 29th day of January, 1847, at Two o'clock in the afternoon precisely.**

JOSEPH UNWIN, Summoner and Cryer.

Sewers' Office, for Holborn and Finsbury Divisions, 5a No. 7, Hatton Garden.

TO BUILDERS AND OTHERS.

Interest in buildings, or in ground for building upon, within the District of Holborn and Finsbury Divisions, the Parish of St Leonard, Shoreditch, and the Liberty of Norton Falgate, in the County of Middlesex, and the Borders and confines of the same.

**THE Commissioners of Sewers for the above Limits, DO HEREBY GIVE NOTICE, that previous to making any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry a drain of water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, application must be made by letter to the form of which may be had at their office, to which must be attached, a plan of the intended line of sewer, and which must be constructed conformably with their regulations.**

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated to too great a depth, the Commissioners have directed that, upon application being made at their office, previous to the excavation of such ground intended, it shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give Notice, that whenever the lowest floors or pavements of buildings shall have been laid so low as not to admit of their being drained into a proper sewer, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings: and further, that no buildings or erections of any kind will be permitted to be made upon or over any sewer.

All communications made with any public sewer, without previous application, as aforesaid, will be stopped out; and the parties making the same will subject themselves to a fine.—By the Court,

STABLE and LUSH, Clerks.

*** The public is also informed, that all rates imposed by the said Commissioners are to be paid by the tenant, and allowed by the landlord out of the rent, except where the tenant, by special agreement or agreement, is bound to defray the same.

TO BUILDERS, PAINTERS, AND OTHERS.

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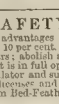


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TO BUILDERS.

**W. W. RAWLINS, Bangor Wharf, King's Road Bridge, Camden New Town, begs respectfully to inform builders and others, that he can ensure to supply every stone and chalk lime (for hot lime, Roman cement, plaster of Paris, plasterers' hair, Thames ballast, sand tiles, cement chimney pots, Welsh slates, and all kinds of building materials), that he and the nearest lime Wharf to the North of London. Yorkshire paving slabs, sinks, &c. Thames ballast, and sand delivered per Barge, in the river or on any part of the Regent's Canal.**

TO BUILDERS AND OTHERS

**MESSRS. H. G. and E. ROSHER, having closed their Lime Wharf at Montague Close, Southwark, have removed their business to Hilton Wharf, Holland-street, Bankside, where they intend keeping a constant supply of Greystone, Flame-burnt, and Plasterers' Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland-road.**

*** Ground Lime for Concrete.

**FIRE BRICKS.—STOURBRIDGE (Rufford's and other) best made BRICKS, at WARD'S, Honduras Wharf, Bankside, London to be SOLD by Cannad. This is a great advantage to the purchaser, passing all the expenses of unshipping, lighterage, &c. to London. An immense Stock of all the best made Stourbridge, Welch, and Newcastle fire-clays at summer prices, although freights and other expenses have risen. Advances made to Shippers, gas companies, engineers, builders, and large dealers supplied at net prices than they can import, besides the advantage of having an immediate supply without the uncertainty of ships arriving at this season of the year.**

**WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Public, possesses every valuable qualification of effectually stopping Knots in Wood, however Large, and preventing them coming through and disfiguring the paint above.**

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and unattended to for years.

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The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp. It neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, For its adhesion to stone, brick, and cement it is excellent to iron and wood, that the hardest brush will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray or sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing it as 75 to 60, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

**MASONS' Provident INSTITUTION.—The First Annual General Meeting of the Donors and Subscribers to the above Institution will be held on Monday Evening, January 25, 1847, at the City of Westminster Literary and Scientific Institution, Great Smith-street, Westminster, for the purpose of receiving the Report of the Auditors and General Committee, and for the transaction of other important business connected with the Institution.**

JOSEPH T. WHITEHEAD, Hon. Sec.
Chair taken at Half past Seven.

**ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, sofite, bed mouldings, &c. &c., on the most reasonable terms, by ARCH. HERBERT and SON, Modellers, &c., 4, Parker street, Drury lane. Modellins executed for the Trade.**

**A first-rate assortment of shop-front trusses ready for fixing—Centre flowers fixed complete 2s per cent. cheaper than paper maché.**

**PORTLAND CEMENT.—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for Bricklayers' work, either in pointing or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank-street, Westminster.**

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**It is a cheap and efficient substitute in lieu of wood for skirting, architrave, and other mouldings, in its application for which purpose it checks the progress of Fire and the attacks of Vermin.**

**Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.**

**GREAVE'S LIAS CEMENT, stone-colour, free from vegetation, does not crack, and is well adapted for every description of modelling and casting.**

**GROUND LIME for concrete, or as mortar for sewers, dock-walls, and hydraulic works generally; is superior to any other lime or cement.—Office, 2, South Wharf, Paddington, and Strafford-Mills, Bow.**

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MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is entirely dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses**

1. It is highly adapted for internal purposes.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its setting time may be made equal to that of the finest marble: NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon the wall.

It is particularly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, in the first mansion erected by him.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and hardness give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, No. 3, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Cannings-place, Liverpool.

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Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a number of testimonials, may be had on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside; LONDON; and of their various wholesale agents.

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses, that have been covered with Cement, Stucco, or Compo, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently turn black, owing to the sulphurous composition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering it a hard and durable surface, and to the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

**ROYAL POLYTECHNIC INSTITUTION.—Professor Schonbein's GUN COTTON, and other EXPLOSIVE COMPOUNDS, with brilliant Experiments illustrated on the Large Scale by Mr. Hoffrichter, Jun., and on the Evenings of Mondays, Wednesdays, and Fridays. The principle of the various ELECTRIC TELEGRAPHS explained daily by Professor Bachhoffner, including the Patent of Messrs. Cook and Wheatstone, in use on the Railways, and the more recent Patent of Messrs. Bain and Gamble. Various Models explained. Magnified Specimens of DISEASED POTATOES exhibited by the OXY-HYDROGEN MICROSCOPE, with the DESTRUCTIVE INSECT, supposed by Mr. Smee, Esq., F.R.S., to be the cause of the disease. A beautiful series of NEW DISSOLVING VIEWS. The DIVING-BELL and DIVER, with the PERPETUUM MOBILE. The NEW CHROMATROPE, &c. &c.—Admission, 1s.; Schools, Half-price.**

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# The Builder,

A JOURNAL FOR

The Architect, Engineer, Operative & Artist.

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**WANTED** by the Proprietor of a Patent who is bringing the subject of his patent into general operation, an Active Intelligent Person, who must be a good bookkeeper, and accustomed to the management of workmen, a knowledge of the construction of buildings, particularly in the smith and founder's departments is indispensable.—Apply personally, at 69, Welbeck Street, Cavendish Square, between the hours of Twelve and Five o'clock.

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LIAS LIME WHARF, PADDINGTON.

**NOTICE.**—I hereby CAUTION all parties from PAYING any MONEY to HENRY HOLDEN, on my account. RICHARD GREAVES.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses and Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office. By the Court,
STABLE and LUSH, Clerks.

TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES.

**HER MAJESTY'S JUSTICES** and COMMISSIONERS of SEWERS for the City and Liberty of WESTMINSTER, and part of Middlesex, HEREBY GIVE NOTICE, that they have approved a plan, whereby an efficient drainage, at a very moderate cost, may be obtained for property in the above situations, abutting on streets where there are sewers. The plans and sections may be seen at the office of the Commissioners, No. 1, Greek-street, Soho.—LEWIS C. HERSLET, Clerk to the Commission.

**KENSINGTON NEW WORKHOUSE.**

We, the undersigned, being a Committee appointed by a Meeting of the Rate-payers of the Parish of Kensington, in Vestry duly convened, for the purpose of taking such steps as they may be advised, either at law or equity, to prevent the Board of Guardians unnecessarily expending the Funds of the Parish in carrying out the above scheme, DO HEREBY CAUTION all parties who may be invited to send in Tenders for the work, that any contract entered into by the Guardians for that purpose, will be resisted by the Parish as illegal.

WM. HAWKES, Chairman.
F. PRATT BARLOW,
JOSEPH LIGGINS,
JOHN PERCEVAL,
RICHARD MORRIS,
W. J. WOOD,
P. SMITH,
GEO. HEN. SASSE,
W. J. DREW.

TO BUILDERS.

1, Canning-place, Kensington, January 27th, 1847.

**THE Guardians of the poor of the Parish** of Kensington HEREBY GIVE NOTICE, that they are ready to receive TENDERS for the works to be done in the erection of a New Workhouse for that parish. The plans, specification, and conditions, may be seen at the office of the architect, Mr. ALLOM, 14, Hart-street, Bloomsbury-square, where copies of the quantities may be obtained, on TUESDAY, the 2nd of February next, and following days.

The Tenders to be delivered at the Board Room of the present Workhouse on or before Eleven o'clock in the forenoon of Tuesday, February 9th next.

N.B. The Guardians do not bind themselves to accept the lowest tender. S. CORNELL, Clerk to the Guardians.

CONTRACTS.

TENDERS FOR BRICKS, LIME, SAND, CEMENT, AND CARTAGE.

**THE Court of Sewers for Westminster and** part of Middlesex, will be ready on Friday, the 5th of Feb., at this Office, at 1 o'clock, to receive sealed TENDERS for the supply (during the next six months), of Stock Bricks, Blue Lias Lime, Thames Sand, and Roman Cement, all of the best quality. Also sealed TENDERS for a horse, cart, and man, at per day, and for Carriage of Soil and Rubbish per cube yard. Forms of Tender, &c., may be had on application at the Court House, No. 1, Greek-street, Soho-square. LEWIS C. HERTSLET, Clerk.

26th January, 1847.

OAK CLEFT PARK FENCING.

**WANTED** immediately, about Seventy-five Rods, to be fixed near Canonbury, Islington.—Any person desirous of sending a proposal for the Work may have the particulars by sending a letter, post free, to Mr. HILL, Surveyor, Canonbury Tower, Islington.

TO IRONFOUNDERS AND SMITHS.

**WANTED CONTRACTS** for Iron Railing and Coping of the same pattern and weight as that surrounding Harrington-square, Hampstead road, London. The quantity contracted for not to be less than 700, nor more than 1,800 feet. The contract to be for the railing, with coping and fixing the same. Iron brick found not to be included.—Address, Messrs. NEWMAN and Co., 5, Great Randolph-street, Camden-town, London.

**THE Committee for the Erection of Schools** at Hildenborough, near Tunbridge, are desirous of receiving TENDERS for the works. The Plans and Specification will lie for the Inspection of Builders at the office of Messrs. CARNELL and GOTHAM, Solicitors, Tunbridge, on and after Tuesday next, the 2nd February; and the Tenders are to be sent to AUGUSTUS LANGDON, Esq., Cold Harbour, Tunbridge, on or before Tuesday, 9th February. The Committee will not bind themselves to accept the lowest Tender.—Jan. 1847.

TO BUILDERS.

**PARTIES** desirous of CONTRACTING for the erection of additions to, and making alterations in the present house, at Spratton, near Northampton, may see the plans and specification at the office of the Architect Mr FOWLER JONES, Monkgate, York, on and after the 4th of February next, (till TUESDAY in that day, Ten till Seven), and at the same hours from the 18th to the 25th at the offices of Mr. MARKHAM, solicitor, Northampton. All tenders must be delivered on or before the 1st of March next, addressed to the architect, as above, of whom any further particulars may be obtained.—The lowest tender may not be accepted.—York, Jan. 26th, 1847.

CONTRACTS FOR WORKS.

**NOTICE IS HEREBY GIVEN,** that TENDERS for the following WORKS will be received at the under-mentioned times and places:—

BRISTOL AND SOUTH WALES JUNCTION RAILWAY.

Contract No. 1.—From the junction with the Great Western Railway, at Bristol, to a point in the parish of Stoke Gifford, being a distance of about five miles.

Contract No. 2.—From the termination of Contract No. 1 to the New Passage, being a distance of about six miles.

Plans and specifications may be seen, and printed forms of tender obtained, at the Engineer's Office, at the Railway Station, Temple Meads, Bristol; and the tenders must be addressed to the Directors of the Bristol and South Wales Junction Railway, and sent to the Company's Office, Exchange-buildings, Bristol, on or before Twelve o'clock, on Monday, February 8.

OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.

Morton Contract and Shipton Contract, being of the respective lengths of five miles twenty-nine chains, eleven miles, forty-six chains, and extending from a point near Chipping Camden, in the county of Gloucester, to a point near Charlbury, in the county of Oxford.

Plans and specifications may be seen at the Engineer's Office, Worcester, and the tenders must be addressed to the Directors of the Oxford, Worcester, and Wolverhampton Railway, and delivered at the Railway Office, 113, West Strand, London, on or before Twelve o'clock, on Tuesday, February 9th.

SOUTH WALES RAILWAY.

Contracts Nos. 11, 12, and 13, Swansea Division, being of the respective lengths of five miles seventy-two chains, six miles sixteen chains, and thirteen miles thirty-two chains, and extending from near Kidwelly, through Carmarthen, to Whitland, county of Carmarthen.

Plans and specifications may be seen, and printed forms of tender obtained, at the Engineer's Office, Carmarthen; and the tenders must be addressed to the Directors of the South Wales Railway, and delivered at the Railway Office, 113, West Strand, London, on or before Twelve o'clock, on Wednesday, February 10.

MONMOUTH AND HEREFORD RAILWAY.

Contracts Nos. 1, 2, 3, 4, and 5, of the respective lengths of two miles four chains, four miles sixty chains, seven miles six chains, one mile fifty-one chains, and four miles fifteen chains, situate between Holme Lacy, near Hereford, and Westbury-on-Severn, Gloucestershire.

Plans and specifications may be seen, and printed forms of tender may be obtained, at the Engineer's Office, at the Railway Station, Temple Meads, Bristol; and tenders must be addressed to the Directors of the Great Western Railway, and delivered at the Railway Office, at Paddington, on or before twelve o'clock, on Thursday, February 11.

IMPORTANT TO BUILDERS.

**THE ARCHITECTURAL CARVING COMPANY** beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston-place, Pimlico, leading out of Eburystreet. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

**CARVINGS IN WOOD.**—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal enrichments, thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 441, West Strand, or at the Works, Ranelagh-road, Thames-bank.

# THE BUILDER.


**DREDGING MACHINE for SALE.**—A capital DREDGING MACHINE, with 8 horse high-pressure engine, and balance chain all complete, machinery of the most improved construction, 4 buckets 16 feet water, all by Rothwell of Bolton, complete with all stores and materials ready for immediate use, having been in use little more than two years. The whole is in excellent repair, and is offered for sale in consequence of the work being finished for which she was built. May be seen on the Severn above Bridge Lode, Worcester; and particulars had of Mr. Grissell, Limekiln—NB If necessary, the machinery may be readily removed to another vessel.

**FRENCH PAPER HANGINGS.**—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufactories, is at Messrs. MARRS & CO.S, 59, Princes Street, Leicester Square, established 1814, above Bubb Lode, Worcester; and supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will defy the early buying against recent exists

TO BUILDERS, DECORATORS, PAINTERS, &c.

**DEPOT of FRENCH Paper-Hangings.**—M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market and the prices very moderate. 8, BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

TO PLASTERERS

**LIME FOR PLASTERING, that may be** used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FOR-RESTS WHARF, Pimlico. Rick-fitters' Sheds for the shacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

TO BUILDERS AND OTHERS

**MESSRS. H. G. and E. ROSHER,** having closed their Lime Wharf at Montague Close, Southwark, have removed their business to Albion Wharf, Holland-street, Blackfriars, where they have on hand a large supply of Grey stone, Flame-burnt and Plasterers' Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other builders' materials. Messrs. ROSHER have sheds for the shacking and mixing of Lime. Accommodation for loading and landing bricks, sand, ballast, &c. Wharf at Limehouse, Millbank street, Westminster, and Kingsland Basin, Kingsland-road

*** Ground Lime for Concrete.

CEMENT AND PLASTER ORNAMENTS TO ARCHITECTS BUILDERS AND OTHERS

**W. HUGHES and CO. having purchased** a large quantity of Moulds, Patterns, &c., the stock of Mr. G. BARTLETT, of Duncan Terrace, City Road, consisting of a great variet. f Chimne, Shafts, Ballasters, Trusses, Cantilevers, Vases, Animal and other Figures, for external purposes; Centre Flowers, Scrolls, Bedmolds, Brackets, &c., for inside work, which, being added to a former collection, they are enabled to supply Builders and the trade in general. Castings of any of the above description of ornaments can be readily supplied. Modelling executed with strict attention to drawings. Address, W. HUGHES and Co., Ornamental Plasterers, &c., No. 2, Rudford's Row, Upper Street, Islington.

**PORTLAND CEMENT.**—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in brickwork or plastering. Satisfactory proof of the fact can be furnished by the manufacturers J. B. WHITE and SONS, Millbank-street, Westminster

**KEENE'S PATENT MARBLE CEMENT** forms an excellent hard and indestructible Stucco, which may either be prepared for gaud, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, in the application of which purpose it also has the property of Fire and the attacks of Vermin

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Cockspur street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT

**CAUTION.**—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against certain lime or clay, invisible Cement with others, erroneously called by the name of Martin's Cement, and pirated themselves to sell MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from corrosive action upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:

1 It equally acquires the hardness of stone

2 Its fine internal elements, as hardness is uniform throughout its entire thickness.

3 Its surface which may be made equal to that of the finest marble NEVER THROWS OFF ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and generally for all purposes to which the purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most perfect reference can be given to the use of this Cement for Plastic of Paris and Cement Manufactories, 189, ARGYLE LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE TRADE IN GENERAL

**JOHN'S and CO.'S PATENT STUCCO CEMENT.**—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:

It will effectually resist damp. It will never change to a durn green, nor otherwise lose hue. It will never crack nor start nor peel off. It will form a complete Stone casing to any Building over which it is applied. Stone that is decayed impassible to detect it. It never requires cutting, be painted, or stained. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be used with confidence by the Scotch. It may be seen in the hottest or coldest climate at any season. It will adhere to any existing work of Wood Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It is a Cement that will effectually resist fire when set to its perfect dryness. It may be worked in Frosty weather as frost has no effect upon it. It may be used on the Inside Walls of new Houses which may be papered next or painted directly. Roofs laid or pointed with this Cement will remain unchanged by the severest Storms. Any Plasterer may apply it, the instructions for the same being very clear and simple. The best cost of this unite Vial does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders are requested to test this Cement before declared that it requires only to be known to be universally preferred.

Specimens may be seen, and Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from persons using it, may be had at the Patentees' Depôt, 3, Little Bolton-row, Mayfair, and of SOLE AGENTS for the Country, at the Queen-street, Cheapside, London; of whom also may be had,

JOHN'S and CO.'S PATENT SOLID STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with this Cement or Stucco, and which have become dirty and discoloured. It is the only one hitherto invented for this purpose that White Lead is not, as is frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the minutest fissures in the wall, and so resist weather, and also finish producing a pure stone-like effect, produceable by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

TO BUILDERS, PAINTERS, AND OTHERS

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only,

92, WATTRLOO-BRIDGE-ROAD

An Apprentice wanted. A Board and Lodge with his friends. Premium £30


CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, South-side, quare, Borough, London.

Orders supplied direct from Caen to any port

The Waterman Steamboats call at Lavender pier, adjoining Caen Wharf.

CAEN STONE DEPOT.—NORWAY SUFFERANCE WHARF, GREENWICH.

**W. TUCKWELL, Caen Stone Importer,** informs Architects, Sculptors, Masons, and others, that he has a large stock of superior, DRY SEASONED CAEN STONE on his Wharf, imported July last, exclusively from his quarries at Allemagne, which, for prompt sales, is superior to any now imported Orders received by Mr. TUCKWELL, at the Wharf, and at the offices (Mr. R. A. WITHELL, Manager, &c., Chepside, where any information can be had. CAEN STONE shipped direct from Caen to any port.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-** tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and others can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the sawn or prepared ready for fixing or fixed, avoiding either waste in the carriage or workmanship.

Box Chimney-pieces for 18s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney pieces and FONTS

Estimates given for building generally.

**LADYSHORE TERRA COTTA.**—The attention of Architects, Builders, and others engaged in building, is respectfully called to this material, which combines the beauty and durability of the best Freestone at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the entire building of two churches; one in Manchester, and one at Bolton-le-Moors, and a parsonage-house and the ornamental parts of a school, also in many other churches and buildings, &c. Its advantages are, that it is not a "Composition," nor of the nature of Stucco, but HARD BURNT CLAY. In rich ornamental work, it is also well adapted for gothic, being so much cheaper than carved stone or wood, and equally durable.

The principal ornaments manufactured are capitals, trusses, bosses, brackets, royal arms, foliated mouldings, panels, panelled bench-ends, with poppy heads; pinnacles, finials, chimney-tops of all sizes, vases, bonnets to pedestals, tiles, chamfered, moulded tiles and other tiles for various purposes, &c., and every variety of ornament that exists for building purposes

This material is warranted to stand the weather. Specimens may be seen, and every information obtained on application to the Proprietors, E. P. WILLOCK and Co., 10, Exchange Arcade, Manchester.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them for security and durability, the glass being secured with Iron Bars, their resistance is so simple that the force required to break in or lose it will be greater than the value of the property to be protected. Their superiority over other revolving shutters consists in their great strength, and shutting both without metal hinges, consequently cannot work loose, be slow in action, or get out of order, as other Persons have done with the patent frame and wood fan or iron shutters, an instrument of real and substantial use, to draw up an air part of the light, and regulate the temperature of rooms, with at most no machinery, thereby avoiding the unpleasant use of oil.

**PATENT REVOLVING SAFETY** SHUTTERS, WITH CONVEX IRON LATHS—PATENT CORRUGATED WINDOW BLINDS, &c.—The attention of Bankers, Builders, and others is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited of the unrivalled Fire and Burglar proof Revolving Shutters, in the parlor of REVOLVING IRON SHUTTERS in all cases between security, solidness, and lightness, to point out the fact that the patent convex laths are 33 times stronger than the common flat laths, and 50 times stronger than the patent corrugated laths, and are much lighter in weight, and more durable, and entirely avoids the necessity of fixing the catches, and is of more simple and much effective, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering the Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters roll horizontally either above or below the window or door) or vertically, for which position the patent improved spring fastening is particularly found to render them such suitable. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Revolving passage doors, forming a complete and effectual protection to the premises, &c. PATENT CORRUGATED IRON BARS, ASPHALTED, MOULDINGS, STALL-BOARD PLATES, &c.

Patentee and Manufacturer, John Hancock, Quincey-mte R. Howard & Co.'s 115, Old street, London.

INJUNCTION

**BUNNETT and CORPE'S Patent RE-** VOLVING IRON SHUTTERS. Since the verdict found in favour of the Plaintiffs in the Court of Exchequer, in the action tried by order of the Court of Chancery, this Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same

THE PRICES ARE GREATLY REDUCED, and BUNNETT and CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST as WELL as THE BEST. They are made with convex laths, if required. The wood and steel shutters for rooms and warerooms from shutters secured by this Patentee is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Sash Casements, &c., fitted with Corpe's Shutters, have now been put up, without a single complaint of their want of strength or security, and the years of practical experience during which they have adopted every real improvement enables the Patentees to challenge competition with any house. The appearance of the shutters, and the cheapness to keep in order, and last twice as long as any with iron convex laths.

B and C also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other iron laths, but greatly superior, being fitted with their patent fastening and different metallic hinges, with which they can be made safe or durable.

BUNNETT and CORPE are the Inventors and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plate Glass, and every description Enamelled, Moulded, Stall board Plates, best Plate Glass, and Internal Brass fastenings of all kinds supplied, and fitted in the country, at the most moderate charges possible. Contracts taken in Town or Country.

Metal Bars and Stamping for the trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent

Steam engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.


PREPARED FLOORING BOARDS.

**ALWAYS on SALE, a Large Assort-** ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH LIGHTS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico into C. Mowatt and Son's, and Great South street, Westminster.

**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge Wharf, Upper Ground street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Flooring and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, &c., at moderate prices.

A. R., including the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

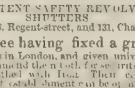
**T. ADAMS (late Byron and Co.),** late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Brewhouse Arms SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS, machine prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Spar Laths, Whitewing Brooms. All saws and prepared go ods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

TO BUILDERS, &c.

**JOHN NEWSON** having now completed his machinery for preparing floor-boards with the smallest possible waste, and as cheap as heretofore, is enabled also now to complete as above. A weigh bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**SILCOCK and Co.'s PATENT PLANES** may be had at the following places:—

Archer, 43, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cock, 28a, Oxford-street; Dean, 46, King William-street; Fenn, 105, Newgate street; Holtzapfel and Co., 64, Charing cross and of all ironmongers and tool dealers in the United Kingdom.




SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Planed, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery, for all the counties of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,

Saw Mills,

Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

**ORTHOSCHISTIC INSTITUTION,** for the TREATMENT of STRICTURE, 38, Castle-street, Holborn.

PRESIDENT

Lord W. SOMERSET.

TRUSTEES

Sir Henry P. Seale, Bart.

Herbert Jones, Esq., Serjeant-at-Law.

W. W. Watson, Esq.

BANKERS

Messrs. Strahan, Paul and Co., 217, Strand.

This Charity, established in 1823, must plead for the suffering poor, being open from 7 to 9 on Tuesday, Thursday, and Saturday mornings. No letter of recommendation is required. Donations and subscriptions, which are earnestly solicited, received by the Bankers, as above, by the Honorary Surgeon, Thomas Bartlett, Esq., 10, Chancery-lane, and by the Secretary, H. Newspare, Lincoln's Inn. CHAS. WOOLLEY, Hon. Sec.

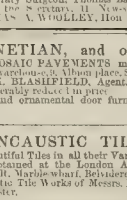
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The Builder.

No. CCVIII.

SATURDAY, JANUARY 30, 1847.

WHEN an eminent officer in the British Museum addressed a letter to the architects in November, 1845, relative to the formation of an extensive collection of tish antiquities, we, in common with many ers, were led to expect much more than it ms was intended; we fondly persuaded our- es that we were at last, to obtain what we long and earnestly striven for,—namely a SEUM illustrative, amongst other things, OF R NATIONAL ARCHITECTURE; and thereat re greatly rejoiced. In our report of the versation at the meeting of the institute en the letter was read,* we find one member nting to a previous application to the stees of the British Museum to induce m to establish a museum of architecture, ntioning the manner in which a recent mo- n in the House of Commons by Mr. Wyse, the same effect, had been negatived, and ling with satisfaction the present determina- n of the trustees. Mr. Donaldson, in the ne strain, alluded to what the French had ne in this respect, and suggested that sepa- e provincial museums should also be estab- ned, rather than bring all remains to Lon- n. And Mr. Britton said, he had advocated e establishment of such a museum for five d forty years; instanced many cases of the appearance of architectural remains; and pressed his delight in finding he might yet e a museum of such national antiquities be- e he passed off the scene.

All this, however, was unfortunately pre- ature. The national antiquities contemplated d not induce *architectural* antiquities, and thout any disrespect to the excellent writer the letter, or the trustees, whose intention excellent so far as it goes, we were just as r, and we fear *are* just as far, from obtaining nat is so much desired as we ever were.

Further efforts must therefore be made, and the trustees of the British Museum still re- se to provide such a collection, and the Go- rnment will not interfere to obtain it either ere or elsewhere, we would call on one or th of the archæological associations to make e attempt.

Our present intention is to make a public peal on this subject to the trustees; and to ake that successful, we would solicit the good fices of THE MARQUIS OF NORTHAMPTON, as ie of their body, who has given much atten- on to the study of architectural antiquities, d is much interested in their preservation. is lordship, as we have reason to know, dmits fully the value of such a collection as e desire,—who, indeed, can doubt it?—but erhaps feels there are difficulties in the way, ot of obtaining, but of housing it satisfacto- ly. For our own parts, we would ask no reat extent of accommodation in the first in- tance, being satisfied that the value of such a useum would soon be universally recognized, hd would enforce the provision of further pace. Even in one small apartment, the Ox- ord Architectural Society have arranged a ucleus for such a collection, of consider- ble practical value. The examples would e arranged chronologically, and might em- race, even if the space were confined, mould- ings in series (an important point), capitals, bosses, spandrils, corbels, tracery, shrines, &c. &c., and if the museum were on a proper scale, a series of arches, a series of windows, pillars, doorways, the varieties of groining, screens, and distinctive ornaments of every period. Diagrams might be used temporarily, to fill gaps in the series; carved woodwork, ironwork, tiles, alphabets, coloured decorations, and stained glass of the various periods, would of course be included, and would form a whole of the greatest immediate value to a very large class, and in result to the whole community.

Architecture occupies at this time the attention of many more in England than it did formerly; and when we call to mind our architects, clergy, builders, sculptors, painters, carvers, modellers, smiths, glass-painters, decorators, and others, it will be seen how large a portion of the public would be directly benefitted by the establishment of a museum of architecture, to say nothing of the much greater number who would be indirectly so. As Mr. Wyse said, in his address to the House of Commons, on the 27th of June, 1845, "It is only by a juxta-position of the monuments of art connected with the different epochs, from the earliest to the latest, that we can either duly estimate the past or produce for the future." He thought it was a cardinal mistake to call on artists to produce historical works, without the means of cultivating their powers, and ascertaining the spirit of the age they had to represent. These means ought to be afforded in a liberal and ample manner, worthy of so great a nation. Hitherto our artists have had but small means; their enthusiasm has been great, but their education has been limited.

A student, by drawing and comparing in such a museum as we desire, would gain there in a month a clearer knowledge of characteristics than he could otherwise in a year. To obtain a large and valuable collection would not be difficult or expensive, if once commenced; and how much that has been destroyed might have been preserved, had some public and recognized receptacle for ancient remains been opened long ago? Mouldering in cellars and lofts, there are yet many private collections which their owners would gladly place in any public repository, while there are two or three which should be obtained even at some cost. The question of cost, indeed, ought not to be considered; the education of a people should not be measured by money. In France, Germany, and Belgium, such collections are being rapidly made. England alone, who most needs them, is denied the advantage! England, where even the rulers are for the most part profoundly ignorant of art, and are unable to estimate rightly its powers and value!

Up to this time we have spoken only of a museum of *mediæval* architecture, and for this it is we must first strive; but we cannot shut our eyes to the importance of obtaining a collection ultimately, where architectural history, as a whole, might be studied; and where we might trace the gradual progress of unbroken connection, from the earliest recorded time till now, which distinguishes it. The prospect of this, however, is far distant; the other is visible, and easy of attainment; and if the distinguished nobleman we have named will aid a request to his co-trustees, that they will recommend the Government to provide, in the British Museum, for a collection illustrative of our national architecture, we shall have little doubt of a successful issue, and his lordship will be entitled to the warm thanks of his countrymen.

* See Vol. III., p. 559.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.

BY PROFESSOR GRIFFITHS.

INTRODUCTORY.

CHEMISTRY, as applied to construction, is an extensive, important, and occasionally intricate department of practical science, the study of which cannot be abruptly undertaken; it will therefore be necessary to make a lengthened introduction to the subject.

This will materially facilitate all future pro ceedings, for the leading characters of the agents of chemical research will be gradually revealed, and this will be infinitely preferable to encountering them as perfect strangers, of whose qualifications we may be ignorant, although we receive them with courtesy.

It will therefore be the duty of the writer of these papers to unfold the portals of a vast and magnificent temple of science, abounding in stores of extraordinary discoveries, and important practical facts, more rich and inexhaustible than those appertaining to any other in the wide domain of human knowledge.

Chemistry, with its furnaces, crucibles, retorts, acids, alkalies, salts, and metals, may be deemed at first glance to have no connection whatever with construction, and therefore foreign to the profession of the architect, whereas the exact contrary is the case, for it will hereafter appear that chemistry is concerned in every material employed by him, from the pencil and paper with which he forms his first rude sketch, up to the marble and metal of which he constructs the most elaborate edifice.

"The true end of all science is to enrich human life with useful arts and inventions;" thus said the illustrious founder of "Inductive Philosophy," and the chemist, with honest pride, can hold forth to his fellow men the most convincing proofs of the truth of the above aphorism, and of the zeal with which he has laboured under its guidance.

Chemistry, applicable, as it is, to every department of science, art, and industry, neither admits of a very concise, nor perfectly accurate definition; but for the present purpose the following may suffice. Chemistry is that branch of natural knowledge which teaches us the properties of substances called elements, and of their mutual combinations; it inquires into the laws which affect, and into the powers which preside over, their union; it examines the proportions in which they combine, and the modes of separating them when combined, and endeavours to apply such knowledge to the explication of natural phenomena, and to useful purposes in the arts of life.

Such being the case, it is obvious that the mere physical or mechanical properties of the materials employed by the architect, demand little attention from the chemist; his leading, or sole study, is to ascertain, as far as possible, the composition, or the elements, of all forms of matter, and then he can afford information to the architect regarding the natural and artificial causes which either ensure the permanence of an edifice, or promote its degradation.

The following example will probably suffice to illustrate the business of the chemist. If a mass of marble be deprived of support, it falls to the ground, in obedience to the *attraction* of *gravitation*,—*i.e.* a mechanical attraction; the marble is hard, compact, requiring considerable force to break it, in consequence of its particles being held or bound together by *attraction of aggregation*, this is also mechanical attraction. The architect, the builder, and the engineer, can afford an immense fund of information to the chemist regarding the velocity of the fall of the mass of marble, and the force which holds its particles together; but he is far from resting satisfied with knowledge of such mechanical properties. He asks, "Can you inform me of what things the mass of marble consists, that is thus subject to the attraction of gravitation and attraction of cohesion? To this question his fellow-labourers in the temples of the sciences can make no reply, and, therefore, the chemist draws upon the stores of his own to discover if there be another power of attraction totally different from mechanical attraction, which he expects will be *attraction of composition*. Mechanical processes will not aid the chemist in this investigation; for however he may break the mass of marble, or comminute it into the most impalpable dust, he only destroys its attraction of aggregation,—the minutest particle is still marble, as true

marble as the parent mass from whence it was broken and abraded; he gains no information as to the things of which it is made; he therefore resorts to the means and appliances of his own well-furnished laboratory, and seeks for some chemical agent that will unbind the particles of the marble, and display the secrets of its composition.

Fire is a grand and powerful agent in the chemical laboratory for extorting a confession from substances, as to their composition, and indeed so constant is its employment, that the chemist is often designated as "the philosopher by fire," his working motto was "*sine igne nihil operamur*," and although the progress of research has proved the necessity of numberless agents besides fire, it is still perfectly indispensable in chemical operations, and in many instances it will effect the decomposition of substances, placed within its power. Suppose then, the chemist take fifty parts by weight (for by weight he exclusively works), of pure Carrara marble, and place it in a crucible, and subject it to the bright red heat of a furnace for some hours, then withdraw the crucible, allow it to cool, and examine its contents. He finds that the heat has not dissipated the marble, or at all events there is a white solid substance in the crucible apparently about the same bulk as the original marble, but removing this carefully and appealing again to the balance, he finds a deficiency in weight amounting to twenty-two parts, and yet he is certain that no portion of the original marble has accidentally fallen out of the crucible during the exposure to the furnace fire. He notes this deficiency in weight, he repeats the experiment again and again, and invariably finds that fifty parts of pure Carrara marble lose twenty-two parts, or in other words that only twenty-eight parts of a white fixed substance remain in the crucible; by this proceeding he has established an *experimental fact*, and it admits of verification by any person who will take the requisite care in accurately weighing the marble before and after its exposure to the heat of the furnace.

The loss of weight is beyond doubt, but submitting to it for a time as demanding a searching investigation hereafter, the chemist directs his attention to the twenty-eight parts of solid matter in the crucible, asking the question, "is this still marble?" He knows that marble is perfectly tasteless, that it does not absorb water, but he finds that if he place a minute particle of the fixed residue upon the tongue, that it is excessively caustic and acrid, and if he pour a small quantity of water upon a larger portion of the residue, both it and the water, from being originally cold, become most intensely hot. The residue, then, evidently cannot be marble, but is probably one of its constituents or components, and by following up the above simple trials of taste, and the action of water, with more accurate trials or *tests* (the action of which need not be here particularly specified), the chemist at length infers that the white fixed residue is identical, in all its characters and properties, with a substance universally known as *pure* or *quick lime*. Then comes the question, "have the original fifty parts of marble derived causticity or acrimony from the burning fuel, or has the heat changed or transmuted the marble into quicklime?" The first part of this question carries with it an obvious answer, viz., "there is a deficiency of twenty-two parts, and therefore nothing can have been derived from the fire; and in answer to the second part, the chemist does not entertain the idea of a transmutation, but deems it far more probable that the fixed residue is really one of the constituents of the marble, forced from its union with another of volatile nature by the heat of the furnace. He therefore repeats the experiment again, intently watching the crucible, but can discover nothing escaping from it, although at the close of the operation he still finds twenty-two parts by weight deficient. The chemist now concludes that the matter volatilized by the fire must be of some highly attenuated nature, and probably resembling the air in its physical characters and habitudes, and knowing that bubbles of air will easily rise through water (as when air is blown from the mouth through a straw dipped into water), he modifies the apparatus in which he next intends to submit the marble to heat, so that the volatile or aërial matter as it is expelled may be collected and examined as follows:—

The powdered marble is introduced into an earthenware retort. The bulb of this is placed in the fire, whilst the neck or beak protruding from the fire is dipped beneath the surface of water contained in a basin or small trough. As the bulb becomes hot, numerous bubbles of air rise from the beak through the water, and by filling a large wide mouthed vial with water, and then inverting its neck beneath that contained in the basin or trough (exactly the same as the long necked glass globe of a bird fountain is inverted into the water of its cistern), the neck is carefully raised above the beak of the retort, so that the bubbles of aëriform matter now rise through the water in the bottle, whilst a corresponding portion of water descends from it into the basin or trough.

The heat is continued until the bubbles cease to be emitted, and then by corking the bottle whilst its neck is under water, the aëriform matter is confined, and by placing the bottle in its ordinary position upon a table, its contents can be examined. The aëriform matter thus extricated from the marble, is transparent and invisible as the air itself, but upon withdrawing the cork of the bottle, and quickly introducing a small lighted taper, its flame is instantly extinguished; now it would continue for a certain time in a similar sized vial, containing a similar quantity or volume of air, so this simple test by flame proves the substance in question to differ from air in one of its characters, though it resembles it in the two others above-named, and by pursuing the investigation with other tests, the theory of whose action will be fully detailed hereafter, the chemist is led to conclude that the aëriform matter expelled from the marble by the action of heat is identical with that which exists in common soda-water, and it is known by the name of *carbonic-acid gas*. Here then the chemist has effected an analysis of the marble, and modifying the apparatus, the agents of decomposition, and so forth, he finds that in all cases fifty parts of marble will invariably yield twenty-eight parts of lime and twenty-two parts of carbonic-acid gas; for it, although a gas, can be confined, weighed, and measured with the same facility as the solid lime.

But the chemist is not yet satisfied, he next reasons thus, "as I can obtain only these two things from the marble, are they its true constituents? if so, it is extremely probable that when they are mutually presented to each other *attraction of composition* should ensue, and marble should be produced. He therefore proceeds to the operation of *synthesis*, the very reverse of *analysis*, and finds that if he dissolve lime in water, so as to form a perfectly transparent liquid, upon pouring a quantity of this into the vial containing *carbonic acid gas*, that the materials instantly become milk white, that in the course of a short time a white sediment is found at the bottom of the vial, and upon analysing it, *quicklime* and *carbonic acid* are again presented in the proportions by weight of twenty-eight of the former to twenty-two of the latter, exactly as they were presented by the original marble. He finds that this newly and artificially formed sediment or *precipitate* as it is technically called in allusion to its *falling*, is chemically identical with *marble*, but mechanically or physically differing from it, inasmuch as it is soft and pulverulent, instead of having a granularly foliated texture; but even this he can confer by ramming the precipitate tightly in a crucible, then perfectly closing its aperture, and exposing it to an intense heat.

Thus, the chemist can not only decompose natural marble, but he can form artificial marble, in virtue of the laws which govern *attraction of composition*, or, as it is more commonly and conveniently called in the laboratory, *chemical affinity*; and to denote in precise terms the composition of marble, he calls it *carbonate of lime*. But these two new substances, *carbonic acid* and *lime*, do they in their turn admit of decomposition or analysis?

The chemist, by very refined and highly powerful agents, proves that they may be analysed, and that carbonic acid consists of charcoal or *carbon*, and a gas called *oxygen*; the former a black, brittle, combustible substance; the latter an invisible gas, incombustible, but capable of supporting combustion; that *lime* also yields *oxygen*, and a combustible metal of silvery splendour, named *calcium*; so that *lime* is no longer called an *earth*, in strict chemical nomenclature, but an *oxide of calciu*
or, in familiar language, it may be calle
*rust*, for common rust is a compound of oxyg
and iron.

Throughout all these trials or experime
regarding quantitative analysis, the balance
appealed to at every step; the chemist fin
that six parts of *carbon* combine with sixte
parts of *oxygen* to form twenty-two parts
*carbonic acid*; and that twenty parts of *calci*
combine with eight parts of *oxygen* to fo
twenty-eight parts of *lime*; and that th
twenty-two parts of carbonic acid, and twen
eight parts of lime, will combine to produ
fifty parts of carbonate of lime. He has
power over the attraction of composition
force these substances to combine in any oth
than their unerring, their definite weights; a
it matters not in what climate, or at wh
season, the experiment be made.

The *carbonic acid* and *lime*, yielded by t
marble during the foregoing simple analys
are called its *proximate elements*, because th
are *nearest* to, or *first* come to, the hand of t
chemist, and will immediately, when present
to each other, combine to produce the marb
or the carbonate of lime, whilst the *carbo*
*oxygen*, and *calcium*, yielded by the more co
plicated or refined analysis, are called the *ul*
*mate elements* of the marble, because, in t
present state of chemistry, they do not adm
of analysis or simplification. They, and so
others to be named, are barriers opposed
the progress of analysis.

In former ages, the term *element* was us
to denote *absolute simplicity*. Thus, A
Earth, Water, and Fire were deemed abs
lutely *simple*, and capable of forming all oth
bodies by their mutual admixture or combin
tion. This doctrine was long entertained
philosophers, and has only been abandon
within the last century.

Thus, every variety of aëriform matter w
looked upon as of the same nature as the A
around us. Under the general term Earth we
classed all substances which remained fixed a
unburnt in the most intense fires of the furnac
Water was regarded as a substance neith
compoundable nor destructible by any oper
tions; and Fire was deemed to be a peculi
form of matter, having the power of destroyin

But the modern chemist, setting aside theo
and hypothesis as of little or no value, a
abiding exclusively by the test of experimen
has proved that Air consists of two gases, vi
*oxygen* and *nitrogen*; that Water also consis
of two gases, viz., *oxygen* and *hydrogen*; th
the various earths consist of *oxygen* and *metals*
and, lastly, that Fire is the common result
intense chemical affinity between two or mo
substances. Constantly experimenting upo
the various forms of matter presented throug
out the wide realms of nature, and the limite
provinces of art, constantly inquiring regardin
*attraction of composition*, the occupation of th
chemist is one of pleasure and satisfaction, fo
in the generality of cases he finds the newly
elicited facts are not only inherently interestin
but susceptible of important and useful appli
cations in the interpretation of natural pheno
mena, and in aiding the progress of the art
and sciences.

In the science of chemistry at the presen
day all substances that can be analysed, *ex. gr*
such as marble, carbonic acid, and lime, ar
called *compounds*, whilst all substances the
resist this treatment, *ex. gr.*, such as oxygen
carbon, and calcium are called *elements*. Thi
term being used to denote substances whic
may not be absolutely undecomposable, bu
which at present remain undecomposed. Th
attraction of composition or the affinity tha
holds their two or more components together
being superior to the power of any decom
posing agents that can be found in the chemica
laboratory.

There are no less than fifty-five refrac
tory substances which defy analysis; the
present types of the three physical forms o
matter, viz., the solid, the liquid, and the aëri
form, or gaseous; they are all *ponderable*, an
are subject to the agencies of light, heat, an
electricity, which are imponderable. The pon
derable elements are capable of uniting in va
rious ways to form a great number of com
pounds, and these compounds in their turn
are capable of uniting with each other to form
a greater number of complex compounds, an
so far as the knowledge of the experimenta
chemist extends, it leads him to consider tha

ll natural and artificial productions consist of lements, and of their combinations, according o definite laws of weight.

Such being the case, it follows that the va- ious materials emp'oyed by the architect in onstruction, *ex. gr.*, such as marble, stone, rick, cement, plaster, stucco, timber, iron, opper, tin, lead, zinc, glass, paint, and var- ish, must present a vast fund of chemical in- ormation, and in the next paper it is proposed o give a very general account of the elements, nd some of their most important compounds, nd then to enter upon the particular investi- ation of the principal materials employed in onstruction.

## IMITATION AND ARTIFICE IN FORM AND MATERIALS.

Amongst the many debated questions in rchitecture, which, from their unsettled state, re the great obstacles to the knowledge of the heory, and to the perfection of the art, great ifficulties surround that of the limit to the use f artifice and imitation in design. We could ot, without forming some estimate of the alue of imitations of materials, properly com- lete our series of papers on interior decora- ion, since it is in this department, that the in- uiry is most frequently presented to us. Conscious of these difficulties, we still feel that uch questions are seldom discussed without he publication of untenable theories, which, nstead of elucidating the point under discus- ion, often mislead. It is some of these views, which it may be mainly our purpose to com- at.—The subject may be treated as,—imitation f forms,—and imitation of materials, and each may be considered, as part of the general ques- ion of the propriety of imitation and artifice nder all circumstances, and as regards the hoice of fitting objects and means of repre- entation. The objection to all imitation would sweep away such features as pediments to windows, and rustic work,—and, if consistent, sculpture, and every part in which a repre- sentation, and often the expression of a use, was hinted at.

It seems to us, that there are certain powers of sensibility, deeply implanted in human na- ture, which, if examined into, would afford a ready solution of many undecided questions of propriety in design. Amongst these are the dislike of every attempt at deception, and, con- sequently, the admiration of sincerity and truth. Such a principle is highly valuable in architecture. But, it is the tendency of most inquirers, to terminate their investigation with the perception of one admitted truth, and to discourse authoritatively with the assumption of that alone,—correlative facts, and principles of equal moment and influence, being disre- garded. Architecture is by no means the only art or science, which has been led out of the direct line in its progress, by erroneous general conclusions from one particle of undoubted truth. Long before the time when Pope wrote—

> "A little learning is a dangerous thing!
> Drink deep, or taste not the Pierian spring,"

men forgot, as now, that several truths may be co existent, and that a definite conclusion cannot, with propriety, be hastily made. In architecture, as, we believe, says Lord Aber- deen, there has been too great a love of generalizing.

So great, then, is this natural love of sin- cerity, that the failure of any deception is sure to recoil in disgust at the attempt; and to this extent do we deem, that the principle warrants us in condemning those so called imitations of materials, which, except from their being put forward as substitutes, could never suggest the idea of any connection between themselves, and what they are by some persons understood, conventionally, to represent. The failure of the attempt, it is, which calls for rebuke; though the mere fact of an imitation of form or mate- rial, is not always to be understood as decep- tion. When the material employed has advan- tages, it would not always be desirable to debar it from taking the appearance of another; and it does not follow, that any person will be de- ceived, or that such an intention was formed at the outset. The question simply is, whether one material may be so far used to represent another, that it shall not suggest the want of any qualities possessed by the original, or, whether the designer must lay aside a very large number of the obvious and constantly recurring resources of his art. The objections against all imitations, if taken in the manner in which they are made, admit of no medium between the admission of those, which put forth no character of deception, and the ex- clusion of such as gilding, scagliola, and veneering. In the case of the first and last, the question would never be raised; but the supposed principle, which rejects a material or form, because it has certain qualities of ano- ther, and may so appear to some people, to re- present what it is not, to be consistent, should admit of nothing but solid material. If we are free to choose between a column of Sienna marble, and one of scagliola not inferior in appearance, we might select the former, but certainly, for its value, its durability, or other reasons, often confounded, but properly to be discriminated from the question of art. Prac- tically, indeed, we may prefer the marble, as not incurring the risk of failure through acci- dent, or want of skill in workmanship. If we are informed that the material is marble, the knowledge of the mercantile value, or the durability, may enhance the pleasure; but is not this wholly irrespective of the pleasure de- rived from it as a work of art, and in itself so far unimportant, comparatively, as to be out- weighed by the advantages—cheapness, per- haps—of the substitute?—The material imi- tated must also be such as might reasonably be supposed to be adapted to the situation, so that imitations, such as those of granite or bronze, will have to be carefully considered, for if these imitations be employed in any un- usual place, they challenge only a closer inspec- tion of their merit, as substitutes. Want of durability may often make us object, and pro- perly so, to an imitation, when otherwise it might be perfectly allowable. The merit of the chief requisite of art is not entered into, the substitute being condemned apart from such considerations, and before they are broached.

The first question, then, which has to be asked, relative to any imitation, is:—What was the intention? if to convert one material to the appearance of another, the answer is at once decided by the success with which the in- tention has been carried out.

Middling art can no more be tolerated than middling poetry. In every work there must be a certain completeness. This characteristic it is, which distinguishes the sketch of a master, which may have but a small amount of labour, from the most pains-taken work of the tyro; in the former, nothing more was at- tempted than the materials, and the opportunity fulfilled.

As regards the use of imitation in forms, we deem that many of the objections, recently made to rusticated masonry, columns and pe- diments to windows, and some other matters of detail, are equally mis-conceived, and would, if founded on true data, apply to every species of architectural decoration. It could readily be shewn, we believe, that every ornamental feature in architecture, except perhaps mere sculpture, has taken its origin from some use, and it was this conviction that led us to assert in a former paper, that architecture would soon be reduced to the state in which it was with the Druids. The resemblance between the form and its original, we take to be often a chief element in its beauty. It has been an adopted principle in architecture, and correctly so, that in all ornament, it is well to preserve the semblance of utility. The theory, that all impressions of the beautiful originate in association, is doubtless something more than hypothesis, and, therefore, not to be forgotten before the interference with a long admitted principle of art.—But, we even doubt, whether the use of pediments over windows and doorways in interiors is to be al- together condemned, notwithstanding the argu- ments which are current against them. We find them in the works of some architects, whose practice has been considered to give authority, and who could not have failed to consider the objections to their use. They have been used, even by Sir William Chambers, in the interior of Somerset House. We should ourselves prefer to adopt a feature, in which the connection between the actual type and its derivative was more remote, in other words, that where there could not be the object of utility, the suggestion ought to be *all* that should find expression. The blocks under a cornice, may be of no use as supports, but that appears to be the cause of placing them there, and the mind admits it as a reason for their presence. The labels over arches are of no use in protecting from the wet, at least internally, and the moulding would do equally well without a corbel, yet it is the suggestion of these uses, which is the chief cause of our satisfaction with them. As Reynolds has well observed, "by imitation only, variety, and even originality of invention, is produced;" and a distinction should be made between imitation and deception, the first a most im- portant part of the art, the second generally its enemy.

We have thus endeavoured to shew, that not the mere *fact* of the imitation, but rather, only the want of success, is matter for regret, accord- ing to the particular intention, and that imita- tions of materials are perfectly admissible, pro- vided they are so good, as to awaken no sense of inferiority to their originals. We have also already argued,* that imitations of pilasters, panels, and other decorations, in which painted decoration is substituted for relief, with intent to deceive, are mistakes such as we have alluded to; but that landscapes and other works in oil, water-colours, and fresco, are not to be objected to, since these can never be con- sidered as in the place of realities. And also, that were these last intended as deceptions, it would lesson their value as works of mind, and class them rather with tricks of hand. Thus, for example, a figure painted upon the wall in neutral tint, having also a cast shadow, would be an imitation of the statue, the place of which it would supply, whilst a figure painted in colours, and without the shadow, like some of the figures in the centres of panels at Pompeii, would be a *picture*, complete in every respect, and perfectly admissible.

Even stucco might be tolerated, if it could be done in the best manner, so that the superior qualities of stone could not be thought of. But this degree of excellence is unfortunately seldom attainable now. The ancients employed stuccoes which had the hardness of marble, and were even used as protection to some kinds of stone, whilst we are compelled to superadd coats of paint, which destroy every resemblance to stone. The material in general is also very unsightly, notwithstanding the frequent addition of paint, which at length destroys all beauty of outline in ornaments and mouldings. It is true, that there are other objections to stucco, which indeed make us re- gret, that there should be such a material, from the facilities which it affords to the un- educated in art; but there could be no objec- tion to it, if it were, and if it always remained, a perfect imitation, and if its use could be re- stricted to those who would make it sub- servient to design.

## ROYAL INSTITUTE OF ARCHITECTS.

Jan. 25.—Mr. S. Angell, V.P., in the chair. Dr. Bromet presented an account of Upton Church, and exhibited a sketch of a thirteenth century arch there, the architrave of which is wood. The mouldings of the archivolt were described as the dog-tooth, alternating with small rounds.

The honorary secretary read a description of the ancient Norman refectory in the bishop's palace at Hereford, containing some curious woodwork, of which there are few specimens left, belonging to the Norman period. This hall or refectory was originally 110 feet long and 55 feet wide, and was divided into three aisles by two ranges of wooden pillars and semi-circular arches; longitudinally it was in five compartments. Only half the roof remains, and yet is sufficient to shelter the principal apartments of the present episcopal residence. The interior, massive and grand, must have had a good effect; the pillars are sturdy, the arches and beams solid. It has been little no- ticed by topographers and antiquaries, partly because it can only be approached by the stair- case of the episcopal residence. Its date the writer considered, was soon after the Conquest. The spandril pieces of the roof, he thought, must have been cut out of timber four feet wide! Mr. Clayton afterwards described the Hall at Oakham, another curious Norman apartment, in three aisles, and four compart- ments longitudinally. The main arches, semi-

* Vide Vol. IV., p. 482.

circular, have the dog-tooth ornament around them.

The chairman, in remarking upon these examples, said, timber buildings had the great merit of always seeming to be what they were; there was no counterfeit in them. Other examples of wooden pillars being asked for, Mr. Poynter mentioned, that the Guildhall at York, had wooden pillars, and belonged to the fifteenth century. Dr. Bromet said, the upper floor of the White Tower (of London) had wooden pillars.

Mr. R. D. Chantrell then read some observations on the existing remains of an ancient Norman roof, over the chancel of Adel Church, Yorkshire, discovered by him in 1843: and Mr. Scoles exhibited a drawing of a "cradle" roof, probably of the thirteenth century.

In connection with the vault formed of earthern tubes, described at the last meeting, Mr. Donaldson exhibited a drawing of the church of San Vitale at Ravenna, the vaulting of which was constructed of earthern pots. The vault illustrated at the last meeting, probably belonged to the sixth or seventh century.

Some specimens of Dampier's patent architectural tiles, in blue clay, were exhibited; also models of others in ornamental forms. Mr. J. D. Hopkins, architect, remarked, that he himself invented these tiles nine years ago, and was quite surprised when he found them getting into use, some time since, under a patent.

The chairman announced, that the drawings submitted for the royal medal would be open for the inspection of the members on and after the 27th instant.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Ninivek Antiquities at Paris.*—These valuable relics have been brought from Abushir to Havre by the Royal Gabarre *le Cormorant*. Mr. Botta had them conveyed on rafts from Mossul to Bagdad, whence they were conveyed down to the embouchure of the Shat el Arab by the crew of the above vessel. As these antiquities consist of soft alabaster, great care is required in their conveyance, on which account they will be brought on the Seine down to the very steps of the Loûvre. Two halls on the ground-floor of this building have been prepared for their reception. Fears are entertained, that these preparations have begun too late, and that the Ninivek blocks may share the fate of the huge Egypt monuments, which have been piled up like lumber in some adjacent halls, for the last twenty years (?) As, during the last session of the French parliament, 300,000 francs have been voted for the publication of Mr. Botta's discoveries, the work is in a fair way of progress; and the first parts are expected to come out very shortly. It will consist of an historic and descriptive text by Mr. Botta, and 180 plates of basso-relievos, after the splendid designs of Mr. Flandin; with 250 plates of inscriptions, copied by Mr. B, (likewise the designs) *on the spot*. So far, the French government has done every thing to place this discovery on a line with the great work on Egypt, undertaken by Napoleon, which (to use a phrase of the King of Bavaria) will last longer than his military renown. It is to be regretted, that no arrangements have been made to make such a work accessible to every competent artist,—or, at least, to every reputable library. But as the price of a copy is 1,800 francs (75*l.*), and only 100 copies are to be sold, it will be attainable but by few persons.

*The Triest Art-Union Exhibition.*—This city, situate on the confines of Germany and Italy, may be presumed to combine some of the art-characteristics of both these countries. Here, also, the works of foreign (not Austrian) artists have been admitted—assimilating art to the legitimate principles of free competition. Thus, landscapes of Morgenstern, in Munich, Ruyter, of Antwerp, Leyboldt, at Dresden, were here to be met with. It is said, however, that the works of Italian artists (even Bisi and Canella, at Milan) stood much behind those of the Germans. Amongst the architectural views, those of A. Bayer, at Baden, occupied the first place; amongst them a basilica, painted with a bold brush. Mr. Zeichini, of Padua, exhibited a fine perspective view of the interior of the dome of St. Stephen, at Vienna. The Triest journalists invite foreign artists to exhibit their works in that city,—reminding them, moreover, that for bold rock scenery, inland and on the shores of the sea, no other city can be found to equal Triest, whose vicinity to Istria and the monuments of Salona and Spalato (corrupted of *Palatium*), may also be taken into account.

*Railway Speculations in Germany.*—The principle, that *every too much is noxious*, has been amply exemplified during the present railway panic at Berlin, where a company effectually offered at the Bourse shares of the Stargard-Posen line, to the amount of 5,000 dollars, for *nothing*—but the stipulation to fulfil the conditions which may hereafter be imposed upon the shareholders; the receiver, of course, gaining all the deposits, &c.

*German Public Library at Rome.*—The King of Prussia has ordered that the library of the late Prince Henry, consisting mostly of German works (many costly-illustrated art-works), should remain at Rome, and be made accessible to the German—we trust to *all* the—public.

*Late Conflagration at Berlin.*—An awful fire has raged of late in some of the populous quarters of Berlin, by which the insufficiency of measures and means, in the case of such catastrophes, has been fully proved. It is, however, to be hoped, that this mishap will afford some lesson, also, for the widening of some parts of Berlin, which are quite in the same state as they were in the fifteenth century. A law of expropriation, also, to purchase such rickety lumber of houses, becomes every day more urgent.

*A Sight of Futurity.*—I see in my mind's eye a time, when *all* (of us) will be, what they have been destined by nature for—*human beings;* an idea, eccentric, yet attainable. I see, like in the times of remote antiquity, splendour and show reserved *alone* for the temples of divinity, and the uses of the public (*people*). I see *art* displayed *everywhere* where it can be beheld by *every one*. I see huge piles and temples and colonnades vibrating with the festive strains of happy—yet not luxurious people. I see *not*, and never can conceive, an *equality* of talent (power!), physical force, beauty, genius, but I behold a human society of human beings! I see every attention paid to human comfort—every square and street and house and room tidy and sleek, and clean and *clear!*—But I see also civilization (like the great luminary of day) moving *westward*. Nineveh buried; the temples of Balbeck nearly drifted over with sand; the Jerusalem of Solomon un-recognizable by a throng of events; the Pyramids despoiled of their once granite-lustre; the Parthenon a mere wreck of the times of old; Rome withering into decay! In the West—*nearer* or remoter West, the shine of a 5,000 years' concluding civilization glares on our sight; different, *at least*, from what it has ever been before. But, whatever the seer and poet may dream, the philanthropist wish for, the statesman devise or even enact, it is the builder who has to *construct* the futurity of prophecies. —[*Isis of Okcu.*]

## INSTITUTION OF CIVIL ENGINEERS.

THE NEW ROOMS.

Sir John Rennie, president, in the chair. The annual general meeting of the institution was held on Tuesday evening 19th inst., and at the ballot for the officers for the ensuing year, the following gentlemen were elected:—Sir John Rennie, president; W. Cubitt, J. Field, J. M. Rendel, and J. Simpson, vice-presidents; J. F. Batemen, J. K. Brunel, J. Locke, Sir J. Macneill, J. Miller, W. C. Mylne, T. Sopwith, R. Stephenson, G. P. Bidder, and J. Cubitt, members; and Captain Coddington, and C. Holtzapffel, associates of council.

The report of the council was very satisfactory, as it announced the institution to be in a prosperous state in every respect, and induced a full conviction that the recently improved premises would be advantageously occupied for the members and the profession generally. Telford medals were presented to Messrs. Barlow, Snell, Harding, Williams, Parkes, West, and Ritterbandt; and premiums of Books to Messrs. Turnbull, Heppel, and Robertson. *Council premiums*, consisting of collections of books of considerable value, were presented to Messrs. Barlow, Snell, and Harding, in addition to the Telford medals. It was announced in the annual report of last year, that the council intended establishing these premiums, and from their value and the stimulus they offer to the competitors, it is hoped they will produce good communications for the meetings.

Succinct memoirs were given of the deceased members, Messrs. Crane, Deville, Handley, and Winsland.

The report entered fully into a description of the alterations of the building during the recess. It appeared, that in consequence of the resolutions of a general meeting, Mr. T. H. Wyatt, architect, was requested to make certain alterations, and Mr. Grissell undertook their execution. Within the short space of four months, these have been completed, and all are inhabited except the theatre, which is yet too damp. The principal works appeared to be the remodelling the basement story; putting an entirely new foundation beneath and partly rebuilding the front wall, which has been cased with Caen stone, and decorated in the Italian style, with a portico at the entrance and balconies to the first and second floors. The ground-floor rooms are thrown together, and decorated with oak panelling. The rooms on the first and second floors are made to communicate with each other by folding doors, forming suites of rooms for libraries. The new theatre is so much enlarged as to contain nearly one hundred persons more than the old one; it is now twenty-two feet high, well lighted both by day and night. The thanks of the meeting were unanimously given to Mr. T. H. Wyatt, the architect; Mr. Grissell, the builder; and Mr. Manby, the secretary, who superintended the execution of the works.

In his address, Sir John Rennie, after alluding to the stimulus the profession had received from the number of public works recently undertaken, and the high position which the Institution had obtained from the successful labours of its various members, urged the necessity of still further exertions, in order to support the scientific character they had earned. Far from being satisfied with what they had done, this feeling should only act as incentive to greater efforts; but by continuing in the same course, they might arrive at a point as much in advance of what had been done in the present day, as they were now beyond what had been done in the time of Smeaton. He then reviewed the progress that had been made in railway travelling and steam navigation; and made some remarks upon the formation of bar harbours, the drainage of extensive districts of marsh lands; and, after glancing at the improvements which had taken place in various branches of science, he observed, that the present position of civil engineers in Great Britain had been brought about entirely by the wants of the community. Without the encouragement or fostering hand of royal or government patronage, they had attained an unequalled degree of eminence in every department; their prospects were bright, and would continue so, if they held well together, and were zealous of their present high reputation. The president then remarked upon the appointment of civil engineers by Government, to investigate into the merits of various projects which had been submitted to the Health of Towns Commission, and which he characterized as a step in the right direction; and observed, that if the same system had been pursued with regard to railways and other important works, so as to have enabled the legislature to arrive at correct conclusions respecting many of the projects, the public would have derived infinitely greater advantages than they were likely to do from their present system, as the naval and military officers who had been appointed upon these commissions, however talented in their own profession, and highly honourable and well-intentioned, must, after all, derive their information from civil engineers, who alone would be competent judges. Neither could he approve of the system of interfering too much with private enterprise; the public understood their own interests much better than any government, and although the present system might have some defects, it had hitherto worked well. Competition had produced talent and employment for it, and the result had been eminently satisfactory. They had only to compare many of the establishments of government with those of private

individuals, to find that the latter were preferable, whether as regarded celerity, quantity produced, or economy of manufacture; but the moment the continental system was followed, and every thing rendered subservient to government, the general energy would be cramped, and the public works of this country would dwindle into comparative insignificance. Civil engineers were bound to give every assistance in their power to the legislature, in order that public works should be established on the best principles; and the profession should make their services indispensable by their superior knowledge, and the liberality with which they offered them. The government and the public would necessarily apply to them, and they would then receive the due reward of their exertions.

The meeting was adjourned until Tuesday evening, February 2nd, when the following paper was announced to be read: "An Account of the method employed in laying the permanent way of the Philadelphia and Reading Railway, U.S.," by W. E. Newton.

## THE SCHOOL OF DESIGN AND THE BRITISH MUSEUM.

Sir,—Suffer me through the medium of your widely-circulated journal, to offer a few remarks respecting the School of Design, in which I am a student. I am led to do this from the following circumstances:—The school has been accused of inefficiency, disputes have arisen among the masters, the students have been called upon to deliver their ideas, and state what they imagine to be the want complained of. Now being one of those appealed to it has occurred to me, that by bringing the matter before the public, the end sought by the masters will be obtained; and at the same time, the additional advantage will be procured of provoking discussion upon the suggestions offered, of drawing the attention of artists and competent persons who might be willing to give their advice and assistance, and by these means enable the committee of the council now sitting to receive new views, and have fresh light thrown upon a matter about which so little unanimity has hitherto prevailed.*

In offering the following remarks to your notice, I would be understood to give them merely as suggestions. Where so many, and of such high talent have failed, surely it would be presumptuous in me to endeavour to point out a path by which success would be obtained; but, at the same time, the greatest results are often produced from the poorest and least expected sources, and if these remarks but attract the attention, and direct the inquiries of some of our leading artists, architects, and sculptors, to the establishment of a nervous system of education in artistic, decorative, and industrial design, one great object for which the nation is most anxious will be answered; and England, as it is superior in power to all other nations, may likewise stand pre-eminent in art.

It has always seemed to me, as a student in the Government School of Design, that the standard of education was taken too low, and that though the hand was guided, and good studies were placed before the student, that the mind was left uneducated. The practice in all cases was taught, and taught well, but the *principles* that guide the practice were unexplained, no course or system of study by books, in connection with his drawing or painting, was pointed out to him, no lectures illustrative of the history or principles of his study were delivered to him, and he was left to flounder on from a Roman cast to an arabesque of Raffaelle, or from a Pompeian pilaster to a fragment of the figure. Without system and a well-directed course of study, the highest efforts are ineffectual, and the energies, otherwise well directed, are by this means wearied and disgusted. What is the course of study needed, or what the routine of instruction to be pursued, of course must proceed from a careful consideration of the subject by competent persons. I have merely stated my own feelings with regard to the want that I have felt, and I believe other students (though they do not like to express them), fully concur in the views that I have here set down.

Our country is eminently industrious over all other nations of the earth, and only point out the path to be followed and the sons of England are universally successful. In one respect alone, in that of art, are we inferior; our productions reach all quarters of the world, and provoke degrading comparisons between our own taste, and that of our continental neighbours, who are rapidly taking the lead of us in foreign markets, with their fancy manufactures on this account.

Let us endeavour to trace this to its cause. Our manufacturers, on being appealed to, say, we find it of no use to expend large sums of money in producing original and beautiful designs, for in nine cases out of ten an inferior copy from our continental neighbour, or something turned out by a practical genius in the factory, will command a larger sale than the most laboured and elegant invention. Whence does this proceed? surely from the want of art-education in the people; once accustom the public mind to appreciate the true proportion of form, originality and beauty of design, with correct harmony of colour,—and the unsightly abortions, now put forward by our best manufacturers, would speedily give way to an impulse that would place us at the summit of excellence in this as in every other respect.

With such a prospect as this before us, is it not incumbent on the Government to bestir themselves boldly, so as to give full and free scope to the wishes and wants of what must be the majority of the people? and to do this all niggardly ideas must be at once thrown aside: the importance of the object claims that it should be treated in a generous and magnificent manner, and that if we wish for a successful result we must give freely and encourage nobly.

I would suggest that a building should be erected purposely for the uses of the school; that each floor or room of the building should be appropriated to its own study; that in each room there should be a desk or tribune from which a lecture should be delivered to each class at least weekly, such lectures to be printed and delivered to each student in the school; that a *large* library for reference and study should be opened for the use of the school; and the student should not, as at present, be allowed to select his own book, but that a steady course of study should be pointed out, and those books given to him by the masters that would best assist him in the object for which he is working: on these books he should either be required to write a page of notes, or else he should be asked by the master a series of questions, to prove his having studied the subject.

I would also suggest that a complete register be kept of the school, with remarks against each name as to studiousness, advancement, &c., that half-yearly reports be made, and prizes given, these prizes on no account to be money.

In connection with this subject, I would also propose another and more comprehensive theme;—to make the school what it ought to be, and to diffuse as widely as possible the benefits to be derived from it, I would make the British Museum available, with its immense collection of art treasures, and I would also make it a means of educating the nation at large, or that portion of it which is, at present, debarred from studying the artistic and industrial productions of all ages contained within its walls. The class I allude to are those confined to business during the day,—surely, an immense, a well-educated, and, take them as a body, a most wealthy and influential class in our country,—to place before them the beauties and treasures contained in our Museum; to educate them in the study of the harmonious and beautiful; and by this means to lead them to exercise a purer taste in the selection of their greatest and minutest wants, will be one of the best ways of bringing about the "consummation so devoutly to be wished." This object is to be obtained by throwing open the British Museum to the public in the evening, not merely three nights in the week, but every night except Saturday, when in nine cases out of ten, the time that is wasted at theatres, and places of mere amusement, would be instructively and profitably employed.

In order that the Museum should be available for the School of Design, the new school should be contiguous to, and connected with, the Museum; and such books, casts, prints, vases, &c., as should be required for the use and study of the scholars, should either be removed, under proper restrictions, or the students should have free access to copy night and day in the Museum. Of the good conduct of the people admitted to the collection in the evening there could be no doubt; the crowd would be quite as orderly as in the day; due care being taken to refuse admission to improper and riotous characters. It might be objected, that the gas would injure many parts of the collection. To obviate this, the building should be lighted, as the present House of Commons, by gas from the outside of the skylights and windows, by which means all heat and impure air would be effectually excluded, and an even light procured, by which the students might work.

It might be urged, that such a system would incur great expense; to this I answer, that for such a boon and for such an object, the people would gladly and freely concede all that was asked.—I remain, Sir,

A Student in the School of Design, and Steady Subscriber to your Journal.

* A large mass of evidence has been taken by the committee, and will afford us matter for comment before long. Ed.

## VENTILATION.

At a meeting of the Society of Arts, held on the 20th instant, a paper by Mr. Mather was read, "On the Ventilation of Schools, Churches, Public Rooms, &c." The author, after a lengthened introduction, proceeded to state, that the application with which he had been honoured from the committee of the Union Schools at South Shields for suggestions for ventilating their schools, had afforded him an opportunity of doing so. The first room is a school for boys, and is on the ground-floor; its length is 60 feet, breadth, 30 feet, and height, 13 feet; and contains 23,400 cubic feet. The second room, for girls, is on the upper story, and is 45 feet long, 30 feet broad, and 13 feet high; and contains 17,550 cubic feet. In the first room there are 180 boys, each breathing not less than 1,200 times an hour, and requiring more than 142,000 cubic inches of atmospheric air per day of twenty-four hours, which, for 180 boys, will be 25,560,000, or for the five hours they are confined in the school-room, 5,325,000 cubic inches of atmospheric air, a 7th and 3 5ths of the entire air of the room, pouring into it in that time from their lungs about 391,500 cubic inches of carbonic acid gas,—taking it 5 per cent. of the atmosphere inhaled,—mingling with it, also, nearly 3,206,750 cubic inches of free azote, or nitrogen, which, with the carbonic acid gas, constitutes a large portion of the school atmosphere. I entered these school-rooms, observes the author, towards the conclusion of school hours, and found the air vitiated to a serious extent,—emanations from the lungs and skin being very perceptible and sickly.

In order to prevent the injurious effects resulting from such an atmosphere, it is necessary that the whole air of the room should be changed at least every half hour, so that all noxious gas may be removed. For this purpose, he proposed that an aperture not less than 12 inches by 24 inches should be made through the wall on the west side of the room (the most open and unobstructed), 6 feet from the floor, equidistant from the end walls. This would be sufficient to displace the entire contents of the room every half hour, passing in at the rate of 6 feet per second. This column of air he proposed should be carried directly across the room by means of a wooden tube 12 inches by 16 inches, like a beam, and a second tube, 10 inches by 10 inches from the same aperture, should rise perpendicularly against the west wall to the ceiling, cross it at right angles, and then descend the east wall till it meets the horizontal beam at its extremity. From the centre on the floor, a tube is to rise as a pillar supporting the horizontal beam. These tubes are each to have about 500 holes drilled in them for the purpose of spreading the air in all directions. The author then proceeded to suggest various plans for the ventilation of churches and dwelling-houses of all descriptions, and also of confined courts, lanes, and streets.

The Memento Victoriæ at Guernsey.—The wherewithal to commemorate the momentous incident of the visit of the Royal Consorts to Guernsey, is announced to have already exceeded the sum of 1,260*l.*

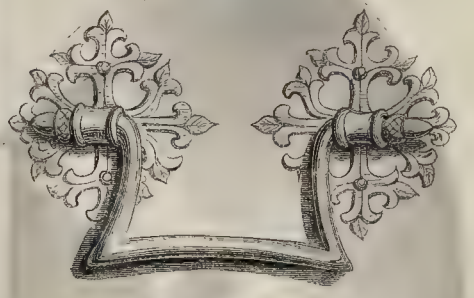
GOTHIC STAIRCASE, AT ANTWERP.



## MEDIEVAL IRONWORK: HANDLE FROM COLOGNE.



FROM THE TOWNHALL.



FROM ST. MARIA CAPITOLINI.

### GOTHIC STAIRCASE AT ANTWERP.

Several years have passed since we were last in Antwerp, yet our recollections of it are as vivid as if we had returned but yesterday. The wonderful pictures with which it is filled, its noble churches, and the picturesque effect produced by every street, are not easily forgotten.

A short time ago we mentioned a few of the churches, and gave a representation of some of the more modern carved wood-work in the cathedral.*

In Antwerp may be seen some of the finest of Rubens' works,—the prodigal king of colourists,—and his old leathern chair stands in the museum there, with an undying wreath upon it. When you go to that museum, good reader, and you may do so, and see much besides, for less than a week at one of our trumpery watering places will cost you—do not fail to look at some early sketches by Rubens, with his intentions, as to the pictures, written upon them, also his "Adoration of the Magi," and "Christ in the Arms of his Father." 'The Fall of the Rebellious Angels," by Floris, with the bee painted on it by Matsys, the "blacksmith," is full of imagination, and there are several wonderful pictures by Vanlyke, the elder Franck, and others.†

In the gardens of the museum is a tomb over the remains of Corneille de Vrindt, sculptor and architect, who built the Hotel de Ville. There are also mural inscriptions to several other artists, including one, if we may trust our notes, to Appelmans, architect of the cathedral, who died in 1434.

The exchange, or Bourse, erected at the beginning of the sixteenth century, served as the model for Sir Thomas Gresham's exchange in London. The open quadrangle which it forms is about 180 feet long and 140 feet broad, and has around it a covered walk, enclosed by curiously sculptured columns and trefoil arches, which carry the upper part of the structure. The columns are octagonal, curiously sculptured, and have good bases and caps, but the trefoil arches and the groining of the covered way are what would be called in England, "Churchwarden's Gothic."

This brings us to the subject of our illustration. Adjoining to the Bourse there are three Gothic staircases, all upon the same principle, but having each different details. They are interesting examples, and the most perfect of them is represented by the annexed engraving, from a sketch made for us last summer.

* Vol. IV., p. 534.

† Our note book says the museum contains 211 original pictures and 17 copies.

### MEDIEVAL IRONWORK.

We have often had occasion, in the course of this publication, to call attention to examples of elegant metallic works executed by the artificers of the middle ages. A fine specimen was recently engraved from Abbey Dore, in Herefordshire, with many capital specimens in the previous volume; and we now add the accompanying handles from Cologne. The first is a handle with a small escutcheon, on one of the doors of the Town Hall, and is an interesting design, visibly in Flemish ironwork of the fifteenth century, of which many fine specimens exist in the low countries. The second is a horizontal handle upon the door of the Church of St. Maria Capitolini; the ends of the handle after they pass through the staples terminate in acorns; the small escutcheons are elegantly foliated, the main design being grounded on the cross crosslet of heraldry.

### NOTES IN THE PROVINCES.

It is proposed to build a new mechanics' institution at Ipswich.——The extension work at the west end of Yarmouth-pier is on the eve of completion. The principal breakwater, it is thought, will be a sufficient one, but doubts are entertained of the smaller. All the defective work has been repiled, and is expected to last for forty years. An additional expenditure of 400*l.* or 500*l.* about the north pier is looked forward to in the ensuing summer.——The new Post Office at Leicester is nearly finished. It is considered to be rather ornamental, which is more than can be said of many provincial post-offices.——The ancient church at Cranoe, says the *Leicester Journal*, has for some time past been in a very dangerous and dilapidated state, owing to the sinking of the foundation. Means for its restoration are much required. The congregation have altogether deserted it, the incumbent performing divine worship in the large school-room recently erected by the Earl of Cardigan.——Damages to the extent of 25,000*l.* for the intentional dilapidation of Kinerton Hall, and destruction of its ornamental timber, have been obtained at law by the Duke of Leeds against the executors of his own father, who was held to have no right to "do what he liked with his own," as the property was his only so long as he lived, having only, in short, a life-interest in it. ——It is proposed to erect a building at Sheffield sufficiently commodious for the fourfold purposes of an athenæum, a school of design, a mechanics' institute, and a philosophical society.—— It is considered that a cathedral that will do credit to Manchester and its bishop expectant cannot be completed under 100,000*l.*; and it is hence proposed, that in the meantime not more than the chancel and two transepts, with the central tower to unite the nave and chancel with the transepts, be attempted; these, with a peal of ten bells, to cost about 50,000*l.* This sum it is proposed to raise by 100 individuals contributing 500*l.* each, whilst subscriptions in smaller sums are being raised for the erection of the nave. The site proposed is the high ground at Cheetwood, rather towards Broughton. The *Manchester Courier* says:—"We apprehend that, for a work of such magnitude, these suggestions are on a reduced scale. To build a cathedral worthy of such a see as Manchester,—for the extent of country over which its jurisdiction will extend, and embracing Manchester, Liverpool, Bolton, Rochdale, Oldham, Ashton-under-Lyne, Bury, and other large towns, incomparably the wealthiest ecclesiastical districts in Great Britain,—one hundred and fifty thousand pounds would be required to be raised. There ought to be no difficulty in accomplishing this, simply by the plan suggested; and a well digested and perfectly organised system, kindred in method and in spirit with that by which Sulpice Boisseeree has succeeded in recommencing the works (after a lapse of six centuries) for the completion of the Cathedral of Cologne, could not possibly fail to have its due effect upon the munificence of English wealth and the piety of a purer form of Christianity than that which the *Dombau Verein* (or Cathedral Building Society of Cologne) appealed to." —— The Birmingham brass-founders, and other staple trades there, have been of late in a somewhat depressed state, but, according to the *Sheffield Iris*, "the wire-drawers are fully employed, and have been so for some time; large quantities of their material having been required during the last few months in the construction of the electric telegraph along the various lines of railway in different parts of the country; and, as a proof of the quantity of iron now required for this novelty, it may be mentioned that, during the last twelve months the contractors to the company (resident in the town) have supplied for that purpose, in the country alone, many hundred tons of the wire. ——The offer of a premium by Mr. J. H. H. Foley, of Stourbridge, for the best plan of sanatory reform and improvement for that town by means of joint stock companies, was responded to by only one essay, and that not at all of the practical and comprehensive nature either intended or desired. Here, as elsewhere now, however, the expected measures of the

Government have, in the meantime, placed in abeyance all local efforts which might otherwise have been by this time in course of progress towards the realization of the ends in view.——Considerable works are going on in the interior of the parish church of Baldock, at a cost of from 1,500*l.* to 2,000*l.*——The practicability of projecting water from the street plugs by the mere hydraulic power of the mains themselves, thus obviating the necessity of using fire-engines in cases of fire, has been tested at the works of the Liverpool and Harrington Water Company, Hotham-street. A branch of ¾ bore was fixed to a common fire plug, and by the mere pressure of the water alone, it was projected nearly to the summit of a tall chimney, about 100 feet in height; the altitude was, in fact, much greater than that usually attained by means of fire-engines, and the volume of water considerably augmented. The stream was directed perpendicularly, obliquely, and horizontally, and in each case with the same effect. Some further experiments were subsequently made in Exchange-street East, and the results, says the *Liverpool Mail*, were equally satisfactory, considering some disadvantages which had to be encountered. With a little alteration in the street water-plugs, it is said, the plan may be effectually carried out in all cases of fire, and thus a very important advantage will be gained over the present mode of projecting water by means of fire-engines. Thus, too, our anticipations of the extension of the principle adopted at Newcastle in the use of the hydraulic power of the water-works there in hoisting goods by cranes, appear to be in the fair way to a most useful and extensive realization.——The smoke nuisance, too, is now engaging, at Liverpool, amongst all interested in the progress of sanatory improvement, that prominent attention which it still requires, and which it now must be accorded. The patent processes, however, of Mr. Williams and Mr. Kemp have there been already applied in consuming the smoke of public works as well as steamers with more or less success. The latter is said to have made a satisfactory experiment with her Majesty's steamer Ariel, and to have even proved that the long funnel itself may be altogether dispensed with; and the former has put up his apparatus in several manufactories in Liverpool, the noxious smoke of which, it is said, he has entirely removed. ——In accordance with the provisions of an Act of 10th Vict., "for making preliminary inquiries in certain cases of applications for local Acts" for the improvement of towns, her Majesty's Commissioners of Woods and Forests have of late sent numerous surveying officers, each in general consisting of one lawyer and one civil engineer or architect, dispatched in couples thus throughout the country into towns, villages, &c., where an intention of applying to Parliament for Acts for lighting with gas, paving, cleansing, sewering, draining, or otherwise regulating or improving, the town, &c., has been expressed. Amongst others, we perceive, in the current newspapers, official notices, issued by the "surveying officers; as, for instance, at Shipley, Windhill, Bingley, and elsewhere, as noted in article on Gas, that they mean to proceed, on days respectively announced, to "make such local examination and survey of the district which such proposed Act will affect, and to investigate such other matters relating thereto, as the said commissioners have by their order directed us to make and investigate;" and therefore *requiring* the promoters and others to appear before them with surveys, plans, witnesses, documents, &c., relevant thereto.

## ADDITION TO THE MANSION HOUSE.

The new entrance to the Mansion House, on the west side, is completed, and shows on the outside a Roman Doric porch, of two pair of coupled columns in front, and corresponding pilasters on the face of the building, carrying a horizontal entablature. It scarcely seems to belong to the original structure, the parts are so much smaller than those of Dance's building, and though a great improvement even in appearance upon the former ugly covered way, has no great claims on admiration in an architectural point of view.*

* The first stone of the Mansion House was laid October 25, 1739; but the building was not finished till 1753.

## GAS IN THE PROVINCES.

Bills are to be shortly brought into parliament for the amendment and consolidation of the various private acts at present in force for the lighting of towns, and for watching, paving, &c.——There is an amendment in the use of gas, by the way, of very general requirement, which may here be noted down while we think of it. Indeed, we have already done so in more instances than one, but the importance and general want of such an amendment induces us here to repeat the very obvious suggestion, that means for the proper ventilation of the injurious products generated in the burning of gas within doors ought to be insisted on, and provided, either by the force of public enlightenment on the subject, or of legislative enactment itself in course of the proposed amendments. Gas burners consume the vital air no less than human lungs, and we are at this moment in as lamentably defective and aboriginal a state of progress with respect to the ventilation of the deleterious products of gas burning as our aboriginal progenitors were with respect to the ventilation of their domestic hearths while chimneys were unknown. ——During the preliminary inquiries instituted at Ipswich lately by two of the surveying officers (a barrister-at-law and a civil engineer) appointed by the Woods and Forests under an act of 10th Victoria, more particularly alluded to under the head of our Notes in the Provinces, which see,—it was elicited that the quality of the gas at Ipswich is exceedingly pure, and such as to do great credit to the management, and that the price charged is 7*s.* per 1,000 cubit feet, with discount up to 20 per cent. And that the manufacture of gas itself is not an unhealthy employment, although the district at the back of the gas works there is very unhealthy. Mr. Lowe, moreover, in considering the subject with reference to the sanatory condition of the town, deprecated the practice of allowing water to accumulate around gas works, the noxious state of which often occasioned fevers of a typhoidal character of a very desperate aspect. The clerk of the works stated that the company have syphon wells in various parts of the town for the refuse of the gas in cleansing pipes, &c., and that these are pumped out as circumstances may require, so that the refuse does not find its way into the sewers. The general refuse of the gas water is used for agricultural purposes, and is carried away by the farmers. The surveyors were said to be about to visit Manchester also, and other large towns on the same mission, namely, in order to facilitate the labours of the committee on private bills during the present session of Parliament, and to save public companies as much expense as possible.——We observe that the same officers had announced a meeting for like inquiries at Southampton regarding the proposed new Gas Act applicable to that town. ——On the 8th instant, a similar commission is to be opened in Liverpool, in order to ascertain whether the Dale-street Gas Company ought to be confirmed in the power which it now has, to charge 4*s.* 6*d.* per 1,000 cubic feet, or whether the Guardian Gas Company (whose bill was rejected last session) shall be now permitted to furnish the same quantity of as good an article for 3*s.* 8*d.* The agitation of the new scheme appears to have already reduced the price of the article charged by the two existing companies there from 7*s.*, at first, to 6*s.*, then to 5*s.*, and ultimately to the still lower figure just noted. It is admitted, too, on all hands, that "better gas than that now supplied it would be next to impossible to procure," which is more than can truly be said of our own metropolitan gas, as we have already repeatedly observed. Cheap gas and good is now the order of the day in the provinces at least, and surely the metropolis will ere long be inoculated with the same sanatory virus. The reduction of the expense of fittings, too, would probably do no less additional good to the gas-fitters themselves than to the landlords and consumers. In Liverpool alone 44,000 houses will be ere long, or at least ought to be, handed over by the wax and tallow-chandler and the cotton-wick and pith manufacturers to the manufacturer of gas and the gas-fitter. As it is, it is declared that the two Liverpool gas companies supply 300,000,000 lights per annum, with a profit of 8 per cent. on the whole, and that they, moreover, expend 10,000*l.* a year in parliamentary and other expenses alone. The Liverpool people have thus, as the *Mail* very truly observes, good cause to regret that the corporation did not purchase the interests of the gas companies when they had the opportunity, as a large sum might from such sources have been additionally devoted annually to the public improvement, as is the case, and long has been indeed, in Manchester.——The lessee of the gas-works at Hereford appears to have heretofore been reaping a glorious harvest out of the citizens, as, in fact, he still must be, although it appears he has lately agreed to charge only 10*s.* per 1,000 cubic feet, under a deduction, however, of 15 per cent., a proposal which, according to the *Hereford Times*, has been accepted by the citizens.——The Bath Gas Company, in order to meet the increasing demand for gas there, are enlarging and improving their works at an expense of nearly 3,000*l.* ——The Stratford gas-works are now completed, and the parish will be lighted in course of the present, to it eventful, month.——Will it be credited that at Newcastle, the very fountain-head whence the raw material of gas is distributed for the illumination of millions of millions of burners, and where we have many a time and oft with the deepest interest and wonder contemplated the spontaneous and perpetual issue, and the vast and eternal illumination of the very mammoth of all gas jets that ever enlightened an "enlightened public," opening out of the ground itself, and even still, for all that we know—schemes to the contrary notwithstanding—expended in one perpetual, useless, and extravagant process of combustion,—that there, nevertheless, where not only the raw material, but the ready made article, may thus be had as it were for next to nothing, "the insufficient quantity, and the infamous quality, of the gas are, indeed, notorious!" Such is the fact, attested by the *Gateshead Observer*, while calling on the consumers of that thriving and independent boon-companion rather than offspring or suburb of Newcastle, whose interests are also implicated in this disgraceful state of things, to second the wrathful outburst of indignation with which the Newcastle consumers have at length set about the attainment of a remedy for "the wrongs inflicted upon them by the Gas Company," by memorializing the town council on "the inefficient and shamefu manner in which the town is lighted, and praying that body itself to exercise the lighting powers conferred on it by parliament."—The town of Keswick has just been lighted with gas, and one *astonishing* circumstance chronicled by the local press is, that the shopkeepers have had it actually introduced into their shops, an astonishment which we recollect of participating in by anticipation, at Edinburgh at least a quarter of a century since, when it was introduced there, however into shops, on a small scale, long before the town itself was "lighted with smoke," as the imaginative, but by no means usually or naturally sarcastic, Scott—himself the wonderful illuminator of his day and age—sarcastically and incredulously expressed it.——At Dalmellington, in Ayrshire, the cost of gas consumed in the street lamps is defrayed by an annual dancing festival, on new year's day, ethe really named the "gas ball,"—a really creditable way of totally reversing their old and proverbial national reproach to all obstructives in the path of miscellaneous improvement, a reproach derived from a very primitive and humble practice certainly, but in general betraying an aphoristic significance in the curt and pithy declaration, that such obstructives are provoking and impracticable blockheads, who will "neither dance nor hold the candle."

Burials in Towns.—Mr. G. A. Walker delivered his second lecture on metropolitan grave-yards at the London Mechanics' Institution, on the 22nd inst., and struck another blow at the heart of this monstrous evil. Some recent proceedings in St. Giles's Cemetery corroborated by the testimony of several witnesses, are too horrible to contemplate. We look to the government for some immediate effort, to guard the community against the dangers to which they are exposed under the present system.

The late Fleet Prison.—The city have paid 25,000*l.* for the conveyance of this freehold, and propose to erect a House of Correction on the site.

## LOCAL SANATORY INQUIRIES.

Professor Hosking is now in York on the part of the Board of Works, making sanatory investigations; and will also visit Cockermouth and Sunderland with the same object in view. We are told, that the other official referees, Mr. Poynter and Mr. Shaw, have also had districts assigned to them.

About three months ago the Worcester city commissioners invited Mr. Austin, the honorary secretary to the Health of Towns Association, to make a survey of that city, and report upon it. This he has done, and has proved, amongst other things, that "on three items — lost labour, excessive sickness, and funerals, there is a year's charge upon Worcester of *twenty-four thousand six hundred pounds, occasioned by an excessive mortality.*" It appears that in the year 1841, the deaths in Worcester were in the proportion of one death to every 44 of the population, and that the average age of all who died was only 33 years and four months. The importance of efficient drainage is strikingly exemplified: in streets which are culverted, inhabited by the poorer classes, the age at death was, on an average of three years, 25 years and a half; *and in the streets not culverted*, similarly inhabited, *seventeen years*.

The report has been printed and diffused, and can scarcely fail to awaken the inhabitants to the power of the destructive agents so busily at work around them.

It is indeed a remarkable thing, as Dr. Southwood Smith said the other day at Exeter, that the human family has now lived together in communities for 6,000 years at least, and has not yet made its places of abode salubrious. Perhaps there has never yet existed a single city, in any age or country, the inhabitants of which have not experienced some degree of suffering, some amount of sickness, and some diminution of the natural term of life, from the neglect of those precautions which are necessary to render human habitations healthy. "Air, water, and light, are physical agents which are indispensable to human existence. They are the primary pabulum of life; and being so, they are provided for us by nature in unlimited abundance; we have only to open our hands to receive them, always fresh, always pure, always inexhaustible; and yet there is no city or town so constructed as to admit everywhere free currents of fresh air; there are few houses so constructed as to admit of a proper degree of air and light; and almost universally the contrivances for the supply of water have hitherto been to the last degree clumsy and inadequate."

It will not be the fault of THE BUILDER if society still remain in its present suicidal state of ignorance.

## REDRESS FOR COMPETITORS.

### THE DALSTON LITERARY INSTITUTION.

SIR,—One branch of my practice brings me into frequent communication with architects and builders, and I have for some time taken in your very excellent and valuable paper, and it does seem to me very strange that, whereas there are daily complaints on the part of architects, relative to what are called "competitions," that they do not take some legal steps to obtain redress; they should remember, that it is one of the first maxims in English law, that "there is no wrong without a remedy."

In the case of the Dalston Literary Institution, one of the most flagrant I ever heard of, if all facts are correctly stated (and I must assume them to be so), it appears to me the remedy is very simple. The committee publicly put forth, that they are desirous to receive certain work from certain individuals, of a certain description, and limited by certain conditions; i. e. they have rejected the offers of those who have observed these conditions, and accepted one which violates in the grossest way the main condition of all. The cost price fixed on the article for which they contract is 1,500*l.*; and it is clear that the article accepted must cost at least 6,000*l.*, half of it being worth 3,000*l.* It is clear the contract is broken, and that all parties can recover the fair value of their work, labour, and services, from the committee.

Suppose a man direct another to buy him a boat, but when the boat is procured and tendered, he says, I want a ship, and you must keep the boat yourself; can any one doubt that the man should recover? Suppose, to come nearer the point, a man directs a house agent to buy him a cottage, and when it is procured says No, I want a palace—can any one of sane mind doubt that he would be compelled to pay for the cottage?

Let your correspondent, "Alpha," deliver in particulars of his demand for his work, labour, and skill, and immediately issue a writ against the party whose name appears. I will engage he shall recover on proof of his identity; it is no defence to say they have been deceived by the offer of the "successful candidate;" proper opinions from competent judges could have been obtained, and ignorance and incompetency is no defence at law. Should there be any tendency on the part of the secretary to shuffle, such as calling himself only an agent, and refusing the names of his principals, I think "Alpha" would have a rare rod in pickle for him. Let him immediately file a bill of discovery: the facts are short, and it would not cost more than 10*l.* or 15*l.* to put it on the file. Mr. Secretary could have no answer, and the equity would be so clear, that in about six weeks his costs would be about 120*l.* So much for the architects; if they do not assert their rights, they deserve to be cheated and swindled to the end of the chapter.

Now for the builders: they have tendered on certain particulars of quantities: most probably the circular contains the usual clause, that the parties are not bound to accept the lowest tender, but this at equity is only binding within reasonable limits. A man who estimated a house at 1,000*l.* might avail himself of the clause in case of tender for 1,200*l.* or 1,300*l.*, but certainly would be liable for the builder's expenses if the house could not be built under 3,000*l.*

Let this simple fact be borne in mind, that all contracts must be observed in their true intent and meaning, and if not, that each and every individual is entitled to his fair and ordinary charges against all and singular of the parties concerned, any clauses and conditions of the broken contract notwithstanding.

In shorter words, the committee having broken their contract, are each and all of them liable to any party who has taken the smallest trouble in the matter. I say each and all, and by a late decision of Lord Denman, if not partners they are co-contractors, and may be sued individually by any claimant.

I am, Sir, &c., DEFENSOR.

Finsbury-square.

*** A large number of letters touching the Dalston competition have been received, and shall have consideration.

## RAILWAY JOTTINGS.

THERE is said to have been a most satisfactory increase of railway revenue for 1846; the gross receipts having considerably exceeded a million sterling.——The often tyrannical and harsh exercise of official authority over passengers received a salutary check in the Exchequer the other day, in the action of damages, Chiltern *v.* Croydon Railway Company, for imprisonment of the plaintiff because he had resisted the extortion of a double fare, exacted from him because he had lost his ticket. The court gave judgment against the company on the ground that they had no right to give a passenger in charge under the circumstances of the case.——The *Doncaster Chronicle* states that the Doncaster and Peterborough loop of the Great Northern line is let to Messrs. Peto, under a penalty of 1,000*l.* a week, for non-performance of the contract, under which it must be completed by 1st February, 1848,——The five large shafts of the tunnel at Dudley on the Oxford, Worcester, and Wolverhampton line have been completed, and the bricklayers and navigators are now fully employed on the cutting of the tunnel itself, about 80 yards of the whole 980 yards of which have been completed, the brickwork being finished as the cutting proceeds. The sub-contractors calculate on cutting about 100 yards a month.

STUDY OF ANATOMY.—Our advertising columns give the particulars of a proposed course of lectures on anatomy by Mr. J. Marshall.

## CHURCH BUILDING COMMITTEES.

SIR,—Observing in your last number an excellent article on the subject of parish committees for building churches, I have sent you the following as an illustration:—

A few years since, a district church was proposed to be built (not one hundred miles from the south of the town of Shrewsbury); a building committee was appointed, consisting of coopers, painters, graziers, goalers, navy captains, &c., and the result of their first consultation was an advertisement in the newspapers, offering the extravagant sum of 15*l.* for the best plan of a church in any style, but the committee would prefer Gothic. Some nine or ten architects forwarded plans; one of these gentlemen (to make sure) sent two or three, with an extraordinary collection of clouds, vapours, and shadow. A few were not devoid of merit for originality, and others possessed considerable simplicity and fitness. A very worthy individual connected with the church thought it would be desirable that a competent person should be appointed to select the best design, and a very proper gentleman was called in, and selected one (out of fourteen), which appeared to be the most worthy of the premium. The committee then ordered tenders (by advertisement) to be sent in, signed, sealed, and delivered, to the parish clerk. Some four or five tenders were forwarded, and the amount being from 200*l.* to 300*l.* more than the committee had at their disposal, they at once abandoned plan and all. The aforesaid committee then put their heads together, and adding to their number a bricklayer builder, commenced a plan to suit their purse. From this extraordinary amount of collective wisdom emanated one of the most disgraceful Christian churches that can be imagined, without one single redeeming merit in plan or construction. The tower (or rather cockloft) was supposed to be provided for six bells, but was found scarcely strong enough for *one*. The graveyard is already eight or nine inches above the floor; the consequences are damp in the floors and walls, and evident rot of timbers, which, by the bye, have no provision for circulation of air. The roof is one barn-like span, the water conveyed from the slates, 70 feet, by 3-inch *semi* zinc troughs, down one 2-inch down-spout of the same material. The ceiling is flat, constructed chiefly of pine joists, 3 and 4 by 2, 12 feet bearing 18 inches apart. Purlins of roof 5 and 6 by 3 and 4, 12 feet bearing. The building was finished without any provision for ventilation, except by three doors in the east end. The committee thought a little air was necessary upon times, and directed their builder to apply three casements. The latter recommended *small* openings should be made, arguing that the *hair* would come in faster through these than larger ones. The committee bowed to his superior judgment, and adopted the small openings. The consequence is, the congregation are either stifled or frozen, and with their respected minister would be glad to raze the edifice from the face of the earth, if the means could be provided.

If the above is worthy your notice, you are at liberty to insert it in your valuable periodical, which I hope will ere long work a beneficial change in church building committees.

I am, Sir, &c., ANTI-QUACK.

DONCASTER TOWNHALL CONTRACTS.—The tenders lodged by six masons, six joiners, seven plumbers, five slaters, and six plasterers, for the various works necessary in the erection of the new Town Hall, have been considered by the council, and the following selected:—

| | |
|---|---|
| *Masonry.*—Messrs. Latham and Co., Darfield | £2,400 |
| *Joiners.*—Messrs. Illingworth and Bellamy, Bradford | 1,087 |
| *Plumbers,*— Mr. William Jackson, St. George-gate, Doncaster | 225 |
| *Slating.*—Messrs. Hill and Co., Bradford | 163 |
| *Plasterers.*—Mr. Tattershall, Bradford | 248 |
| Total | £4,123 |

The difference between the highest and lowest estimates in the masons' work was, 730*l.*; in the joiners', 293*l.*; in the plumbers' 144*l.* 10*s.*; in the slaters', 86*l.*; and in the plasterers', 103*l.*: total difference, 1,356*l.*

## TESTIMONIAL TO MR. J. B. PAPWORTH, THE ARCHITECT.

We mentioned a short time since, that some of Mr. Papworth's professional friends had subscribed to present to that gentleman a tribute of their esteem, upon his retiring from practice. The testimonial took the shape of a silver inkstand, and on Monday last the subscribers met at the residence of Professor Donaldson, who has been one of the most active promoters of the offering, to present it to Mr. Papworth.

Professor Cockerell, at their request, conveyed with the testimonial the congratulations and kind wishes of Mr. Papworth's friends, in an elegant and feeling address,—congratulations that he had been able to pass through a long life devoted to the Beautiful of his art, without reproach, and hearty wishes that he might long live to enjoy his escape from the sweat of the battle, and see his sons, to whom he had resigned his practice, following worthily in his steps.

Mr. Papworth, almost in tears, expressed his high appreciation of the kindness which had been offered him,—the bright ray of sunshine in which they had allowed his professional life to end. The recollection of that event would remain with him as a bright form, to smooth his course to eternity, and he thanked them most heartily and sincerely for the delight they had afforded him.

We would add expressions of our personal esteem and respect, to those which were uttered when Mr. Donaldson mentioned that it was Mr. Papworth's birthday, and called on all present to drink long life to him.

The inkstand was thus inscribed:—

"To John Buonarotti Papworth, Esq., M.I.B.A., Architect to H.M. the King of Wurtemburg, first Director of the Government Schools of Design in England, &c., this Testimonial is presented by a few professional Friends, upon his retiring from practice, as a tribute of their respect and esteem for his talents as a distinguished Architect and for his worth as a Man.—January, 1847.

T. Allason, S. Angell, G. Bailey, C. Barry, R.A., T. Bellamy, W. J. Booth, J. Burrell, R. Cantwell, C. R. Cockerell, R.A., T. L. Donaldson, C. Fowler, E. M. Foxhall, G. Gutch, G. Smith, P. Hardwick, R.A., J. D. Hopkins,* J. Kaye, H. E. Kendall, J. Lockyer, J. Lockyer, jun., C. Mayhew, W. A. Nicholson,* J. Noble, W. M. Nurse, G. Papworth,* W. F. Pocock, J. Shaw, J. Stokes,* W. Tite, J. Thomson,* S. West.*

* Pupils of Mr. Papworth.

## ECCLESIOLOGICAL CARVERS AND MASONS.

Sir,—In No. 206 of your paper, January 16th, there is a notice of a "Masons' Provident Institution," of which the object, as far as I can gather, is to grant pensions to aged and needy members of the trade, and to their widows and orphans, and also to supply relief to those who are disabled by accident or bodily infirmity. The qualification, in the first case, is stated to be, that the mason or sculptor must be of ten years' standing in the trade, and fifty-five years of age. An appeal is made to employers and architects in behalf of this institution. Now, on what grounds this institution is formed, or whether any regard is had to the religious and moral influence which such a society may exercise on this large class of men, I am quite ignorant. But, supposing for a moment that all is right in this respect, I think the formation of such an institution a favourable opportunity to make some remarks on this important subject. To take the last point in your notice first, it appears to me that the appeal to employers and architects for support is most just; and I would venture to add, that such an institution, if constructed on right principles, might as justly appeal to all the ecclesiological and architectural societies now existing in England. For it is a certain matter of fact, that without efficient operatives all scientific knowledge fails of its due execution; and those persons who have been concerned in the restoration of churches well know how difficult it is to procure skilful workmen, both carvers and masons, who shall in all points be desirable to work in a *church*. This observation, perhaps, may apply especially to the clergy, who undertake the restoration of churches as a matter of principle rather than of taste or inclination, but who have sufficient discrimination to detect bad work, and sufficient knowledge of the sanctity of a church to be horrified at the indecency and irreverence of the common run of workmen.

The occupation of a mason, and more particularly a carver, if he discharge his office properly, gives him an especial claim on his employers. For it is well known, that the occupation is most injurious to health, and very destructive of human life; and I believe that a strict inquiry would discover a great proportion of early deaths from consumption amongst sculptors, and an unusual degree of illness, which occasionally disables them from work. The flexibility of hand, too, and acuteness of eye, which are required to make a good sculptor, can hardly be retained in a sufficient degree, to enable him to carry on his trade as an operative to any advanced period of life. If, therefore, they spend their lives in the service of the church (and it is chiefly in the working of the details of churches that the best carvers are required), they are fairly entitled to the best support which those connected with the church can give them. As to the qualifications for assistance from the Provident Institution, though they appear somewhat incongruous, I say nothing, feeling that the parties concerned in the framing of those rules would have gathered sufficient statistical facts to render them sound and useful.

But a method occurs to me by which carvers might be very much benefited, both as to their moral and practical condition; and that is, if architectural societies would institute premiums (after the manner of agricultural societies) for the best workmen and most decent men; and that testimonials, both as to efficiency of skill and decency of character, from clergymen and architects under whom they have worked, should be the grounds on which they should apply for these premiums. The man who had worked the longest time under the same master should have especial preference; and it would be well to make a distinction in the appointment of the premiums between those who are good carvers of new work, and those who are clever and patient at cleaning and restoring old work; for the latter is a more difficult man to find than the former.

Should you be disposed to give publication to these remarks in your useful publication, you may, perhaps, hear again on the same subject from your obedient servant,

A Practical Ecclesiologist.

Bristol, January 23, 1847.

## THE BUILDINGS ACT AND THE MASTER CARPENTERS.

A meeting of the Society of Master Carpenters was held in the Freemasons' Tavern, on Wednesday last, at 7 p.m., to appoint a committee, in accordance with the suggestion of Lord Morpeth, made to a deputation of the Society on the 17th December last, in order to prepare the draft of a New Buildings Act. Amongst those present, were—Mr. Biers (in the chair), Messrs. Masham, G. Lever, Wm. Cubitt, Timpson, Knight, Nesham, Higgs, Sparkes, Stephens, Harris, Gooch, Outhwaite, Burstall, jun., Arding, Norris, and R. L. Jecks, Secretary.

The chairman stated, that on waiting on Lord Morpeth, with a limited deputation, his lordship informed them, that though the Government did not intend immediately to proceed with any amendment of the Buildings Act, it was probable that in the course of the session, measures would be brought forward to obviate as far as possible the many complaints and objections that had already been urged in regard to the working of the present Act. At the same time, his lordship desired to know the precise nature of the objections which the deputation had to urge. The deputation therefore, referring to the petition of the society of date 12th March, 1846, against the present Act, entered into a detail of the ill-workings by which parties appeared to be most aggrieved, dwelling more particularly on the useless and oppressive nature of some of the enactments; the expense of the staff, the prohibitions as to the use of timber, which were in many cases not only useless but equivocal and mysterious, especially as relates to party-walls, and the mode of putting in plates; the enactments as to projections in front of houses overhanging the public way, &c., with many other objections. His lordship, in conclusion, had requested the society to furnish him with a draft bill, such as would appear to them to be an improvement. The present meeting had been called for the purpose of appointing a committee to carry out his lordship's suggestion.

After some incidental remarks on various points, such as those relating to disputes under the Act, whether they should not be brought before the magistrates; as to the supervision of the public building class, from which small schools and such like ought to be excluded; the expensive and uncertain, as well as often absurd, enactments as to fees, which frequently perplexed the district surveyors themselves; all of which Lord Lincoln had promised to attend to in the last bill. Mr. Higgs observed, that with respect to front projections, he thought the referees had taken a wrong view of the meaning of the act, which only required the deletion of a few words to prevent all mistakes. He thought the proposed committee should consist of the whole board. It would be very desirable to have men who had already been practically engaged in the matter in question. After some discussion on this point, it was ultimately moved by Mr. William Cubitt, and resolved, that the members then present should constitute the committee, with power to add to their number; and it was then determined that Mr. Grissell's name should be added to the list.

## MASONS' PROVIDENT INSTITUTION.

The first annual meeting of this institution was held on the 25th inst., at the Westminster Literary Institution, Mr. Wm. Freeman, treasurer, in the chair. The secretary, Mr. Whitehead, having read the report of the managing committee, the chairman shewed what had been attained by the exertions of the committee, as also the benefits derived from such an institution.

Resolutions were subsequently passed calling upon the operatives to enrol themselves as members of the institution, as a duty they owed to themselves and families. Thanks were given to the various employers who had contributed towards the funds, trusting that the institution would, in like manner, receive the aid of those who had not yet given it. Thanks were also voted to Alderman John Johnson, president, to the other members of the direction, and to the Editor of The Builder.* The account shewed a balance in the bankers' hands of 161*l.* 3*s.* 7*d.* The following sums were presented during the meeting:—Mr. John Foot, 10*l.* 10*s.*; Messrs. H. & J. Lee, 21*l.*; and Mr. Field, 2*l.* 2.

* For which we have to express our acknowledgments.

## THE WESTMINSTER SEWERS AND HEALTH OF TOWNS.

At a Court of Sewers, held on the 22nd inst., Captain Bague in the chair, Mr. Le Breton called attention to the strictures on the Westminster Commissioners of Sewers, contained in a report published by the Health of Towns Commission (report of Health of Towns *Association* also), and after proposing several resolutions, and some discussion, ultimately moved:—

"That the opinion of the attorney-general and Mr. Pescock be taken by the solicitors of this court as to whether any and what steps may be successfully taken against the publisher and author of the report of the Health of Towns Commission, reflecting upon the conduct of the members of this commission."

The chairman put the motion, and, on a show of hands, declared the numbers to be equal for and against it. The chairman then said that, as the issue was left to him, he should give his vote against the motion, and it was consequently lost.

Fall of an enormous Chimney at Wigan.—A chimney upwards of 400 feet high, which we alluded to during its progress, fell to the ground last week. We shall be glad to receive particulars of the foundation which was prepared for it, the height, &c. of footings, and its construction generally.

## New Books.

*Instructions in Practical Surveying, Topographical Plan Drawing, and Sketching Ground without Instruments.* By Professor G. D. Burr. Second Edition. Murray, Albemarle-street. 1847.

Although chiefly intended for military students, being, indeed, prepared for the cadets of the Royal Military College, this work will be found of great use by all who desire to acquire an art daily becoming more important. Surveying by the theodolite is clearly explained, and the use of the field-book, protractor, and plane table. The method of drawing hills and sketching them on the ground, is treated of at some length, including some valuable remarks on shade and oblique light.

*Railways for the Many, and not for the Few.* By Mr. Jas. Ward. Smith, Elder and Co.

The main object of this pamphlet, of which a second edition has just now appeared, is to advocate the reduction of railway shares to about 5*l.* each, in order to bring them within reach of that very numerous class of investors, who now have only the savings' banks to resort to. We have long entertained similar views: although such an arrangement might give more trouble in the management of a company, we are satisfied it would prove advantageous to the nation if extensively adopted.

At the close of the pamphlet, Mr. Ward raises his voice against the farcical delusion, perhaps self-delusion too, which is being practised by the managers of what are called *Building Societies*. He quotes the first annual statement of one, which professes to shew a net profit during the year on each share, whereon 6*l.* only had been paid up, of 10*l.* 17*s.* 5*d.*!! We have seen several precisely similar; the mistake by which they arrive at so gratifying and attractive conclusion being, that they regard "all the income from fines and premiums, *paid by the shareholders themselves*, as so much profit which the shareholders have made."

## Correspondence.

### Mode of measuring artificers' work.

Sir,—In The Builder of Saturday, January the 16th instant, I observe, under the head, "Royal Institute of Architects," some remarks on the subject of measuring builders' work.

The chairman is reported to say, "The mode of measuring stone was especially empirical. Measuring first the cube stone, then face, bed, and joint, as plain work, then the sunk work, and then the moulded work, led to a false result."

I shall feel very much obliged to you, Mr. Editor, or to any of your very able correspondents, to be informed of the quackery or falsification in this mode of procedure, in order to pay the operative fairly for the material and labour, presuming that he surely is entitled to be paid for both.

I willingly admit, that my fashion in measuring builders' work is rather ancient, but not empirical; and I contend, that the only fair way between the employer and the employed, is to dissect the work as much as can possibly be done. I shall, therefore, be most anxious to hear of a better method.

I am, Sir, &c.,
A Measurer.
20th Jan., 1847.

### A gallery of British art.

Mr. Editor,—In an extract of last week's Builder, from "Haydon's Lectures on Painting and Design," I found the following observation:—"Within my own time, works of all classes of art, which, if collected in one gallery, would inevitably set British art in its true colour before the world." Now, Mr. Editor, how much is it to be lamented, that when the Government undertook to erect a National Gallery, they did not take into consideration a building sufficiently capacious to admit of a gallery, or galleries, to be appropriated solely to British art and artists, whether as regards painting or sculpture. In the present gallery, the works of our own countrymen and artists are obliged to be mixed up with the works of foreign schools. Some alteration, ere long, must take place in what is termed the National Gallery,—a name quite out of character with its appropriation, as regards works by native artists. The Gallery will soon be found too small for its present purpose, independent of which it is ill adapted, and I believe that many liberal and spirited individuals, who might feel disposed to bequeath their collections to the nation, would be sorry to see them placed in such an ill-ventilated building. Much has been said and written of late, by parties, respecting the state of the pictures; but I believe those who have been induced to pass censure on individuals who have the charge of them, have never once taken into consideration the injury pictures sustain from an ill-ventilated gallery, the dust from the visitors, and also in cleansing and sweeping.

I am, Sir, &c.,
A Subscriber.
Jan. 25th, 1847.

### Builders' estimates.

Sir,—As your columns are at all times open to represent the evils, and expose the present system of competition, injurious alike to all parties concerned, I beg to forward for insertion in your valuable journal, the following almost unparalleled instance of the evils above referred to, in a contract for the erection of eight houses for the Peckham Building Investment Company, on some land adjoining the Licensed Victuallers' Asylum, Old Kent-road. The plans and specifications were made by Mr. George Smith, of Mercers' Hall; and the tenders were delivered on the 28th of last month.

| | |
|---|---|
| Green | £3,920 |
| Brewer | 3,800 |
| Knight | 3,460 |
| Harding | 3,126 |
| Trego | 3,120 |
| Patrick | 2,948 |
| Cooper and Davis | 2,880 |
| Walker and Lopez | 2,860 |
| Marshall | 2,787 |
| Church | 2,700 |
| Winward | 2,544 |
| Litchfield | 2,446 |
| Woolaston and Muggridge | 2,166 |
| King | 2,000 |
| Pettinger | 1,943 |

The difference between the highest and lowest tender being 1,977*l.*

I leave your numerous readers to draw their own conclusions from the above fact. Cannot some of your able correspondents suggest means, either by association or otherwise, whereby the honest tradesman could be protected from the injuries such a system entails?

I am, Sir, &c.,
Scrutator.
Jan. 21st, 1847.

### Tenders for a cotton mill.

Sir,—I send you an account of the tenders for rebuilding a cotton mill at Pleasley, near Mansfield, Notts, as published in the *Nottingham Journal* of January 22, 1847.

| | |
|---|---|
| Messrs. Walker, Notts | £7,986 |
| Mr. C. Lindley, Mansfield | 8,400 |
| Messrs. Burton and Sons | 15,090 |

If Messrs. B. and Sons have come into the country with the idea of "astonishing the natives," it will be some gratification for them to know that they have fully succeeded.

I am, Sir, &c.,
A Subscriber.

Mr. Eastlake and the National Gallery.—We are sincerely glad to be able to contradict the report that Mr. Eastlake has resigned his appointment in the National Gallery, to which we gave publicity last week. It came to us with such authority that, though much surprised by the intimation, we were unable to question its truth. We trust the public may long retain there the advantage of his knowledge and integrity. On Monday night, Mr. Hume moved "for a copy of the minutes of the trustees of the National Gallery, during the years 1845 and 1846, with the names of all the trustees present at each meeting; also for copies of the orders and instructions to the keeper of the gallery respecting the cleaning of the pictures, and any directions in respect to their arrangement." Sir Robert Peel seconded the motion, and very properly desired honourable members to suspend their judgment on observations which had been elsewhere made, until official documents were laid before them.

## Miscellanea.

The Menai Bridge Experiments.—These experiments on the large scale, of which we before gave engravings and notices, have been continued till now, and are quite satisfactory. The only point on which doubt remained was as to the ability of the bridge to withstand the effect of gusts of wind by its lateral strength. For the purpose of bringing this to the test, some further experiments have just been completed. The following are some practical details of the most valuable of these experiments:—The result of the experiments clearly proves that the lateral stiffness of the tube is sufficient to resist the strongest wind which can act upon it—that is to say, for a *constant blast*, for should the blasts recur at regular intervals (which I believe they sometimes do), the vibrations would of course be increased. Taking the force of the wind at 50 lb. on the square foot, which greatly exceeds any recorded measure, the resistance offered by the Menai bridge would be about 300 tons X 2=600 tons, which is not two-thirds of its own weight; so that if the Menai tube, or a similar tube, support its own weight, when laid on the side, the weight thus supported would exceed the pressure of the wind. Now, the model tube, which is in every respect a similar tube to the Menai, being one-sixth of the dimensions, weighs 6·2 tons, and when laid on the side deflects ·85 in. only. The greatest weight we loaded it with in this position was 26,781 lb. (12 tons) X half its own weight=15 tons, with which the total deflection was 3⅛ in. Under this weight the tube showed no signs of falling; but as we did not wish to injure the tube, no more weight was added. When in its natural position this tube deflected 3·2 in., with 60 tons, which after being left on for sixteen hours increased the deflection to 3·35 in. Since that time the tube has been loaded again with 60 tons, which have been left on for ten days, and the deflections at the end of that time only exceeded ⅛ of an inch. The calculated breaking weight of this tube is about 80 tons. I subjoin the areas of the different parts of the tube as it now stands:—Top=24 square in. of metal throughout. Bottom=22·3 square in. of metal at centre. Do.=9·0 square in. of metal at ends. Two sides=9·6 sq. in. of metal, same throughout 75 ft. between supporters. Top, 1-10 in. thick. Sides, 1-12 in. thick. Bottom double, 5-16 in. thick at centre. Do., single, ¼ in. thick at ends.—*Railway Chronicle.*

Ventilation at Westminster.—Complaints of the alternate blowing of hot and cold blasts into the Court of Common Pleas still continue, as plaintive and piteous as ever. Mr. Serjeant Gaselee declared the other day that his "learned brothers of the bar were kept in such a state of alternation between heat and cold, that he would not answer for their lives." Mr. Rae and himself had penetrated to the poles and tropics of these northern blasts and southern simooms, and "had found persons there turning on hot and cold air alternately." Lord Chief Justice Wild, had commanded the breezes to blow gently, and he was surprized that his injunctions had not been obeyed. M. Badeley, who spoke from the back seats, must have been very badly off indeed, in that far distant region of the court; for he assured the court itself, that there "the cold air was really most dreadful." The reporters, too, have since declared, that they were, at that precise moment "bordering on petrifaction;" after which, in general, "comes a semi-parboiling;" tending, however, according to a recent French authority, towards the same scientific end, although, in this case, not by congelation, but by the singular and interesting power of evaporation. By the science of contraries however, or rather of contradictories, probably, the reporters firmly believe, that "in general, the icy-cold draughts of air are reserved for the coldest days of winter; the hot blasts being carefully preserved for the dog-days."

A Consolatory Precedent.—"All degrees of nations begin with living in pigsties. The king or the priest first gets out of them; then the noble, then the pauper, in proportion as each class becomes more and more opulent. Better tastes arise from better circumstances; and the luxury of one period is the wretchedness and poverty of another."—*The late Sidney Smith.*

CAB-REFORM: MILE INDEX.—Mr. H. Von Uster, C.E., Putney, has invented and patented an ingenious instrument for measuring and indicating the length of ground run over by the wheels of carriages. The indicater has a face exactly like a clock, only the minute hand shews fractional parts, and quarters, halves, &c., of a mile, in place of minutes, and quarters, halves, &c., of an hour; and the hour hand takes up and accumulates the number of miles, of course, instead of the number of hours. The instrument, according the *Times*, which gives an interesting account of it, cannot be reached or tampered with either by driver or passenger; the same authority expressing surprise at the nicety of the result, ascertained by trial. As truly observed, a reform in our cab system has become one of the recognised wants of city life, and the first great step in this direction must be in the passenger himself possessing an effectual check upon overcharge. The parties most strongly interested in such a reform, however, are, perhaps, the proprietors and drivers of public vehicles themselves, since it must often have occurred to our readers that a much greater aggregate amount (probably nearly double the present sum), would be received in fares every year by cabmen, if they would be content with their legal fare, and would receive it with civility.

COOKING OVENS FOR THE WORKING CLASSES.—It must be laid down as a general axiom that our modern cities have grown up to an incommensurate size and population, but the Solon or Lycurgus to legislate for (organize) these huge masses has not yet come. It may be stated, however, at once, that public cooking-ovens are but the necessary *complements* of public wash-houses; as it stands to reason, that while the poor but industrious housewife is occupied in her cleansing avocations, the other parts of the household must, necessarily, come to a stand-still; provided the above accommodation be not added (somehow) thereto. It is also to be taken into account, that while one washing-house and one cooking-house, will (separately) occupy one area + another area, they combined will occupy, say only one + one half, and the same will be the proportion of the expense of building, firing, lighting, nay, superintendence. It is nearly useless to observe, that at a cooking-oven the necessary vessels, as tin pans, &c., are to be met with, so much so, that if the poor but industrious journeyman wants to get a meal at cost price, he has nothing to do but to purchase the meat and bring it to the oven.

THE ROYAL SOCIETY.—The award of the Royal Medal in physiology for 1845, having caused much commotion and discontent, a special general meeting of the fellows will be held on the 11th of February, with the view of removing the cause of discontent, if possible. Lord Northampton has issued cards for four conversazioni as usual, on February 13th and 27th, and March 13th and 27th.

ASSOCIATION OF ARCHITECTURAL DRAUGHTSMEN.—At the next meeting of this association, to be held on Wednesday, a paper will be read by Mr. Robert Kerr, on "Architectural Education, and the proposed establishment of an Architectural Society, for the benefit of those connected with the profession in the capacities of student and draughtsman."

THE SOANE MUSEUM.—It may be interesting to some of our readers to know that the season during which Sir John Soane's Museum is open to the public commences on Tuesday, the 2nd of February, from which day, to the last Tuesday in August, it may be viewed by application to one of the trustees, or at the Museum.

ISLE OF MAN GRANITE.—A new quarry has been discovered at Foxdale, Isle of Man, whence granite has been already shipped for Birkenhead, where it is to be used for the new docks now constructing there, and whence it might have a clear, direct, and rapid transit by rail to the metropolis itself.

BRONZE STATUE OF LORD AUCKLAND.—The casting of a large portion of this work took place on Saturday, at the studio of Mr. Weekes, in Pimlico. The casting is said to be perfectly successful.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

TUESDAY, Feb. 2nd.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 3rd.—Society of Arts, Adelphi, 8 P.M.: Association of Architectural Draughtsmen, 33, Southampton-street, Strand.

THURSDAY, 4th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

FRIDAY, 5th.—Archæological Institute, 25, Great George-street, 4 P.M.

## TO CORRESPONDENTS.

"*P. V.*" (Bury.)—Write to Mr. James Simpson, Edinburgh. We have had no experience of the "Interaco" he advocates (qy. *Internaco*), but are disposed to think it a valuable material.

"*W. H. L.*" shall appear.

"*E. C. S. B.*"—Ditto.

"*B. D.*"—Put the accounts into the hands of a respectable architect.

"*The Morgan Testimonial.*"—We are asked to say that the gentlemen who obtained the second premium should be described as Messrs. Raunes and West, architects, of Southampton, not builders.

"*C. L.*"—We will endeavour to call at the *Atelier*.

"*A Subscriber.*"—We cannot undertake to supply valuations through our corresponding columns. The premium would be regulated by the custom of the diocese.

"*Student.*"—Mr. Dollman, 27, Mornington-place, has commenced giving instruction in perspective and architectural drawing.

"*Subscriber.*" (Revesby.)—We believe Mr. Lamb's view is not published, but Mr. Weale, Holborn, could probably obtain it.

"*Subscriber.*" (Leicester.)—We shall be glad to see the remarks.

"*C. F. C.*"—An angle chimney may be built on a stone landing or iron girder. If the cottage has a basement, a chimney may be built on brick, stone, or iron corbels, in any part of the room.

"*Subscriber.*" (Beds.)—Tredgold's Carpentry.

"*W. D. L.*"—The Temple of Erectheus is called "The Erectheium."

"*Constant Reader.*"—The whole width of intended line must be kept within the "limits of deviation" marked on the plan.

*Next week.*—"Amateur," "A Builder," "G. S. P." "Young Architects of England."

*Received.*—"R. W. A." "J. R." "G. R." "J. D." "J. W." "H. C. T." "E. and J. D." "M. O'C." "G. B. W. T." "Alpha."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—Covers for Volume IV. of THE BUILDER, may be obtained at the Office, 2, York-street, price 2s.; or the publisher will bind sets at 3s. each.


## ADVERTISEMENTS.

MISS BESSEMER, EMBROIDERESS, 9, JUDD-STREET, Brunswick-square, respectfully solicits orders for the cleaning, repairing, and transferring of Ancient Needlework and Tapestry, also for the superior tempering of Needles for working Church Cloths, Coats of Arms, Crests, &c., &c., worked in gold or silk.—Miss B. has been so long engaged in the Trade as to be able to refer to noble Families for whom she has worked.

BUILDERS, CARPENTERS, and others are respectfully informed that they can be supplied with iron castings, of any kind, and every description, plain and ornamental work, both in wrought and cast iron; also stoves, ranges, staircases, iron doors, balconies, conservatories, railings, &c., &c., at the lowest possible prices, by JOHN MILLS IRON FOUNDRY, 9, Brick-lane, Old-street, St. Luke's.

Manufacturers and Loose Castings made to patterns and drawings.

ANTI CORROSIVE MINERAL POWDER FOR BLACK PAINT.

THE Attention of Builders, Master Painters, and others is particularly invited to this Paint, which is unequalled for durability, and at half the usual cost. For the use of Railings and Stucco Compositions, Estate Fencing, Iron Dock gates, Water Tanks, and other exposed Iron Work, and all Metallic Surfaces. It dries and becomes hard in a few hours, and will not stain Stucco, &c., and is a most valuable preservative for many years. All Iron Work Painted with this Paint will last much longer than under the old system. Farmers will find it a most valuable article for Painting Palisades, Lawn Fences, Farm Implements, &c., also Carts, Waggons, Iron Sheds, Mangers, &c., which it renders perfectly weather tight. It is made in Black only, and is sent out full in gallons to measure, and sealed, by JOHN COLVILLE, 33, Budge Row, London.

TO ARCHITECTS, ENGINEERS, &c.

TO BE SOLD, a Subscriber's Copy of Horwood's Plans of the Cities of London and Westminster, the Borough of Southwark, and parts adjoining, shewing every House, and the Boundaries of the Parishes; Thirty-two Plates, Bound, Coloured, and in Good Condition. May be seen and price obtained at Mr. MANN'S, Bookseller, 39, Cornhill.

THE ART-UNION JOURNAL, for February, contains Three Engravings on Steel, and above Sixty Engravings on Wood, with a variety of Articles useful and interesting to the Artist, the Amateur, the Manufacturer, and the Artisan. Among the leading subjects treated of and illustrated are the following: The Picture Cleaning in the National Gallery—Denière's Bronze Manufactory at Paris—Midsummer Eve, by Mrs. S. C. Hall—The Living Artists of Europe—Industrial Art in France, by Dr. Cooke Taylor—The Gallery of the Earl of Ellesmere, &c. &c.; with Intelligence, concerning Art in Continental States, the Provinces, &c.; and Notes on the various topics of the month.

CHAPMAN and HALL, Publishers, 186, Strand.

SECOND EDITION.

THE BUILDER'S FRIEND, Price ONE SHILLING.

By HENRY FITZGERALD.

Sold at the Office of "The Builder," York-street, Covent-garden; MEAD and POWELL, 93, Whitechapel, and Mrs. HARVEY, Romford.

"The Builder," Nov. 7, 1846.

THE BUILDER'S FRIEND. Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices plank, deals, battens, and timber, bear to each other, and so far is well; but what is looking at it, any person about to build will easily discover which is cheapest for him to buy. The information is given in a concise form, so as to fit the pocket-book.

"Herapath's Journal," Nov 28th, 1846.

THE BUILDER'S FRIEND.—We have received a copy of a useful little Manual under this title, that ought to be in the hands of every one in the building business. It shews at one view the relative prices plank, deals, battens, and timber bear to each other, and will save an immensity of calculation.

"Sunday Times," Dec. 6th, 1846.

This is a very concise but useful work; it shews in one line the relative prices of planks, deals, battens, and timber. The author has certainly contrived to put the greatest amount of information in the smallest possible space.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 32s. per cwt.
Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 9s. | 12s. per gross. |

Elliptic Stoves, 3½ per inch Registers, 6d., 7½, 9d. per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

3 ft., £3 3s. 3 ft. 6 in., £3 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre paid, inclosing postage-stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars.

| 2 ft. | 2 ft. 6 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 6s. | £3. 13s. | £3. 19s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven.

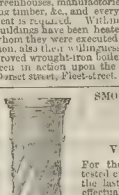
| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 6s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 9d., 10d., and 1s. do.
Manufacturer of WOLFENDEN'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or references, will meet with prompt attention.

IRON WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouthpieces; Plates, Fire-bars, Top and Fall Pieces, Stoppers, Chimney bars, Inside, Outside, and Ash pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON TESTS.

HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, schools, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset street, Fleet-street.



SMOKY CHIMNEYS EFFECTUALLY CURED

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT.

For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pot cannot be rendered out of order, and can be effectually swept by the sweeps machine.

They are now manufacturing of artificial Stone Cement.

The trade supplied with them at the Manufactory,

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

PAVING, 2s. 9d. PER SQUARE YARD.

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses and every description of Paving at half the usual price for the above low prices, and the work executed in the best manner, by JOHN KINGSTON, PATENT STONE PAVEMENT POTTER, 7, WHARF-ROAD, CITY ROAD.—N.B. Country Agents and Railway Engineers shall contract to supply and lay the Pavement for exportation to any Climate.

LEAD WORKS, HAMMERSMITH, AND AT READING, BERKS.

C. H. and F. CLARK beg to inform Plumbers, Builders, and others, they may be supplied with Goods of their manufacture at the following list prices, per cwt.:

| | | | |
|---|---|---|---|
| Sheet Lead .... | per cwt., | 19s. 6d. | |
| Pipe ..... | " | 19s. 6d. | Genuine White Lead, warranted ... per cwt., 26s. 6d. |
| Pumps ..... | " | 28s. 6d. | Second ditto ... " 24s. 6d. |
| | | | Third ditto ... " 22s. 6d. |

Lift Pumps, Water-closets, Cocks, and Brass-work of every description. Sheet and Steel Glass for Building and Horticultural purposes. Oils, Colours, and Varnishes of best manufacture. Old Lead bought or exchanged. Great care given upon receipt of any orders or remittances.

January 28th, 1846.

KENT MUTUAL FIRE INSURANCE SOCIETY, for the Suburbs of London, and the Country Towns and Districts throughout East Kent.

PROFITS RETURNED to the Insured every three years. Prospectuses may be had at the Office, Rochester; the Branch Office, 57, Moorgate street, London; and of the Agents.

THOMAS BURR, Secretary.

THE LIVERPOOL FIRE AND LIFE INSURANCE COMPANY.

Offices, 8, Water-street, Liverpool, and 3, Charlotte-row, Mansion House, London.

LONDON BOARD.

CHAIRMAN—RICHARD SQUIRE, Esq., M.P.
DEPUTY CHAIRMAN—WILLIAM LWART, Esq., M.P.

| | |
|---|---|
| John Atkins, Esq. | James D. Nicol, Esq. |
| Thomas Blake, Esq. | Hon. F. Ponsonby |
| Matthew Forster, Esq., M.P. | Charles Pott, Esq. |
| Frederick Harrison, Esq. | J. M. Rosector, Esq. |
| J. Maclean, Esq. | Wm. Wilberforce, Esq. |

By the Act of Parliament obtained by the Company, it is expressly enacted that the liability of the Shareholders under the Policies shall not be restricted by special contract, or otherwise.

INSURANCES AGAINST FIRE are made taken on property of every description in the United Kingdom, the British Colonies, and the Foreign Countries.

LIFE INSURANCE. The sum of premiums one much lower than usual, securing the amount of the policy with all any additions; the other, lower than the participating scales generally adopted by companies, but no uncertain bonuses, and carry the guaranteed additions on a plan entirely new and peculiar to this institution.

PREMIUM TO INSURE £100.

| | Age 20 | Age 30 | Age 40 | Age 50 | Age 60 |
|---|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| Without Additions ..... | 1 13 7 | 2 2 0 | 2 16 3 | 3 13 8 | 5 1 6 |
| With such Additions after ten Years .. | 1 19 0 | 2 9 5 | 3 5 5 | 4 12 7 | 7 1 3 |

WHOLE WORLD POLICIES which will not be forfeited by the party going to Foreign Countries, are granted by the Company.

BY THE HALF PREMIUM SYSTEM on which Policies are issued, only one-half of each of the first seven years ordinary premiums is required, the other half being payable at the convenience of the insured.

SWINTON BOULT, Secretary to the Company, Liverpool.
ALEXANDER ROBERTSON, Resident Secretary London.

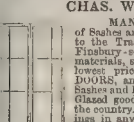
FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Defauville's system of filtration, the only one known by which large quantities of liquids are easily filtered, begs to announce that he continues to supply these apparatus, which are easily applied to cisterns and water-butts, and when fixed require no care or attention from servants, and never get out of order. The prices are from Two to Four Guineas, producing from 100 to 200 gallons daily: for brewers, distillers, paper makers, hospitals, and large establishments, to an unlimited quantity, the prices varying accordingly.
40, London Platform, Rotherhithe; Office, 33, Conduit-street, Bond-street.

DUTY OFF ORNAMENTAL WINDOW GLASS.
CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King-street, Portman-square.—Terms, Cash only.

SASHES PRIMED, GLAZED, and sent to any part of London at 9d. per foot.
BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon the best wholesale terms.
FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN PROPAGATING GLASSES.
Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, shew-cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.
Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.
VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 22s. per cwt. Lead Pipe, 23s. per cwt. Pumps, Water-closets, Baths, Brass-work, and all materials used by Plumbers.
For complete Lists, priced.—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent to the houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sunblind; all simple, cheap, and effective. Apply for lists, and to inspect its real merits, to HERRINGS Patent Steam-filed Feather Factory, 14, Kingsgate-street, London.

CHAS. WM. WATERLOW,
MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 500 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.


By Her Majesty's Royal Letters Patent

WILKINS'S "SILENT" WATER-CLOSET.—To Architects, Surveyors, and Builders.
Gentlemen,—Your attention is respectfully invited to the above Closet, the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining apartments, while it retains all those useful in the ordinary Closets. It does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable: the want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office apartments, has long been felt, and the benefit to be derived from the use of the "Silent" in the saving of the Machinery and supply of Water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.
This Closet is simple in its construction, the whole of the apparatus (including the trap), being completed between the floor of the room and the sent of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.
May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London, from 8 in the Morning to 9 in the Evening.

WALLIS'S PATENT LIQUID WOOD KNOTTING. This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them rising through and disfiguring the paint above.
Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.
In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.
Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.
The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by sea or sea-water.
PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.
THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Bethwick, Staffordshire, manufacture Tubes under an exclusive license from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 66, Upper Thames-street.

DEANE'S TWO-HOLE BLACK PENS, which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, besides several of her Majesty's judges, the most eminent counsel and the reverend the clergy. Their cheapness and popularity have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser, and disgraceful to the vender. The public are therefore cautioned, and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed
"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

JENNINGS'S SHUTTER FASTENER.
Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and too obtrusive when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 39, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

W. GREENWOOD, SASH MAKER and JOINER to the TRADE, 6, Wickam-street, Pool-street, New North-road, begs most respectfully to submit the following list of reduced prices for Sashes, Frames, Doors, &c., for ready money only:—

| Inch. | SASHES, at per Foot Superficial. | s. | d. |
|---|---|---|---|
| 1½ | Ovolo | 0 | 4 |
| 1½ | Shop Fronts | 0 | 4½ |
| 1½ | Ovolo Sashes and Frames | 0 | 8 |
| 1½ | Ditto, double hung | 0 | 9 |
| 2 | Ovolo Sashes and Frame | 0 | 11 |
| 3 | Ditto, prepared to hang double | 1 | 0 |

| Inch. | DOORS, at per Foot Superficial. | s. | d. |
|---|---|---|---|
| 1½ | ½-panel square | 0 | 7½ |
| 1½ | Ditto, moulded one side | 0 | 8½ |
| 1½ | Ditto ditto, both sides | 0 | 10½ |
| 1½ | Ditto, bead, butt, and square back | 0 | 9 |
| 1½ | Ditto, bead, flush, and square back | 0 | 10 |
| 1½ | 6-panel square | 0 | 8½ |

FANCY SASHES, SHUTTERS, AND DOORS, TO ANY DESIGN.

JAMES BARKER, SASH MAKER and JOINER to the TRADE, 83, Theobald's-road, Bedford-row, respectfully invites the attention of Builders and gentlemen building, to the subjoined list of prices for joiners' work, prepared from the very best materials, in a most superior manner, for ready money.

SASHES, at per Superficial Foot.

| Inch | | s. | d. |
|---|---|---|---|
| 1½ | Ovolo | 0 | 4½ |
| 2 | Ditto | 0 | 5 |
| 2 | Lamb's Tongue, or Gothic | 0 | 6½ |
| 2½ | Shop Front | 0 | 6½ |
| 1½ | Green-house, or Skylights | 0 | 4 |
| 2 | Ditto | 0 | 4½ |

French Casements, Sash-doors, Fan-lights, and Circular Sashes, made to order at proportionate prices.

SASHES WITH FRAMES, per Superficial Foot.

| Inch | | s. | d. |
|---|---|---|---|
| 1½ | Ovolo, sashes and frames | 0 | 9 |
| 1½ | Ditto, both sashes to hang | 0 | 10 |
| 2 | Ovolo sashes and frames | 0 | 11 |
| 2 | Ditto, both sashes to hang | 1 | 0 |
| 2 | Lamb's Tongue, or Gothic, ditto | 1 | 0½ |

Gothic Frames and Sashes, Mullion Windows, Wainscot and Mahogany Sashes.

SHUTTERS, at per Superficial Foot.

| Inch. | | s. | d. |
|---|---|---|---|
| 1½ | Square Sliding Shutters | 0 | 6½ |
| 1½ | Ditto, moulded one side | 0 | 7½ |
| 1½ | Moulded, head and butt back | 0 | 8½ |
| 1½ | Boxing Shutters, with front moulded, and back, with 1 inch back flaps, head and butt | 0 | 8 |
| 1½ | Shutters and back flaps, moulded front and head, and butt back | 0 | 9 |

DOORS, at per Superficial Foot.

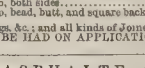
| Inch. | | s. | d. |
|---|---|---|---|
| 1½ | Dwarf square | 0 | 6½ |
| 1½ | Ditto, moulded front | 0 | 7½ |
| 1½ | Four panel square | 0 | 7 |
| 1½ | Ditto, moulded front | 0 | 8 |
| 1½ | Ditto, square | 0 | 8 |
| 1½ | Moulded one side | 0 | 9 |
| 1½ | Ditto, both sides | 0 | 11 |
| 1½ | Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch. | | s. | d. |
|---|---|---|---|
| 1½ | Ditto, bead, flush, and ditto | 0 | 11 |
| 1½ | Ditto, ditto, and moulded back | 1 | 0 |
| 1½ | Six panel square | 0 | 9 |
| 1½ | Ditto, moulded one side | 0 | 10 |
| 1½ | Ditto, ditto both sides | 1 | 0½ |
| 2 | Four panel square | 0 | 10 |
| 2 | Ditto, moulded one side | 0 | 11 |
| 2 | Ditto ditto, both sides | 1 | 0 |
| 2 | Ditto, bead, butt, and square | 0 | 11½ |
| 2 | Ditto, bead, flush, and square | 1 | 0½ |
| 2 | Ditto, ditto, ditto, and moulded back | 1 | 2 |
| 2 | Six panel square | 0 | 11 |
| 2 | Ditto, moulded one side | 1 | 0½ |
| 2 | Ditto, ditto, both sides | 1 | 2 |
| 2 | Ditto, bead, butt, and square | 1 | 1 |
| 2 | Ditto, bead, flush, and square | 1 | 3 |

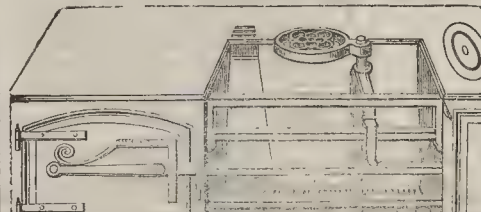
Front, flush, and covered doors, to any design.

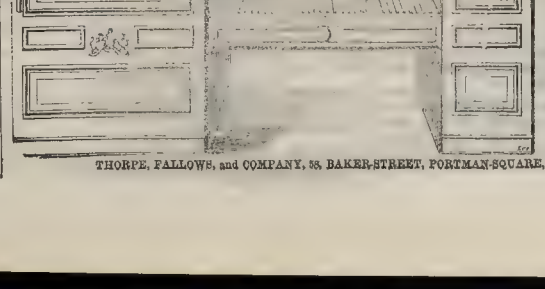
Prices for Architraves, Base Mouldings, &c.; and all kinds of Joiners' Work in Wainscot or Mahogany, TO BE HAD ON APPLICATION.

SEYSSEL ASPHALTE COMPANY.
CLARIDGE'S  PATENT.
Established March, 1838, for working the Mineral Asphalte Rock of Pyriment Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.
Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.
THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | which also renders it very |
| Kitchen Floors (particularly where it is essential to keep damps from rising). | Dog-kennels. | Covering of Railroad and other Arches. | appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Barn Floors. | The only effectual mode to prevent the percolation of water. | |
| Carriage Drives. | Granaries. | | |
| | Tan-room Floors. | | |
| | Malt-house Floors. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.
The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.
In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.
Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.
J. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.


CHEAP PAN FOR WATER-CLOSETS,
With Trap, in One Piece.
DOULTON AND WATTS,
LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,
Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.
They are of the most durable ware, and are recommended in preference to iron, on account of their cleanliness and cheapness.
If preferred, they can be had in two parts, the Pan at 4s. 6d., and the Trap at 3s.
N.B. Manufacturers of RAIN-WATER PIPING for houses.

THE PANKLIBANON IRON WORKS,
WHOLESALE AND RETAIL, 33, BAKER-STREET, PORTMAN SQUARE.

ARCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE-GRATES, FENDERS, and FIRE-IRONS, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive stock of FURNISHING IRONMONGERY, Tinned Copper, Tin, and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epernes, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.
The Patent Thermio Stove is in daily operation. Also,
CUNDY'S
IMPROVED HOT-AIR STOVES,
for heating and ventilating rooms.
THORPE, FALLOWS, and COMPANY, 33, BAKER-STREET, PORTMAN-SQUARE, LONDON.

# THE BUILDER.



THE Committee for Letting the City's Lands will MEET at Guildhall on Wednesday, the 17th day of February next, instead of the 10th as before advertised, at One o'clock precisely, to receive TENDERS for LETTING on LEASE a HOUSE, No 19, on the north side of Bread-street-buildings, and a house No. 8, Windsor-court, Monkwell-street, for twenty-one years from Lady-day next; and also a house No. 2, Beehive-passage, Lone-street, for thirteen years from Lady-day next. Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall.

THOMAS SAUNDERS, Comptroller.

TO BUILDERS.

AN old established Business in a Market Town, about 30 miles from London, TO BE DISPOSED OF. The premises are well adapted, and the rent moderate.—For particulars apply by letter, prepaid, to A. B. Messrs. Huxley, Hurlock, & Co., Ironmongers, Castle-street, Long-acre.

WHARF and WAREHOUSES TO LET, situated at No. 28, Wharf-road, City-basin, consisting of a Wharf, two Warehouses, Stabling for Horses, and Dwelling-house. The premises are well adapted for the Carrying Trade, or other business requiring room.—For further particulars, apply at 83, Fleet-street.

STEAM SAW MILLS TO BE LET, in consequence of the proprietor wishing to retire, consisting of two frames and circular saw, one for cutting English and foreign timber 32 inches deep, the other for deals; they are situated by the canal side, with every convenience for landing timber and deals, with the use of a crane.—Apply at 20, Wharf, Paddington.

TO BUILDERS AND OTHERS.

LAND TO BE LET, on advantageous terms, on Building Leases, at West Ham, Middlesex; Streatham and Carshalton, Surrey; Hoxton and Dalston; and Tunbridge Wells, Kent.—For particulars, apply to Messrs. BROOKS and GREEN, Estate Agents, Surveyors, and Auctioneers, 28, Old Bond-street.

TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS.

TO LET, a Compact and Convenient Wharf, between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of the above Trades, having excellent water and land carriage ways.—For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace-road, Lambeth.

TO TIMBER MERCHANTS, DEALERS, or Commission Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

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1, Canning-place, Kensington, Feb. 4th, 1847.

**KENSINGTON NEW WORKHOUSE.**

TO BUILDERS.—The Board of Guardians of the Parish of Kensington, having observed in "The Builder," on Friday last an advertisement, signed by irresponsible parties, purporting to be a Caution to Builders that any Contract entered into by the Guardians for Building a Workhouse will be resisted by the Parish as illegal; the Guardians are desirous of stating that the legality of the Poor Law Commissioners' Order for Building the Workhouse under which the Guardians Act, has been affirmed by the Queen's Bench. The advertisement is obviously designed to prevent the Receipt of Tenders, but the Board believe that it will be rendered ineffective by this public notification, that the Guardians possess the amplest legal authority to contract for the Building of the said Workhouse; and they take this opportunity of reminding builders that they will receive TENDERS for the Execution of the Works at their Meeting at the Board Room, on Tuesday, the 9th instant, as stated in "The Builder" on the 30th ultimo.

S. CORNELL, Clerk to the Board of Guardians.

Guildhall, January 28, 1847.

**THE** Committee for Letting the City's Lands will MEET at Guildhall on Wednesday, the 17th day of February next, (instead of the 10th, as before advertised), at One o'clock precisely, to receive TENDERS for LETTING on LEASE a HOUSE, No. 19, on the north side of Broad-street-buildings, and a house No. 3, Windsor-court, Monkwell-street, for twenty-one years from Lady-day next; and also a house No. 2, Beehive-passage, Lime-street, for thirteen years from Lady-day next. Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall.

THOMAS SAUNDERS, Comptroller.


IRONFOUNDRY.
163, Drury lane, and 1, Charles-street, London.

JOSEPH GLOVER,
(Late HENDRY and GLOVER),

**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will ensure every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**H.** S. CHAUNCY, SURVEYOR, HOUSE, and ESTATE-AGENT.
OFFICES—10, Symond's Inn, Chancery-lane.

**DECORATIVE ART SOCIETY,**
20, Great Marlborough-street.—Wednesday, Feb. 10—Conversazione: The application of Design to Stained Glass Windows.
Visitors' tickets may be obtained from
E. C. LAUGHER, Hon. Sec.
17, Sussex-place, Kensington.

**ART-UNION OF LONDON:** Incorporated by Royal Charter.
PRESIDENT—H. R. H. the Duke of CAMBRIDGE.
The list for the current year is now open. Subscribers will receive for each guinea paid, besides the chance of obtaining a work of art at the distribution, a pair of prints, the "Last Embrace," and the "Neapolitan Wedding," engraved by Mr. Charles Rolls and Mr. F. A. Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of 500l. offered by the society for an historical picture.

GEORGE GODWIN, } Hon. Secs.
LEWIS POCOCK, }
4, Trafalgar square, January 1, 1847.

**SOCIETY OF ARTS.**
PRESIDENT,
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 5th of May, 1847.—A List of the subjects for which Premiums amounting to 300 Guineas, with 40 Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, Johnstreet, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.


### PUBLICATIONS.


Just published, a new edition, for 1847, price 4s.,

**LAXTON'S BUILDERS' PRICES,** containing nearly 11,000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Buildings Act, and the modification of the Act.—To be had at the office of the "Civil Engineer and Architects' Journal," 10, Fludyer-street, Whitehall; WEALE, High Holborn; SIMPKIN, MARSHALL, and Co., Paternoster-row; and at the office of "The Builder," 2, York-street, Covent-garden.

For 1846.

**KELLY'S PRACTICAL BUILDER'S** PRICE BOOK, or Safe Guide to the Valuation of all Kinds of Artificers' Work; with the Modern Practice of Measuring, and an Abstract of the New Building Act for regulating the Construction of Buildings. Revised and corrected by New Calculations upon the Present Value of Materials and Labour. Arranged to an architect of eminence, assisted by several experienced measuring surveyors. Illustrated and exemplified by steel Engravings, and numerous Woodcuts. Royal 8vo., price 8s., neatly bound

London: published by T. KELLY, Paternoster-row; SIMPKIN and MARSHALL; and may be had of all Booksellers.

**CARPENTRY.**—It is intended to Publish in Monthly Parts, a most Comprehensive, Elementary, and Practical Work in Carpentry and Joinery, in all its appliances; Ancient and Modern, Foreign and English, Domestic and Ecclesiastical; to contain 100 Engravings, with a Practically described Text, and to comprise—

1. The well-known work of PETER NICHOLSON'S CARPENTERS' NEW GUIDE, being a complete Book of Lines for Carpentry and Joinery; 84 Plates with Additions and Improvements to the present time. By an Architect.

2. SUPPLEMENT A.—New Subjects of Roofs, Domes, Doors, Windows, &c., of recent construction in Public and Private Buildings. By an Architect.

3. SUPPLEMENT B.—Ancient Carpentry of England. Specimens of Open Roofs and Timber Work, Standards, Staircases, Panels, &c., &c. &c. By an Architect.

4. SUPPLEMENT C.—Modern Carpentry of England, France, and Italy. By an Architect.

5. SUPPLEMENT D.—Various Designs of Modern Verandahs. By an Architect.

6. SUPPLEMENT E.—Modern Fronts with Plans of the London Club-houses, Institutions, Shops of Various Trades, Professional Places of Business in London and Paris.

All will be amplified with Measured Details and Dimensions to them. The whole of these numerous and valuable additions will be of a nature to Instruct and Elevate the Genius of the London and Country Carpenter, by placing before him Examples which either have been inaccessible, and at a convenient cost of 2s. 6d. per Part with Eight well executed Engravings and Text, and Published Monthly. To be completed in Twenty Parts.

Persons desirous of having the work direct as published, will be pleased to forward their names to the Editor and Publisher, JOHN WEALE, 59, High Holborn. Canvassers and the Trade in the Country who will Canvass their Counties, will be liberally treated with.—Prospectuses ready on the first Part, May 1st, and the publication continued every month till completed.

**JENNINGS'S SHUTTER FASTENER.**
Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger

# THE BUILDER.


THE RENT-RECOVERING OFFICES, 25, New Broad street, City.—The BUSINESS of COLLECTING and lawfully recovering RENTS, for half a century conducted by the Misses PITT, is now carried on at the same Rooms by Mr. ROBERT HODGSON, who will succeed to the same, respectfully solicits the continuance of those favours so liberally bestowed on that firm's predecessors; and by strict personal attention, economy, and punctuality in the above and all cash trusts to merit still to merit a share of patronage and support.

IMPORTANT TO BUILDERS

THE ARCHITECTURAL CARVING COMPANY (Irvine's Patent), beg to inform Builders, that they are now manufacturing beautifully ornamental Jamb pieces in stone and marble in moulded and tapering Specimens may be seen at their works in Endeston place, Pimlico, leading out of Ebury street. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

CARVINGS IN WOOD.—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public at an extremely reduced price every possible variety of Carved Wood for external and internal embellishment, thus obviating the expensive and frail forms of papier mâché, which have hitherto been found, from their fragility, so objectionable.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Tavern Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 341, West Strand, or at the Works, Ranelagh-road, Thames bank.

CAEN STONE DEPOT—NORWAY SUFFERANCE WHARF, GREENWICH

W. TUCKWELL, Caen Stone Importer, having Architects, Sculptors, Masons, and others, that he has a large stock of superior DRY SEASONED CAEN STONE on his Wharf, imported by last evening's Boats from the quarries at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 86, Cheapside, where any information and samples may be obtained. CAEN STONE shipped direct from Caen to any port.

CAEN SUFFERANCE WHARF, ROTHERHITHE

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by constant importations from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr GEORGE GATES, 18, South-wark-bridge, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c. are executed in the most reasonable rate, and packed for the country, under the superintendence of ARCHITECTS to ensure the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their masterly inspection.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the roods or carriage.

Box Planing, superintended upwards.

THE WORCESTER MOSAIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces, at the Works.

Estimates given for building generally.

LADYSHORE TERRA COTTA.—The attention of Architects, Builders, and others engaged in building, is respectfully solicited to this material, which combines the beauty and durability of the best Portland at half the cost. Its colour is of a rich tint, like stone or brick. This material has been used in the entire building of two churches; one in Walsall-street, and one at Bilston, Staffordshire, and a large block of the ornamental parts of a school, also in many other churches and buildings, &c. Its advantages are, that it is not a "composition," nor of the nature of Stucco, but HARD BURNT CLAY. In rich ornamental work, its value will be found to be great, being so much cheaper than carved stone, and equal to it in durability.

The principal ornaments manufactured are capitals, trusses, bosses, brackets, royal arms, foliated mouldings, panels, panelled terminals with poppy heads, pinnacles, finials, chimney tops of all sizes, vases, fountains pedestals, busts, chimney pieces, inscribed tiles and other tiles for churches, halls, &c., and every variety of ornament that is used for building purposes.

This material is warranted to stand the weather specimens may be seen, and every information obtained, on application to the Proprietors, E. P. WILLCOX and Co., 19, Exchange Arcade, Manchester.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs Geo and Thos Wallis have the satisfaction of producing to the public, possesses the valuable property of effectually stopping Knots in Wood, however bad, and preventing them existing the least in shrinking or starting.

Most of the Knots we have used from time to time in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long wanted by many.

In the application, skill is not required, it is put on the work with a brush like common paint, can be used in all climates and seasons, and does not crack or fall out.

Sold wholesale and retail, by Messrs G and T. Wallis, Varnish, Japan, and Colour Manufacturers, No 64, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NAPE HILL, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot houses, for Iron-work, and for Shipping. It will stop in water at 40 fathoms and under the hardest friction will hardly require it. It prevents vegetation on stucco of buildings, and is not affect dry spray from water.

PROTOXIDE PAINT is 1 degree and in all, and, compared with white lead, its property of covering is as 75 to 56, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with all the colours and oils a cheap mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly healthful.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation will not stand the test of time when compared with the coal and varnish which adhered to the original grain. Those who are painting their houses would save much money in the end if they would use this process, which improves their appearance, while it preserves them. It makes the whole surface of a house, which will take a month or six weeks to paint in the usual way, look as fresh as new work after the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 51, Stamford street, Blackfriars-road; sold also at the office of "The Builder," 2, York street, Covent Garden, London; Hodgsons, Wilderness Row, Clerkenwell; Hodgsons, Wilderness Row, Hereford; R. Sutton, "Review office," Nottingham; H. Wills, 30, High-street, Lynn; and in Manchester at Crake's Marble Works, Garratt-bridge. In bottles of 6d. and 1s. each, and at 1s. per gallon. The colours are sent out in the powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

TO BUILDERS, PAINTERS, AND OTHERS

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only.

6, WELLINGTON-BUILDER ROAD

An Apprentice wanted to be bound and lodge with his friends. Premium, £20

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt houses, Corn Stores Floors of Warehouses, and every description of Pavement laid down at the above price, and the work guaranteed.—April 2, JOHN HILKINGTON, PULOGNE'S BITUMEN PAVEMENT OFFICE, 1, WHARF-ROAD, CITY-ROAD. R.M. Country Agents for Railway Companies and Contractors supplied with the best bitumen for paving, &c. Lessons given.

FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Defourmille's system of filtration; the only one known by which large quantities of liquids are easily filtered, begs to announce that he continues to supply these apparatus, which are easily applied to cisterns and wells, inside, and when fixed require no care or attention, as no servants, and never get out of order. The prices are from Two to Ten Pounds, and the filtering matter only requires changing. Instances paper mascis Hospitals, and large establishments, to an unlimited quantity, the prices varying accordingly.

40, Love lane Platform, Rotherhithe; Office, 23, Conduit-street, Bond street.

TO ARCHITECTS, BUILDERS AND BRICK MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for every purpose where Water Places, as per Cuts and Prices for Liquid Manure Build Or MAKERS PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth, SINGLE and DOUBLE PUMPS up to fourteen in bore, Kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street

TO PLASTERERS.

LIME FOR PLASTERING, that may be used immediately without risk of blistering, manufactured expressly for Plastering purposes, by the usual process, at FOX REST'S WHARF, East-street, Blackfriars-road, where the shortage and mixing of lime. A commodious house, large enough for finishing trades, sand, ballast, &c.

TO BUILDERS AND OTHERS.

MESSRS. H. G. and E. ROSHER, having closed their Lime Wharf at Meadow, Southwark, have erected their Stores at Mount Wharf, Holland street, Blackfriars, where they intend keeping a constant supply of Greystone, Flame-burnt, and Pulverised Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other Building Materials. Meets Re-SHER have also Lime Wharfs at Limehouse, Millbank street, Westminster, and Knightsland Basin, Kingsland road.

* * Ground Lime for Concrete.

PORTLAND CEMENT.—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season. It contains work of other kinds when plastering. Samples for proof of the fact can be had at the manufactories—J. B. WHITE and SONS, Millbank street, Westminster.

KEENE'S PATENT MARBLE CEMENT is a material of an exceedingly hard and durable nature, which may be used for internal purposes, in the manufacture of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, and is applicable with a superior finish to plaster, Parian, and other cements.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and 342 Strand, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, principally sold by the Sacks, as it is to be had in Casks. Stevens themselves that MARTIN'S CEMENT is totally unlike any other composition and manufacture from every other, and being a neutral compound, it is not affected by the sea, or any chemical agency, by coming in contact with which it does not destroy, but positively increases the adhesion of the strongest acids. They feel it a duty to direct attention to the fact upon which it is proved it invariably possesses

1. It retains all its natural properties.
2. Unlike other cements, it hardens uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, which is quite impossible to any other.

It is peculiarly adapted for internal stucco or walls, skirtings, architraves, mouldings, and enrichments of all kinds, in all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and perfect freedom from dust, render it of very great value, it being the only composition that can be used for the most delicate inlaid patterns in wood. To be had in the principal towns, Paris, and Petersburg. Sold by the Patentees.

Agent in Liverpool and Manchester, Mr. E. PARTRIDGE, Cunningham place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Cement over Stucco:—1. Economy in reduced first cost. It will effectually resist Damp. It will never vegetate, but turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and sound for a long time, and for a number of years. It is the only Cement that can be used with safety for export. It is the only Cement that can be used with confidence by the Sculptor, Modeller, and Architect. It does not require any skill to use it. It is applicable to, and forms, a cheap and effective Work, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It contains in it no Acid, and does not corrode Metal. It may be used through the Winter as freely as in the Summer. It may be used on the Inner Walls of Iron Buildings, to prevent the sweating or painted surface of Iron. It is the best Cement for Concrete, and for Floors, Roofs, and Terraces, and other purposes. Any Plasterer may work it, the Instructions for use being simple. Any Bricklayer may use it, the Instructions for use being equally simple. The first cost of this Cement does not exceed that of the cheapest Cement now in use; but with all the above manifold extra merits and valuable advantages, nothing can approach it in point of Economy.

Architects, Builders, and others are invited to Consult, have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials, may be had on application at the Office, 1, Mincing-lane, Fenchurch-street, London; of whom also may be had,

JOHN'S and CO.'S PATENT STUCCO COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses, and other Buildings, and for the Interior Decorations of which, to be washable, and should it become soiled, may be restored to its original appearance, for the purpose, the White Lead Paint used with ordinary oil, is thus rendered unnecessary. Applicable to any Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction thereof, rendering it a well-fixed, hard, durable, and white finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 6d per ft. to 3s. 6d. and Plate from 9d per foot, run and having just built two of the largest kilns in London, is enabled to execute orders to any amount with the utmost dispatch.—1, King street, Portman square.—Terms Cash only.

SOHO PLATE GLASS WAREHOUSE, 20, SOHO-SQUARE, Depôt for the Sale of the Plate Glass manufactured by the British Company, Ltd. The attention of Architects, Builders, and the Trade generally, is particularly requested to this article, which stands unrivalled for brilliancy of colour, purity of substance and polish, and possesses almost double the strength of Crown Glass, and is specially adapted for all dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed as above.

ALFRED GOSLETT, Agent, 36, Soho Square.

SASHES PRIMED, GLAZED, and sent to any part of London and suburbs at 2s. per foot.

BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PLATE. PLASTERERS' GLASSES
Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate for shop fronts, show cases, &c. The largest stock of cheap Glass in London.—ROBERT CULTRUM, 101, Fenchurch-street.

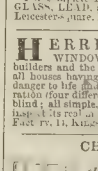
Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade carried on.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 22s per cwt. Lead Pipe, 23s per cwt. Pumps Water closets, Basins, Brass-work, and all materials used by Plumbers.

For complete Lists, priced Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 3, Princes-street, Leicester-square, London.

HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life in sash cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sunblind; all simple, cheap, and effective.—Apply for licenses and to Inventor, 32, Red Lion-square, Holborn. Patent Steam Bed Feather Factory, 11, Kings-arms-street, London.

CHAS. WM. WATERLOW, MANUFACTURER of sashes and Frames, and Dealer in the Trade, Deal, Batten, Flooring, Pinsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on hand. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

JOHNSON and PASK, 1, AMWELL-STREET, Clerkenwell.

Beg to inform the Trade and the Building Public in general, that they continue to manufacture Sashes and Frames, always on hand, Shop Fronts, and all their kinds of Joiners' work, on the lowest possible scale of prices. Also a few Weather Boarded Mansions, which they can recommend as being of the best description of workmanship, and materials, and finished ready for the reception of families. A full list of prices forwarded by return of post, to any part of the country.



PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark Iron and Zinc Works, Southwark Park Road, Bermondsey. At the above Works, Mr. Porter begs to inform the Public and the Trade that he continues to manufacture his Corrugated Iron, of the best quality, and with every improvement in its application for Roofing Buildings, &c. Also, his Corrugated Iron Hurdles, Sheep Pens, Iron Rails, Gates, and Palisades, of the best quality. Iron Fence and Hurdles as usual. The Trade supplied.



By Her Majesty's Royal Letters Patent.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED METAL.—This article was at first only manufactured for Lamp Glass and Shades, but the Patentees, finding that the Metal answered admirably for Roofing, and having just built two of the largest kilns in London, is enabled to execute orders to any amount with the utmost dispatch.—1, King street, Portman square.—Terms Cash only.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON.—This Patent is for improvements in the manufacture of Iron, and consists in the application of a coating of Tin to Iron, by which the Iron is preserved from rust, and rendered more durable than Iron not so coated. The Galvanizing Process, which Mr. Morewood and Roger's Patent Galvanized Tinned Iron has undergone, has obviated many mistakes, and consequent disappointment to purchasers in future Iron, manufactured by the Patentees, will be found to be of the Most Durable and Reliable Description. The Galvanized Tinned Iron has also the great advantage of being extensively used in her Majesty's Dockyards, at the Admiralty, and other Government Establishments, for Roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience that this article is beyond all comparison superior to those possessing, as it does, all the advantages arising from the strength and firmness of Iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc, and lead, which melt and run down through, imparting fresh air to the fire, and causing it to burn more fiercely. It is thought desirable to state that the Iron used is not otherwise named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and all other purposes where strength, durability, and lightness, without its liability to corrosion. It is by far the most economical material for roofing, being obtained in sheets of the width, and to any length required, and fixed with the same facility as slates.

The head of the Admiralty Department has recently applied to sheet iron, but also to manufactured iron in any forms, as bolts, nails, hinges, &c.

For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.

DEANE'S TWO-HOLE BLACK PENS, which are unequalled for their durability and easy action, are recommended, the attention of Bankers, merchants, and public companies of the city of London, besides several of her Majesty's judges, the most eminent engravers, and the largest manufacturers, who have used them for many years, are hereby informed that the genuine article, which are equally useless to the purchaser, and disgraceful to the vender. The public are therefore cautioned against such spurious and worthless pens. DEANE'S GENUINE TWO HOLE BLACK PENS are each pen stamped, "D. and J. Deane, London-bridge," and the box, which contains only twelve dozen, has thereon a variously coloured label, inscribed,

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The Builder.

No. CCIX.

SATURDAY, FEBRUARY 6, 1847.

WHEN the council of the Institute of Architects announced, in June last, the terms of the competition for the medal granted by the Queen for the promotion of architecture, we protested against the limitation of the age of competitors to twenty-five years.* We reminded the council that they had, in their circular advertisement of the subjects proposed for the medals of the Institute, and the Soane medallion, pointed out that the object of the Institute was, not merely to draw the attention of students and the younger members of the profession to the subjects proposed for the prize essays, but, "to enlist the experience, the judgment, and the taste, of those profoundly acquainted with the several departments of the art, whether members of the Institute or not:" and we then made the following remark.

"The Institute wish very properly to enlist the experience and the judgment of practised men; but the medal graciously presented by the Sovereign to advance the art and science of architecture—the greatest honour they have to bestow—is not to be opened to such candidates. The council should have ennobled this medal to the utmost, and made it open to all, so that, like the corresponding medal given by the Royal Society, it might be an object of ambition to the most eminent in the profession. Architecture has few or no honours. By the course pursued, they are not only throwing away the opportunity of creating one, but are actually, as will be found in practice, lowering the worth of their other medals."

Further consideration has made the correctness of our first view of the question more evident, and now comes the result of the advertisement to clinch it.

And a melancholy result it is. A result we must confess, much worse than might reasonably be expected; insomuch as we ought to find plenty of men of four or five-and-twenty capable of designing a building suitable to the purposes of the Royal Institute of British Architects, comprising lecture-room, library, gallery for casts and fragments, &c. not to exceed in cost 20,000*l.*, which, as our readers may remember, was the subject proposed to competitors. The reward, too, was certainly a tempting one; for, be it remembered, in addition to the royal gold medal,—the *first* royal gold medal awarded in England for the advancement of architecture, with all the *prestige* it will give,—the successful competitor will be entitled to draw upon the treasurer of the Institute for the sum of *50l.* after his arrival in Rome, in pursuit of his professional studies, at any period within five years from the time of the medal having been awarded to him, upon sending to the Institute a satisfactory study of some existing building, either ancient or modern.

This, we repeat, was a tempting offer, and ought to have produced a number of emulative competitors, and some fine fresh bold thoughts, well set forth on paper, to shew that the rising generation of architects intended doing something more than blindly copy the orders and repeat worn-out precedents, without thought of principles.

We are not amongst those who look for great and sudden changes in style; we do not expect to find architects employing details never before met with, or producing at once, as with the blow of harlequin's wand in a pantomime, a building altogether different from others already erected. As we have often said, the history of architecture is the history of a progress. A number of modifications and adaptations to circumstances, scarcely perceptible, singly, concur to produce gradually a change which can be chronicled. It requires many inventive minds, and many years, to evolve a new style in architecture.

What we do expect, however, is, that architects will recombine rather than repeat,—that they will give the most perfect and commodious arrangement for the purpose of the building, and be able to carry it out with the most proper materials and economy; that this purpose shall be fittingly and, in proportion to the means at their disposal, magnificently expressed; that the proportions shall be harmonious, whether the building be costly or simple, and the adornments strictly in character; in short, that in all the arrangements for utility, the development of the beautiful be never lost sight of.

The sets of designs submitted for the royal medal are eleven in number. One, with the motto *Tenet Deus clavum*, is a mere piece of impertinence; and there is one other, if not two, which is little better. Three or four are very creditable drawings, though far beneath what we looked for, and the remainder call for no remark. There is a creditable attempt to obtain a *monumental* character for the building in one of the designs, and the interior arrangement of a second is satisfactory; but the defects in all are so great (if the proper standard be kept in mind), the want of any thing like *genius* is so apparent, that comparison is unnecessary, as we cannot think the council will feel themselves justified in awarding the prize on this occasion.

To give the author of either of the designs submitted fifty pounds would be a sad misapplication of the Society's funds; but to bestow upon him the royal medal would at once destroy the value of that medal, and would be a public injury of very serious character. We are most anxious that this medal should be regarded as an honour worth striving for by every member of the profession; that obtaining it should give a reputation; and we therefore hope that the council will refuse to award it on the present occasion, and will in their next advertisement withdraw the limitation of age. We would further suggest that on alternate years, it should be offered for the best essay on a subject to be named.

* See Vol. IV., p. 308 and p. 325.

## CONDITION AND IMPROVEMENT OF CHESTER.

CHESTER, like other places, we are happy to say, is arousing itself to the importance of sanatory improvements, and certainly no town with which we are acquainted stands more in need of them. The statistical returns of the Registrar general shew that it does not do to depend entirely upon the good natural drainage alone, with which the fair city has been bountifully blest by Providence, as the neglect of artificial drainage entails a fearful sacrifice of the energies, the health, and even the lives of a great proportion of the community annually. Steps are now being taken to carry out an efficient system of sewerage upon a comprehensive plan, under the powers of the Improvement Act recently come into operation, and we shall look forward with confidence to the beneficial results to be derived from such a salutary measure, both in an economical and sanatory point of view, although many of that class termed of the "old school," are disposed to question its utility. Nevertheless, we are not so sanguine as to hope that the measure of sanatory reform, which we have from time to time so strongly advocated, will prove the panacea to all the "ills that flesh is heir to," without it is followed up by measures that have a tendency to check the practice of adulterating many of the necessaries of life, now so extensively prevalent.

In a former article upon this subject, we lamented over the apathy displayed by the authorities of towns with reference to sanatory improvements, and regretted, that as a nation of mechanics, and anxious to maintain that character, so little sterling science had been brought to bear upon the question, in which every member of the community was interested, both high and low, rich and poor.

Great evils are caused in this city by the constant disturbance of the streets for the purpose of repairing or relaying water or gas pipes, which is evident from a casual inspection of the cross sections of the surfaces. Our observations confirm us in the belief, that the time has arrived when some other plan must be devised for that purpose, and that subways or tunnels must be used for sewers, water, and gas pipes, or that the water and gas pipes must be banished the middle of the streets, and placed at the back of the curb-stone of the footways on each side, with a double row of mains, so that when sewers are once constructed, the middle of the streets may never be disturbed, or left, as at present, to the tender mercy of water or gas companies. And this leads us to the consideration of the construction of the roadways of streets; some better and more durable system is urgently called for, for when the arch enemies, sewage commissioners, water and gas companies, are banished, the excuse of an imperfect road surface ought not and must not be admitted, but we fear that until there is some change made, the public will have to submit, though with murmurings loud and deep. Upon this subject we shall speak at greater length at a future period.

Trapping drains by water alone, it seems clear, as already mentioned, is not effectual in its character; we are open to receive any plan that may be suggested as an efficient remedy. We are glad to hear the wretched foot pavements of this venerable city are to be replaced with flags, so that the sojourner, and he that is troubled with corns, may traverse the streets with as much ease and comfort as the "rows" and walls that bear the stamp of imperial Rome. This wise measure will, further, have a direct tendency to improve the health of the city.

The water supplied to the citizens on the intermittent system, we are sorry to say, is impure in quality, and inefficient in quantity, and is pumped up from the river Dee, and conveyed at once to the tanks of the consumers without being filtered or divested of any of its impurities, and there are neither reservoirs nor filters attached to the works. Two serious fires have recently occurred there; fortunately the one was situated near the Chester and Ellesmere Canals, the other near the River Dee, where a copious supply of water was obtained, but although a fire-plug was within a few feet of the former premises, it was not used, because it was stated there was no water on in the main; so if a fire were to occur in the middle of this city amongst the old timber buildings, under such a system, the consequences must be disastrous. No town with which we are acquainted is so well situated for a copious and good supply of pure water as Chester, and if the constant supply under high-pressure system was adopted, fire-engines might be dispensed with, and stand-pipes and hose applied directly to the mains, which would throw a greater volume of water than could possibly be done with engines; and if fire-plugs were more numerous, and hose and stand-pipes at depôts in every street, we should seldom hear of fires so destructive in their character as have recently been recorded by the press.

A discussion has lately taken place in the council on the supply of gas, a new company having been projected for the obvious purpose of supplying gas at a cheaper rate than that charged by the old company, viz., 8*s.* per thousand feet, but the permission of the council to break up the streets was refused, because the

project was in too crude a state, and the old company promised to amend and reduce the price to 6s. 8d. per thousand feet.

As a considerable profit is to be derived from the manufacture of gas, it is to be hoped the new Health of Towns Bill, to be introduced by her Majesty's ministers, will place both the supply of water and gas in the hands of the municipal authorities, and the profits derived may be applied either in the reduction of taxation or to the permanent improvement of the city.

It has occurred to us, that in this age of shares and electric telegraphs, the system of lighting the public lamps might be improved, and the old fashioned lamplighter, with his long ladder, &c., dispensed with, a great nuisance in populous places. We think that the day has arrived when the public lamps should be lighted simultaneously by the aid of galvanism.

We trust that the spirit of improvement which has recently manifested itself in Chester will respect many of those venerable and antiquated buildings that add so much to the interest of the place, both to the lover of archæology and antiquarianism, and that they will be preserved by the authorities with as much religious sanctity as the "rows" and the venerable walls that encompass the renowned city. The cathedral and other public edifices, erected of the soft red sandstone of the district, exhibit outward marks of rapid decay, and it is to be regretted that the restorations that are slowly taking place are being executed in the same friable material, although good durable stone can be obtained from Marley and Pechforton, as evidenced in the County Hall, Grosvenor Bridge, and other buildings in the locality. A fine throne has recently been erected in the cathedral from the design of Mr. Hussey.

We cannot close this article without mentioning the disgraceful practice of burying the dead within the boundaries of the town. The surface of St. John's churchyard appears to be raised nearly 3 feet above its original level, from the accumulation of dead bodies that have been deposited there. Surely another session will not be allowed to elapse, and this disreputable state of things continue.

It is contemplated to erect a magnificent central station for the five railways meeting in Chester, and that a new approach to the city will be formed. We trust that the railway companies will not be niggardly in their expenditure, but make an approach worthy of their combined energies and the citizens of Chester.

We observed that the Chester and Holyhead Railway Company had most sacrilegiously crossed an angle of the wall near the Water Tower, and, in consideration, had put up two most hideous beam bridges, instead of structures in character with the wall and the adjacent towers, and they are condemned by every man of taste as evincing discreditable parsimoniousness on the part of the company, and paying the citizens of Chester but a poor compliment.

The designs of the stations on the Chester and Shrewsbury Railway display some tact and judgment, and are gratifying proofs that some of the railway companies, at least, are sensibly alive to the importance of a little architectural embellishment.

## AWARDS OF OFFICIAL REFEREES.

### PROJECTIONS—OPEN PORTICO.

Mr. Allen had commenced in Spring-street, Paddington, a small portico, formed of two columns supporting an entablature, which projected somewhat less than the front area, and was wholly on his own ground. He quoted the following from schedule E in support of his proceeding:—

"As to all balconies, verandahs, porches, porticoes, shop-fronts, open inclosures of open areas, and steps, and water-pipes, and to all other projections from external walls, not forming part thereof, every such projection (except such part of shop-fronts, and the frames and sashes of the windows and doors, in reference to the necessary woodwork thereof) may stand beyond the general line of fronts in any street or alley; but they must be built of brick, tile, stone, artificial stone, slate, cement, or metal, or other proper and sufficient fire-proof materials, and they must be so built as not to overhang the ground belonging to any other owner, and so as not to obstruct the light and air, or be otherwise injurious to the owners or occupiers of the buildings adjoining thereto on any side thereof."

The district-surveyor, at the instance of the adjoining owners, objected; and the decision of the referees was therefore sought. The award was:—

"That the portico in question would be injurious to the owners and occupiers of the buildings on the sides thereof, and that, therefore, it would be contrary to the provisions of the Metropolitan Buildings Act to project the same before the general line of the shop-fronts on the same side of the street."

### CORBELLING FOR CHIMNEYS.

Mr. W. Snoxhill, in building two second-rate houses, Edith Villas, North End, Fulham, had committed what the district-surveyor considered an irregularity; "namely, the chimney-breast and stack have been corbelled over the whole space, between the front and back chimney breasts, on the front thereof, on the floor next below the top floor, and to a projection exceeding 4½ inches."

The referees determined, "that the operation in question is not expressly provided for by the Metropolitan Buildings Acts, or either of them, but that the surveyor of the district was justified in laying his information; and inasmuch as the projection of the chimneys is between two chimney-breasts, which are built, from the foundation, of not less projection than the overhanging work, the subject of the information; and the construction is good and safe; such operation is not to be deemed contrary to the said Acts."

### STEAM PIPES.

Messrs. Collard, of Tottenham-court-road, having inadvertently laid iron pipes for heating their workshops so as to infringe the Act of Parliament, appealed to the referees with the hope that "as there was no possibility of accident to the building or property therein from such pipes, they being on a much safer principle than the plan long adopted by themselves in other departments of their business, and almost universally through the pianoforte trade, and inasmuch as the building is wholly detached from every other, and stands in a comparatively isolated situation, they might be spared the expense and inconvenience to themselves, and the loss of time to many of their workmen, attendant on an alteration of such pipes, especially as in a recent instance at the baths and wash-houses in George-street, Hampstead-road, contrivances certainly not less dangerous had been permitted to remain undisturbed."

It appeared that the "pipes are stout cast-iron pipes of 4½ inches internal diameter, fixed so as to be in many places at not more than 4 inches from timber, and in some places in actual contact with timber, and that they are connected with a boiler from which they receive steam, the heat of which is required and is used in an extensive series of workshops to dry wood in various forms, and to prepare glue for the manufacture of pianofortes; that means are used to prevent the temperature of the steam in the boiler from reaching such a degree as to involve the possibility of any substances becoming ignited from contact with the pipes;" and in confirmation, that some of the hollow boxes technically known as cual chambers, and charged with steam, rest upon and in close contact with pine boards, which exhibit no sign of being affected by the heat of the steam.

The referees determined, "that the pipes in question being used for conveying steam, and being fixed on the inside of a building nearer than 14 inches to timber, have been so fixed contrary to the first-mentioned Metropolitan Buildings Act, but forasmuch as we are of opinion that under the circumstances hereinbefore recited there is no danger of fire being occasioned by such greater nearness of the steam-pipes to the timbers which form part of the building, we hereby declare that we are prepared to report such our opinion to the commissioners of works and buildings, if Messrs. Collard present a representation to the official referees of the circumstances set forth in such recital, and claim a modification of the rule in schedule E of the said Act, under the head "Smoke-pipes," so far as to allow pipes for the conveyance of steam so regulated and so used for the manufacture of pianofortes and of cabinet-work, having similar requirements, to be fixed at a distance less than 14 inches from timber."

## PRESENT LOW STATE OF ARCHITECTURAL EDUCATION.

On Wednesday evening last, at a meeting of the Association of Architectural Draughtsmen, in their rooms, Southampton-street, Strand, Mr. Kerr read a very able paper on architectural education, with reference to the proposed establishment of an architectural society, for the benefit of those connected with the profession in the capacities of students and draughtsmen. From the shortness of time before going to press, we are unable to do more than give part of the paper in our present number, but will return to it next week.

When I say that the present system of architectural education is exceedingly defective, I am sure I may appeal for confirmation to the experience of every one of you. And if I were to say that this is so much the case that the architect is perfectly anomalous among professionals, I really do not know of any instance by which the position could be confuted.

But, perhaps, if you are to understand me aright and fully in what I have now said, my meaning in the term *architectural education* must for a moment be enlarged upon. By *architecture* I signify a certain Fine Art; by *Architect* a certain artist. Thus by the term architectural education, I signify education in this Fine Art—education in the work of this Artist—the teaching of a man the Art of Design (or, as I have on another occasion expressed it, the Art of the Beautiful) in buildings. There are certain other matters which in common practice are connected with this,—which enter into the calling in life under which the Fine Art practically comes;—but with these I do not at present at all concern myself. They must not be confounded with the Fine Art,—however closely connected with it in any system of practical action they may be, they belong to quite a different class among the matters of knowledge; they are not my subject. (I might also say, perhaps, that the complaint I have to make against the present manner of architectural education does not extend to these other matters, its adjuncts, in the same degree.) The subject and the person I speak of are Architecture and the Architect as I have defined the terms; when I speak of the young architect, and when I address you in that capacity, I allude to the subject of the Art of Design, and speak to the Artist. And when I appeal to your experience for confirmation of my position that the present system of architectural education is exceedingly defective, now that I have thus explained the exactitude of the idea, I am confident of a response from every mind that can at all appreciate what the Fine-Art Architecture is, that the education of our young men for their future practice of this Art of Design—this Art of the Beautiful,—is most inadequately conducted indeed,—conducted in a manner perfectly anomalous in its inadequacy.

Enthusiasts tell of architecture as the grandest of all arts, and dreamers dream of its genius-work as a very wide and very glorious thing—a noble work among the works of man. They point to Phidias, to Michael Angelo, to William of Wykeham, to Christopher Wren, and call upon us to count them great names in the world's history. They tell the pupil at the desk how these are brothers in his brotherhood,—he has entered upon a very honourable walk. And truly there is something in all this that commends itself well—this architecture *is* a noble work. Look then, for a moment, at our young architect,—and see how his noble work is prepared for.

* * * *

Our hero's education professes to embrace a good many things,—planning houses from the beginning to the end, construction from the alpha to the omega, specifications, superintendence, and so on,—perhaps measuring, valuing. But there is one thing more than all this,—and it is with this one thing that we have at present to do,—he has been educated for an Architect—the Artist in Buildings. And he who can appreciate this—whose mind is able to grasp at once the entirety of the grand idea—cannot but allow me that here there is a thing of essentially another sphere from the

rest—and a higher sphere,—a thing of loftier nature, nobler skill, more exalted, refined acquirement. I had almost said—of more difficult attainment; and if you will take my words in peculiar meaning I will say so. To scheme house-plan, to contrive house-construction, are matters that (to use this common phrase) any man can do. But in the Parthenon of Athens, in the Cathedral of Rome, in the Minster of York, in the Hospital of Greenwich, there is something that reaches a higher height than this—something whose province our Architect now professes to be his,—and it is of this that we inquire—this thing of the loftier nature, the more difficult attainment, How has he been educated for this same?

And when we cast it up—how much study and of what nature this young Artist has now passed through to fit him for the Artist's work—how much teaching, and of what kind, he has received in that subtle noble thing DESIGN, ART,—what is it? What if I were to say it is *Nothing*? Certainly if we compare it with the teaching of the Painter, Sculptor, Musician, Lawyer, Divine, Physician, Engineer,—with the teaching, I may very well say, of any other professional whatever,—it is really, strangely, *Nothing*? There is a kind of *picking up* calculated upon, and that is all! Even taking architecture at its present miserable value—a little art of patchwork,—this system of pupillage is beneath even a little art of patchwork. And if you look on Architecture, not as it at present stands—confounded strangely with a maze of lower things—its very existence broadly denied as a principle of thought (for what can PRECEDENT be, but the denial of the existence of DESIGN? Antiquity-rule, but the denial of the power of modern mind?)—if you look on our Art, I say, not as at present it has its strange fate to stand, but thinking of it, if you can think of it, as the wide ethereal thoughtful thing it is—the broad bright province of Imagination,—tell me then how it can be that the teaching of the Architect is so little a thing of moment—how Painting, or Music, or Law, or Physic, contains so much more skill, demands so much more study, than this Art of the Beautiful? And it is in such a light that I would have you view it—Architecture in all its grandeur and freedom, an Art of Design. If Architecture is Greek precedent, then I may grant you that with Stuart at your back you are an Architect; you need but the book of canons, the little articles of your little faith. If Architecture is medieval Freemasoncraft, then I may grant you that with Pugin and Paley and Rickman's Attempt, your creed does not much demand teaching. But if Architecture is an illimitable Art of the Beautiful—an infinite, inexhaustible, essence for the mind of man to draw up from the deep Thought-well of Fancy, its canons the mere canons of Thought and Nature, fully subtle, fully unconfined, uncontractible,—then your Stuarts and Brittons and Paleys sink into the insignificance of mere chroniclers of little corners of an empire; this Art of the Beautiful, this Genius-work of Design, transcends their little limits as the wide Atlantic transcends the little circle that you see, and there are thousands of gallant ships upon its broad bosom besides your own.

When the Architect becomes Artist, truly, Architecture will assume among the Arts a place one of the very highest of all. It is simply because it is not understood—simply because it is—(this saying, by-the-by, is not mine, it is a weapon from the very enemy's camp itself)—because it is "the only branch of human knowledge which remains an exception to this century in its intellectual advancement,"—simply because it is a thing its real full self not known—that it is placed low by even its admirers, and by many excluded entirely from the beautiful circle of the Arts. And when the Architect becomes an Artist truly—when Architecture assumes its very high place—the student of those days will not be the student of these. He will not be merely taken into an office to do the office work—the mere drawing labour, writing labour, arithmetic, of house-building craft; it will be seen that there is a something apart from these,—of nobler kind, of more difficult attainment,—and to learn this—this Art-work—this Architecture—will be an object that a long train of subtle knowledges will be brought to wait upon—a goodly retinue of studies brought to serve. It will be seen that although office-work may serve the end of training the pupil for an office clerk very well, his education for an ARCHITECT is quite a different thing.

If I were to enter upon a detailed consideration of Royal Academy studies, Royal Institute studies, University lectures, it would take time which we have not to spare at present, and serve at best very little purpose. Taking Architecture at its present value, every student who has attempted education by these means can testify to their inefficiency; and if we put the art at its own true nobility, it needs but one grasp of the idea to see how utterly all these are a mockery. Neither is it requisite that I investigate the principle of instruction by the master's designs passing, in the present way, through the pupil's hands in the office-work; that this may serve valuable purposes in education cannot be denied, but that it is at all equal to the whole end of education need not be claimed. The young architect,—he on whom we have to depend as professionally taking the practice of this art of design, ought surely to be educated in some manner in the principles of design—trained for a designer.

It is manifest that no such training is had by the present system of architectural education. It is not had directly or indirectly; and the facility with which the carpenter or bricklayer manages, in our day, to set himself up for an architect is just because the education of the professional is very little different from his own. The young architect has had no training for a designer; he has *picked it up*: and picking it up is a thing which, so far as that goes, the carpenter can do just as well. When a stupid man fails utterly and for ever as carpenter, or stone-mason, or slater, his last resource is to turn architect. And not a whit worse an architect does he make on the whole;—frequently, I am ashamed to say, in some valuable respects, much better,—than the "regular dustman" himself, even many a proud metropolitan that we could tell of. It is of no use to denounce the depredations of non-professionals; the professional must step out himself. The only way for our friends to keep the carpenters back is by themselves becoming more truly, properly, architects.

There must be means provided for education in designing. What is commonly called among us a School of Design would undoubtedly be of very great service to this end. Not a drawing-school, though—not a model office. Systematic instruction in Design is what is needed—to teach the young architect Architecture—the art of beautiful design in buildings.

The plan by which I would propose to effect this teaching of Design I shall describe by-and-by, after I have propounded another project in connection with it.

No manner of instruction is complete until the pupil becomes the self-teaching student—studies, thinks, reasons for himself;—the pupil being taught the truth, is very imperfect work till it ripens into the student discovering the truth for himself. The School of Design which I have claimed is not all that is requisite. It is but preparatory—a first class to which there must be a second. Education under a teacher is mere preparation—groundwork for a very great deal which the student has to learn for himself.—When he leaves the pupillage, he is only made ready for entering upon another course of study—another manner of learning. Books come to be thought over in search of principles—not referred to as canons; doctrine is canvassed as opinion,—not received as dogma; a period of life of the most eminent and peculiar value is now entered upon—the years between the boy and the man—when the work of pupillage is being gradually applied to the practical surrounding world, and the mind is energetic in investigation,—thinking and searching and trying—following knowledge for the love of knowledge,—the years of that happy conceit, which is often railed at by the short sighted as the culpable vanity of inexperienced youth, but which is the wise regulation of a wise Maker for laying a good groundwork of bold thought for the life that is beginning. Just as the ant or bee lays up its store against the winter, so is the human mind in these years of youth, by an instinct as beautifully true, under the same good governance, unconsciously nerving itself for the race—the long race that will weaken it, and weaken it as it runs. The pupillage of boyhood is but the preparation for these years. It is not itself the school, it is but the introduction. Now is the time of study. This lost, the loss cannot be repaired. The man at twenty is unfit for the work of forty; but so, also, is he of forty for ever unfit for the work of twenty. And if the theme of study be work of Fancy and Philosophy, so much the more is this the valuable time for thought. The world will soon drag down such energies as this,—it discords with them, it distracts them among the multiplicity of affairs, confuses, scatters them in the quick hurry of life.

## A LEAF ON THE GRAVE OF A FRIEND OF J. BARRY.

JAMES BARRY was, undoubtedly, one of the greatest artists *England* ever possessed—as well as the least rewarded; sufficient reasons to account for him not being yet duly appreciated. Still, there they are—his splendid canvasses in the hall of the Society of Arts in the Adelphi, the work of *seven years'* unremitting, and unapplauded, and unrewarded toil. It is a fact, that during this time, Barry often lived on mere bread—all friends having left him, save Edmund Burke, who surely felt some inward con-*genial* attraction towards him. But there was another friend, whom Barry's *inward* being had gained for him, the humble subject of this memoir,—Elizabeth *Cockings*, then the servant, subsequently, up to her death, the housekeeper of the house in Adelphi. There was James Barry—the stern, solitary, misanthropic *eccentric*, and the then, childish, playful girl of eighteen. The girl (we gather from *her own* confessions to us) gazed complacently at those inspired beauteous images, as they grew out of the *mute* canvass; and Barry, perhaps, painted these capricious female figures to astonish his young friend. Many anecdotes she knew to relate, shewing the pride and independence of Genius. A certain Lord had lent Barry some costly work for reference, and as the artist kept it a little while, his lordship wrote him a most friendly letter, *presenting* him with the books. This (poor, undiplomatic) Barry repulsed as a downright insult! What was to be done with a man of such feelings in a commercial, banking, higgling age. Then, he would shut himself up in his cheerless cold room—brooding and pasturing over his own mind, which, perhaps, he did not *understand* himself, and then again dart forth, venting his pride and sentiments in images, which posterity will *understand*, as we certainly do *not*. When, by such behaviour, he confused and baffled all his friends, none could approach him—save Elizabeth. Then she would bring him his meals, *dare* to deliver messages, and make his room as comfortable as his strict (and religiously observed) orders would permit it to be. And then she had to bear his death, and almost neglect of his memory. Years rolled on—there were Barry's paintings, but none for a long while looked at them. But *time* is a great *justifyer*. And then came Canova—and gazed long and intent on these apotheoses of man's history. This consoled Elizabeth's heart, who remained single all her life—as Goethe says, that a person who has ever known a departed *spirit*, can no more enjoy happiness. Be it said to the credit of the managers of the hall in the Adelphi, Miss Cockings retained her place up to her death, one of comparative ease and comfort. But she also has now departed. Few remain who have known James Barry—none, now, who has ever *loved* him.

SMELTING IRON.—EXPANSION.—The recent dreadful accident on the Great Western Railway, caused by the separation of the tire of the driving wheel, shews the importance of care in the welding, and in afterwards testing these and other parts of machines exposed to the action of such powers as locomotives and railway carriages are subjected to. We were astonished at learning during the inquest, that the tire is secured to railway carriage-wheels merely by being put on hot, and therefore in an expanded form, and so griping it by its contraction when cooled. None require to be told, even though they may not have seen, as we have, the floor of a railway carriage in flames, produced by very rapid motion, of the effect of friction on the tire, and the little security this method therefore affords.

## STAINED GLASS.

At a meeting of the Decorative Art Society, on the 27th ult., Mr. Fildes in the chair, Mr. E. Cooper, in resuming the subject of his paper "On Stained Glass Windows," observed, that a combination of the Italian, or renaissance, with gothic embellishment, took place during the reign of Henry VIII., as seen in the chapel of Bishop West, at Ely, and in Wolsey's hall, at Hampton Court, whilst, indeed, the pure Italian architectural design by Torregiano, in the tomb of Henry VII., as well as the windows, carved stalls, and organ-screen, in King's College Chapel, Cambridge, belong to this period. Some fine examples of Italian decorations, in the paintings by Holbein, at Hampton Court, were also referred to. He enlarged upon these circumstances, lest he might be supposed to have anticipated by a century the introduction of the revival more usually attributed to Inigo Jones. A detailed description of the windows at King's College, Cambridge, followed; and the east window of Saint Margaret's church, Westminster, was, in his opinion, designed by the same artist: an examination of this window will convey a correct notion of those at Cambridge. It was said, that this had been executed at Gouda, in Holland; at which place may be seen some of the finest examples of stained glass in existence: they are in the style of the revival, with a considerable portion of white glass in the background, and were painted towards the end of the sixteenth century. Some elaborate engravings of them, just completed by Mr. Weale, were referred to. The eastern window of Saint George's, Hanover-square, is also of this period. Much of the detail was said to be valuable, although a confused effect arises from the ornamental portion overpowering the figures.

Mr. Cooper then remarked, that the windows of the sixteenth century have a peculiar character in the imperfectly attained perspective effects, and the attempts to represent distances by painting; hence exhibiting a departure from the true principles of the art. He observed, that all figures should be supported by draperied or diapered back-grounds, admitting depth in colour. The windows of King's College chapel might be considered beautiful, rather from the rich colours of the glass than from the artistic merit in the application of colours to the design, which can only be made out after some little study. During the thirteenth, fourteenth, and fifteenth centuries, one uniform tone of colour pervaded the back-ground; and as one of the finest examples of this class, the window of the north transept of Canterbury Cathedral was referred to. It displays a glowing brilliancy not subsequently attained.

In the reign of Elizabeth, stained glass was largely introduced in mansions, exhibiting heraldic devices and mottos. The seventeenth century led to a notice of several windows by Van Linge, that in Lincoln's-inn chapel being a good example of this artist's productions. Others were enumerated, which belong to the eighteenth century, but they were not considered worthy of commendation, having been, for the most part, treated as an oil-painting, and with a preponderance of shadow on a transparent medium. At the present day, Mr. Cooper observed, there is a return to the practice of medieval glaziers, in the employment of flashed glass and potmetals together with minute lead-work. The east window of Saint James's Church, Piccadilly, he thought creditable in respect of glazing and richness of tone in the colours; but a higher degree of artistic merit might have been readily obtained. A proper gradation of colour in the composition had not been observed; the most elevated figure, viz., that of the Saviour ascending, being inconsistently clothed in scarlet, and which, the reader argued, should have been represented in drapery of the most aerial description. Much controversy and criticism had taken place upon the character of this window. He said that he could not detect any Gothic details in the window as executed; that the borders are Italian, from works by Raffaelle, G. Romano, and others, and may be seen in Gruner's work. The borders of mosaic-work impart a Byzantine feeling, whilst the various symbols and emblems introduced were commonly employed by the early Italian Christians. He considered that we may expect success in direct imitations of the medieval works, as seen in new windows in the Temple Church, where the colours and glazing are alike good, and the tableaux, or subjects, being small, do not render any impropriety of intensity conspicuously objectionable.

The east window of the new church in Wilton-place was next noticed as a misunderstanding of this kind of decoration. It is not yet completed; but in the lower portion a failure was said to be clearly indicated. The intention of the designer, the writer supposed to be akin to those prevalent during the transition period, when the introduction of a series of small and separate subjects illustrative of history was aimed at; but omitting the principal charm arising from the harmonious and rich glow emanating from a combination of full-toned colours. The figures in this window were then described as small, on light or white grounds, producing a spotted effect from their size, and also precluding the possibility of readily making out the subject; added to which, each figure, or group, is surmounted by tabernacle-work in pale yellow glass, feebly contrasting with the stone mullions of the window. He then argued, that one of two rules should be observed,—either a rich general effect should be produced (the design or subjects being subordinate), or the subject should be well defined, and sufficiently large to be well understood in any part of the building. Neither of which had been regarded in this last instance.

One great cause of failures at the present day was attributed to the art being regarded as a mere trade; and it was contended, that were artists of eminent talent to devote attention to the principles which regulated the application of colour to this material, we might soon realize our brightest expectations. Much might be hoped for from the great advance taking place in chemical information. The writer suggested improvements that he believed had not yet been applied to stained-glass windows. One was, to introduce "lights" in the representation of objects. Shadow had been freely used, but he argued, that dark shadowing constitutes a great fault. The best effects in a picture generally arise from the lights. By using flashed glass and a partial removal of the coloured surface these might be produced. Another plan by double glazing was mentioned, using two plates of flashed glass of different colours, and subjected to certain modifications by grinding or acid. Specimens illustrating these considerations were exhibited.

By these and other means that might be suggested, together with an avoidance of aërial perspective, a superior pictorial effect would result; and he concluded his paper by a brief recapitulation of the leading characteristics of the design and colouring peculiar to each of the centuries which had been passed under review.

## THE LIGHT AND HEALTH TAX.

A very numerous deputation of Members of Parliament and delegates attended Lord John Russell on the 29th ult. to solicit a total repeal of the window-tax. Lord Duncan, Mr. G. Daniell, Mr. Hume, Sir de Lacy Evans, Mr. Benj. Hall, Mr. Roebuck, Mr. Pattison, Mr. Masterman, and others, addressed the premier at considerable length. Mr. Hume shewed the position in which the question of the window duties stood when the present Government was last in office, and when he (Mr. Hume) withdrew a motion he had given notice of for the total repeal of the window-tax, on a promise being made by Lord Althorp that in the following year half the tax should be abolished, but which, on account of the low state of the finances of the country, was not carried out.

Lord John Russell observed in reply, that what had fallen from the members of so highly influential and respectable a deputation must necessarily command his serious consideration. He could assure them his attention should be directed to all the arguments adduced with the greatest care. He would, however, only remark, that he feared, if he should repeal this tax, there would be other parties pressing upon him, declaring that other taxes were equally obnoxious.

The deputation then withdrew, as little satisfied with the result as deputations usually are.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Bridge Construction.—System Neville.*—Mr. N., builder of the Seine-bridge of Bezons, which has been open to traffic for the last two years, has of late experimented on a bridge on a new system, of which we collect the following details. The bridge is situated on the North Line at Brussels, and has an opening of 22 métres. It is of cast-iron, and the experiments were made under the eyes of a commission, named for this purpose by government. The first train passing consisted of the engine and its tender, to which were attached four waggons, each loaded with a weight of 5,000 kilogrammes—the weight of the waggons averaging 2,500 kilogrammes each. Next, *two* trains like the former (two engines and eight waggons) were started simultaneously, but in an opposite direction, so as to pass each other on the bridge. Another set of experiments consisted in letting pass two engines, one after the other, on the same rail; then four engines, of which every two were attached to each other. They also passed in an opposite direction, and met on the bridge. Ultimately, each pair of engines was attached to four waggons, loaded as above. Two engines were then stationed on one rail of the bridge, while on the other, two engines and four waggons were passing.

The above experiments were made at a slow, and a very rapid speed. Moreover, when two locomotives were stationary on one rail, the other train was darted with great speed on the second rail, and the moment it arrived on the bridge it was suddenly stopped, and the waggons spoked. It remained only to ascertain what effect would be produced by the derangement of rails. For this purpose, the rails on one side of the lines were raised to an inclined plane, so that one of their extremities became 20 centimétres elevated above the level of the line. A waggon, weighing, with its load, 10,000 kilogrammes, and propelled at a great speed by an engine, which was detached therefrom at the entering on the bridge—continued its course on the raised rails, and became fixed at the middle of the bridge, where the rails had been taken off. It continued, notwithstanding, its course, but the shock had been so terrible, that the traverses of the waggon were broken. "All these experiments—even the last pushed to such extreme—did not occasion any derangement in the jointing or the *ensemble* of the bridge." The *arcs fléches* determined by these different trials varied from 0·020 métres to 0·030 métres. The commission, for the sake of using every precaution, has ordered the bridge to be loaded with a considerable weight, which has to remain a fortnight in its place.

*Art improving—Monarchs.* [From Goethe.]—The king invited Joseph II. to Fusaro; and *Philipp Hackert* had also to come there with sketches of three pictures. Before dinner the king explained to the emperor the pictures with much energy and taste, so much so, that the queen was surprised, and said to Hackert: "You have well initiated the king into painting, which I am much pleased with. *The good God has sent you to us.* I am enchanted that the king *finds enjoyment* in the fine arts; and this we have to thank you for."

*Athletizing of Working Classes.*—The free state of Frankfort precedes (it seems) most others of the continent in this respect, as the association for the above purpose counts already 400 members, and arrangements are now completing, for affording youth an opportunity of systematic and *progressive* bodily education (*sic*) in every season and every state of weather. The association have offered themselves to co-operate with the brigades in cases of fire—which, however, to accept has not seemed expedient but under very extraordinary circumstances. Still, even the offer speaks well for the *heart* of these new athletes.

*Railroads in Egypt.*—The barrage and embankment of the Nile are progressing satisfactorily, and in December last 20,000 persons were employed thereon, working alternately day and night. Ali Pasha, in fact, contemplates great structural improvements in Egypt, which he certainly will carry out if his life be so far prolonged. Amongst these is a railroad from Alexandria to Cairo, another from Suez to Cairo. An embankment of the Nile in Nubia (!) is also spoken of. Thus civilization

seems to *return* to those places where, certainly, it took its origin.

*Napoleon — the Builder.*—During a comparatively short reign, this man, whom we are wont to consider merely as a warrior, executed the following astounding public works:—He constructed the great sea-basins of Antwerp, Flushing, and Cherbourg; the ports of Dunkirk, Havre, Nice, and many others; the roads of the Simplon, Mont Cénis, Mont Génèvre, and the Corniche, opening the Alps in four directions. He built the bridges of Austerlitz, Jena, des Arts, Sèvres, Tours, Roanne, Lyons, Turin, Rouen, &c., and made roads throughout France, too numerous to mention. Napoleon constructed the canal which joins the Rhine to the Rhone, uniting the seas of Holland with the Mediterranean; the canal between the Schelt and the Somme; the canal of Arles, &c.; drained the marshes of Bourgoing, Corentin, Rochefort, &c. Paris owes to *him* the embankment of the Seine by way of stupendous rock-built quays; an abundant supply of water, its markets, *granaries*, and a great number of public buildings and establishments; the grand gallery of the Louvre, the *Museum of Architecture*, for the formation of which a member of the Institute was sent to Sicily, to *effoss* and collect parts of friezes, architraves, capitals, &c. Not to enumerate the many arches, statues, and monuments erected by him, as well as the renovation of many venerable churches and palaces.

*Glass Domes.*—The dome of the large hall of the Civil Tribunal at Brussels, which lights this huge building, has given way under the weight of snow which fell upon it from adjacent houses. Fortunately, there was no public audience there at the time.

*Gigantic Bridges.*—The Emperor of Austria has just ordered the erection of a suspension-bridge over the large (combined) arm of the Danube, near Vienna, being about the breadth of the Thames at Woolwich. As, however, several small islands and sandbanks intersect this stream of water, pillars, with stupendous freestone and granite foundations, will be erected thereon. This bridge will be a very essential complement of the great Austrian North Line, and an ornament to Vienna and its environs. Mr. Schirn, whose superior skill has been attested by the erection of the suspension-bridge over the Moldau at Prague, is the architect of this new structure. The estimated cost, to be borne by the public purse, is five and a half millions of florins—equivalent to one million English sterling value. Another bridge, of similar dimensions, will be that over the Vistula, on the Prussian Eastern Line from Berlin to Königsberg. It will be the most extensive bridge-structure in the world,—that over the Lagunes, at Venice, not excepted. The estimated cost will be four millions of dollars,—equalling, as well, a million of English currency.

## RATING ASYLUMS, &c.

On the 29th ultimo, the senior sister of a Roman Catholic Asylum, in Fulham Lane, for the reception of erring females of all denominations, appealed against a poor rate levied by the parish of Hammersmith. The asylum is conducted by nuns. The parties received into the asylum are employed in needle-work and washing, from the profits of which the institution is principally supported, and the appellant claimed exemption on the ground that as a charitable institution, the managers of which had no individual benefit accruing to them, it was not rateable.

In support of the appeal, Mr. Bodkin cited the case of the Queen *v.* Shee, the President of the Royal Academy, wherein it was held that the defendant, having no exclusive residence in the Royal Academy, was not liable to be rated. It was also shewn, that the asylum was exempt from Government assessments, water rate, or window tax.

For the respondent it was contended that the appellant was rateable, she being the manager of the institution, and was deriving actual benefit from the proceeds of the industry of the inmates.

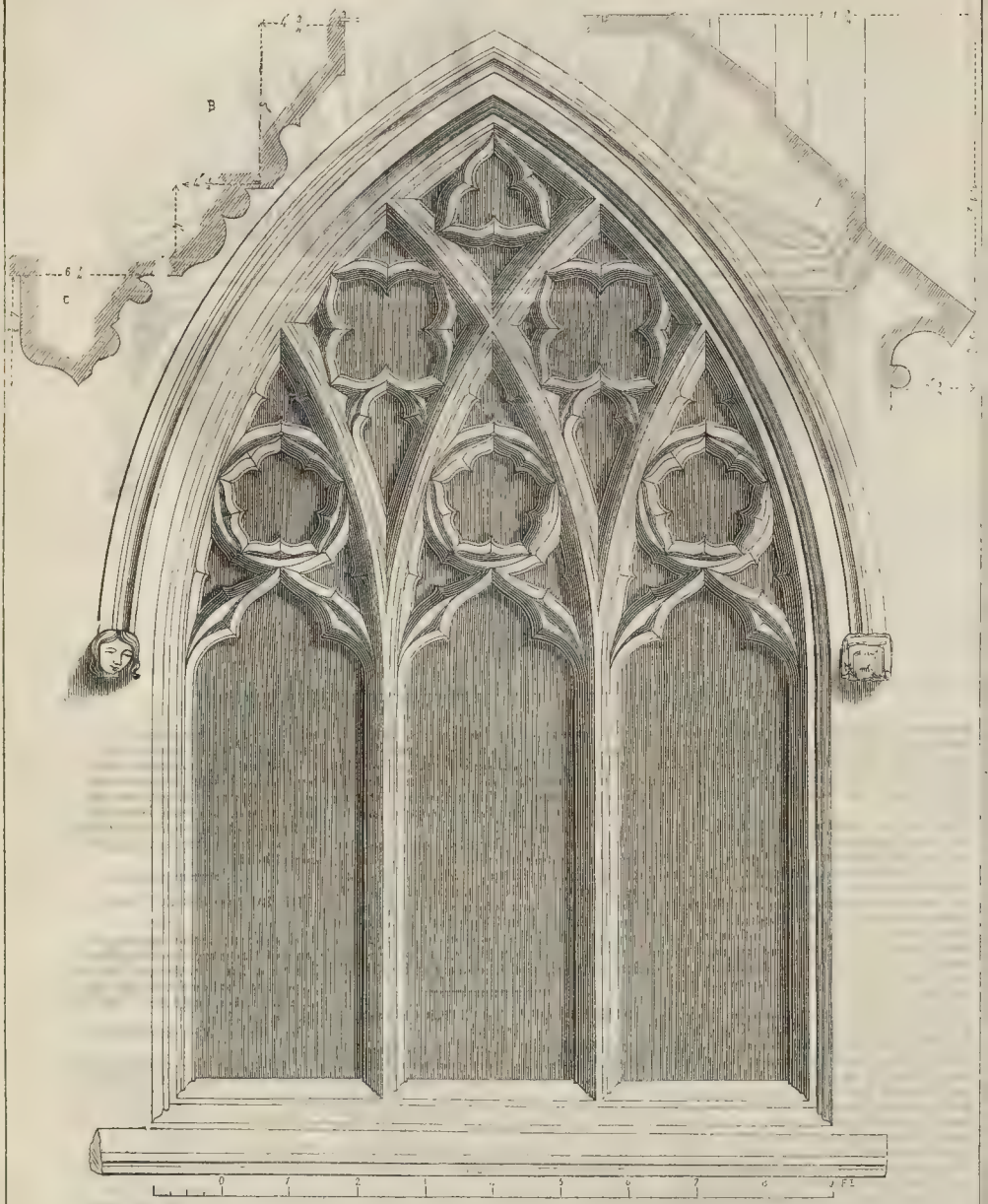
The assistant judge said, he thought the senior sister, or appellant, had no more interest in the institution than any other inmate, and therefore would disallow the rate.

## LONDON.

A morning contemporary of the daily press the other day was informed by a correspondent, "that the Commissioners of Woods and Forests have definitively resolved that the Wellington Statue shall remain on its present site, and that the workmen employed at the Triumphal Arch at Hyde Park-corner will commence removing the scaffolding to-day." The wish, however, of this correspondent, must have been father to his information, for almost the very next day (1st February) came the counter-information of Lord Morpeth himself, in the House of Commons—responsive to Captain Polhill's "wish to learn whether the noble lord was prepared to give any information to the House on the subject,"—that "the Government have signified their wish to the Sub-committee of the Wellington Statue that it should be removed from the place which it occupies."——Government have also, on the other hand, quite decided on not removing Westminster-bridge.——The extension of the electric telegraph, now in course of deposition under the principal thoroughfares, to the several fire-brigade stations, is about being taken into consideration by the authorities. The instantaneous intelligence it would communicate to the fire-preventive force throughout the metropolis will doubtless result in the saving of much property and life. The wires on their way from the south-western station to the central office [in the Strand, still talked of seemingly, although it was alleged, some time since, that this point as a central office was abandoned] has reached Lancaster place; three weeks having been spent in crossing Waterloo-bridge.——Friday week a Court of Sewers for the limits of the Holborn and Finsbury division was held at the office of the commissioners, at which it was resolved to construct the following new sewers:—In John-street and Rodney-street, Pentonville, 980 feet long; in Penton-street, &c., 1,020 feet long; in Castle-street, Finsbury, 230 feet long; in Compton-street, Clerkenwell, 790 feet long; in Turnmill-street, Clerkenwell, 230 feet long; and an outlet sewer at the north end of the Liverpool-road, and in Henry-street, Hampstead-road, a length of 1,400 feet. The Court then took into consideration, and agreed to, the propriety of a further extension of the sewer towards Holloway, commenced at the termination of the City sewer in 1839, and which had been carried beyond Ball's-pond. It was now proposed to form a tunnel sewer to Holloway, 6,100 feet long, which would cost 7,930*l.*; and a branch one from it, 2,500 feet in length, at a cost of 3,000*l.* Mr. Rowe's, the surveyor's, annual report was read, from which it appeared that 35,038 feet of sewers had been formed last year; and that 100 miles had been practically flushed.——The dilapidated balustrade on the Adelphi-terrace, which has for some time past been in a very dangerous state, was yesterday (Wednesday) we observed in course of removal. It is to be replaced by a light iron palisade.——The new church of St. Andrew, Marylebone, of which we recently gave an engraving, was consecrated on the 28th ult. according to previous notice.——The Marylebone vestry have been organizing their forces in opposition to the Regent's Canal Railway scheme, the strongest objections to which appear to be grounded on the threatened abolition of the exclusiveness or seclusiveness of the vicinity, as urged in a report, by their committee, and on complaints such as that of Mr. Edwin Landseer, that from the opening of a tunnel at the bottom of his garden, and the annoyance of the noise of the engines and the whistles, the loss of a portion of his garden, &c., he would probably be obliged to quit the vicinity, and erect a studio elsewhere, while his brother's house would be completely undermined, and he also of course compelled to remove. Cases of personal inconvenience such as these will no doubt occur, and all due allowance be made for them, both as to number and degree, in considering the relative merits and advantages, or demerits and disadvantages, of such a scheme; and Lord Morpeth has promised that he will do so "both legally and morally, and then decide, upon the principle of justice."——The salubrity of the district of Kensal New Town was held to be endangered, as our readers may remember, by the proposed erection of the Kensal-green Gas Works, in which cannel coal is to be used, for the improvement of our metropolitan gas, and for the consequent removal of what is at present a nuisance of a far more general and extensive order than the mere erection, in any one locality, of gas works, especially one of this description, in which, as we have already observed (vol. iv. p. 608), effectual means of a novel and still secret, though patent order, are to be adopted for the prevention of all noxious exhalations in the preparation of the gas. The Chancery case alluded to in our previous notice of this project was before the Court on the 1st instant, on some point of law, when the leaning of the Lord Chancellor appeared to be plainly in favour of the company. His lordship declared the Master of the Rolls to have rightly declined to grant the injunction asked, the plaintiff having failed to make out any case for the interposition of the Court. The whole difficulty had arisen by the defendants' declining to disclose the secret of their patent, a disclosure which, as his lordship observed, no sensible man would make, and which no one had any right to insist on.——In the Court of Queen's Bench, on the 28th ult., in the indictment *v.* Flockton and three others, for having erected a nuisance in the river Thames, called the Waterman's Floating Pier, at Paul's-wharf, near Blackfriars-bridge, the Court adjudged the defendant Flockton should pay a fine to the Queen of 25*l.*, and the other defendants 1*l.* each, and that they be severally imprisoned until the fines be paid. The defendants had pleaded guilty, but that there were a great many piers on the river of the same nature as that complained of, and in particular that the corporation itself had erected at Blackfriars-bridge a permanent wharf which projected into the river much farther than the pier erected by the defendant. Arguments of this nature, however, could not be listened to by the Court.——The twenty-third (or seventeenth) annual report of the Commissioners of Woods, Forests, Land Revenues, Works, and Buildings, of date 27th August, 1846, has just been issued in a printed form. The report itself is only nine folios in length; but the appendix, like a lady's postscript, is in truth the body and substance of the whole communication, being itself no less than eighty folios in length. It contains, amongst other particulars of course, an account of the progress of the metropolitan improvement carried on under the authority of the Woods and Forests. We have already anticipated much of what might have been extracted from this report, so far as relates to the state, previous or subsequent to August last, of various lines of thoroughfare, such as that from Coventry-street to Long-acre, Oxford-street, to Holborn or New Oxford-street, &c.; but there are various items of interest which we may here note. Thus from Appendix, No. 20, it appears that the property purchased up to January, 1846, for the purpose of carrying out these lines of thoroughfare, cost, for the New Oxford-street line, 287,155*l.*; Bow-street to Charlotte-street, Bloomsbury, 96,408*l.*; the Coventry-street line, 179,543*l.*; the line from London-docks to Spitalfields, 136,241*l.*; from East Smithfield to Rosemary-lane, 18,256*l.*; in all 717,604*l.*; and that there still remained purchases to be made to the extent of 10,813*l.* From Appendix No. 23, it appears that the total paid or agreed to be paid for property required for the formation of Victoria-park, amounted to 86,873*l.*

Institution of Mechanical Engineers.—The new Association held their first meeting at the Queen's Hotel, Birmingham, on Wednesday week, for the purpose of enrolling members, agreeing to rules for the government of the society, and electing officers for the ensuing year. Mr. George Stephenson was elected president by acclamation, and on taking the chair delivered a short address, in which he adverted to the difficulties of his own early career, and encouraged young engineers to proceed earnestly and endeavour to check the present strong continental opposition. Messrs. Beyer, M'Connell, and Miller, were appointed vice-presidents; Messrs. Hunter, Fothergill, Buckle, and Cowper, the council. A general meeting of members is to be held quarterly. After the business meeting was concluded, a festive gathering of the members took place, and was also presided over by Mr. Stephenson.

WINDOW: HERNE CHURCH, KENT.




## WINDOW FROM HERNE CHURCH, KENT.

Rickman gives the following account of this church:—"It has a very fine early English tower at the west end of the north aisle, with some decorated windows inserted; the nave has a very fine five-light perpendicular window, and a good early English door under it. The aisles of the church are embattled." It would almost seem that Rickman had not visited the interior of this church, as he does not mention either the handsome oak screen at the end of the north aisle, the old seats of excellent design in the centre chancel, the fine arch mouldings of the tower, or the rich font, besides other matters worthy of notice.

The window shewn in the illustration is on the west side of the tower; the mouldings are very good, and the entire composition has a very rich appearance.

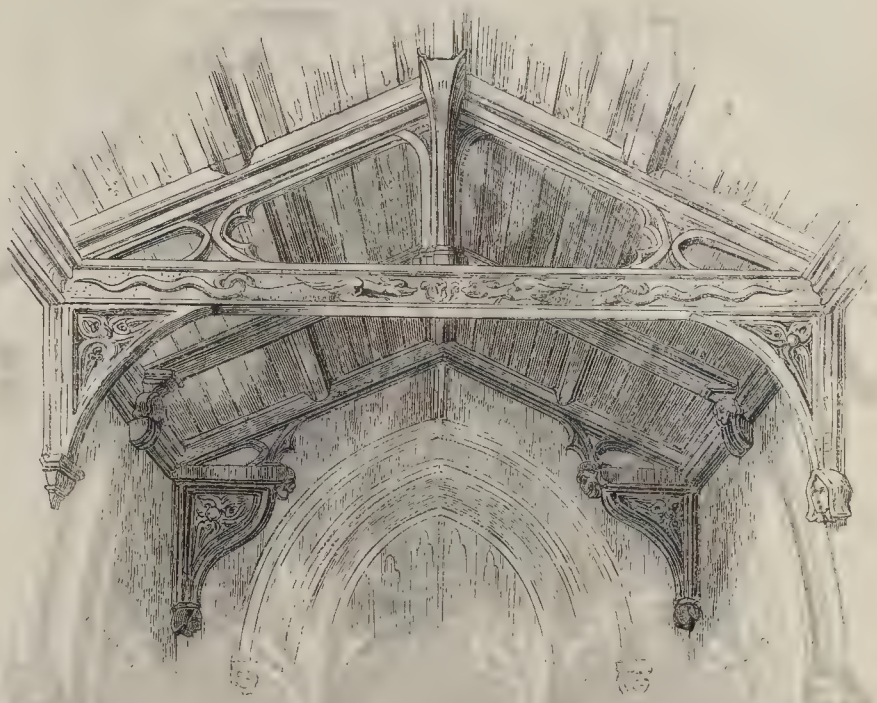
A, section of sill and string.
B, Plan of jamb.
C, Plan of label mould.

## ARTISTICAL CHAT.

The British Institution will open on Monday with only a middling display, the top men being absent. There is no Landseer, no Stanfield: indeed, if we are correctly informed, there is no one work sufficiently prominent to take a visitor there a second time. We shall be able to say more next week.

Sir John Jervis, her Majesty's attorney-general, has been elected on the council of the Art Union of London. "L'Allegro" and "Il

TIMBER ROOF: THAXTED CHURCH, ESSEX.



Penseroso," have been selected by the council of this body for illustration by drawings on wood, to be executed by the first artists and engravers of the day, and presented in a connected form to all subscribers, in lieu of a print.

An original painting by Michael Angelo has been bequeathed to the university of Oxford by Mr. Fairholme, of Chappel, Lauder, with a direction that it be placed in the new university galleries, where are now deposited the drawings by Michael Angelo and Raffaelle, formerly collected by Sir Thomas Lawrence. The painting represents the infant Saviour asleep on his mother's lap, and originally consisted of a mere sketch, by Michael Angelo; but it was subsequently filled up by his pupil, Marcello Venusti.

The Liverpool papers mention the following act of liberality:—Mr. Charles Chaloner, of Oak Hill, Old Swan, has recently had Mr. Herbert, R.A., staying at his seat, for the purpose of painting his portrait. When the work was finished, the host, without asking the artist's terms, placed a sealed letter in his hand, requesting his acceptance of its inclosure. On opening the envelope, Mr. Herbert found a check for *a thousand pounds*. Another Liverpool patron of art last week, it is said, paid a thousand pounds for a picture by Etty.

A committee has been organized in Dublin to arrange an exhibition of the works of old masters, for the relief of the general destitution. The Earl of Arran and other noblemen have offered to aid the scheme by all the means in their power. Donors, or subscribers of 1*l.* and upwards, are to be considered original members, and have the privilege of admission for the whole season for themselves and immediate family, and exclusive admission during the first week, after which the public generally will be admitted on the following terms:—Season ticket for a single person, and not transferable, 2s. 6d.; single admission, 1s.; catalogues, 6d. and 3d. each.

Mr. Howard, R.A., having retired from the office of secretary to the Royal Academy, with the enjoyment of its emoluments, Mr. J. P. Knight, R.A., has been elected deputy secretary.—The *Art-Union Journal* says, a *Concours* will be opened this month in Paris, for the painters on glass, for the purpose of restoring the windows of the *Sainte Chapelle*, and of some other structures.

We learn from the *Athenæum* that Mr. Severn is painting in fresco the interior of the splendid hall at Gatton Park, near Reigate, the property of the Countess of Warwick. This hall is, we are informed, an exact imitation of the Consini Chapel at Rome, and is lined with the richest marbles from Italy.

Mr. Barry has been elected a foreign associate by the Brussels Academy of Fine Arts.

## TIMBER ROOF: THAXTED CHURCH, ESSEX.

The church of Thaxted is considered by Morant to be "the most spacious and stately, and, upon all accounts, may be called the best, in this county. The length of it is 183 feet, and the breadth 87 feet, in the inside, exclusive of the thickness of the walls and the projection of the buttresses; its circumference, buttresses and all included, is 345 yards. It is built cathedral-wise, with a cross aisle, and consists of a spacious and lofty body, with north and south aisles. At the west end stands a noble tower and spire, all of freestone, the perpendicular height of which, from the summit of the vane to the ground-floor, is 60 yards 1 foot. In it are six bells."

The roof of the south transept, which we engrave, is believed to have been constructed in the early part of the reign of Henry VIII., as the badges of Catherine of Arragon occur in this part of the church. It is a good example of the timber-work of that period, and is well finished in all its details. The tie-beam is ornamented with boldly-cut figures of winged dragons, with long knotted tails; the ground of the sunken part of the beam being indented similarly to the dotted back-grounds seen in woodcuts of that period. The king-post has a moulded base; the angle of the roof above each side of the tie-beam is filled with tracery, as also on the spandrils which support it beneath, and which rest on corbel-heads, some of which are human, and wear the pedimented head-dress introduced in Henry the VII.'s reign, and others of grotesque and fanciful animals. The principal rafters are supported by similar corbel-heads.

## THE BUILDINGS ACT IN GREENWICH.

A very numerous meeting of the inhabitants of Greenwich and Deptford was held at the Swan Inn, Deptford, on the 28th ultimo, to petition Parliament for the repeal or revision of the Buildings Act. Mr. W. J. Evelyn was in the chair.

Mr. David Wire moved the first resolution:—

"That while this meeting admits that the public safety and health demand that an Act for regulating buildings should exist, yet it is of opinion that the existing Buildings Act does not secure either of these objects in a simple and satisfactory manner."

He pointed out at considerable length some of the annoyances and vexations caused by the Act. "A flue could not be altered to prevent smoke without a demand of 10s. by the district surveyor. A privy could not be built or repaired, nor a chimney-pot or brick removed and replaced without the intervention of the surveyor, at a cost of 10s., nor could be underpin a washhouse, but a demand of 5s. was made. A hog-stye could not be built, pulled down, or altered, without the intermeddling of this agent of the law. The intermeddling and strange interpretation put upon the Act was worse than the payment of fees. The law was unintelligible and badly framed. A neighbour of his had been served with nine informations by the district surveyors on one building. A person could not proceed with any kind of building but he was sure to be entrapped by some clause or other of the Act. He (Mr. W.)

understood that no less than 4,000 cases, since the passing of the Buildings Act, had been laid before the official referee. Did not that show what a mystified law it was? It was a bar to improved ventilation, and indeed to all improvement."

The following other resolutions were then passed, Messrs. Dawson, Corbett, Hall, Knott, Pascoe, Lee, and Irvine taking part in the proceedings:—

"That the interference of district surveyors in small matters, their fees, the fee of the official referee, are burdensome to the class of small builders, and in the first-mentioned cases ought to be abolished, and in all cases modified."

"That it is desirable to have an appeal from the judgment of the official referee."

"That the Act as a whole is unintelligible, and needs in every clause to be revised by practical men, so as to simplify and shorten its provisions, and to remove from it all objectionable and oppressive restrictions."

A form of petition to the House of Commons, and of memorial to the Woods and Forests, was then determined on.

## FURTHER NOTE ON GAS IN THE PROVINCES.

The surveying officers held their first meeting at Southampton on Monday week, but the proceedings were merely preliminary. The case of the new or "Southampton Consumers" Gas-light and Coke Company was opened by Mr. Coxwell, who stated that the great deficiency of gas there at present, and the price, were the grounds on which another establishment was requisite. The inquiry was adjourned till next day, as a short-hand writer was necessary, and does not appear to have been present. A director of the South Western Railway offered the services of the electric telegraph, but in so indefinite a way, that when one of the surveying officers thanked the director, and declared that "it would assist them materially," the solicitor of the old company "excited much amusement by reminding the learned gentlemen that the short-hand writers' notes could not be so transmitted." Neither, indeed, could the short-hand writer himself, for that matter; and as to a telegraphic dispatch in quest of him, in all probability an ordinary messenger by rail would have been equally, if not more effective, as an adjournment till next day had been determined on. Complaints of injury to the gas-pipes and lamps by the excavations for the sewers had been made by the old company to the improvement board; and on considering these, the question was started whether there was not in their lease with the company a reserved power to the commissioners to take possession of the gas works altogether, and themselves to manufacture gas; the very practice through which improvements have been so handsomely supported at Manchester. It is strange that the question whether there be such a reservation in the lease of a company whose establishment and supply are held to be so insufficient and unsatisfactory should only be now started, when another remedy for the evil has been proposed, in the establishment of a new company. It was also wondered whether the new company would interfere with that privilege, supposing it does exist. Now is the time, if it be not too late, to consider the advantage of laying hold of such a privilege, for the common good and the improvement of the town, as has been so successfully done at Manchester, the history of whose gas exploits ought to be before the eyes of the community at Southampton and elsewhere at this eventful moment. If we recollect aright, some statistical and other details of this matter will be found in the Parliamentary Gazetteer of England and Wales: which see.——The enormous per centage which the Gas Company at Mansfield are making on their gas and meters is now a subject of general complaint there. The inhabitants are said to be most scandalously treated too. "The taps of the street lamps are frequently not more than half turned on, and the lights are often extinguished altogether by two o'clock on dark nights. Well may larking gentlemen escape the police. But all this will not be much longer endured. If persisted in, the public must and will take a decisive step."——In addition to our note on the *Liverpool Guardian* gas question, last week, we may here observe, that though the further reduction of the price of gas to 3s. 8d. per 1,000 cubic feet, is a prominent feature of the new measure, another feature, no less prominent and interesting to the shareholders at least, if not to the public at large, is the assurance of a profit of $7\frac{1}{2}$ per cent. even on that unprecedently low price; "and this they are prepared to prove can be realized in consequence of the improvements which science has introduced into the manufacture, and by the vast increase of the population and buildings."——The town council of Berwick-on-Tweed, according to the *Berwick Warder*, have been requested by the inhabitants of Spittal to extend the local Act for lighting the streets with gas, to Spittal, which, strange to say, has not been hitherto done, although it contains a population of no less than 2,000, and although a great portion of that population have now the benefit of gas in their houses. It is full time that a community such as this should be put on a par with almost every small town in Scotland as well as England even of 700 inhabitants, much less of 2,000.

## SOCIETY OF ARTS.

January 27th.—Mr. George Moore, vice-president, in the chair.

The first paper read was by Mr. Irvin, on his "Patent Machinery for the Manufacture of Architectural Carvings," concerning which we spoke long ago. The second communication read was by Mr. Henry Cole, "On the Formation of a National Gallery of the works of British Artists by means of public voluntary contributions." The author proposed, that an exhibition of the works of one living artist should take place in the society's rooms annually; that a graduated charge should be made for admission to view the same; and that, after deducting from the receipts the cost of such exhibition, the remaining fund should be appropriated as a commission to the artist to paint a picture, without restricting him to any particular subject. The picture, when painted, to be presented to the National Gallery, or in some way made the property of the nation, and to be so placed as to be open to the public free for ever. Thus, the author thinks, art might be promoted, and that such commissions would be calculated to obtain from artists pictures which they would feel a pride in shewing to their countrymen as their best works, on which they would rest their fame, and which they would offer to posterity as the best specimens of their genius and ability.

It was stated from the chair, that the proposition had been under the consideration of the council, and arrangements for carrying it out are being made by the Committee of Fine Arts.

Mr. Startin, surgeon to the London Cutaneous Institution, forwarded some remarks "On a Pneumatic Inspirator for the use of Dry Grinders, Divers, Firemen, &c., also on its applicability for the administration of sulphuric or other medicated vapours." The immense destruction of life in that large division of our population, whose occupation produces dust or noxious vapours, the author observed, has attracted the solicitude of physicians for many years past, but no means have hitherto been devised of effectually arresting so great an evil. To give a vivid idea of the nature of this evil, we need but refer to the statistics of mortality among dry grinders of needles or cutlery; by which it appears, that the majority of deaths occur between the ages of twenty-six and thirty. After enumerating the various trades by whom such an instrument might be used with advantage, he proceeded to describe the apparatus, which consists of a thin case of metal, glass, or other substance, $1\frac{1}{4}$ inches deep, $2\frac{1}{4}$ inches long, and $3\frac{1}{2}$ inches in breadth at the base, and is so constructed as to cover the mouth and nostrils, and is retained on the face by an elastic band. This case is provided with two valves, made of vulcanized India-rubber; one is in front of the case, and opens outwards; the other is in the bottom, below the mouth, and opens inwards; a tube is attached to the case, below the latter valve, and opens into the external air, or it may be fixed to a vessel carried in the folds of the dress, and arranged with a tube, having one opening to the air, whilst its lower extremity is immersed in a fluid, which shall absorb or neutralize the noxious particles.

## MUSEUM OF ARCHITECTURE AND THE SOANE COLLECTION.

Sir,—In reference to the leading article in The Builder of January 30th, on the subject of architectural antiquities, in which many judicious remarks and hints are made, I venture to ask a question.

Is the museum of Sir John Soane so irrevocably shut up, in that diminutive fancy den in Lincoln's-Inn-fields, as to be for ever a mere useless toy?

Valuable and most encouraging as this collection might become, as the very nucleus of what the above article advocates, it nevertheless now is, and must remain, in its present confined position, a mere splendid toy, to be gaped at twice a week by "country cousins," and the seekers after gratuitous sights. As to any real value either to professional architects or the lovers of architectural antiquities, and in a more extended and valuable light, as a studio for artists, it is useless; and its costly library is a sealed volume.

But if, Mr. Editor, the will of Sir John Soane is such that the house and collection must remain, like the Siamese twins, inseparable, is it not in the power either of the trustees or of Parliament, so to modify the terms of the bequest as to make it constitute the centre of a collection, and by purchase of adjacent houses, really constitute a museum of "architectural antiquities," worthy the name, and of England,—a fitting and appropriate *vis à-vis* to the museum of the College of Surgeons, and an addition of no mean value to that noble square, and to the grand pile so lately raised by the munificence and good taste of the benchers of Lincoln's Inn?

Your constant reader,

E. W. Smith.

Bedford, February 2nd, 1847.

## GLOUCESTERSHIRE ARCHÆOLOGICAL SOCIETY.

This society held their first *conversazione* at the Shire Hall, Gloucester, on the 25th ult., when the president, Mr. W. Vernon Guise, read an interesting address, which is reported, *in extenso*, in the *Gloucestershire Chronicle*. After inviting the county gentlemen to join their ranks, he said:—

"I would impress upon all the necessity of elevating our pursuit into a *science*, and not permitting it to degenerate into a mere hunt after cabinet curiosities. We must keep in view a higher purpose, if we would aspire to the attainment of such results as, though small, may be no unworthy contribution to the general stock of true antiquarian knowledge. Then, not in vain will these memorials of the past have been strewn around us; and it will be a grateful and ennobling task to trace the history of our county in the numerous relics of bygone ages, scattered over its surface,

> 'Like dials which the wizard Time
> Hath rais'd to count his ages by.'"

A communication from Mr. Purnell B. Purnell, on Roman antiquities discovered at Stancombe Park, was read. In 1819 walls were found there of a small Roman villa, varying in height from one to two feet. Plaster still remained on them about one inch and a half thick. "The material of this was coarse and strong, faced with a coating of about one-eighth of an inch thick, very hard and smooth, and this was painted in fresco. It is known that the Romans used pounded marble for this coat, and painted it while the wall was damp; the paint and wall drying together, the former was not subsequently liable to be rubbed off. The paint on these walls was a striped border, colours, crimson, pink, and green, severally, to different rooms. There was no tessellated pavement, Forest of Dean paving stone had been used in some rooms, and floors of cement in others: there might be about six rooms. Neither Roman brick nor tiles were found, nor any apparatus for heating the rooms."

The excavation now going on covers six acres. The walls of thirty-two rooms are exposed, in five of which are the remains of tessellated pavements. The building was destroyed by fire, the tessellated pavement, with the exception of that in five rooms, removed, and nothing of any value left. The walls are in some places as they fell,—the timbers burnt to charcoal, and the tiles broken.

The villa will be interesting for inspection, not on account of the pavement only, but from the works affording the only opportunity which has as yet occurred in this county of seeing at one view the perfect foundations of a Roman villa, with all its offices and dependant buildings complete, not interfered with by modern buildings, roads, or trees.

## ALL SAINTS' CHURCH, EAST HORNDON.

East Horndon Church is situated about four miles S.E. from Brentwood, in Essex. It stands on a high hill, which commands a magnificent view of the country down to the Thames; and the hills of Kent may be distinguished in the horizon. The village of East Horndon is on the Brentwood side of the hill.

The church has a very singular appearance, as it is built entirely of bright red bricks (the churches generally in this neighbourhood are of this material, stone being very scarce), and roofed with tiles. This is a cross church, and consists of western tower, nave, and chancel, transepts, and south chapel. On the north of the chancel is a small revestry. The transepts intersect at the junction of chancel and nave, and are very short, extending but a few feet beyond the nave walls. The tower is square and massive, and has a large octagonal turret at each corner, which dies off into a gigantic buttress, about 12 feet from the ground. It is divided into two stages by a string course, just above the buttresses, that is to say, at the union of turret with buttresses. The parapet consists of steps; thus, from one turret, it descends three steps, to the centre of the wall; and then rises three to the next; and so on all round. The upper stage contains four long, plain, circular-headed, square-edged windows. Probably, the date of the erection of this tower is about the latter end of the seventeenth century. The staircase runs up the south-east turret.

The windows (with the exception of those in the tower) are all late perpendicular; and (excepting the east window) they are of three lights, square-headed, with foliations and dripstones. There are two in the south chapel, one in the north transept, and another on the north side of the nave. The east window is three-light pointed perpendicular, with tracery. The north door of the nave is pointed perpendicular, with plain mouldings and dripstone; and the south transept contains another plain pointed doorway. A four-centred door opens into the south chapel.

The nave contains nothing of any interest but the font. This is square Norman, standing on four corner pillars, and a centre pillar, all, but the latter, with capitals and bases. It is ornamented with a Greek cross, with the ends trefoiled, and intersecting arches, each subject being represented on two sides. These ornaments are very rude and shallow. It is lined with lead. In Poole's essay on "The Appropriate Character of Church Decoration," this is mentioned as an instance of a Norman font in an unfinished state.* The pillars which support the bowl are modern.

The seats in the nave are all open. There is a small gallery at the west end.

The north transept contains only the mutilated remains of an arch (apparently the canopy of a tomb) in the wall. In Salmon's time (about 1760), there was a mutilated monument, which he mentions as having part of an inscription in brass, bearing the date 1400; it was then said to be in memory of one of the Tyrell family. In the south transept is a black slab resting on solid masonry, and let into the wall. At the back of it, on the wall, are the marks of brasses. Salmon states that, "under the south wall are the effigies of a man in armour, with his children kneeling behind him, of whom, not so much as tradition informs us." This is the only tomb he mentions as being in the south wall, and it is the only one remaining in that part of the church to which he could possibly refer. This transept is a chapel belonging to the Petres; but there are, I believe, none of that family buried here.

Internally, the separation of nave from chancel is marked only by the distinct roof, and the ascent to the rood loft, now used to reach a small gallery. The chancel has a groined oak roof, and at the intersections are bosses, with the vine leaf, shields, and the usual perpendicular ornaments.

Just below the altar steps is a large incised slab of alabaster, seven feet by three. "It represents a female with a horned head dress, within a canopy, the shafts of which are composed of a series of niches, five on each side, containing figures of the children of the deceased, each of whom holds a label, on which their names are incribed. Those on the right side are: "Walterus p'mogenit', To . . ., Will'ms, senr., Joh'nes, Will', junr. On the left side, Johe's Tirill clic' (abbreviation of clericus), Alicia, Elizabeth, Alionora," the last a female figure with hands conjoined in prayer, is without a label. On the sides of the head of the figure is "j h s mercy;" also two escutcheons of arms, one of Coggeshall, the other of Tyrell and Coggeshall. The inscription runs round the verge of the slab, and has at the corners the symbols of the evangelists; it is as follows:—"Hic jacet humata Alicia, filia Will'mi Cogesale militis et Antioche consortis sue quondam uxor John'is Tyrell militis, qui quidem Joh'es et Alicia habuerunt inter se extium filios et filias quor' noi'a hic scripta sunt ex utroque p'te istius lapidis que obiit anno domini millesimo cccc°xxii° cui' anime propiciet' deus, amen."* Which may be thus translated:— Here lies interred Alice, daughter of William Cogesale, knt., and Antioche, his wife, formerly the wife of John Tyrell, knt., which said John and Alice had between them issue, sons and daughters, whose names are inscribed on both sides of this stone, who died in the year of our Lord 1422, on whose soul may God have mercy. Amen. "The slab is in fine preservation" (that is as to the engraving, for it is cracked seriously in three places); "and of French design and execution; but one other of the same kind is known in England" (this refers to its French character),—"that at Brading, in the Isle of Wight. This, though of not quite so rich a design, is in a better state of preservation."†

The supposition of its French origin, is thus confirmed by Salmon—"John Tyrell Knyth, was by Henry Vth. appointed captain of the carpenters, for the new works at Calais, to be paid 12d. a day's wages."‡ In a pew in the chancel, are preserved two poppy heads, of perpendicular design. On the north side of the chancel is (what is now used as) a revestry. The probability is, that it was originally a chantry chapel. It is groined with oak, with perpendicular bosses. Over the door is the trace of an arch extending the whole length of the chantry, which was apparently divided from the chancel by a screen. At one end, a brass is fixed against the wall. It represents a widow wearing the wimple, and is about two feet long. There is no inscription.

In the east window is some modern stained glass; originally, there was the following inscription in this window—"Thomas Tyrell Knyth, and Dame Eleonora, and for all the soulys that schuld be preyd for. Prey for the welfar of the seyd Thomas Tyrell Knyth, of John Tyrell Knyth, Alice his wyffe, and for all Christen soulys."§ This refers to John Tyrell and Alice, above mentioned, and the father and mother of the former.

The south chapel (which belonged to the family of Tyrell), is separated from the chancel by two four-centered arches resting on piers, which consist of four half pillars with a cavetto connecting each, with octagonal capitals. The mouldings are good, and the whole is a favourable specimen of perpendicular work. There are several modern mural tablets to members of the Tyrell family, but the most interesting is to one who adhered to Charles I., and suffered for his loyalty. On the wall are hung a helmet and two gauntlets in good preservation.

This church is in a good state, everything is clean, and every remnant of antiquity appears to receive that respect which is due to it.

There is a report that the head of Queen Anne "Bullen" is buried under the black marble slab in the south wall above-mentioned; but what foundation there is for the report I do not know.

### HISTORICAL NOTICE.

The parish of East Horndon was known before the Conquest as Tornindune. Suene held it at the time of the Survey, and the whole continued for some time in his family.

Upon the forfeiture of Henry de Essex, the standard bearer, this estate was given to a family surnamed De Cornhull, by King John, in whose hands it continued till it passed into the family of Neville, by the marriage of Joan de Cornhull to Hugh de Neville. He gave an entire manor* in Thorndon to Waltham Abbey, which gift was confirmed by his son, John de Neville. We find frequent mention of the De Thorndons; probably this branch of the Nevilles took that title. This manor remained in the hands of the Abbey of Waltham till the suppression. Henry VIII. then granted it to Sir William Petre, and it still remains in that family. The rest of the parish (with the exception of the manor of Herongate) continued in the descendants of Neville till the reign of Richard II. Henry IV. and his successors retained the estate in their hands, probably belonging to some Yorkist.

The manor of Heron, or Herne, appears to have been derived from a hernery here. The family of Heron possessed it, and it came by marriage into the hands of the family of Tyrell, by the marriage of Sir James Tyrell to Margaret, daughter of Sir William Heron, in the reign of Edward II. or III. He was succeeded by his son, Sir James: then came Sir Walter, and then Sir Thomas. This family was anciently of great power and importance in Essex, being supposed to have descended from the Walter Tyrell who shot Rufus. Many members of it held the office of sheriff of Essex. Thomas Tyrell was knight of the shire several times under Edward III. The manor of Herongate was held by Sir John Tyrell in 1413, captain of the carpenters and sheriff of Essex under Henry V., and treasurer of the household to Henry VI., by Sir Thomas Tyrell in 1476, and Thomas Tyrell in 1591. His son Sir John succeeded; then his son was created baronet in 1666; his son Sir Charles succeeded him, he died in 1714, and was followed by his son Sir John, who died in 1740.

The hall at Herongate was destroyed during the last century, and nothing was left but two towers, which are engraved in the "Beauties of England and Wales."

East Horndon Church has been engraved in the Antiquarian Repertory, published in 1817.

Thorndon Hall, the fine seat of Lord Petre, built from the designs of Paine, is situated within this parish.

AMATEUR.

## THE YOUNG ARCHITECTS OF ENGLAND

BY ANOTHER OF THEMSELVES.

Mr. Editor,—Allow me to ask a question of you or any of the older members of the profession,—"What is a young architect to do, and how is he to get on?"

Suppose he is out of his time; has been on the continent (we won't say for how long) for improvement; has no end of sketches and drawings; a love for his profession; and a very great desire to be doing something. He then goes into an office; thinks Mr. T. Square a very nice man, but that he knows nothing about "Christian architecture," and is a regular "Pagan," so he leaves him, and walks off to Mr. Workallnight, who "sends in" for every competition advertised in the London or country newspapers. This architect (who never did any thing but compete and get the second premium), commences his drawings just three days previously to their "going off," and always writes to the committee, asking for more time, "as a month is so short a period for getting up the splendid drawings that he intends to send them." However, in they go on the day named, having, with those in the office, worked for the three nights until three in the morning; and when, after all, he finds that some one has been more fortunate than himself, writes to The Builder, complaining

* Page 45. It is here called the font at Herongate; but Herongate was a manor within this parish, as afterwards described.

* It will probably be noticed, that in this inscription, and the names above, the mark of abbreviation is omitted in some instances, and misplaced in others; but they have been copied with care, and afterwards compared with a rubbing.

† Journal of the British Archæological Association, No. IV., p. 314.

‡ "History and Antiquities of Essex."

§ Salmon.

* Now known as Horndon in the Vale, or low Horndon (I forget exactly which); however, it is expressive of its situation, being at the bottom of the hill on which the church stands.

of the scandalous way in which competitions are conducted, and wondering why architects can be so stupid as to spend their time and talents in such chance-work.

Well, our friend is determined, after leaving Mr. Workallnight, that he will send in for the first church that is advertised for; he does a nice set of drawings; slashing perspective, illuminated writing (which the committee cannot read), gilt frame, plate-glass, and "fair play" for his motto; thinks he *must* get it, but does not; the cheesemongering committee have given the premium and *job* to some builder of the town, and have actually traced all his drawings, and not returned the perspective.

Never mind, I'll send in for the next, he says; this time he *must* get it, but no, he's done again. —— and —— are the lucky ones; *some one* has earwigged the committee, for if it had been all fair, they must have given him the premium. Well, on he goes, sending in for every thing and getting nothing, until at last he is quite sick of competitions.

Hang it, I'll set up a brass-plate he thinks; so gets himself into chambers on some second floor (for *if* any one comes, and will mount one flight of stairs, they would not mind another), and soon a very bright brass-plate glitters in the sun on the newly painted door.

He decorates his room with rubbings of brasses, a few casts, some old chairs, and perspective views of unsuccessful competition designs for churches, lunatic asylums, and cemetery chapels; the room looks well, and highly architectural.

But what, Mr. Editor, is the use of this brass plate? people do not run after an architect as they do after a doctor: a gentleman does not run about the streets for one, or rush into a cab and tell the man to drive as quickly as possible to the nearest architect, as his house requires to be restored, or to have some Italian tower, or Gothic window, or something else erected in some part or other. What is it for? and *what is a young architect to do?* Let him go to the Royal Institute of British Architects, and see if he can get an answer from those who give advice gratis to "the junior members of the profession."

"Young man, you must not expect everything at first." "No, Sir, I do not; for if I had every thing at first I should get nothing afterwards: what I want is to get something."—"Get your friends to give you a job." "But suppose they don't choose to pull their houses down on purpose for me to put them up again, or if they would rather have nothing to do with bricks and mortar, what must I do then?"—"Try your luck again, and compete for the Army and Navy Club; there are a couple of capital premiums, and it you do not get either, why the drawings will be sure to be exhibited, and you may have your designs spoken well of in some of the papers; that will be a *little* consolation for you, will it not?" "To be sure it would; but I should not grow very stout upon it; do you think I should?" "Ah, you must look at architecture 'not as a business, but as a *fine art*.'"

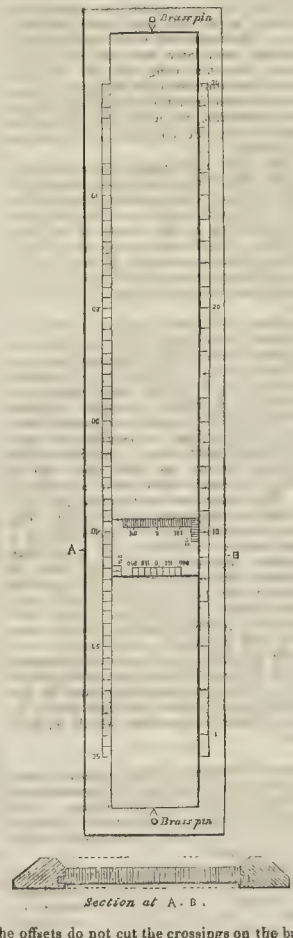
It's all very fine, "but what is a young architect to do, and how is he to get on?"

RYDE ESPLANADE AND PIER-STREET IMPROVEMENT.—Surveying Officers have been sent to Ryde for the purpose of inquiring into the merits of the proposed improvements there. Evidence has been laid and statements made, from which it appears that the plan has in contemplation the removal of the present unsightly houses forming the north side of Pier-street, and the formation of an esplanade at an expense of 15,413*l.*, with buildings of a regular and handsome elevation, fronting the sea, and extending from the pier to, or near to, the battery west of the Royal Victoria Yacht Club-house. The sea wall is to be faced with stone, backed with concrete, and have stone copings. It is to be in width 5 feet 6 inches at bottom, 3 feet 6 inches at top, and 14 feet above the line of the shore. The expense of filling up was estimated by Mr. Gilbert McDougall, who prepared the plans, at 9d. a cubic yard for 20,000 yards. Mr. Thomas Hellyer, architect and surveyor, however, did not agree with the estimates of Mr. McDougall. The filling up of 22,945 cubic yards he estimated to be requisite, at a cost of 2,390*l.* 2s. 1d.; and piles, he considered, would be essential for safety. It is also proposed to improve the drainage.

## NEW PLOTTING SCALE.

SIR,—The circulation which your valuable publication has in almost all the engineers' and surveyors' offices, as well as in the artists' studio, and the operative's sanctum, induces me to send you a drawing of a plotting scale which I have devised, and which I think the profession will find most useful upon adoption. I will state my reasons for preferring this to the present scales.

The method of plotting the field notes from the scales now in use, I have experienced to be not only tedious and awkward, but attended with a great chance of incorrectness. They may be used with much nicety and carefulness, yet the eye cannot and will not be constantly looking at the commencement of the line to which the scale is set, to see if it has shifted itself. Shiftings accordingly often occur, and are not discovered until the offsets are laid down. The draughtsman finds that




the offsets do not cut the crossings on the base line, when he has to rub out the major part plotted. Again, the offset scale at one end is apt to slip unobserved on to the figured bevel part of the chain scale, causing it to be inclined, and in such a position the offsets are not laid down at right angles with the chain line. This observation to some, perhaps, may appear futile, but it is not so, and the practitioner will confirm what I state. Besides, the offsets ought to be laid down with as much exactness as they are taken, and indeed at times they are of *more* than ordinary importance, and the least inclination of the scale, especially if the offsets approach 100 links, plotted to a "three-chain scale," will throw them out of their relative position ten or fifteen links.

Further, the edges of the present scales are not in the least protected; they get chipped, become "blind scales," and are useless.

The scale which I have devised will prevent these occurrences. The two little brass pins, one at each end of the scale, will keep it in its place. The offset scale works in a groove, and so cannot slip on to the bevel part of the chain scale, and the offsets taken on each side of the line may be plotted without moving the scale.

The divisions on the offset scale, parallel with the chain, will be found quite sufficient, and the figures being marked upon the latter *perpendicularly*, the same may be read off with much more ease and rapidity.

EDWARD C. S BLAKE,
Architect and Surveyor.

No. 1, Lancaster-place, Waterloo-bridge.

*** The drawing of the scale respesents it half real size. The section is of the full size.

## THE IRON TRADE.

THE prospect of a *future* rise in the price of iron, with which the iron-masters have been for a long time congratulating themselves, still remains but a future prospect. Or rather, the false glitter of future gold with which it has been attempted to cajole them into an inflation of past and present prices has turned out but a will-o'-the-wisp, which they themselves have now repudiated. "The general impression amongst the great makers [at the late quarterly meetings] seemed to be, that there had been an attempt made to raise prices inconsistent with the legitimate demand for iron." And the secret of the modus operandi has come out, since it has been found that the attempt was somewhat indiscreet, and rather, therefore, to be repudiated than to be taken advantage of, which, no doubt, it would have been, had there been any prospect of maintaining an advance; but "it was the opinion of the meeting, that if they declared an advance, there would be a difficulty in maintaining it, exclusive of the confusion which it would cause in the trade." Therefore it was determined to sacrifice their indiscreet advocate at the Moloch*te* (or the Mammonic) shrine of public opinion, and thus to make a *virtue* of *necessity*." Accordingly "Certain statements, which appeared in a local paper, with the evident intention of writing up high prices, were referred to at that meeting, and such attempts were very generally and very *indignantly repudiated*." The declarations of the heretofore oracle, therefore, were even characterized as "random assertions made by parties either reckless of the statements they publish, or misinformed on the subject on which they profess to enlighten the public." Where are we to look for that light, then, since what was once deemed a truthful leader has turned out but an *ignis fatuus*. At all events, the acknowledgment or declaration quoted in our last note on the quarterly meetings, and which has probably paved the way for the present repudiation,—that all who charge *low* prices are *small* masters,—a very ingenious one, indeed, which merited a better return from the *great* masters than repudiation,—leaves us, who believe a little in the converse at least of the axiom, no reliance on the dictum of the great masters at their quarterly meetings; and therefore we need not quote *their* prices any more unless induced by circumstances so to do. Besides, there being little or no change of previous quotations, in the meantime, there is no reason for quoting the prices of any class at present.

MANURE COMPANIES.—Inquiries relative to the application of the Metropolian Sewage Manure Company for an Act of Parliament, have been referred by the Commissioners of Woods and Forests to Sir Henry T. de la Beche and Mr. Frederick Luard Wollaston, of the Middle Temple, barrister-at-law; and similar inquiries relative to the London Sewage Chemical Manure Company, to Sir Henry de la Beche, Mr. F. L. Wollaston, and Drs. Richard Phillips, and Lyon Playfair. The latter inquiries are to be entered on 11th February, 10 A.M., and the former on 17th February, 10 A.M., both at the Freemasons Tavern, Great Queen-street; where all interested, and any one else, may be heard, witnesses examined, plans and documents exhibited, &c.

## MEANS ADOPTED TO BUILD ST. PETER'S IN ROME.

PRESERVATION OF MONUMENTS.

A SHORT time ago we gave a translation of he brief by which Leo X appointed Raffaelle rchitect of the Roman cathedral.* The *Engineer's Journal* for the current month conains the following brief, from the same pope, o facilitate the provision of materials for the ame work, and prevent the destruction of ncient monuments:—

"TO RAFFAELLE URBINATE.

As it is most necessary for the construction f the Roman temple of the Prince of Apostles, at stone and marble, of which we ought to ave an abundant supply, should be rather rocured at home, than be conveyed from broad; and as it has been ascertained that the ins of Rome contain a great quantity of these aterials, and that all persons who, either in ome or even in the neighbourhood, intend to uild, do appropriate the same to their own e; I make you, whom I use as the master of is said temple, the overseer of all the marbles d stones which, henceforth, may come to ght at Rome, or at a distance of ten thousand ces therefrom—for this reason, that you all purchase for me those which may be proer for the edification of this temple. Therere, I command all people, middle, highest, west, that wherever they shall, hereafter, g out marbles or other stones, of any kind, thin the space assigned by me, that they all acquaint you, the overseer, forthwith, the nature or kind of every thing so disvered or excavated. And also, that whoer shall not do so within three days from e time of such discovery, he be fined from 0 to 300 gold coins, as shall appear to you And, moreover, as I have been informed, at much of ancient marble and stone, enaven with inscriptions and other monuments, nich monuments often bear some exquisite mp of art, and ought to be preserved for cultivation of literature and the improvent of the Roman tongue, are vilely cut up the marble workers as building material, d that thus the inscriptions are destroyed, command all persons who exercise the trade cutting marble and other stones, that, with your orders or permission, they may not e to cut or work any inscribed stone,—plying the same fine, as aforesaid, to all who y act otherwise than I command.—Given sixt Cal. of September. Year three. me."

## GERMAN KNIGHT-CASTLES (RITTENBURGEN).

AMONGST the restorations (re-*habilitations!*) ently made, the *Burg* Lichtenstein, near utlingen, re-erected by order and under the e of Count William of Würtemberg claims ecial note. Above the village of Honau, n rock 800 feet high, and whose peak s obelisk-like in the air, Lichtenstein s free in the skies, its towers being 160 high. That same mind, which imparted this *Burg* its external shape, *picturesque* on sides, with its walls, and pinnacles, and conies, and gables, and sollars, and the nifold tiers of stories—has arranged also inside with poetic feeling, so much so, the claims, as well of sentimentality, as se of a sociable life, then almost constantly ed for festivity, are equally attended to. ere is the entrance hall with its fine sculps, and cheerful and admonitory inscrips; the hall of armour, with its seats cut he main rock of the foundation—the chapel i its mysterious dim; the more homely se and banqueting-hall (*Jagd und Trinkse*), where every utensil reminds of the ly sportiveness and hilarity of a vigorous estry! The dwelling-rooms exhibit a vast unt of German mediæval art, or modern nce—and the platform of the tower ranges a sublime view of the Alps, from the Jung to the Zugspitz—views sublime, denied to northern Cimmerians. Of the ancient ures preserved at Lichtenstein much might aid—but suffice to redeem from oblivion ld Swabian master, older even than Zeit, and whose works seem to have inced that worthy *picturer*. His forms are free, his technicism exceedingly perfect, both pointing (as many other works of old German school) to that of the Flanders Eycks.

Near Hechingen, lays Hohenzollern—the cradle of the ancestors of Frederick the Great—yet in its state of grandeose ruination, but the present king has given orders to recall it to pristine beauty.

* Vol. IV., p. 495.

## New Books.

*Punctuation, Reduced to a System.* By WILLIAM DAY. Ollivier, Pall Mall. 1847.

A VERY useful little book, and we recommend it to all our readers. Correct punctuation is of great importance, even in the business of every-day life; the want of it often produces annoyance and trouble. For example, "The contract made for lighting the town of Liverpool, during the year 1819, was thrown void by the misplacing of a comma in the advertisements; thus: 'The lamps at present are about 4050, and have in general two spouts each, composed of not less than twenty threads of cotton.' The contractor would have proceeded to furnish each lamp with the said twenty threads; but this being but half the usual quantity, the commissioners discovered that the difference arose from the *comma following*, instead of *preceding*, the word *each*. The parties agreed to annul the contract, and a new one was ordered."

"That the above-named advertisement," says Mr. Day, "was drawn up by the solicitor of the Liverpool commissioners, there is little doubt. It would, therefore, not be punctuated at all, according to the custom of the legal profession. But the printer was not permitted to follow so bad an example. *He* was expected to supply the necessary points, that the notice might appear before the public in a readable state."

He then, with justice, remarks, "*Why* the gentlemen of the legal profession, who take such pains to make their meanings clear, and who employ such a multiplicity of words to effect their object, should deem *pointing* unnecessary, it is difficult to explain. Misconceptions are likely to arise in *all* kinds of composition, when written in a language so equivocal as the English; but, if the aid of points is required in any one kind *more* than in another, it is surely called for in all forms of law. The longest and most tautological writings stand in the greatest need of points. The original copy of a long act of parliament, or a verbose deed of conveyance, or a marriage settlement, engrossed upon many skins of parchment, without a point from the beginning to the end, may be almost unintelligible to a common reader; as nearly so, indeed, as if penned in an unknown tongue. If points were used in such documents, they might be *considerably abridged*, to the manifest advantage of those who pay for them; for, as Mr. Booth tells us, "The conveyancers account for the tautologies which abound in legal deeds, by reason of their being written wholly without points."

*Memoirs of Benvenuto Cellini, written by himself, containing a variety of Information respecting the Arts, and the History, of the Sixteenth Century.* Translated by THOMAS ROSCOE. H. G. Bohn, York street, Covent Garden. 1847.

A MORE curious and vivid piece of autobiography than that of Benvenuto Cellini was never written. Engaged for Francis I., Charles V., Pope Clement VII., and Duke Cosmo of Florence; and intimate with Michael Angelo, Titian, Giulio Romano, and the other giants who lived at the beginning of the sixteenth century, he brings close before us in his graphic self-willed style (not always to their advantage, by the way, in point of morals), those whom we have long contemplated at a distance and in mist. Though through his self-confident and irritable disposition, he appears to have been constantly engaged in squabbles, and often offended his best friends, admiration of his talents as an artist, and of the real good that was in him as a man, kept them still about him, and enabled him to escape from many difficulties in which his own acts had involved him.

Mr. Bohn has acted wisely in selecting this work for his marvellously cheap "Standard Library:" it can scarcely fail to have a large sale. We may mention, for the advantage of those who are not aware of it, that there are many admirable specimens of the wonderful skill of Cellini, as a worker in metal, in the gold closet at Windsor Castle.

## Correspondence.

WOOD AND IRON BOND.

SIR,—From perusing your leading article of last week, I am induced to offer a few observations upon the subject of wood and iron bond. Having had great experience in practical matters, you will allow me to state that I have always found wood bond alone preferable to either iron hooping, or iron hooping and occasional courses of brick in cement. It is obvious, that iron hooping, of itself, will not prevent irregular settlements, because, by the elasticity of the iron, it will bend to suit such settlements, and, therefore, is of little use without the addition of some other means to counteract that elasticity; for which purpose the laying of courses of brick in cement has been resorted to, and even then, in many instances, I have known it to fail.

If wood bond be thoroughly well tempered and seasoned before using, it will answer in every way the purpose desired, namely, the securing the building from irregular settlements. Of course, I conclude that there has been a thorough good foundation laid before commencing the building, for without that necessary precaution, it is absurd to talk about securement from settling.

I cannot close these remarks without adverting to the present Metropoliten Buildings Act, which, by prohibiting the use of wood bond or plate, has been the cause of so many failures. From the multiplicity of cases which have come under my own observation, I am led to believe, that nearly two-thirds of the buildings erected since the 1st of January, 1845, are badly constructed. I refer chiefly to the private houses in the suburbs of the metropolis, in which I have seen the floor joists with their ends just lodged on a projecting piece of thin stone (hardly worth calling a template), and I am confident that very many of them will not stand twenty years.

I am, Sir, &c.,
A BUILDER.
26th January, 1847.

MODE OF SELECTING A SURVEYOR FOR LIVERPOOL.

SIR,—I can confirm the statement made in your last number, as to the unfairness with which the election of surveyor for the Borough of Liverpool has been conducted, having received a letter (some days previously to the publication of the number of your journal alluded to), from a gentlemen residing in Manchester, stating, that out of the sixty-three candidates, "five had been *selected*, but that they were all put aside to make room for some one recommended by Mr. Hartley, but who was too diffident to make the application in the usual way." Now, Sir, I think it too bad for the corporation of Liverpool to trifle thus with the public, by advertising for parties to send in testimonials, and when some threescore of gentlemen take the trouble to procure testimonials from their friends, they are all to be set aside for some one "too diffident" to make the application, and who probably had no testimonials, but only a recommendation from Mr. Hartley.

I, for one, have received testimonials from gentlemen standing very high in the profession, and feel that it is in a certain measure an imputation on those who give testimonials, as well as the candidates themselves, to be set aside so easily.

I inclose my card, and shall be happy to produce the testimonials alluded to if the committee will have the courtesy to return them.

I beg to subscribe myself
ONE OF THE CANDIDATES.
29th Jan. 1847.

ARCHITECTURAL COMPETITORS.

SIR,—Permit me to say a few words on the subject which appeared in your last number under the head of "Redress for Competitors." The architect does not sufficiently regard his profession. The solicitor and the physician demand their fees for what they do, and why should not the architect be paid according to

his talents? The power is in his own hands to protect himself, but he will not use it. The moment he sees an advertisement for a plan, and too generally the premium is inconsiderable compared to the professional value of such required plans, he, without first setting down and counting the cost of so great a work, and the risk occasioned by the competitors being numerous, immediately applies for the particulars; and when they are obtained, he devotes all his thoughts to the matter, till his composition is placed on the paper. He then forwards them to the advertising committee; he anxiously waits for the decision day after day, and at last, probably, he receives a note (without any thanks for his production) merely to say that the committee selected a competent person to decide on the best plan for the purposes required, and that Mr. So and So's has been selected. Then the architect begins to reflect; he then estimates the value of his design, and finds his labour has been spent for nought. It is important that each competitor should carefully watch the movements of these committees after the plan is chosen, and ascertain the amount of estimates for the execution of the works from the chosen plans: if the amounts exceed the statements in the advertisement, the contract is then certainly broken by the committee, and he should resort to the course laid down by "Defenso." Also, let the whole matter be brought before the public, by means of your publication, which is found so exceedingly useful in all architectural matters. I trust you will pardon me for thus intruding at such length, but it appears that the unpleasantness which is experienced by us may be much lessened if this course be adopted; and that, instead of spending all our time and abilities for the benefit of others, some return may be obtained for ourselves.

I am, Sir, &c.,
Ramsgate, Feb. 1, 1847. W. E. S.

TENDERS FOR COTTON-MILL AT PLEASLEY.

DEAR SIR,—A paragraph appears in your number of Saturday last, in which our name appears as tendering for a cotton mill, at Nottingham. We have never done so; but it appears one Mr. Thomas Burton tendered on his *own* account, ordering an agent to do so, he never seeing the estimates or drawings before delivery. This agent appears to have made a serious mistake. And Mr. T. B. is as much astonished as your correspondent observes "The natives are." Yours respectfully,

THOS. BURTON AND SONS.
150, Aldersgate-street, Feb. 1st, 1847.

CURVED IRON GIRDERS.

SIR,—Being unable to meet with any formula for determining the strength of curved iron girders, you would oblige me could you, or any of your correspondents, furnish the means of determining the ratio between a flat iron girder and a curved one of the same form and transverse sectional area.

I am, Sir, &c.,
Manchester, Jan. 25, 1847. G. S. P.

P.S. Can you inform me also if any experiments have been published? I find that the experiments of Mr. Eaton Hodgkinson treat only of flat girders.

EXPENSE OF PRIVATE BILLS.—It is to be hoped that the evidence on this point, taken before the House of Commons last session, will lead to some change. Mr. Chadwick shewed in the case of an opposed water bill that one-fourth of the money on which the inhabitants would have to pay interest, went for Parliamentary expenses. It is asserted that the money expended in Liverpool for the private Act legislation would have sufficed for the effectual drainage of more than 2,000 houses.

CHICHESTER CATHEDRAL.—A meeting was held in this cathedral on the 14th ult., to take steps for obtaining funds for its much needed restoration. The Duke of Richmond, we are told, gave 500*l.*, and Mr. J. A. Smith, M.P., the same. The dean, who has taken up the matter warmly, proposes to build a new church close to the cathedral, for a congregation which has from time immemorial assembled within the latter; on what sufficient grounds, however, we have not yet heard.

## Miscellanea.

PROJECTED WORKS.—Advertisements have been issued, through the past and previous week, for contract-tenders for erection of cottages at Ashford; station and other works at Hull; tunnel at Woodhead; fence wall at Swinton, with gates, iron-railings, &c., also for 2,500 tons of rails and 750 tons of chairs for Malton and Driffield Railway; the whole works on about 5½ miles and 1,120 yards of Birmingham, Dudley, &c.; a portion of Fleetwood, Preston, and West Riding Junction; 8 miles 1 furlong, 3¾ miles and 7 miles 2½ furlongs of Manchester and Leeds; 6 miles 30 chains of Bristol and Exeter; 3¼ miles and 5¼ miles of Whitehaven and Furness; 21 miles of Glasgow and Carlisle, in two or more divisions, also 4 miles of same; and 3,200 yards of Edinburgh and Bathgate Railways; also repair of Bromyard turnpike trust roads in 8 districts; sewering, making, and macadmizing road at Birkenhead; repairs of roads, wells, &c. and granite chippings, gas fittings, &c. for metropolitan districts; erection of a house and offices at Teignmouth; of farmery at Bury; and five houses at Stafford; razing and rebuilding bridge at Staleybridge, with iron roadway; rebuilding seven bridges in Cardiganshire; taking down and rebuilding bridge at Dalmuir, Scotland, and culvert there; three portions of cutting, embanking, and masonry with sluices, wooden bridges, roads, reservoirs, basins, conduits, &c., at Gorbals water-works, Glasgow; and for 100 cast-iron lamp-posts with wrought-iron lantern frames, pitching-irons, nutts, screws, &c., at Liverpool. By a mischance some of the above were omitted last week, but most of them are still current.

DIMENSIONS OF EUROPEAN CHURCHES.—The *Roman Advertiser* of December 26th, says "those who attended at St. Peter's during the august ceremonies of Christmas-day, might, perhaps, have imagined that temple, in all parts open to the public during the function, as much crowded as possible. To shew the impossibility of St. Peter's being *ever* crowded, we annex the following statistics of its capabilities, as compared with other great churches, allowing four persons to every quadrate meter (square yard):—

| | Persons. | Sq. yds. |
|---|---|---|
| St. Peter's | 54,000 | 13,500 |
| Milan Cathedral | 37,000 | 9,250 |
| St. Paul's, at Rome | 32,000 | 8,000 |
| St. Paul's, at London | 25,600 | 6,400 |
| St. Petronio, at Bologna | 24,400 | 6,100 |
| Florence Cathedral | 24,300 | 6,075 |
| Antwerp Cathedral | 24,000 | 6,000 |
| St. Sophia's, at Constantinople | 23,000 | 5,750 |
| St. John, Lateran | 22,900 | 5,725 |
| Notre Dame, at Paris | 21,000 | 5,250 |
| Pisa Cathedral | 13,000 | 3,250 |
| St. Stephen's, at Vienna | 12,400 | 3,100 |
| St. Dominic's, at Bologna | 12,000 | 3,000 |
| St. Peter's, at Bologna | 11,400 | 2,850 |
| Cathedral of Siena | 11,000 | 2,750 |
| St. Mark's, Venice | 7,000 | 1,750 |

The piazza of St. Peter's, in its widest limits, allowing 12 persons to the quadrate meter, holds 624,000; allowing four to the same, drawn up in military array, 208,000. In its narrower limits, not comprising the porticoes or the paizza rusticci, 474,000 crowded, and 138,000 in military array, to the quadrate meter.

FALL OF CHIMNEY AT WIGAN.—It seems to us of considerable importance that the particulars of the construction of the enormous chimney, which fell the other day, at Mr. Dodd's chemical works, at Wigan, should be known. It has occupied several years in construction, and was 400 feet high. Shortly after its completion an indention of one side near the top was observed, and was watched daily, when, after a further lapse of time, a very apparent deviation from the perpendicular had taken place, and the base slightly parted from the side of the excavation. A further inclination being observed, the advice of Mr. Fairbairn, civil engineer, of Manchester, was obtained, and we believe he recommended a portion of the top being taken down. This was done, and about 80 ft. had been removed when it fell. For some time past a further sinking of the base had been observed, and a series of stays were being constructed to place round it.

## TO CORRESPONDENTS.

*"Jackonosides."*—A plate may be used to receive ends of rafters of leanto-roof. Dripping eaves must be made fire-proof. If plate be left exposed, it must be 4½ in. from face of wall. A discharging arch over a bretsummer is not enforced by the Act.

*"W. O. O."*—We should claim *all* repairs now necessary.

*"H. J."* (Walworth.)—We have often pointed out the tendency of the employment of external cement work to induce defective and unsound brickwork.

*"Railway Bridge."*—A correspondent says, he has invented a wood and iron bridge suitable for bad foundations, and asks how he can make it of service to him. We cannot advise him.

*"A. G."* (Birmingham.)—Write to Mr. Scott Russell, Secretary Society of Arts, Adelphi. (See our advertising columns.)

*"D. C."* (Brighton.)—Ditto.

*"W. W."*—The restoration of old Upston Church, near Slough, was strenuously advocated in our third volume.

*"J. D."*—We have constant inquiries for the means of preventing what he complains of, namely, the vapour on shop windows when the gas is burning, but can only give a general reply—improve the ventilation. An Arnott's valve in the chimney-flue might be useful.

*"A. J. G."*—We cannot insert the letter, which is simply an advertisement; nor can we judge of the system without knowing what it is.

*"F. E. S."*—The following description of a cheap filter was given in our third volume, p. 313:—"On a small scale an efficient filtering vessel may be formed of a common garden-pot, well burnt, and with holes in the bottom; the lower part to be filled with round pebbles, then some smaller pebbles, then some coarse sand, and finally a stratum of pounded charcoal, three or four inches thick; the use of large filters of broken shells interposed between the gravel and sand, is a great improvement, inasmuch as the fragments being flat, engage each other, and counteract the tendency of the sand to settle amongst the gravel, thus preserving a free percolation through the lower strata."

*Received.*—"T. S.," "Subscriber," "H. W.," "Bloomsbury," "A Reader," "A Constant Reader," "S. V. C.," "J. Jones," "A.," Cozer, "History of the House of Austria," London (H. G. Bohn), 1847; "Dolman's Magazine for February, 1847; "An Address to the Inhabitants of St. James's, Westminster, on Circumstances Affecting Health," by a Retired Churchwarden (Ridgway).

*"Books, Prices, and Addresses."*—We have not time to point out books or find addresses.

CHEMISTRY as APPLIED to CONSTRUCTION.—The second paper on this important subject will be given next week.

NOTICE.—Covers for Volume IV. of THE BUILDER, may be obtained at the Office, 2, York-street, price 2*s.*; or the publisher will bind sets at 3*s.* each.


## ADVERTISEMENTS.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 86, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. The superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are silent. Persons dissatisfied with the patent noisy gear now used for shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

PATENT REVOLVING SAFETY SHUTTERS, WITH CONVEX IRON LATHS.—PATENT CORRUGATED WINDOW BLINDS, &c.—The attention of Architects, Builders, and Blind makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and is respectfully invited at the manufactory. The great importance of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, in affording increased security as above, and it is only necessary to point out the fact, that the patent convex laths are 12 times stronger than one or more flat laths, to ensure their general adoption. The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw (worm and wheel combined), from its being incapable to run down, and entirely avoids the necessity of using the ratchet wheel, and is at once simple, strong, thoroughly effective, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters are fixed horizontally either above or below the window or door, or vertically, for which position the greatly increased strength of the convex laths renders them particularly suitable. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Engravings and prospectuses forwarded on application. IMPROVED CASEMENT, CASH, AND SASH BARS, METALLIC MOULDINGS, STALL-BOARD PLATES, &c.—Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 118, Old-street, London.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of the Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In these shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength, security, and ease in working, practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee Shutters put up by them to keep in order, and last twice as long as any with flat convex laths.

Bunnett also manufactures REVOLVING WOOD SHUTTERS, the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which, no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Copper Sashes, Plain or Ornamental, handsomely Engraved, Mouldings, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam engines, Sawing, Planing, and Moulding, Cutting Machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

# THE BUILDER.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d |
|---|---|---|---|---|---|
| 6d. | 7d. | 8d. | 1s. | 1s 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. 6d. per cwt.
Best Town Glue 50s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7½., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 2 ft. | £3 3s. | 2 ft. 6 in. | £3 12s. 6d. | 4 ft., £4. |
|---|---|---|---|---|

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 6s. | £3 15s. | £3 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6 5s. | £6. 10s | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do. at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

IRON-WORK FOR BAKERS' OVENS.

**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Pots and Pail Pieces, Stoppers, Chimney bars, Irons, Outside, and Ash pit. Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UTSETS.

**J**OSEPH FENN, 105, Newgate Street, London, Manufacturer of Turning Lathes, Flatting Mills, Stocks and Dies, Circular and other Saws, Files, Tools, and Materials for Engineers, Millwrights, Die Sinkers, Coach Makers, Locksmiths, Lamp Makers, Pianoforte Makers, Plumbers, Wood and Metal Turners, Gun Makers, Engravers, Pantentees, Watch and Clock Makers, Lapidaries, Jewellers, Gold and Silversmiths, Saddlers, Curriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c.

Amateur Mechanics and others can be supplied with every description of Mechanical Apparatus, viz.:—Wheels and Pinions, Racks, &c. &c. Sets of Miniature Tools, Sets of Tools, and prepared Wood for Wood Engraving. TOOL-CHESTS FITTED UP COMPLETE. Cutlery of the finest quality. Horticultural Tools, Ironmongery of every description. Brass, copper, steel, zinc, &c., in sheet, bar, and wire. Wholesale, Retail, and for Exportation. Railways supplied on the best terms.

**L**EADBEATER, many years manufacturer for Chubb, of St. Paul's Churchyard.—PERFECT SECURITY is afforded to PROPERTY of every description by LEADBEATER'S strong Wrought-Iron Chemical compound-filled FIRE-PROOF SAFES, CHESTS, and BOXES. Doors for Strong Rooms and Party Walls, &c., all secured by his Improved Detector Locks throwing from 3 to 20 bolts, which defy the skill of the most experienced burglars. A large Assortment of Fireproof Safes, &c., on Sale. Made to order at the shortest notice, at prices 25 per cent. under any other house in London, at his Manufactory, 150, Aldersgate-street.





A large FIRE-PROOF REPOSITORY, well adapted for Solicitors, to be SOLD a BARGAIN.
Improved Detector Locks and Latches, affording PERFECT SECURITY, for Street and other Doors.

ROBERT STEDALL'S
PATENT SCOLECOTHIC VENTILATOR,
AND CURE FOR SMOKY CHIMNEYS.



The most effectual and most ornamental Chimney-pot yet invented, entirely obviating the objection to which all others are open, namely, that of soon becoming clogged with soot, and, consequently, useless.
A large quantity have been made in various parts of the kingdom, which have given the greatest satisfaction.

Price, Strong Painted Iron ..... 32s.
" Strong Galvanized Iron..... 40s.

To be had of ROBERT STEDALL, 71, Nelson-street, Greenwich.

THE TRADE SUPPLIED.
And also Licenses granted to Manufacturers.

SMOKY CHIMNEYS EFFECTUALLY CURED
WILSON AND CO.'S
PATENT
VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been tried extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.
The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.
They are now manufactured of artificial Stone Cement.
The trade supplied with them at the Manufactory,
WALL PLACE, HAMMERSMITH GATE, MIDDLESEX.
N.B. Licenses granted to Manufacturers.

WILSON'S PATENT
VENTILATING
SPIRAL CHIMNEY POT,



For the cure of smoky chimneys (manufactured by J. PORTER), is the ONLY one for the purpose which assists the draft of the chimney by an external pressing power. Upwards of fifty were fixed last winter on the chimneys of Buckingham Palace, and Windsor Castle, with great success.

This Chimney-pot is not only the best and most effectual ever invented for the purpose named, but stands unrivalled in its ornamental appearance.

The public may be supplied with the above useful article by any of the respectable ironmongers, or at the sole manufactory,

SOUTHWARK-BRIDGE IRON ROOFING WORKS.

TO ARCHITECTS AND BUILDERS.

**D**OOR SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE ACTION BUTT HINGES, in Brass and Iron for Doors to open one or both ways, and Rising Hinges for the convenience of Doors opening on uneven Floors. Likewise Swing Centres, which consist of a combination of power unequalled by any made at present.—Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

**C**HARLES SMITH and SON, 25, GREAT CHARLES STREET, BIRMINGHAM (late STANDLY and SMITH, formerly STANDLY and GALE, Bull-street), Locksmiths, Bell-hangers, Brass-founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS, and ENGINEERS to their inventions for prisons, lunatic asylums, &c.

C. S. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar locks, signals, inspection apparatus, chapel door-fastenings, iron frames, hinges, &c., as supplied by them at the MODEL PRISON, LONDON, and TWENTY-THREE SIMILAR GAOLS, where they have given entire satisfaction.

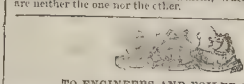
Among other testimonials can be shown that of Major Jebb, attesting the efficiency of the labels, &c., invented by them.

The contracts will be executed to the approval of the inspector-general of prisons, and the architects.

C. Smith and Son also are prepared to contract for the supply of the whole of the ironmongery requisites for the residences of the nobility and gentry, churches, banks, barracks, gaols, asylums, and workhouses, including locks, bells, hinges, grates, kitchen ranges, stair-cases, grates, park fencing, fire-proof safes, bookcases, doors, metal sashes of all kinds, and every description of ornamental brass and iron-work, light castings, &c. &c.

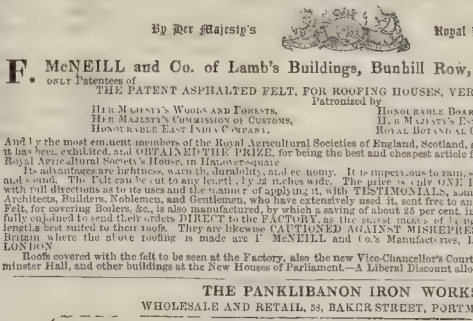
C. S. and Son beg to refer to the extensive works performed by them at Windsor Castle, Northumberland and Stoke Houses, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work, in combination of which numerous letters from noblemen and gentlemen can be shown.

N B C. SMITH and SON do not appropriate inventions or advertisements, nor label locks "Patent, Warranted, Secure," that are neither the one nor the other.



TO ENGINEERS AND BOILER MAKERS.
LAP WELDED IRON TUBES FOR STEAM BOILERS.

**THE BIRMINGHAM PATENT IRON** TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes made on exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames street.



FRENCH PAPER HANGINGS.—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO'S, 59, Princes Street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

TO BUILDERS, DECORATORS, PAINTERS, &c.

**D**EPOT of FRENCH Paper-Hangings,—M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market, and the prices very moderate. S. BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

PAPER HANGINGS—TO THE TRADE.

**M**ESSRS. HENNELL and CROSBY, Manufacturers of Paperhangings, Queen-street, Southwark-bridge road, have just completed their New Set of Patterns for 1847, consisting of French Designs cut in Paris, and English Designs by our First Artists, for Style and Workmanship not to be surpassed. Retail Prices. Satins from 3d. per yard; Superior French Flocks from 6d. per yard. A liberal allowance to the Trade. A Large Stock always ready, and orders promptly executed. The Cheapest House in London for Panel Decorations.

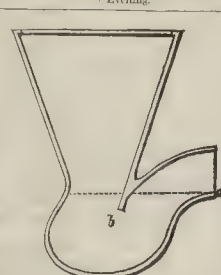
By Her Majesty's Royal Letters Patent

**W**ILKINS'S "SILENT" WATER-CLOSET.—To Architects, Surveyors, and Builders.

Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the convenient mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

This Closet is simple in its construction, the whole of the apparatus (including the trap), being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

May be viewed Daily, and Orders taken at No. 36, Gower-place, University College, London, from 8 in the Morning to 9 in the Evening.



CHEAP PAN FOR
WATER-CLOSETS,
With Trap, in One Piece.
DOULTON AND WATTS,
LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,
Manufacturers of the annexed in superior
GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, on account of their cleanliness and cheapness.

If preferred, they can be had in two parts, the Pan at 4s. 6d., and the Trap at 3s.

N.B. Manufacturers of RAIN-WATER PIPING for houses.

CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

**F.** McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

Patronized by

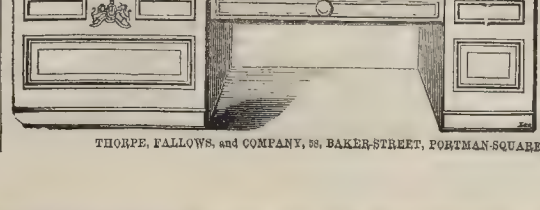
HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S DEPOT, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of having supplied with the genuine article, and in the best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only works in Great Britain where the above roofing is made are T. McNEILL and Co.'s Manufactories, LAMBS-BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

THE PANKLIBANON IRON WORKS,
WHOLESALE AND RETAIL, 58, BAKER STREET, PORTMAN-SQUARE.



**ARCHITECTS,** BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE-GRATES, FENDERS, and FIRE-IRONS, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive stock of FURNISHING IRONMONGERY, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epernes, &c. The plan adopted by the Proprietors, of advertising the present small profit for cash, enables all purchasers to have the same advantage.

The Patent Thermio Stove is in daily operation. Also, CUNDY'S IMPROVED HOT-AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

# THE BUILDER.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

**PERSONS** requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, manager, at the offices above.

N.B. To expedite the procuration, personal application at the offices is, in all cases, better, the party bringing with them the abstract of title, plans, &c.

TO BUILDERS.

**AN** old established Business in a Market Town, about 30 miles from London, TO BE DISPOSED OF. The premises are well adapted, and the rent moderate. For particulars apply by letter, prepaid, to A. B. Messrs Haxley, Heriot, & Co., Ironmongers, Castle-street, Long-acre.

**BRICK EARTH**, of most excellent quality, TO LET, close to the Nelson Arms, Cheam.—Apply at the Nelson Arms, or to Mr. THIRK, Copthill, Epsom.

**EXTENSIVE** Manufacturing Premises, between Bond-street and Park-lane, TO BE LET, on Lease. —Apply to Mr. CUTHELL, 13, Avery-row, Lower Brook-street.

OLD HOUSES AND GROUND FOR REBUILDING

**TO BE LET, on a Building Lease, for 61** Years, Old Houses and Ground in Sea Coal-lane, Skinner-street, City.—For particulars, apply to Messrs. GOUGH and ROUMIEU, Architects and Surveyors, No. 10, Lancaster-place, Strand.

TO BUILDERS AND OTHERS.

**LAND TO BE LET, on advantageous** terms, on Building Leases, at West Ham, Middlesex; Streatham and Carshalton, Surrey; Boxmoor, Herts; and Tunbridge Wells, Kent. For particulars, apply to Messrs. BROOKS and GREEN, Estate Agents, Surveyors, and Auctioneers, 28, Old Bond street.

**REGENT STREET.—Extensive Premises** TO LET, situated a few doors from Regent-street, comprising several ranges of Workshops, Large Yards, a Hot Room, and a Residence. Gas is laid on and there is a Warm-water Apparatus. They are most desirable Premises for a Builder's Joiner, Coach or Cabinet Manufactory, or any business requiring great space.—For particulars, inquire of Messrs. DRUCE and CO., Bazaar, Baker-street.

TO TIMBER MERCHANTS, DEALERS, or Commission Agents for the Sale of Timber, Lime, Cement, Coal, Slate &c.

**TO BE LET, on Lease, for 21 Years,** Excellent BUSINESS PREMISES, with Residence attached, eligibly situated, No. 4, Albion place, on the High-road, Holloway, near the Chapel of Ease. Rent, £70 per annum. Further particulars may be had of Messrs. OVERTON and HUGHES, 2a, Old Jewry, and of Mr. LLOYD, on the premises.

HIGHBURY GROVE, HIGHBURY—BUILDING LAND.

**TO BE LET, a valuable piece of Building** Land, situate on the west side of Highbury Grove, being the most delightful part of the locality, with beautiful pleasure grounds in the rear for the erection of a Villa Residence. £600 on each house will be a liberal sum, if required, as the works progress. Term, 80, 60, or 50 Years. Length of Ground-rent, £12 12s. Particulars may be had of Messrs. OVERTON and HUGHES, Solicitors, 25, Old Jewry, and of Mr. LLOYD, No. 4, Albion place, Holloway-road.

TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, Land-tax redeemed, for family-mate houses, situated in street leading from the Queen's-road, Bayswater, to Lancaster-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare to all parts westward to the new Victoria-park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

ST. JOHN'S WOOD PARK :: IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation :: commanding pictures que views of the NEIGHBOURING BEAUTIFUL HEIGHTS, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable places of public resort in the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's villas, Avenue road, Regent's park.

BRICKFIELD.

**TO BE LET, a snug BRICKFIELD,** situate at Hanwell, on the banks of the canal, which enters the Thames at Brentford. The expense to Vauxhall, for freightage, toonage, and towage is 3s. 6d. per thousand. A field will two small wash mills, and two close kilns each capable of containing 50,000 bricks. Land being covered on the premises with a view to the manufacture of white bricks of a superior quality, and the whole may be procured on very advantageous terms. Apply to Mr. WILLIAM THOS WOODS, Bedford New road, Clapham Rise.

FREEHOLD LAND.—TO BUILDING SOCIETIES, BUILDERS, AND OTHERS.

**TO BE LET, or SOLD, the remainder of** about seven acres of Freehold Land, well adapted for the erection of small respectable dwellings, and situate within 3 yards of the Bedford Arms, Clapham Rise, and 4 miles of the City. It will be sold in plots of about 30 feet in depth, or let to purchasers at 3s. per foot rental. Bricks will be advanced on security of the property, or sunk at a ground-rent, if required. Apply to Mr. WILLIAM THOS WOODS, Bedford New road, Clapham Rise.

**TIMBER SAWING FRAME FOR SALE,** Well Manufactured, and in complete working order, and only sold in consequence of their not being required for other purposes.—Apply to W. G. WARDLE, Stangate Saw Mills, Palace-road, Lambeth.

TO CARPENTERS AND BUILDERS.

**MORTICEING MACHINES** are now offered FOR SALE, the first and only ones ever invented that will cut a mortice any depth or width in one minute, through hard or soft wood, warranted to work true to the gauge. Expense small, and requires only one man to work it. To be seen at JONES'S, 127, Gosw ell street, between 10 A.M. and 4 P.M., daily.

TO LEAD MERCHANTS AND PLUMBERS.

**TO BE SOLD, the Lease and Goodwill,** together with the Stock in Trade, of a valuable business in the above line, in the immediate vicinity of Belgrave-square and Eaton-square, which has been successfully carried on by the present proprietor, and is parted with by him solely on account that having received an appointment in India.—For further particulars apply to Messrs. HARBROTHER, CLARK, and LYE, Surveyors and Auctioneers, Lancaster place, Strand, London.

**FIRE BRICKS.—Stourbridge best made** Bricks at WARD and HARTS, Hondurus Wharf, Bankside, London, TO BE SOLD for arrival. This is a great advantage for the purchasers, saving all the expenses of unshipping, lighterage, landing, reloading, &c. An immense stock of all the best made Stourbridge Welsh and Newcastle Fire Goods at Summer Prices, although freights and other expenses have considerably advanced. Skippers, Ship Companies, Engineers, Builders, and large buyers supplied at lower prices than they can import, besides the advantage of having an immediate supply without waiting the uncertainty of ships arriving at this season of the year.

BUILDER'S BUSINESS—CITY OF LONDON.

**MR. H. BIERS** has received instructions to dispose of by PRIVATE CONTRACT, the Valuable Stock in Trade of a Builder. The workshops and premises are excellent, arranged for carrying on an extensive business. They will be let upon Lease, and an introduction given to the present customers. May be viewed by cards only, which may be obtained of Mr. H. BIERS, 13, Broad-street, Golden-square.

SALES BY AUCTION.

TO BUILDERS AND OTHERS.

**MESSRS. STOPEN and GILL** are instructed to submit to PUBLIC AUCTION, at their spacious Rooms, Limehouse, on THURSDAY, February 11th, 1847, at Twelve for One precisely, an excellent stock of about 5,000 pieces of PAPER HANGINGS, consisting of rich flocks, satins, crimson, damasks, chintzes, gothics, borders, orles, and other descriptions. May be examined, and priced catalogues of sale, authenticated at the office of "The Builder," and at the offices of the Auctioneer, Limehouse

**TIMBER, on the Wytham Estate, near** Oxford. For SALE, by AUCTION, by Mr FISHER, at the Bat and Ragged Staff, Cumner, on FRIDAY, the 26th of February, 1847, at Twelve o'clock, about 450 fine Maiden ELMS and ASH, standing on the farms at Botley, Wytham, Cumner, and Whitley, well situated for carriage, and within a short distance of Oxford. Catalogues may be had of JAS. WILKIN, the woodman, who will shew the lots; at the place of sale, and Lion, Cumner; Carpenter's Arms, Botley; Swan, Eynsham; all the inns and public houses in the neighbourhood; and of the Auctioneer, Littlegate, Oxford. Credit will be given on approved security.

TO ENGINEERS, NEWSPAPER PROPRIETORS, and Others. —By Mr FULLER, on MONDAY, Feb. 22, at Eleven, on the Premises, Gough-sq., Fleet-st., Southwark,

**A FOUR-CYLINDER PRINTING-** MACHINE, capable of working 4,000 to 5,000 copies per hour, of a similar construction to those now in use at the "Times" Journal Office, highly finished and perfectly adapted for immediate use.—May be viewed on Friday and Saturday previous to the sale, when catalogues may be had on the premises, and of Mr FULLER, 13, Billiter-street, City.

TO ENGINEERS, MILLWRIGHTS, MACHINISTS, SMITHS, and Others.—By Mr. BULLER, on MONDAY, Feb. 22, and following Days, at Eleven each Day, on the Premises, Pardise-row, Gravel-lane, Southwark, without Reserve, the Premises being Let,

**THE Machinery and Tools of an Engineer,** the property of Mr LLOYD, retiring from business: Four steam-engines, of 20, 6, 5, and 4-horse power; rotatory-engine, 12-horse power; a very capital 4-cylinder steam printing-machine (similar in construction to those used at the "Times" office), capable of printing from 4,000 to 5,000 per hour; powerful planing and boring machine (capable of planing 16 feet by 4 feet 3 inches), by Fox; nut-shaping machine, by Nasmyth; two capital screw-cutting machines, by Rogers; a lathe, with bed, and two sets rings capable of boring 80 horse power cylinders; 12 engine-turning lathes, from 8 to 20 feet long; 30 cwt. of tools, in bits, chucks, taps, and dies, &c.; 200 feet shafting, 300 rigger and pulley wheels, three steam-boilers, cranes and chains, force-pumps, a five-ton crane, the fittings of smiths' shops, six tons iron, bottom, and smiths' tools; ten tons iron, two tons chain slings, 30 vices and benches, two new five-feet grindstones, five tons cast-iron, drawing tables, accompanying weights; also a large quantity of valuable patterns, and numerous other effects.—To be viewed on Friday and Saturday previous. Bills and any conditions may be had on the premises, and of Mr FULLER, Billiter-street, City.

VALUABLE FREEHOLD PROPERTY in Redcross-street, a few yards from Barbican.—By Messrs. HODGART and NORTON, at the Mart, on FRIDAY, Feb. 12, 1847, at Twelve, in Five Lots.

**THIS Property is all Freehold, consisting** of most substantial brick-built Houses, with handsome fronts, and strongly timbered, in a populous part, and in an excellent situation for trade.

Lot 1. A Dwelling house, with shop and numerous rooms, No. 58, Redcross-street, with a tenement adjoining in 3, Herring-court, let to Mr. Robertson.

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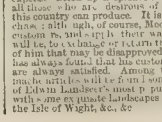
May be viewed by permission of the respective tenants, and particulars had of Mr HAILY, Solicitor, Threadneedle-street; Messrs. DOWNE and TAYLOR, Solicitors, 28, New Broad-street; at the Mart, and of Messrs. HODGART and NORTON, 62, Old Broad street, Royal Exchange.

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# The Builder,

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## CONTRACTS.

TO BUILDERS AND OTHERS.

THE COURT of SEWERS for WESTMINSTER and part of MIDDLESEX will be ready at the Court-House, No. 1, Greek-street, Soho-square, on Friday, the 19th of February, 1847, to receive TENDERS for Building about 160 ft. of Sewer in Exeter-street, Strand. A Plan and Specification of the above Work may be inspected, and a Form of Tender, and other particulars may be obtained at this Office, daily, between the hours of Nine and Four. Parties offering must be in attendance at Half-past Two o'clock precisely, on the 19th of February, with sealed Tenders, marked on the outside Tender for Works. Each Tender must be strictly in the printed Form prescribed. The Court does not bind itself to accept the lowest Tender.

LEWIS C. HERTSLET, Clerk.

Sewers Office, No. 1, Greek-street, Soho-square, 11th February, 1847.

BUILDERS who may be desirous of CONTRACTING for the erection of a Hall, and other buildings, in Pembroke College, Oxford, can inspect the plans and specifications, by applying to the Porter of the College on or after Wednesday the 10th of February. Tenders to be sent in to the Master, on or before the Third of March.

Pembroke College, February 5th, 1847.

TO CARPENTERS AND JOINERS, WOOD CARVERS, AND MASONS.

THE Committee for the Restoration of the Interior of St. NEOT'S CHURCH, in the County of Huntingdon, GIVE NOTICE, that they will receive TENDERS for repairing and other works, on or before Thursday the 4th of March next. The Plans and Specifications may be seen on application to Mr. WILLIAM EMERY, St. Neots, one of the churchwardens, and further particulars obtained by applying to the Architect, Mr. JAMES TACY WING, Potter-street, Bedford. The Committee do not pledge themselves to accept the lowest Tender.

St. Neots, February 8th, 1847.

TO BUILDERS.

PARTIES desirous of CONTRACTING for the ERECTION of the proposed NEW CONGREGATIONAL CHURCH, in Wolverhampton, are hereby informed that the Drawings and Specifications thereof may be inspected on Thursday, the 11th instant, at the office of Mr. Banks, architect, Wolverhampton. Tenders, sealed and indorsed "Tender for New Congregational Church," to be delivered on or before Thursday, the 1st of March, to J. BARKER, Esq., Wolverhampton.

*** No pledge is given that the lowest Tender will be accepted.

TO BUILDERS.

PARTIES desirous of CONTRACTING for the erection of additions to, and making alterations in the present house, at Spratton, near Northampton, may see the plans and specification at the office of the Architect, Mr. FOWLER JONES, Monkgate, York, on and after the 4th of February next, till TUESDAY 16th, from Ten till Four o'clock; and at the same hours from the 18th to the 28th, at the offices of Mr. MARKHAM, solicitor, Northampton. All tenders must be delivered in on before the 1st of March next, addressed to the architect, as above, of whom any further particulars may be obtained. The lowest tender may not be accepted.

N.B. As some Builders have expressed a wish that the Quantities of the various works for the above should be taken out and Bills supplied, a competent Surveyor has been employed to do so. It is therefore requested that those parties intending to give in tenders will make application as soon as possible to Mr. W. BACKHOUSE, at Mr. JONES'S Office, that Lithographed Copies may be prepared for them; and it is expected that they will be ready by the 18th instant.—York, 8 Feb. 1847.


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**MESSRS. ROBERTS and ROBY** are instructed to SELL at the Auction Mart, on WEDNESDAY, February 24th, at Twelve, by direction of the Heiress at Law of Mr. William Trott, deceased, a desirable plot of FREEHOLD BUILDING GROUND, with 27 feet frontage to Lamb-street or Three Colt-lane, Cambridge-road, Bethnal Green, and NINE ACRES OF VALUABLE COPYHOLD PASTURE LAND, situate near the village of Laughton, a short distance from Debden Green, Essex, particularly adapted for Building purposes. May be viewed, and particulars, with plans annexed, had ten days previous to the Sale, of Messrs. WATSON, BROUGHTON and SON, Solicitors, Falcon-square, Aldersgate-street, and at Messrs. ROBERTS and ROBY's Offices, 2, Moorgate-street, Bank.

EXTENSIVE SALE OF BUILDING MATERIALS, GREENWICH, BY ORDER OF THE COMMISSIONERS OF GREENWICH HOSPITAL.

**MR. GARDINER will SELL by AUCTION**, on the Premises, on TUESDAY, February 23, and following Days, at twelve each day, the whole of the valuable MATERIALS of FIVE TAVERNS and PUBLIC HOUSES, known as the Crown and Anchor, the Chatham Chest, the Red Lion, the Arundel Coffee House, and the White Horse, together with a great number of dwelling-houses, [illegible] and [illegible] the whole side of Fisher-lane, and the [illegible] side of Stockwell-street, and comprehending a large quantity of capital bricks, flooring boards, timbers, joists, sashes, doors, tiles, slates, fixtures, a great quantity of lead gutters, pipes, &c. The whole to be immediately cleared for the improvements about to be made to the Hospital.—May be viewed three days prior to the sale, and catalogues obtained at the Works'-office Greenwich Hospital; of Messrs. LETHBRIDGE and MACKRELL, solicitors, 25, Abingdon-street, Westminster; at the Ship Tavern, Greenwich; the Crown and Anchor, Woolwich; of the auctioneer, 17, Hatton-garden.

BUILDING MATERIALS, WHITTON, NEAR HOUNSLOW AND TWICKENHAM.

**MR. M. ADAMS will SELL by AUCTION**, without reserve, on the Premises, on Tuesday, March 2, 1847, and two following days, at eleven o'clock each day precisely, on account of the number of Lots, all the excellent BUILDING MATERIALS and FITTINGS of a Mansion and Offices, distinguished as ARGYLE HOUSE; formerly the seat of Archibald, Duke of Argyle, comprising about 450,000 excellent Malm and Scotch Birch, 13 tons of Lead, 3,800 feet of York and Portland Paving Stone, Seventy squares of Slating, 3,000 feet of capital Oak Floor Boards, Elegantly Carved Doors and Mantles, Marble and Portland Vases, beautifully executed Original Casts, Works of the most Eminent Artists and Royal Academicians and obtained at a great expense by the late Sir WILLIAM CHAMBERS, Glazed Sashes and Frames, elaborately Carved Mantles and Moulded Doors, Marble Chimney Pieces, Register Stoves, Girders, Joists, Oak and Deal Floor Boards, Copper Cisterns, Pumps and the whole of the Valuable Materials.—May be viewed, with Catalogues, only a week prior to the first day of Sale, the Sunday excepted, and Catalogues had of each fourteen days prior to the Sale, at the Red Lion and White Hart Inns, Whitton; Kings Head Inn, Twickenham; George Inn, Hounslow; Chequers, George, and Northumberland Arms Inns, Isleworth; Royal Oak, Whitton Lane; at the Office of "The Builder," York street, Covent Garden; and of the Auctioneer, Mr Adams, Isleworth.

VERY IMPORTANT SALES, by order of the Assignees of Messrs. Acraman, Morgan, and Co. at the Bedminster Ship Yard, Bristol, and at the Bristol Iron Works, St. Philip's. To be SOLD by AUCTION, by

**MR. EDWIN NAISH, at the SHIP-YARD**, MONDAY and TUESDAY, Feb 22nd and 23rd, at the IRON WORKS, WEDNESDAY and THURSDAY, Feb 24th and 25th, the prime Oak Skeleton FRAMES of Two STEAMSHIPS, now on the blocks, about 185 feet between the perpendiculars and 2[illegible] feet extreme beam, having been designed to attain great speed. Also, the MACHINERY, which was in course of preparation for the same; comprising two pairs of Condensing Engines, with horizontal cylinders of 51-inch diameter, speeded to exert the nominal power of [illegible] horses each pair, composed of the best material and excellent workmanship, being a late improvement on the same system of similar engines, by the same makers, now in use in the celebrated "Little Western:" together with the [illegible] and other forgings which have been made for the above engines and their wheels.

A FERRY-BOAT, and Four New Copper-fastened BOATS. 50,000 Feet of thoroughly-seasoned Choice ENGLISH OAK PLANK, of several thicknesses, well calculated and intended for the completion of the above vessels, and suitable for other purposes; some thousands of feet of prime Yellow and Red Pine, English and American Elm Plank, various thicknesses.

[illegible] feet of prime [illegible] ENGLISH OAK TIMBER, of large dimensions; Cedar, Dantzic, and American Oak, Yellow and Red Pine and Elm Timber, all the Ons[illegible] and Posts, Blocks, Stores and [illegible] at the Ship-builder's yard and premises.

Mr. NAISH [illegible] to Advertise that a limited time will be allowed the purchaser or purchasers of the Skeleton Frames to finish the ships on the premises [illegible].

The Shells of the Steamers, Timber, Plank, and Wood work is intended to be Sold at the Bedminster Ship-yard; and the Engines [illegible] and Ironwork at the St. Philip's Iron Works. [illegible] Lots by Land or Water, and within a short distance of the Great [illegible].

Catalogues are now ready for distribution and may be had on application to the Auctioneer, 7, North-street, Bristol; to Mr. [illegible] HUTTON, Official Assignee; or Mr. J. K. HALEFIELD, [illegible] [illegible]

[illegible]

Stock in Trade of a Bankrupt Timber Merchant, comprising Mahogany, Rosewood, Wainscot, Lime, Sycamore, Maple, Beech, Birch, Deals, Planks, Battens, Boards, and Veneers, a Timber Carriage and Truck, Store street, Tottenham-court-road.

**MR. T. TIMS will SELL by AUCTION**, on the Premises, No. 7, Store street, Tottenham-court-road, on MONDAY, February 15th, at Twelve, the capital seasoned Stock, consisting of Spanish and Honduras mahogany, [illegible] Havannah cedar, beech planks and quartering, sycamore, maple, oak staves and planks, Swiss belly wood, dry yellow deals and battens, spruce deals, pine planks, deal quartering; veneers in mahogany, maple, birch, and sycamore; a nearly new light timber-carriage, a truck, and two ladders. May be viewed three days prior to the sale and Catalogues and Particulars then had of E. EDWARDS, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; of JOSEPH TURNLEY, Esq., Solicitor, Ludgate-street, and at Mr. TIMS'S Offices, 63, Upper Charlotte-street, Fitzroy-square.

DAY OF SALE ALTERED, from Monday the 8th, to Tuesday the 15th February, 1847.—BUTTERCRAMBE, near YORK.—Capital Oak, Ash, Scotch Fir, Sycamore, Birch, and Alder, for SALE BY AUCTION, by

**MR. JAMES WALKER, at the House of** Mr. Wilson, the White Swan Inn, Goodramgate, York, on TUESDAY, Feb. 16th, 1847, about THREE THOUSAND TREES of superior quality and useful dimensions, now standing in the Hedgerows and Plantations in the Township of Buttercrambe. For particulars, and to view, apply to Mr. SHARON, Aldby Park. The Sale to commence at Three o'clock in the afternoon, precisely.

CATALOGUE OF TIMBER.

Lot 1.—117 Fine Ash, 9 Alders, 17 Ciphers, on Mr Rounthwaite's Farm.
Lot 2.—111 Fine Ash, 19 Ciphers, on Mr. Rounthwaithe's Farm.
Lot 3.—91 Fine Ash, on Mr. Dowson's Farm.
Lot 4.—139 Ash, 4 Sycamores, 10 Oaks, 22 Ciphers, on Mr. Smithson's Farm.
Lot 5.—193 Birch, on the right hand of the road leading from Stamford-bridge.
Lot 6.—117 Birch, 2 Poplars, on the left hand of the road leading from Stamford-bridge.
Lot 7.—128 Ash, 18 Oaks, 19 Ciphers, between Beech lane and road.
Lot 8.—128 Ash, 18 Oaks, 3 Elms, 8 Ciphers, on right of Beech-lane.
Lot 9.—60 Ash, 9 Oaks, 1 Poplar, on Mr Mills' Farm.
Lot 10.—100 Ash, on Mr. Mill's Farm.
Lot 11.—500 Fine Scotch Fir, in the River Wood, near Stamford-bridge.
Lot 12.—426 Ash, 75 Oaks, 212 Sycamores, 4 Elms, in Bossal Wood.
Lot 13.—148 Ash, 118 Oaks, 108 Sycamores, in Bossal Wood.

Buttercrambe adjoins Stamford-bridge. The Lots are contiguous to the river Derwent and possess every facility of being conveyed by land or water.

9, Davygate, York, 4th Feb. 1847.

STONE MERCHANT'S STOCK.

**MR. H. BIERS has received the directions** of Messrs. Mowlem, Freeman, and Burt, to prepare Catalogue for SALE by AUCTION upon the present premises, they being about to remove to No. 13, South Wharf Road. This very Valuable Stock comprises several Thousand Feet of York Paving, Landings, Steps, Kirb, and Coping, Portland, Mansfield, and Bramley Fall, in Block, Slab, Steps, and Landings, Purbeck, Portland Sinks of superior quality, Granite Kirb and Spur Stones, a Portland Stone Staircase in good condition, a small quantity of Sienna and other Marble; a Powerful Stone Truck with Patent Boxes, capable of Carrying Ten Tons, and many useful articles.—Catalogues when ready, will be sent post free, to any part of the kingdom: and an unusual facility presents for Water-carriage, the stock being close to the Grand Junction Canal. APPROVED BILLS at Three Months where the purchase amounts to 50l. Four Months to [illegible], 15, Broad street, Golden square.

BUILDER'S BUSINESS OF FIRST CHARACTER.

**MR. H. BIERS has been instructed to dispose of** by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST-RATE PRACTICE: declining health of the proprietor [illegible] the sole reason for parting with the same. No [illegible] [illegible] required for goodwill, but merely that the stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from 1,000l. to 2,000l. Further particulars and cards to view may be obtained on application to Mr. H. BIERS, 13, Broad-street, Golden square, between the hours of One and Three. Written applications cannot be attended to.

**DESIGNS, DRAWINGS, ESTIMATES**, SPECIFICATIONS, and WORKS executed at one-half the usual charge, by a person of great experience in the profession. Builders' accounts adjusted, quantities taken out, dilapidations, &c., surveyed, and measurements made on the most reasonable terms. Address, post-paid, to X. Y., care of Mr. Squire, Stationer, No. 22, Thornhill place, Caledonian-road, Pentonville.

**ARTISTS, DESIGNERS, and Amateurs** are informed that the General PRACTICAL SCHOOL OF DESIGN, 18, Maddox street, Hanover square, Master J. M. Leigh, Esq., is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female—with Weekly Lectures on Art. Terms, One Guinea per Quarter.
R. W. HERMAN, Hon. Sec.
24, Green-street, Grosvenor square.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.
By the Court.
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek street, Soho square.

**TO BUILDERS and Others interested in** buildings or in ground for building upon, within the district under the jurisdiction of this Court drained by water-courses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewers or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers or drains into sewers, to be made for the [illegible] of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers.

All petitions must be delivered at this office at least three clear days before they are presented to the Commissioners, and all such petitions will be called on in the order of their application, and the [illegible] of any party not present when called on to support the [illegible] will be struck out, and the proceedings must be recommenced [illegible] here.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act, 7 and 8 Victoria, [illegible] the authority of the Commissioners [illegible] but their powers are [illegible] reserved, and their regulations made subservient to the purposes of the Act. The [illegible] of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewer or drains within this commission, or relieve the parties making them from the penalties above mentioned.
By order of the Court.
LEWIS C. HERTSLET, Clerk.

**MISS BESSEMER, EMBROIDERESS**, 9, JUDD-STREET, Brunswick-square, respectfully solicits orders for the cleaning, repairing, and transferring of ancient Needlework and Tapestry, also for the embroidering of Altar cloths to new and approved designs; Coats of Arms, Crests, &c. &c. worked in gold or silk.—Miss B. is allowed to refer to some of the first houses in the trade as to her care and abilities.

**SURVEYING.—UNIVERSITY COL**LEGE, London.—During the months of February, March, April, and May, Mr. HARMAN LEWIS, M.A., Professor of Civil Engineering, will conduct an Elementary Course of Theoretical and Practical Surveying, with Field Practice. Tuesday, seven to eight, Thursday, seven to nine; Field Practice at times to be fixed at meetings of the class.—Fee, for students attending the class of Engineering 5l.; for others, 6l. The course will commence on Tuesday, February 16.

CIVIL ENGINEERING. Professor Lewis's Course commences on the 3rd instant.

HENRY MALDEN, Dean of Faculty and Arts.
CHAS. C. ATKINSON, Secretary to the Counc[il].
February 6, 1847.

**ART-UNION OF LONDON: Incorpo**rated by Royal Charter.

PRESIDENT—H. R. H. the Duke of CAMBRIDGE.

The list for the current year is now open. Subscribers will receive for each guinea paid, besides the chance of obtaining a work of art at the distribution, a pair of prints, the "Last Embrace," and the "Neapolitan Wedding," engraved by Mr Charles Rolls and Mr. F. A. Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of 500l. offered by the society for an historical picture.

GEORGE GODWIN, } Hon. Secs.
LEWIS POCOCK,
4, Trafalgar-square, January 1, 1847.

**SOCIETY OF ARTS**

PRESIDENT
H. R. H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered in on or before the 5th of May, 1847.—A List of the subjects for which Premiums amounting to 300 Guineas, with 40 Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, John street, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.

**ARNEWAY'S CHARITY.—NOTICE** IS HEREBY GIVEN, that the Trustees of this Charity are enabled to LEND OUT the TRUST MONIES to Poor Decayed [illegible] or Traders resident within the City and Liberty of Westminster, that is to say, within the Parishes of Saint Margaret and Saint John the Evangelist, Saint Ann, [illegible] Saint George, Hanover square, Saint Martin in the Fields, Saint James, Saint Mary-le-Strand, and Saint Paul, Covent Garden. The amount of each loan [illegible] after the rate of 3l. per cent. per annum, and is to be secured by the bond of the borrower, with two sureties. [illegible] application [illegible] between the hours of Ten and Three o'clock [illegible] at the office of the Clerk and [illegible], 19, Great Queen street, Saint James's-park.—By Order.
EDWARD S. STEPHENSON,
Clerk and Solicitor to the Trustees.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from the quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr GEORGE GATES, 18 South-wark square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

CAEN STONE DEPOT.—NORWAY SUFFERANCE WHARF, GREENWICH.

**W. TUCKWELL, Caen Stone Importer**, informs Architects, Sculptors, Masons, and others, that he has a large stock of superior DRY SEASONED CAEN STONE on his Wharf, imported July last, exclusively from his quarries at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 50, Cheapside, where any information and samples may be obtained.—CAEN STONE shipped direct from Caen to any port.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

**SAMUEL CUNDY begs to inform Archi**tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate and packed for the country, ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY of CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to size from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected in addition to the usual extensive stock of Chimney pieces and FONTS.

Estimates given for building generally.

**LADYSHORE TERRA COTTA.—Th**e attention of Architects, Builders, and others engaged in building is respectfully called to this material, which combines the beauty and durability of the best Freestone at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the entire building of two churches, one in Manchester and one at Bolton-le-Moors, and a parsonage house and the ornamental parts of a school, also in many other churches and buildings, &c. Its advantages are, that it is not a "Composition," nor of the nature of Stucco, but HARD BURNT CLAY. In rich ornamental work, its value will be found to be great, being so much cheaper than carved stone or wood, and equally durable.

The principal ornaments manufactured are capitals, trusses, bosses, brackets, royal arms, foliated mouldings, panels, panelled bench ends, with poppy heads, pinnacles, finials, chimney tops of all sizes, vases, fountains, pedestals, [illegible] chimney-pieces, indented tiles and other tiles for churches, halls, &c., and every variety of ornament that is used for building purposes.

This material is warranted to stand the weather. Specimens may be seen, and every information obtained, on application to the Proprietors, E. P. WILLOCK and Co., 10, Exchange Arcade, Manchester.

**ROYAL POLYTECHNIC INSTITU**TION.—CHEMICAL LECTURES by Dr. Ryan, with brilliant and varied Experiments, daily, and on the evenings of Mondays, Wednesdays, and Fridays. On the commencement of LENT, Dr Bachhoffner will deliver a series of Lectures on ASTRONOMY [illegible] the latest [illegible] Mondays, Wednesdays and Fridays [illegible] MUSIC, by Dr. Wallis [illegible] lecture on the ELECTRIC TELEGRAPH, including the recent Patent of Messrs. Nott and Gamble.—The [illegible] Works in the [illegible] described. The [illegible] OPTICAL EFFECTS include the NEW DISSOLVING VIEWS. EXPERIMENTS by the DIVER and DIVING-BELL, &c., &c.—Admission, 1s.; Schools, Half-price.

The Builder.

No. CCX.

SATURDAY, FEBRUARY 13, 1847.

PEOPLE say architecture is a noble art, and so it truly is: its influence on taste and morals is undeniable, for, as an American writer observes,—"There is a kind of symmetry in the thoughts, feelings, and efforts of the human mind. Its taste, intelligence, affections, and conduct, are so intimately related, that no preconcertion can prevent them from being mutually causes and effects. The first thing powerfully operated on, and, in its turn, proportionally operative, is the taste. The perception of beauty and deformity, of refinement and grossness, of decency and vulgarity, of propriety and indecorum, is the first thing which influences man to attempt an escape from a grovelling, brutish character; a character in which morality is effectually chilled, or absolutely frozen,"—and so on, and so on. Those who profess this noble art should be gentlemen—*must* be gentlemen: men of education and cultivated taste, with more acute perceptions and finer feelings than the multitude. The sense of beauty is necessarily accompanied by a feeling of its superiority over deformity, and may be supposed to confer this superiority on those who possess it over those who do not. To stand under the shadow of a *once* great name,—every one remembers what Vitruvius looks for in the architectural character,—integrity, high feeling, nobleness of heart. For an architect even to solicit employment was an abasement, in the eyes of the accomplished Roman, of both art and artist, not to be endured. And we emphatically say the Roman was right.

So far then our exordium: and now we will just let our readers see what is thought of this noble art, and its high-minded professors, in at all events one district of Great Britain,—the good town of Ipswich.

The committee of the Mechanics' Institution there, proposing to erect a building for the purposes of the society, and desiring to have the best plan, and a choice of plans in order that they may get the best plan, have issued an advertisement to "Architects and *Builders*," stating this desire. They set forth that the building must not have more than 60 feet of frontage, and must comprise,—"A lecture room, about 30 feet high, to accommodate a lecturer and a company from 600 to 800 persons; a library and reading-room, or the two combined; a committee-room, class-room, and a good vestibule entrance; also rooms for the residence of the librarian;" and they say that the whole must not exceed the cost of 1,600*l.*

The plans are to be sent in under a private mark; and, will you believe it? no less a sum than FIVE GUINEAS will actually "be given for the one most approved, if the party be not employed to carry it out." Listen to this, ye Inigos and Christophers of England! Talk no more of want of encouragement, ill-appreciation, insults to art,—but sit ye down to your tables; use the knowledge ye have acquired at so much cost and labour; and respond to this benevolent offer in the way it deserves.

And if you do so, it will be with one universal burst of contemptuous indignation, sufficient to awaken these gentlemen of Ipswich from the ignorance which led to such a proposal, deter other committees from offering a similar insult, and perhaps effect an alteration in the miserable and degrading system altogether.

There is no mistake in the advertisement: it runs clearly, FIVE GUINEAS will be given *for* the one most approved, if the party be not employed to carry it out; goes on to say the institution is open to offers for sites or *premises* that are eligible (in the event of which latter not being found, the plans, of course, will not be carried out by any one), and is signed J. Allen Ransome and Henry Lawrence.

We wonder if Mr. J. Allen Ransome and Mr. Henry Lawrence felt ashamed of the document when they signed it? ashamed of themselves and their colleagues? If they did not, it must have been for want of thought on what they were doing.

If an architect were commissioned by an employer to design and prepare the plans for such a building, five-and-twenty pounds would be a moderate charge for them. And yet in the present case, architects are unblushingly invited to prepare these plans for merely the *chance*, the very remote *chance*, of getting five pounds, five shillings, or one-fifth of what they would be fairly entitled to charge. Apply the invitations, as we have often said, to lawyers, and doctors, butchers, and bakers; and while its absurdity is made manifest, the low and degraded position to which the profession of architecture is reduced also becomes strikingly apparent. Would Messrs. J. Allen Ransome and Henry Lawrence venture to put their names to an advertisement, offering five pounds for the best five-and-twenty pounds' worth of, say mechanism, of no use to any but the advertiser? or if they did, would a mechanic be found, however vain he might be of his skill, and anxious to shew it, who would spend his time on such a losing game, even if certain that the *best* would have the miserable prize (?) which, in the case of the architects, is very far from clear. Or as we inquired when the fishmongers and poulterers advertised for the best plan of an asylum—what would fishmongers and poulterers say if they were asked to obtain and submit some particular kind of game (never called for by their every-day customers) on the *chance* that it would be bought at the ordinary market price? "But then, say the poulterers, *fowls* cost money, and are really worth something, whereas the *designs* you speak of are merely drawings, which, unless we take them, will not realise the cost of the paper they are made upon; so that the cases are not parallel.

Truly the cases are not parallel. An honest, able design represents not merely present time and thought, but a large premium and outlay in other respects, long travel, years of study, and many previous, and unsuccessful attempts. But whatever can be had for nothing is literally worth nothing: and thus it is that architects have lowered the character of their profession, and degraded themselves.*"

The poulterers were bad enough, and we told them so; but the *savans* and wisdom-lovers of Ipswich are a hundred times worse. The former did pledge themselves that the author of the selected design should carry it out, if found to have experience; but the Ipswich philosophers, while they offer to the *successful* candidate half the absurdly small sum which the others gave to the first unsuccessful competitor, do not even hint at employing him, but, indeed, make it as apparent as it can be made without saying so in words, that they do not contemplate any such step.

The question now comes, will architects be found to countenance a system, of which this is so bare-faced and insulting an illustration, by submitting plans on the terms proposed?

Earnestly we hope not, as well for the sake of the art as of the profession; and we trust that some steps will be taken, to let the enlightened committee of the Ipswich Literary Institution know the feeling with which their advertisement is viewed by the profession at large.

* Vol. IV., p. 169.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.

BY PROFESSOR GRIFFITHS.

INTRODUCTORY.*

PROBABLY fifty-five substances must be regarded as *elements* in the present state of chemical science; their names are here subjoined in alphabetical order. Those marked * are combustible and non-metallic; those marked † are incombustible and non-metallic, the others are metallic.

1, aluminum; 2, antimony; 3, arsenicum; 4, barium; 5, bismuth; 6, * boron; 7, † bromine; 8, cadmium; 9, calcium; 10, * carbon; 11, cerium; 12, † chlorine; 13, chromium; 14, cobalt; 15, columbium; 16, copper; 17, † fluorine; 18, glucinum; 19, gold; 20, * hydrogen; 21, † iodine; 22, iridium; 23, iron; 24, lantanum; 25, lead; 26, lithium; 27, magnesium; 28, manganesium; 29, mercury; 30, molybdenum; 31, nickel; 32, † nitrogen; 33, osmium; 34, † oxygen; 35, palladium; 36, * phosphorus; 37, platinum; 38, potassium; 39, rhodium; 40, * selenium, 41, silicium; 42, silver; 43, sodium; 44, strontium; 45, * sulphur; 46, tellurium; 47, thorium; 48, tin; 49, titanium; 50, tungstenum; 51, vanadium; 52, uranium; 53, yttrium; 54, zinc; 55, zirconium.

Of the elements, the following will be most frequently mentioned during these papers on chemistry as applied to construction:—

I. Combustible and non-metallic: carbon, hydrogen, phosphorus, and sulphur.

II. Incombustible, and non-metallic: chlorine, nitrogen, and oxygen.

III. Metallic: aluminum, calcium, iron, magnesium, potassium, silicium, and sodium.

The leading chemical characters of these fourteen elements are as follows:—

*Carbon*, a non-metallic combustible solid, perfectly unalterable by exposure to all vicissitudes of atmospheric temperature, or to the joint agency of air and water; but when its temperature is artificially raised, it burns by combining with oxygen, and produces carbonic acid gas. This compound unites with many metallic oxides to form *carbonates*, and they are of great utility and importance.

*Hydrogen*, a non-metallic gaseous element, eminently combustible, and producing during its combustion *water*, by uniting with the oxygen of the air. Hydrogen also combines with several non-metallic, and a few metallic elements, and it, in common with carbon, is most generally existent in organic bodies.

*Phosphorus*, a non-metallic element, solid, but combustible at a very slight elevation of temperature, and producing, by uniting with the oxygen of the air, *phosphoric* acid; this combines with many metallic oxides, and forms *phosphates*: some of these are important.

*Sulphur*, a non-metallic element, solid and easily combustible, and producing, during its combustion in air, *sulphurous acid*, or by modifying its combustion, in contact with certain compounds containing oxygen, the product is *sulphuric acid* or *oil of vitriol*; this acid combines with the generality of metallic oxides, forming *sulphates*, a very definite and extremely valuable class of compounds.

*Chlorine*, a non-metallic incombustible vapour of a greenish yellow colour, eminently poisonous, but a powerful disinfectant, and destroyer of colouring matters; it combines with the generality of the metallic and non-metallic elements, producing definite compounds, called *Chlorides*, when they are not acid. The great natural source of chlorine is common salt, a binary compound of chlorine and sodium.

*Nitrogen*, a non-metallic incombustible gas, a perfect type of a non-supporter of combustion, existing in a state of uniform mixture with oxygen, carbonic acid, and watery vapour

* See p. 47, *ante*.

to constitute atmospheric air; but when combined with oxygen, forming several compounds, amongst which is *nitric acid* or *aqua fortis;* this combines with most metallic oxides, and forms an important class of compounds called *nitrates*.

*Oxygen*, a non-metallic incombustible gas, but a powerful inducer and supporter of combustion; it is universally present throughout nature, in air, in water, in earth, and most organic bodies. Its compounds with other elements, when not acid, are termed *oxides*, thus, all the substances formerly called earths or calces, are true oxides of metals.

*Aluminum, calcium, magnesium*, and *silicium* are metals obtained from clay, or alumina, lime, and magnesia, and *silica;* they are extremely difficult to procure, on account of their extraordinary affinity for oxygen; hence, in a pure state, they are not practically known, but their compounds are of vast utility and interest.

*Iron*, a metal most abundantly presented throughout nature in a state of combination, and especially with oxygen. It forms two *oxides*, and these are capable of combining with various acids to form compounds, which constitute the basis of many colours and stains: it is a metal having a very extensive and practically valuable range of chemical affinity.

*Potassium* and *sodium* are the metals of the alkalies potash and soda. These metals are difficult to obtain on account of their energetic affinity for oxygen, and they are only of importance in the refined operations of analytical chemistry; but their compounds with oxygen, and of these with other oxides and acids, are of great value in most departments of science, art, and industry.

Many of the metallic elements are employed in a pure or insulated state, as, for example, iron, copper, tin, lead, or zinc; in the form of beams, bars, rods, sheets, tubes, and pipes of all sizes, shapes, diameters, and thicknesses.

The compounds which some of the metals form with each other are technically called *alloys;* these are in universal request in decorative architecture; for example, bronze, and brass; the former a compound of copper and tin; the latter, of copper and zinc. The hard and soft solders, also, used for uniting the several parts of metallic work, are all alloys of various metals. These alloys, generally speaking, are more fusible than the individual metals of which they are composed, and, therefore, admit of being applied with great facility.

The precious metals, gold and silver, are employed in decorative architecture even to a lavish extent. But the great value of these elements would entirely preclude their use if they did not possess the important physical property of malleability, or extension into leaves of extreme tenuity, in a degree superior to all other metals; for as regards gold it may be stated, that a cubic foot of the precious metal admits of being beaten into leaves sufficient to cover nearly one hundred thousand square yards. Then the permanence of gold, and good gilding, is remarkable. It has no affinity for oxygen, or any other substances that are existent in air or in water; it, therefore, preserves its deep orange lustre unimpaired for centuries,—witness, for example, the golden ornaments and the gilding that embellish the cases of Egyptian mummies. Silver, on the other hand, although of a beautifully chaste white lustre, will soon become tarnished or dull. This change is not due to oxidation, but to the action of sulphureous vapours upon the metal, by which a thin scale of sulphuret of silver is formed, and this acts as a shield to the metal beneath. The silver and silvering found in many ancient cathedrals, churches, and abbeys, is frequently thus tarnished, or blackened, and to a very great extent, if in the immediate vicinity of decomposing organic bodies.

The use of silver is almost excluded from theatrical decorations and properties, unless it be strongly lacquered, to keep off the action of the sulphureous compounds which are emitted during the combustion of coal-gas, and very few silversmiths or jewellers can venture to illuminate their shops with coal-gas unless great care has been taken in its purification. It is no easy task to free gas entirely from compounds of sulphur, hence the recent plan of having the gas lamps outside, instead of inside the windows, to exclude the action of sulphur, and also the heat, and watery vapour, resulting from the combustion, all of which conduce to the tarnish.

The chemical habitudes of the metals require much study from the architect, for a metal alone may be extremely permanent, but will often corrode rapidly if in contact with another metal; thus, for example, copper or zinc, alone, will resist oxidation for a great length of time, but let them be rivetted together, and exposed to the vicissitudes of the atmosphere, and the zinc will soon sustain corrosion. The chemist discovers that the mere contact of dissimilar metals disturbs their electrical relations, thus zinc renders copper electro-negative, and in that state it will not suffer chemical change, whilst the zinc becomes electro-positive, and in that state, although capable of protecting the copper, suffers oxidation and corrosion itself.

This fact having been pointed out by the chemist to the architect and builder, we now find when plates or masses of metals are to be employed, care is taken to examine strictly their electro-chemical relations or habitudes, that corrosion may be prevented, though in many cases the fact cannot be conveniently rendered applicable. Look, for example, at railings of cast, but more especially of wrought-iron, when firmly secured into stonework by pouring molten lead around them, how often they decay and dwindle away in some cases to mere wires, especially at their lower parts, immediately in contact with the lead, the iron being rendered electro-positive, and therefore capable of undergoing oxidation by the joint agency of air, water, and the animal fluids that are so commonly voided against corner rails. Although the common metals, *ex. gr.*, tin, copper, lead, iron, &c., are so extremely plentiful and cheap, they are not presented by nature either in purity or quantity adequate to the supply of the enormous demand that is made for them in the arts of life, and as they are all elements, of course the chemist cannot form them artificially. The metals are presented by nature in combination with non-metallic elements, generally oxygen and sulphur, constituting *oxides* and *sulphurets*, or as oxides combined with acids, constituting *carbonates* and *sulphates*; such compounds are known to the chemist under the title of *metallic ores*. Thus the tin ore of Cornwall is an *oxide*, whilst the copper ore of that county is a *sulphuret*, and the iron ore of Staffordshire is a *carbonate*, these are familiarly known as *tin-stone*, *copper pyrites*, and *iron-stone;* they contain the metals, tin, copper, and iron; the art of obtaining such valuable forms of matter is founded upon known laws of chemical affinity, and consists in exposing the respective ores to heat, with some non-metallic element, having a strong affinity for that in the ore, but none for the metal; this operation is called *reduction*, and during its procedure the metal is *not made* or *produced* by the agents employed, but *drawn forth* or *educed* from its natural combination with a non-metallic element.

The following example may serve to explain the theory of the process of reduction. If a piece of charcoal be heated red hot, it will rapidly consume; this is a chemical change and due to the charcoal or its pure *carbon*, exerting affinity for the *oxygen* of the surrounding air, so that the product of the combustion is *carbonic acid gas;* the chemist ascertains by analysis, that the ore of tin consists of the metal and oxygen, and having as in the above simple instance discovered that charcoal at a high temperature has an affinity for oxygen; he mingles charcoal with the ore of tin, and expects upon heating the mixture in a furnace, that the charcoal will burn by attracting the oxygen of the ore, that carbonic acid will be *produced*, and then the metal thus deprived of oxygen or *deoxidated* will be *educed;* the correctness of this reasoning is borne out by experiment, and conducted upon a large scale it furnishes all the commercial demands for the metal tin.

The natural and artificial compounds of oxygen with the metals present a vast mass of useful materials for the purposes of the architect and the builder. All of these have been laboriously and accurately examined by the chemist.

Thus pure white clay, sand, and lime, although commonly called *earths*, are true *metallic oxides*, the constituent metals being so firmly united to oxygen by the power of chemical affinity, that they do not admit of extraction or reduction by ordinary decomposing agents, but by employing such, in conjunction with the action of electricity, three extraordinary metals, viz., *aluminum*, *silicium*, and *calcium*, reward the researches of the experimentalist.

In consequence of clay, sand, and lime, undergoing no reduction to the metallic state by the sole agency of heat, they become eminently fitted for the construction of fire-places and furnaces, not only for the combustion of fuel for warming dwellings, but for that required in the reduction of ordinary metallic ores and the formation of every variety of earthenware, porcelain, glass, and vitrifications, as will be more particularly shewn hereafter. Native compounds, or in some instances, native mixtures, and in others artificial mixtures of these substances with other metallic oxides, constitute all the varieties of granite, slate, terras, puzzolano, and cement. Oxide of iron is most abundantly distributed throughout nature, and more particularly in all common kinds of clay, it has a very intense affinity for the pure white alumina of clay, and the red colour of bricks, tiles, and articles of common pottery is referrible to its presence in a high state of oxidation induced by the heat and air of the clamp or kiln in which such useful materials are burned or baked. Then the chemist by attentively studying the characters of ordinary metallic oxides, finds that they have the power of uniting with those used in the manufacture of earthenware, and of conferring various splendid and highly permanent colours, thus the oxides of chrome, cobalt, and manganese, respectively confer all shades of green, blue, and purple.

The glass employed in window-sashes is a compound of metallic oxides, crown-glass, for instance, consisting of oxide of silicium or *silica*, and oxide of sodium, or *soda;* whilst the softer and more brilliant glass called flint-glass consists of silica oxide, of potassium, or *potash*, with the addition of litharge, or *oxide of lead;* to this its extreme brilliancy and high refractive power are referrible, and hence its admirable adaptation to the splendid cut-glass chandeliers, lustres, &c., which are introduced by the hand of decorative art. All the beautiful varieties of stained glass are compounds of metallic oxides; and seldom, indeed, do we imagine, when gazing upon, and admiring the effect of the beams of rainbow-coloured light that pierce through the party-coloured panes of a magnificent cathedral window, that the glass, under the hands of the chemist, may be caused to reveal more beauties that those immediately apparent to the eye; but such is the case, for the deep ruby red is conferred by gold, the bright yellow by silver or antimony, deep orange by iron, green by iron or copper, blue by cobalt, purple by manganese, and the various shades of colour by the judicious admixture of those metallic preparations with each other in originally colourless glass, the same as various shades may be produced by adding ordinary pigments to white lead upon the palette of the artist,—with this exception only, that vitrified colours will never fade or deteriorate; witness the vitreous relics of Egyptian art.

Pursuing our inquiries regarding "Chemistry as applied to construction," it appears that all kinds of mortar essentially consist of oxide of calcium and oxide of silicium, or, in other words, lime and sand; whilst hydraulic cements, which harden or set under water, contain, in addition, oxide of aluminum, or alumina, and oxide of iron. These latter substances confer the peculiarity belonging to such cements, in consequence of a very powerful and beautiful affinity that is brought into action when they are mingled with the materials of common mortar. This important subject will open a wide field of discussion. Oxide of calcium, or lime, naturally combined with carbonic acid, and in many cases involving other metallic oxides, presents the architect and the builder with every variety of pure white and veined marble, free-stone, Bath-stone, lime-stone, calcareous spar, chalk, and whiting.

In the language of chemistry, the combination of an oxide with an acid is called a *metallic salt*, however it may differ in its character from common salt, which is a binary compound of chloride of sodium.

Alabaster, gypsum, plaster-stone, and plaster of Paris, consist of sulphuric acid and lime, and are more or less pure according as they

are perfectly white, for the red coloured, or veined, specimens contain oxide of iron. In examining these sulphates of lime, the chemist points out how the characters of substances may be disguised by the power of affinity; for sulphuric acid and lime, in a pure or insulated state, are excessively caustic and poisonous, and cannot be exposed to the air without undergoing change; but upon being united they form a compound perfectly neutral, having no poisonous property, and which will endure for ages unchanged, as the sculptured work of many ancient funeral monuments so amply testifies.

Most of the materials employed as paints or colours are salts of metallic oxides. The yellow colour given to old brickwork previous to the operation of pointing, is due to the oxide contained in sulphate of iron or green vitriol, being extracted or precipitated by the greater affinity of lime for the sulphuric acid. White lead is a carbonate of the oxide of lead; blue and green verditter are carbonates of oxide of copper; chrome yellow a compound of chromic acid and oxide of lead, whilst vermilion is a direct compound of sulphur and mercury, or a sulphuret of mercury, and common bronze-powder, a sulphuret of tin.

These examples may suffice to prove how largely the architect, the builder, and the decorative artist draw upon the elementary metals and metallic compounds for materials suited to the pursuit of their respective professions, and that chemistry as applied to construction presents many important and useful facts to their notice. But we can proceed further; let us turn our attention to some of the non-metallic elements and their compounds or mixtures. The basis of all black paints is *carbon*, in various states of mechanical division, known as lamp-black, ivory-black, and vegetable black. The very pencil point with which the design of the palace or the cottage may be traced, although familiarly called "black lead," does not contain a particle of lead; it is a variety of carbon, in a pure and soft state; and the diamond, employed by the artificer to cut the tables of glass, is the same element carbon, absolutely pure, crystalline, and the hardest substance known to the experimentalist.

This same Protean element carbon, as elicited by the decomposition of organic remains, confers the blackness upon the much admired marble called *Lucullite;* and if the chemist cause affinity to ensue between carbon and iron, the result is cast-iron and steel; without the latter compound fashioned into tools, the architect could not have his designs properly and effectually executed.

Another extraordinary element is *hydrogen*. Although never presented pure by nature, it exists in combination with oxygen to constitute water, a liquid of the most universal employment for tempering clay, mixing cement, stains, colours, and for aiding the sawing, grinding, and polishing of marble, stone, glass, metals, and so forth.

But water, thus useful and indispensable, is a natural agent against whose effects it is the constant aim of the architect and builder to be repaired, for it contributes in no small degree both mechanically and chemically to the disintegration and decay of many materials employed in construction.

These may appear perfectly compact, yet close examination proves them to abound in minute pores, which, in virtue of an attraction purely mechanical, called capillary attraction (like that of a sponge), eagerly absorb, and tenaciously retain, water derived from the clouds or from the humid soil of foundations, and thus remain damp; some idea of the extent to which this absorption and retention takes place may be formed from the fact, that a single good and apparently sound stock brick, such as is employed in the generality of metropolitan buildings will absorb and retain upon the average eleven ounces of water.

Accordingly, if mortar or cement be laid on dry bricks, the water is rapidly absorbed, and little or no cementation takes place; hence the utility of soaking the bricks in water, or lime water, to fill the pores, so that the water of the mortar may be not rapidly, but gradually absorbed, as the brickwork dries, supposing always the situation is suitable for the drying to ensue.

If porous brick or stone-work saturated with water be exposed to frost, the water passes from the liquid to the solid state, or in more familiar terms freezes, and in so doing it expands with vast force, a force that the particles of the materials are unable to withstand; accordingly, they are riven asunder, chiefly at the surface, and in the course of time by the alternations of thaw, frost, and heat, a considerable amount of disintegration and decay is the consequence; many public buildings present striking examples of this fact.

Water forms an essential, and, in many cases, a truly definite, constituent of building materials. Thus *slaked* lime, although it may feel perfectly dry, in every 100 parts, contains 25 parts of water, and such lime the chemist terms *hydrate of lime*. The above quantity of water is theoretically required to slake 75 parts of quicklime, although in practice, a larger quantity is generally added; alabaster and gypsum owe their beauty, translucency, and compactness, to the presence of water, chemically combined in the proportion of about 20 per cent., and are *hydrated* or *enhydrous* sulphate of lime, if the water be expelled by the action of heat, they become opaque white, and *anhydrous*.

Thus plaster of Paris is *anhydrous*, and when artificially mixed with water, the well-known property of setting and hardening is due to affinity between the sulphate and the water, by which the latter is solidified.

Water, although so abundant throughout nature, is never chemically pure, or solely consistent of its two elements, hydrogen and oxygen; it contains various saline matters derived from the strata of the earth, and these impurities, however minute in quantity, perfectly interfere with its use in refined experiments; and where they exist in abundance, as in some kinds of river water, or more especially in sea water, they interfere with its employment by the architect and builder. The purity of water employed in mixing clay, mortar, cement, and colours, although a matter of great importance, is but too often neglected by practical men, and the consequence is, that blotches and efflorescences disfigure the work, originally destined to be fair and beautiful.

To those who have not made the science of chemistry a branch of study, the foregoing statements as to the earths and earthy materials (popularly so called), being metallic oxides, may appear extraordinary. If this be the case, how much more extraordinary will appear the ensuing statement,—that all kinds of timber consist of the elements *oxygen*, *hydrogen*, and *carbon!* but such is the chemical fact; and not only consist of these non-metallic and diametrically different elements, but in definite weights, so exactly apportioned, that their individual characters are as perfectly neutralized as in the case of sulphuric acid and lime, when united to form alabaster.

In perfectly good, dry timber, free from any great excess of turpentine, resinous matter, or knots—say, for example, well-dried American pine—the elements, oxygen and hydrogen, are found in the exact proportions requisite to the constitution of *water*, and these combined with an equal weight of the element *carbon*. The accumulation, the, elaboration of these three elements by the vital, or organic powers or functions of the vegetable kingdom is most wonderful, and upon it the chemist reflects and experiments with the full intensity of delight and admiration;—it throws all his limited artificial operations into the shade of insignificance.

Look, for example, at the dry timber of an oak tree, weighing say thirty tons; look at its hardness, its compactness, its strength, its durability, and then reflect for a moment upon the statement that the chemist can make regarding its composition! it will "move our especial wonder."

Who would imagine that the timber of the tree contained, in a solid state, the identical elements of the flowing river upon whose banks it grew and flourished, combined with the elementary matter of the sparkling diamond?

But such is the chemical truth; for in the thirty tons of dry oak timber there are consolidated fifteen tons of *water* and fifteen tons of *carbon*.

Then again, the pure matter of wood, thus constituted, or woody fibre or *lignin*, as it is called, wonderfully elaborated by the hand of nature, chemically the same as that of solid oak, mechanically different in point of aggregation, presents every variety of hemp, flax, and cotton. These valuable organic forms, by artificial processes, are manufactured into canvass, linen, calico, and paper, and all used in construction, either in a plain state as they are sent forth from the loom or paper-machine, or most elaborately or richly adorned with chemical elements or compounds under the hands of the decorative artist, to constitute the magnificent paintings in oil or water colours, or the stained hangings which embellish the walls of a finished edifice.

The very same elements, oxygen, hydrogen, and carbon, in other proportions, and especially with more hydrogen than is essential to the formation of water, constitute the black and solid coal, the white and solid wax, the yellow and liquid oil, which are employed for warming and illuminating our dwellings; and coal, when artificially deprived of oxygen, leaving only hydrogen and carbon in combination, forms the transparent, invisible, inflammable gas, which is rapidly superseding all other materials for artificial illumination. Resins, gums, bitumens, the alcohol, the oils in which they are dissolved to constitute varnish, lacquer, and polish, consist of the three elements, oxygen, hydrogen, and carbon.

But the materials for an edifice would be incomplete without the stores of chemical compounds that abound in the animal kingdom; and in seeking out the ultimate elements of this wonderful and elaborate realm of nature, the chemist arrives at the extraordinary—the inexplicable conclusion, that animal products contain the same elements as those of vegetables, with the addition, in the generality of cases, of the element *nitrogen*.

Glue, size, serum, and albumen of blood, parchment, all used for cements or distemper painting, contain the above four elements, and so likewise the hair, feathers, and down of the luxurious chair or sofa, its silken covering, the silken hangings, the soft deeply piled carpet.

And lastly, when the mineral, vegetable, and animal kingdoms have been each in turn explored and ransacked by the architect and builder for the materials of an edifice, the agency of an imponderable element, by which they are all more or less affected, has to be well and correctly examined,—viz., the universal and all-important agency of *heat*,—or vain will be the attempt to render the edifice a comfortable habitation.

The most general effect of heat upon the three physical states or forms of matter, is to cause their expansion or enlargement of bulk; and amongst solid substances the metals and their alloys are most susceptible of this change. Thus, if a bar of metal be accurately measured in length and diameter at the temperature of 32°, and then exposed to the heat of the sun at 70°, it will be found to have sensibly increased in bulk.

The chemist discovers that all metals will expand by heat, but some do so much more than others; thus lead is the most expansile of the common metals, and platinum the least. This expansion takes place with enormous force, which no mechanical power can restrain.

Native and artificial compounds, such as granite, limestone, marble, wood, brick, plaster, stucco, and so on, also expand by heat, but in a degree vastly inferior to the metals and their alloys; but in all cases the expansion is temporary, and the various substances return to their original dimensions when the heat is withdrawn, or, in other words, when they are cooled to the degree that they had at the outset of their measurement.

In reference to the materials employed in construction, knowledge regarding their expansion by heat and contraction by cold is of the utmost importance to the architect, for their dimensions are constantly undergoing changes by the ordinary fluctuations of atmospheric temperature. Iron, or other tenacious metal, is frequently introduced into stone or brickwork, for the purpose of conferring stability upon a structure; but, if injudiciously employed, becomes the most active agent in promoting its instability. Thus, during a warm day, the metal becomes heated, it expands in all directions,—so does the stone or brickwork, but not to an equal extent; and, therefore, it is thrust out of position, and remains where thrust, so long as the heat of the day continues; but as the cool of night approaches, the metal cools and contracts rapidly to its original dimensions, whilst the contrac-

tion of the stone or brickwork is extremely slow, and never can follow up that of the metal, and, accordingly, is compelled to remain, very nearly where it was thrust or forced by the metal. This operation of expansion and contraction being constantly proceeding, the masonry or brickwork soon become unsteady by detachment from the mortar or cement. Again, if an iron plate be inserted in a wall for giving it support, and then to disguise this it be plastered over, the consequence is, that in a very short time the plaster will be cracked by the expansion of the metal beneath.

The coping stones of walls are frequently but most injudiciously held together by cramps of iron "firmly imbedded in lead," and such pieces of metal, if of cast-iron, which is brittle, often break during the first frost, from a tendency to contract by the cold more than the stonework will permit; or if they be made of wrought-iron, which is tough, then, instead of rupturing, they generally rupture the stonework, and so loosen themselves from their leaded sockets. Then in the construction and setting of iron stoves or fire grates, the expansion and contraction of metal requires to be well investigated, and to be well guarded against, or in a short time the whole arrangement will become ricketty; unsightly gaps and chinks will appear around the metal work, and not unfrequently the marble chimney-piece will be distorted from its true position, or even broken.

These are all instances in which chemistry may be advantageously applied to construction, and the principles of the science likewise demonstrate to the architect and builder that in their attempts to heat edifices by hot air, hot water, or steam, the pipes for the conveyance of such agents should never be rigidly fixed or firmly abutted against the walls or other solid obstacles, lest the pipes in expanding may cause distortion or eventually overthrow, and the same fact is applicable to the employment of iron beams, &c.

The chemical nature of atmospheric air, and its expansions and contractions by heat and cold, most imperatively demand attention from the architect and builder, for this wondrous medium is the very pabulum of all warming and ventilation. Atmospheric air is a *mixture* of the gaseous elements oxygen and nitrogen. Its changes of volume and of levity by alternations of natural or artificial temperature are great and sudden; and, to maintain air of a genial warmth without disturbing the relative proportions or characters of its elements, which would unfit it for the support of life; to give free egress to such portions as become chemically vitiated by respiration and combustion, whilst free ingress of pure air is at the same time abundantly allowed, are matters literally of vital importance, but of extremely difficult practical application.

Absolute ignorance, or wilful neglect of the chemical habitudes of the atmosphere, have opened a vast and fertile scope for quackery, not only as regards the futile attempts at warming and ventilating extensive and costly edifices, but in the construction of flues and chimneys of ordinary dwellings, so that the roofs are disfigured with abortive contrivances in the shape of creaking caps and clattering cowls, "to make the fires draw."

In these two introductory papers, on "Chemistry as applied to Construction," the writer has endeavoured to present a general outline of the nature of the science, the business of the chemist, the nature and properties of elements and compounds, and the extreme importance and utility of such knowledge to the architect and the builder. Having thus in some measure introduced the agents that are to be employed, the reader will be prepared for the particular discussion of the individual materials used in construction, for example, marble, stone, brick, mortar, cement, glass, and other vitrifications, paint and varnish, the metals, iron, copper, zinc, tin, and lead, and their alloys. These will afford a vast fund of useful information, and to them future papers will be devoted.

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Leominster Butter-Cross.—This ancient piece of architecture is now about being removed from its long resting place. A local paper says, "it will be placed on wheels, and moved to where some old houses now stand behind it."

## DECORATIONS AT SIR ROBERT PEEL'S.

The principal staircase of Sir Robert Peel's house, in Whitehall-gardens, has been decorated by Messrs. Collman and Davis in encaustic colours. This staircase is very simply arranged, the walls of the ground-floor being mainly taken up by a simple flight of steps to the principal floor, bearing four lofty panelled walls above; the whole of the ceiling is divided into numerous compartments, filled in with ground-glass, and forms one skylight. In the centre of the four principal panels are introduced, as chief subjects, the four seasons, represented in figures of considerable size, painted in relief on dark grounds. Beneath these are painted, in twelve smaller compartments, figures composed in reference to the principal subjects. Arabesque ornaments surround the centre paintings, and fill in between the others in fanciful devices, and also enrich the upper part and sides of the large panels, which are besides framed by a quietly coloured border connecting the whole. In the architectural members of the walls, cornice, and glazed ceiling, rich colour and gold is introduced to harmonize with the rest. The style of the decoration is of a classical character, in accordance with the architecture.

## PROPOSED ARCHITECTURAL SOCIETY FOR STUDENTS AND DRAUGHTSMEN.

Last week we printed the first part of a paper on the state of architectural education, read by Mr. Kerr, before the Association of Architectural Draughtsmen. This treated of present deficiencies, great and numerous enough! In the second portion of the paper, which we now give, a remedy is suggested.

The School of Design being provided for the preparation, there must now be had some powerful means of study to follow it up, build upon it, perfect, and apply it. And certainly for this period, and for this subject, a very valuable principle indeed is that upon which the system of mutual instruction and collective investigation is founded, which is so well known among us in the form of our many scientific societies. This principle I hold to be more valuably applicable in the early manhood than in any future period of life whatever; for in our every day public associations the main; spring is always in the energy of an enthusiastic few,—apply the principle to youth, and this energy is that of an enthusiastic many—perhaps I might say an enthusiastic all. And even when the principle spreads into debate and controversy, still it is valuable,—perhaps even on this account the more valuable. We differ in opinion; we always have differed,—we always will. And this fact, which the thoughtless will set down as a curse of war lying upon fallen man, is in fact a beautiful scheme in Creation for effecting the grand purpose of Earth's advancement. Were we all of one mind, human nature would settle down and stagnate. But we are more wisely made, and by this very spirit of controversy,

> "Thro' the ages one increasing purpose runs,
> And the thoughts of men are widen'd by the process of the suns."

An Architectural Society for young men, if such could be properly established upon a broad basis, to be secure, its face in the right direction, and with a few good leaders to guide, would be, I confidently believe, a most powerful means of good architectural education. Laying hold of the architect's mind at the best period for the energy and thought required, and providing him with an excellent means of encouragement, the cordial study of the Art would be, I am persuaded, directly and most valuably produced. And particularly am I sanguine of its good effects in view of the peculiarities of our special subject. In the Institute of Architects the principle spoken of must be admitted, in so far as regards any incentive to study and research among its members, to have signally failed. A great cause of this is to be found in the undeniable fact that the younger members of the profession are, to all intents and purposes, completely excluded from any part in its transactions. The principle is applied too late in life: take the architect a few years earlier, when study and research are his element, and your expectation may be a very different result. The study which is demanded must be mainly over before the commencement of practice; complete establishment may be not improperly taken as equivalent to the complete extinction of the spirit.

It has been expressed as a fear that the supply of material—the production of essays and other subjects by the members—would be very likely a difficulty in the society proposed; but I cannot believe that it could fail through want of this support, if once fairly and properly working. My view of it rather is that, with a careful, spirited, liberal guidance at the commencement, and cordial attention on the part of a few leaders, the means of supply for material would soon admit of selection. With a hundred, or even fifty, young men earnestly engaging in such an association, surely the four-and-twenty subjects a year would be obtainable.

This society I would have to embrace the entire class of the young architect, from the Institute down to the youngest pupil. If any one be inclined to demur against his association, as a man in the omega of study, with the mere boy commencing the alpha, I would remind him that such argument would deprive the world of all its great ones—if it were beneath the dignity of a Socrates, or a Buonaparte, or a Washington, to associate with meaner men. Let it embrace the whole class, and upon a liberal spirit even then. For what is wanted is a society for this class, not like what our Institute is to the profession, but like what it ought to be.

The School of Design which I have spoken of would be simple in its nature. A proficient man takes charge of a small class of students for their instruction in Design. There might be several teachers for several branches, and junior classes and senior. The teachers' duty is to appoint subjects for design, and to criticise the designs presented. This is all I would propose as a commencement; but there might be classes for other matters,—construction, for instance, drawing, perspective, painting, practical work,—anything, in short, which might be found desirable. There are also many other amplifications which would fall within the province of architectural education; but a perfect School of Design would be of gradual, perhaps difficult, attainment.

This institution ought certainly to be supported by the Institute; but I fear we cannot expect it; and even if it were to be had, I should be suspicious at present of its government. I would connect it, therefore, with the Architectural Society which I have described. First, there appears no other means of obtaining that necessary support which the School of Design would thus obtain. Secondly, there would be a very valuable aid to the Society itself. Thirdly, I do not know where efficient instructors are at present to be had; and the Society would be, I believe, a speedy means of producing them,—for in six months I would expect a new school of architectural criticism to be established.

I have not been able to devote that careful study to my subject which is requisite, to be able to leave generalities for speciality and detail. My object has been, therefore, more to shew the grounds for the scheme, than to develop the scheme itself. The constitution of the society would have to be arranged carefully and deliberately. I would be exceedingly cautious in proposing at the present any decided principle of detail. But one or two passing observations might be made as a conclusion. The expenses of the Society ought to be as small as possible—the subscription money as nearly nothing as may be. Exclusiveness ought to be avoided carefully. Better to explode through liberality than to fall cold and dead through selfishness and scruple. I would also expect that teachers for the School of Design would be had for generosity and not fee—their trouble being made as small as possible, as much a pleasure as possible, and as much as possible an honour to be desired. Students' fees would be well to be nothing,—instruction free. Secret committee work must be none,—the government must be open, a management by delegates, not a dominion of rulers over subjects.

Now I have said what I have to say. I leave it for consideration and inquiry. For my own part I am only fully convinced that something of the kind I have described might

with great benefit be established; and I hope the moving spirits will be found, to carry it into effect, as a means, not only of the advance of our beautiful Art in the present generation, but also (it may be said without hesitancy) of its regeneration from its present obscurity, confusion, disguise, and error, to its true free height as one of the noblest works of the intellect of man.

## THE BOND QUESTION.

Sir,—Will you allow me space in your publication to add a few words on the subject of *bond in brickwork*, so that your readers may have more views than one before them? In my humble opinion it should be laid down as a fundamental principle, that "no woodwork, either in the shape of bond, plates, or lintels, should be used in brickwork, and that wood bricks and the ends of timbers should be admitted as seldom as possible."

In order to supply the place of wood, I would adopt one or more of the following expedients:—

*For Bond.*

1. The brickwork should be carried up in English bond, in party-walls *at least*.

2. Two or more courses of *stone* or *slate*, set in cement, all the joints broken; this would apply particularly to ashlaring, and might receive the form of stringing courses.

3. Four or more courses of iron-hoop or vat-hoop. It should be an invariable rule, whenever iron is used, either to have it *galvanized, painted, pitched and sanded*, or coated by one of the processes you have mentioned in recent numbers of The Builder.

4. Two or three courses of *tiles* somewhat after the Roman manner, but bedded in cement and the joints broken. The tiles might be made of the width of the wall, of any convenient length,—say from 2 to 3 feet, and from 1 to 2 inches in thickness. Perhaps these might be objected to in the *front* walls of buildings, but at any rate they might be used in the party-walls, or they might be *moulded* so as to form stringing courses, in the same manner as the stone or slate bond, and in that case might be made very ornamental.

5. Two or more courses of bricks formed in lengths of 2 to 3 feet, and the *whole width* of the *wall*. These, if bedded in cement and with all the joints broken, would form a very efficient bond.

*For Plates.*

1. Iron vat hooping or iron bars (*galvanized*) to which the ends of the timbers might be screwed or spiked.*

2. Cast-iron corbel plates, on which the wooden plates would rest.

*For Lintels.*

1. The arches over the external door and window openings might be formed the whole thickness of the wall, in which case no lintels would be required.

2. Wherever lintels were required, bars of iron (galvanized) might be used with discharging arches over them.

*For Wood Bricks.*

I think I have seen it stated either in The Builder or some other publication (but perhaps you or some of your correspondents can refresh my memory on that point), that an *incombustible* substance had been invented which might be very usefully applied in the place of wood bricks, being capable of resisting pressure, and possessing the nature of wood, inasmuch as nails might be driven into it without splitting it.

*Ends of Timbers.*

The use of cast-iron corbels for supporting the plates would get over this difficulty, and a very good tie might be obtained.

I have not said anything on the advantages of excluding a substance that is liable to *decay* and *fire* from brick and stone walls, considering it a self-evident proposition.

I am, Sir, &c.,
A Builder.

London, Feb. 4th, 1847.

* The contraction and expansion of iron by heat would render the use of bars of any size in brickwork very inexpedient.—Ed.

## A PEEP AT LAHORE.

A recent French traveller describes Lahore, of which we have recently heard so much, as being surrounded by high walls and defended by towers and ravines, and gives a graphic picture of its sanatory state and condition. He says, when seen from a distance, no idea can be formed of the spectacle it presents within. Its present misery is as great as its past splendour. It is nothing but a mass of ruins; every where its noble mansions seem ready to fall to the ground. To adventure on foot through the inextricable maze of tortuous, infectious, dark streets, forming the town, obstructed, as they are too, by ruins, and filled with elephants, horses, and men, is almost impossible for a stranger. The streets are so narrow, that in many you may touch both sides as you pass. The houses, constructed of brick, are so high, so overladen with balconies and occupiers, and in such a state of dilapidation, that a blow would seem sufficient to overturn them, as it would the triumphal gates, under which you pass in going from one quarter of the city to another. To sum up all, the ground, which has never been paved, is a mere open sewer, as horrible to see as to bear; and is pierced here and there by deep holes, which, notwithstanding all the address which is displayed to avoid them, often cause the elephants dangerous falls. We should be glad to obtain the correct average duration of human life in this reeking cesspool, for the advantage of the sanatory agitation now going on in England.

## TRUE FIELD FOR SCHOOLS OF DESIGN.

Sir,—I have just read the letter of "A Student," &c., in The Builder of 30th ult., on the much tortured and, it appears, everlastingly-to be-misunderstood question of schools of design. The suggestions contained therein are valuable, and worthy of due consideration, but an idiosyncrasy appears to pervade all one meets with or hears on this subject,—it is the perfecting of a School of Design in London alone. Louis XIV. said, "*L'état—c'est moi!*" and the earnest and intelligent advocates of a reform at Somerset House appear to think, that *London is Great Britain and Ireland, with dependencies and colonies.*

Now, Sir, the question of schools of design out of London,—fixed in the great hives of manufacturing industry, is *the* national question; and whatever may be done in London, or however excellently things may be conducted in a school adapted to the wants of the metropolis, the "*pons asinorum*" of the matter has still to be got over—the education, adaptation, and productive powers of provincial schools. Even the committee, now or lately sitting, appear to have altogether neglected this point, and the rule of action appears to be,—"Get a good school in London, and all the rest will follow." This of course is anticipated out of the controlling power to be exercised by the authorities of the central school. It may not be amiss, therefore, to name three or four points for the consideration of all parties interested in the matter.

First. How far the provincial schools of design, placed in the numerous centres of varied manufactures, can possibly be efficiently directed from a necessarily limited sphere of observation like London (as regards their positive wants), even with all its advantages, artistic and mercantile.

Second. That some provincial schools have flourished and done their work satisfactorily, so far as regards the wants of the districts in which they were located, whilst the central school was found to be totally inefficient.

Third. That the unreasonable and untimely interference of the authorities of the central school with efficiently managed provincial ones, has resulted in bringing one of the latter at least, and that too the most important one, to the very unsatisfactory level of the former.

Fourth. That whilst affecting to look to France for a high and potent example, the fact has been overlooked, that the French schools are not necessarily controlled in their action by the metropolitan one,* and that the great School of Design of France is not that of Paris, but of Lyons.

Make the London schools what you like, from an infant drawing academy, up to an university of industrial art; train all the masters and teachers, directors and professors, you may require; drill them by searching examination before making an appointment; but after all, the great field of these operations must be Manchester and Birmingham, Sheffield and Glasgow, Paiseley and the Potteries, or any other place in which positive manufacture is carried out by practical men anxiously waiting for artistic excellence. I am, Sir, &c.,

Manchester, Feb, 4. Geo. Wallis.

* See Mr. Poynter's Report on the French Schools.

## KENSINGTON WORKHOUSE COMPETITION.

Mr. Builder,—Herewith I send you a list of the amounts of tenders for the erection of a new workhouse at Kensington. Much has been said at various times in your paper, respecting the disadvantages arising out of the present mode of competition; a stronger case than the present could not in my opinion be adduced of the necessity of a great alteration in the course pursued both by architects and building committees.

The adopted plan is one of the many sent, in answer to an advertisement limiting the amount to be expended to 9,000*l.*; and it was stated by the architect it could be carried out for 8,700*l.* Tenders were required, and when received they ranged from 14,000*l.* to 18,000*l.* The architect then stated that he had discovered that the person employed to take out the quantities had committed an error, and which occasioned the excess of difference between his statement and the tenders. The board of guardians, at the suggestion of the architect, employed him to take out the quantities anew; his estimate then was 9,800*l.*, and he assured the board that an eminent builder had offered to execute the work for that sum. But what is the result: the tender accepted, although estimated upon the *architect's own quantities*, is 11,020*l.* Comment is altogether unnecessary; I am content to leave the subject to the consideration of your readers, and remain, Mr. Builder,—Yours truly, G. H. S.

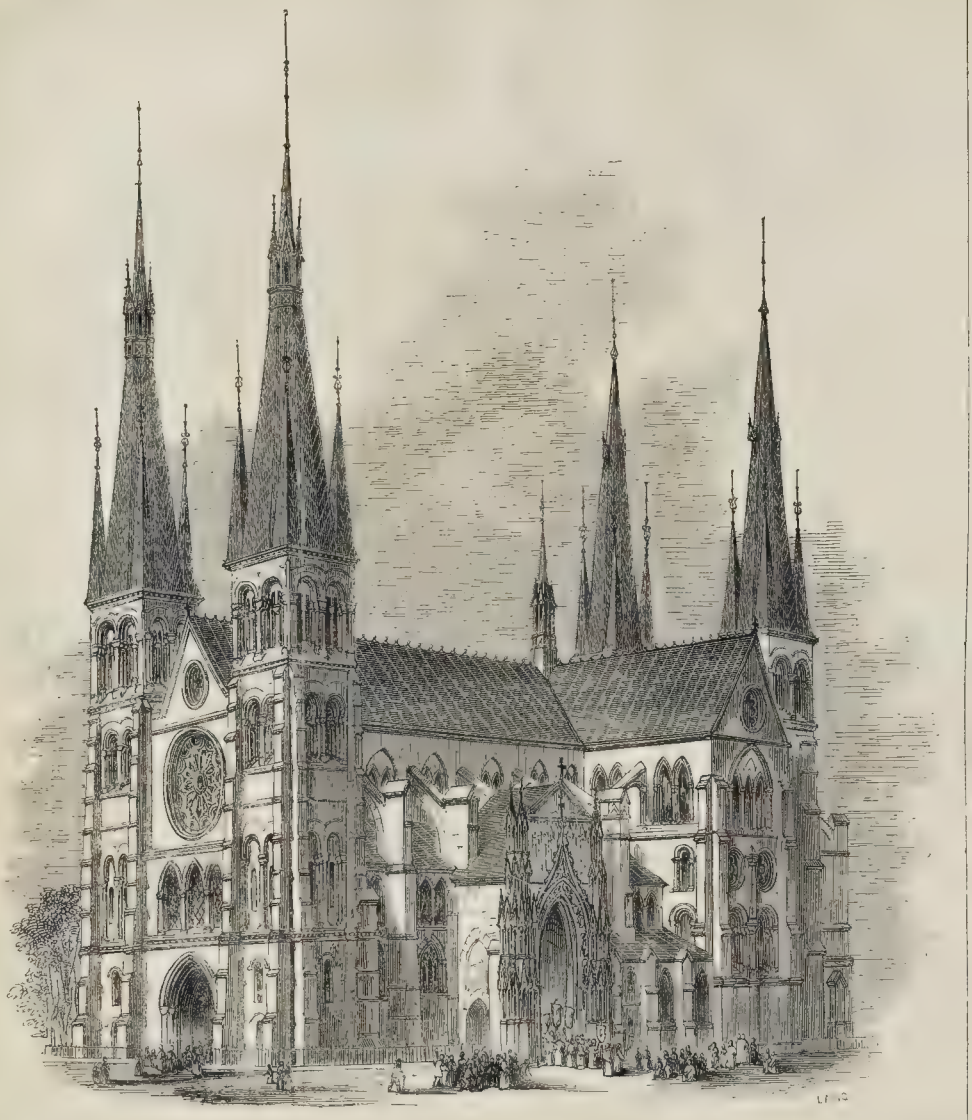
| | |
|---|---|
| Cooper and Davies ..... | £12,746 |
| Nicholson..... | 12,442 |
| Jeffries ..... | 12,419 |
| I'Anson ..... | 12,231 |
| Sissons ..... | 12,219 |
| Curtis ..... | 12,134 |
| H. W. Cooper ..... | 11,912 |
| Higgs ..... | 11,326 |
| Trego ..... | 11,289 |
| Willson..... | 10,970 |
| Burton (accepted)..... | 11,020 |

## NEW CORN EXCHANGE, BIRMINGHAM.

It has been determined to erect a new Corn Exchange in Birmingham, immediately behind the St. George's Coach Office, in High-street, between Carr's-lane and Castle-street. The plans have been prepared by Mr. S. Hemming, architect, and the building will consist of a hall, 110 feet long by 40 feet wide, lighted by a semi-circular roof, surmounted by a lantern, extending the whole length of the hall. The room will be about 50 feet in height, and will be divided into side compartments by pilasters, between which stands and tables, intended to be let to farmers and dealers, will be placed. It has a glass roof of semi-circular shape, as the one best suited to admit the greatest quantity of light. According to a local paper, this spacious room will have two doors, one leading from a vestibule, with columns and ornamented ceiling, at the entrance of St. George's-court, in High-street, the other with a still larger vestibule at the Castle-street entrance. A porch, ornamented with pilasters of the Roman Doric order, will form the High-street entrance; that by Castle-street, which will be the principal front, will be enriched with eight columns, and ornamental recesses leading to the vestibule and to the floor beneath, which it is proposed shall be appropriated to the exhibition of agricultural implements. The building is of the Roman Doric order, in cement. The extreme length of the building, including porch, vestibules, and hall, will be 167 feet, the width varying from 37 to 40 feet. The builder is Mr. Briggs, and the cost will be 5,000*l.*, the expense of the land being nearly the same sum.

## CATHEDRAL OF NOTRE DAME, CHALONS-SUR-MARNE.

AS PROPOSED TO BE RESTORED.



### CHURCH OF NOTRE DAME, CHALONS-SUR-MARNE.

The city of Chalons is situated on a fertile plain, watered by the Marne, the Mau and the Nau. It still retains many features of its ancient strength and importance; and the wall which fortified it during the turbulent middle ages still partially exists. The Hotel de Ville is an attraction to tourists; but the principal feature of the place is the fine Church of Notre Dame, which adorns it, and which, to use the words of the Curé M. Champenois, "for the regularity of its plan, for the purity of its style, for the grace and majesty of its details, takes anhonourable position among the most remarkable edifices in France." This beautiful church, founded in the twelfth century, presents many interesting features of the transition between the circular and pointed styles of architecture, and abounds with beautiful details. The stained-glass windows, executed in 1520, are one of the sights of the place; the rood-loft is also exceedingly beautiful, and the portal is fine. But the great external feature of the church was the four spires, and the pinnacle in the centre of the roof, which were destroyed in the revolution of 1793, only one surviving the ravage. They were covered with lead, and were exceedingly light and elegant in design. The present curé, whose words we have quoted above, with a laudable desire to re-instate its ancient glories, has issued a circular requesting subscriptions towards the restoration of what he justly considers "a monument of the nation's glory." There can be little doubt of the propriety of thus directing attention to the reparation of much that is beautiful in the national monuments of France. Some of the restorations now going on there are worthy examples, which all true lovers of art would be glad to see followed in England as well as in France. Our engraving represents the church as it will appear when restored.

### IMPORTANT CHANGES IN THE ROYAL SOCIETY.

For two years, at intervals, the council of the Royal Society have discussed the desirability of altering the mode of electing fellows, with the view of limiting the number of new members to be annually admitted, and preventing the introduction of persons whose claims are trifling, and they have at last come to the following resolution on the subject. After the commencement of March next, as we understand it, there will be but one election, of fifteen fellows, in the year; the first being in March, 1848. The names of candidates will be suspended the whole year, and just preceding

## GOTHIC WELL, IN GHENT.



the election, a list of all candidates will be sent to every fellow, together with the names of fifteen recommended by the council for election. It remains to be seen whether or not the members generally approve of this plan, or even will acknowledge the right of the council to make this change, without first appealing to a general meeting.

### WHY REMOVE THE STATUE?

This question, long ago answered, is again put, in a four-leaved pamphlet, by one who calls himself a friend of Sir Frederick Trench, and begs the public not to let themselves be bullied out of their opinion by the Academicians. If the writer really wishes an answer to his question, we advise him to look through the last volume of our journal, and if he does not find there sufficient sound reasons for its immediate displacement, we must think he has voluntarily closed his mind against conviction. Reasons for its remaining where it now stands he has none, excepting the assertion which we now unhesitatingly contradict, that the public is *pleased* with its position. The arch spoils the statue, the statue spoils the arch. Singly, each might be made a satisfactory public monument; together, unnaturally conjoined, they disgrace the country and harrow the feelings of every observer who has a just perception of harmony or the want of it. It is to be hoped that, after the present severe weather leaves us, not a week will be suffered to elapse before it is taken down. The western entrance to London has been disfigured through it long enough.

Heat Without Fuel.—Important as cheap fuel may be, to be able to do without it altogether is more important still. A Hungary chemist, perhaps a cold one too, has taken some promising steps towards making this possible. He places in contact two iron and one copper cylindrical plates, highly polished, turning on an axis at the end of a lever, with a balance weight at the other end, to keep the plates in contact, when, by means of very simple apparatus and trifling exertion, a glowing red heat may be produced in five minutes, and maintained with ease. Chalk is nothing to this.

### GOTHIC WELL IN GHENT.

We transfer from our sketch-book the annexed representation of the ancient enclosure surrounding a well, in Ghent, as an instance of the artistic skill exhibited by the old architects in treating even small and unimportant subjects. In its present state of ruin this well forms an exceedingly picturesque and curious object. It is situated in a part of the city little visited by travellers, known as the Old Citadel, where also are the remains of a very curious early church, to which we may refer on some future occasion.

### MODERN WORKS AT THE BRITISH INSTITUTION.

It appears to be generally understood that there is something radically wrong in the proceedings of the British Institution; the government rests in two or three irresponsible hands; injustice is done both in the selection and the hanging; and spiteful acts, as regards sales, are complained of by artists, which are as incomprehensible by those not in the secret as they are disgraceful if true. A reform is anxiously looked for, but whence the worker of it is to come seems as yet a profound mystery: a closer and apparently more impenetrable citadel than that which he would here have to enter can scarcely be conceived. Let us suggest to the directors, that is, to the two or three (if so many) who, according to report, alone take some little part in the affairs of the institution, to begin the change themselves from within, and endeavour to bring the institution into a more healthy state.

To look for a good collection of pictures under present circumstances is vain; and it was with little surprise, therefore, that we found the exhibition, which opened on Monday last, exceedingly unsatisfactory. Many of the elder artists are absent, and the works of the younger ones shew little advance. The want of reading and general knowledge, on the part of the majority of artists, is painfully apparent, and perhaps want of industry not less so. Having been once in any degree successful in the choice or treatment of a subject, they think it unnecessary, if not unwise, to tax their invention or recollection for some years to come, and go on issuing fresh editions of the former work, with constantly diminishing effect; and it is seen that, instead of following an art, they are simply practising a knack.

A true artist is a poet, expressing fine ideas in a fine manner. The thought exhibited in a picture is the first point to be inquired into. That which has cost no thought on the part of the painter will excite none in the spectator. In proportion as the idea developed be lofty and ennobling, so will the character of the picture be high. No skill in painting, no power of execution, will compensate for want of invention, or entitle a mean thought to rank with one that is noble though less well expressed.

We must confine ourselves, at present, to mentioning briefly some of the more prominent pictures in the collection.

1. *A Mountain Road, North Wales*, by J. Linnell, is a highly elaborated landscape which possesses much excellence, and is deserving o examination.

3. *The Lovers' Walk*, F. Danby, a moonlight picture with some of those peculiar effects over which this artist has acquired great control. Though it will not please the majority, it is a work of genius.

6. *The Holy Well*, by F. Goodall, a hacknied subject treated with great feeling. 23, *Irish Courtship*, a larger picture by the same artist is a charming work, though it displays no advance on former works by the same able hand. The girl's face is a perfect sunbeam, gladdening all who look on it, and the contrast between the two suitors is so forcibly expressed, as to suggest a story for the picture and lead one to speculate on their future.

13. *Hatton Forge, a scene on the River Lune*, by W. Linton, is a fine bit of nature.

21. *A Venetian Letter-writer*, by J. Inskipp, represents two girls, the size of life, dictating a reply to a scribe, and notwithstanding that the costume scarcely bears out the title, has high qualities as a picture. 53, *Spring-tide*, and 239, *Fruit- girl*, both by the same painter, will not be passed unnoticed. The directors have not treated Mr. Inskipp well. They ought to make much of him.

30. *Market-place, Coutances*, the only picture exhibited by D. Roberts, R.A., though very charming, is scarcely up to this excellent artist's own mark.

58. *The approaching Footstep*, by F. Stone, consists simply of the figure of a girl (often painted before by Mr. Stone, or we mistake) leaning against a bank, in expectation. The start of a spaniel, she holds in her arms, gives token of the approaching comer. It is a covetable work.

66. *Morning*, by J. Sant, represents a youth, of life size, on the summit of a hill, with a lark, "the herald of the morn," above his head. It possesses considerable merit and entitles its author to commendation. 170. *Evening*, and 185, a reclining female figure under an artificial light, are both large pictures by the same gentleman, and shew a considerable advance.

67. *Welch Mountain Scene, autumnal cloudy weather*, by H. Bright,—a repetition of his *chef-d'œuvre*: very excellent. He has also some smaller landscapes of considerable excellence.

83. *The celebrated Oak in Polstead Park*; 162, *An old Avenue* (once more); 180, *The Cottage under the Hill*; 442, *Landscape with Figures and Cattle in a Boat*; are all by F. R. Lee, R.A.

150. *Rizpah watching the dead Sons of Saul*, by J. C. Hook, is a meritorious attempt in a high walk. The indications it gives of study lead us to augur well for Mr. Hook's future progress.

148, 184, 340, 350, and 432, representations of fruit and still-life, by G. Lance, are quite perfect in their class.

214. *Bianca Capello*, by A. Elmore, A.R.A., deserved a better place than it has; and the same may be said of 244, *Study of a Head*, by C. Baxter; 379, *The Campagna, Rome*, by W. Linton, a capital picture; and 443, *Scene from Shakspeare's Henry IV.*, by F. R. Pickersgill. Indeed, the hanging altogether is most discreditable.

259. *The frugal Meal*, by J. F. Herring (three horses' heads) is capitally painted.

267. *Glen Falloch, from above Inverranan*, by J. D. Harding, is a charming little landscape, full of beauty.

295. *The Death — Stag Hunt in the olden Time*, by R. Ansdell. A powerful representation of the stag's last struggle with the dogs, calculated to maintain the reputation Mr. Ansdell acquired in London by his pictures of last year. The stag and dogs are full of vigour.

303. *Reposing after Bathing*, by W. Etty, R.A. Mr. Etty is unquestionably a great master, and has much advanced the art. Although this is but a small sketch, when viewed at its proper distance it is a perfect blaze of colour. Two other pictures by the same painter are less striking.

359. *A Break in the River*, by T. Creswick, we seem to recognise as an old acquaintance, and a pleasant one.

365. *The last Moments of Mary Queen of Scots*, by Alex. Fraser, stands prominently out in the company that surrounds it, as one of the very, very, few historical pictures to be found in the gallery.

438. *Morning, the arrival of a Greenland Ship, Shields Harbour*, by J. W. Carmichael, is a capitally painted sea-piece, with much life.

451. *Frost Scene*, by C. Branwhite, though scarcely so good as similar works last year, is nevertheless a well-painted picture calling for commendation. We cannot say so much for his other picture, 260.

478. *Mary at the Sepulchre*, by H. O'Neil, has poetry, as well as skill, in it, and should have been better placed.

485. *The First Death*, by E. B. Morris, is a large picture, with figures the size of life, commendable for its intention.

J. Holland has some brilliant pieces of colour; and J. D. Wingfield, G. E. Hering, G. C. Stanfield, Jun., A. Gilbert, H. Jutsum, and others, exhibit some very nice landscapes.

We have only space to say further, that the exhibition consists of 543 paintings, and 18 pieces of sculpture; and that 400 pictures were returned for want of room. Is it possible these were all worse than the majority of those now exhibiting?

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GLASS.—A patent has just been taken out by Mr. Parkes, of Peckham, Surrey, for making coffins of glass by a mould, or of thick plates of china joined together by a durable cement, or of wooden cases lined with plates of glass, united by a mixture of fused glass and borax.

## NOTES IN THE PROVINCES.

THE commissioners or surveying officers appointed to visit Colchester relative to the expediency of the Improvement Bill applied for, in opening the business of the commission, stated, that their inquiries also bore reference to the question of the sanatory condition of towns in general, upon which information was required to enable Parliament to pass some general measure. It was stated in evidence, that all the drainage of Colchester might be concentrated in the river; that there were eighty to ninety streets, alleys, and courts, in the town; that the drainage is very imperfect, particularly as regards cesspools; and that at Chelmsford the water used to rise 3 feet on the Chelmer meadows, but that since the bridge was built by the Eastern Counties Railway Company it has risen 8 feet. A clause was proposed to give the Channel Commissioners power to make a sufficient bridge in case the company should not do so. It was also stated in evidence, that nearly ten miles of gas mains have been laid through eight miles of streets and roads. Cesspools at the end of the drains where they emptied themselves into the river, so that the sediment could be cleaned out by the farmers and used as manure, were proposed for adoption in the bill, and were admitted by the officers to be worthy of consideration.——The town council of Colchester have resolved that it is expedient to join the county justices in the erection of a pauper lunatic asylum.——A fund for the erection of Pawnbrokers' Almshouses at Stratford, Essex, has been already realized to the extent of 3,000*l.*, and ground has been purchased for a site.——The new Ordnance map of Southampton, which is just completed, will, it is said, be one of the most valuable articles of property in the possession of the municipal authorities. It is drawn up on a scale of 60 inches to the mile,—the scale of the General Ordnance Survey of the Empire being 6 inches.——The Castle-gate Chapel, at Nottingham, the oldest dissenting chapel in the town, is to be enlarged.——Part of one of the pinnacles of St. Thomas's Church, Dudley, was recently blown off by the wind, and broken to pieces during divine service.——The church at Soberton has been restored and re-opened. The gallery has been removed, three fine arches again brought into view, and this ancient edifice has been restored to something like its former state.——The parish church of Bebington has been re-opened after being extensively embellished and repaired.——It has been determined to postpone the Bristol Improvements till June 1848.——The Bath town-council mean to apply to the Treasury for a confirmation of the grant of a piece of ground in front of St. James's Church, for the improvement and enlargement of that edifice, on a plan proposed by the rector, and approved by the parish.——The bill proposed for the improvement of Taunton contains 300 clauses!——It is intended to erect a new church at Rowbarton, near Taunton, from a design by Mr. William B. Gingell, architect, of that town. The new edifice is to be in the pointed style of the time of Henry III., with a broach spire, open timber roofs, &c.——The repair and restoration of the parish church of West Lavington, Wilts, is talked of.——The munificent sum of 1,000*l.* has been offered by Mr. R. Richards, of Tregadwgan, towards the rebuilding of a new church in the parish of Llanfihangel Abergowin, the present church being very inconveniently situated.——The Royal Consorts have each given 20*l.*, and the Queen Dowager 10*l.*, towards the establishment of new public baths and washhouses for the poor at Liverpool. The Green-lane Water-works there are now completed, with an engine filling the cooling ponds at the rate of 900 gallons per minute. The Kensington reservoir, which will hold 10,000,000 gallons, was expected to be filled in a few days, when not only will there be a constant supply of water in the warehouse and other districts of the town, but from the height of the reservoir (170 feet above the level of the Exchange) fire-engines now will be often unnecessary in suppressing fires. The sewers, too, will be scoured out whenever they require it, and the streets in summer will be effectually watered.——The first stone of a new church to be built at Hagbergham Eaves, near Burnley, was laid on New Year's day. It is to be in the early decorated style, with a tower and broach spire, and open benches for 500 persons. Messrs. Weightman and Hadfield, of Sheffield, are the architects. Messrs. J. P. Kay, Shuttleworth, and W. Dugdale are the chief benefactors of the work.——A new iron-foundry for casting is about to be erected near Chesterfield. The proprietors are said to have already contracted for a portion of the chairs and rails for the Ambergate, Nottingham, and Boston Railway.——A new opposition to the new town-hall and market scheme has lately sprung up at Doncaster.——The first stone of the chapel of St. Michael, at Carleton, near Pontefract, was laid on Tuesday week.——Upwards of 2,000*l.*, it is said, have been subscribed towards the erection of a new church in the populous district of Cookley, in the parish of Wolverley, near Kidderminster.——The Newark Mechanics' Institution expect to have a building of their own erected by subscription.——An astronomical observatory is about to be erected by Mr. Edward John Collingwood, at Lilburn Tower, near Wooler. Elevational and sectional plans have been prepared by Mr. James Moffat, formerly pupil of Mr. Dobson, architect, of Newcastle. The dome is to slide round on friction wheels.——The parish church at Wolsingham is to be partly rebuilt, and new schools are to be erected at Towlaw. Tenders have been called for in both cases.——The Gateshead new Mechanics' Institute is to be erected in West-street, where the borough is otherwise extending.——In the Edinburgh town council the state of the Greyfriars burying-ground has been brought under notice. It appears to be far too small for the crowds who are there interred. The Greyfriars is the only burying-ground in the city for the poor, and the idea was thrown out that the duty of interring the poor should devolve upon the parochial board, and that a new burying-ground for that purpose was indispensably necessary.——From the statement of the Prime Minister it appears that in Ireland the Government are giving employment to 500,000 men, who are supposed to represent, with their wives and children, upwards of 2,000,000 of the population. These 500,000 men include a staff of 11,587 officers, chief clerks, check clerks, pay clerks, &c. The expenditure upon these officers, clerks, and labourers is 172,000*l.* weekly. This is, as near as possible, at the rate of 7,000,000*l.* per annum.——According to the *Daily News*, a new trade is about to originate in Galway, which, if well worked, would afford employment to great numbers of the poor. The new enterprise consists in supplying broken granite for the formation of roads in and about London. The granite procured from Guernsey at present costs 11s. 3d. a ton, which covers all charges including the actual freight of the vessel for the special purpose. Now the Galway people believe, according to our contemporary, they could undersell Guernsey by at least the difference in the freight, as numbers of vessels sail from that port to London in ballast.——Among other presentments passed at the city of Waterford presentment sessions, was one of 1,000*l.* for a public garden.

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## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Bad Prospects for German Railroads.*—It is stated that there are some proposals making at the German Diet—to place, in case of war, all the lines under the *control* of a *military* commission, presided over by an Austrian general. Prussia, however, has protested against this encroachment on the freedom of public traffic.

*A Humanitarian Club*—has been established at Brunswick, whose aim it is to devise means how the impediments to man's welfare could be best removed, and the feelings of true humanity fostered amongst the working classes.

*The King of Bavaria*—outstripping even the speed of the press, has just resolved on erecting statues of two ladies, one from the ranks of the people,—Maria of Brabant, and Agnes Bernauer; these monuments are to be placed on the craggy castle of Donauwörth and the bridge of Straubing.

*Embellishments of Paris.*—Mr. the Préfet de la Seine has addressed to the Home Secretary, for the approval of government, a plan for the alignment of the Place St. Michel, at Paris, near which a prolongation of the Rue

Soufflet is to be effected, which will extend up to the Palace of Luxembourg, on the side of the Rue d'Enfer. The iron railing, which has been already carried up to this point, will be extended to the present point of junction.

*Prizes to Fire-brigade Men at Paris.*—On the 1st of this month all the detachments of the above corps (*Sapeurs-pompiers*) assembled in the barracks of the Rue Culture Sainte Catherine, in complete parade order—to witness the distribution of medals to those men who had, during the last half-year, most distinguished themselves in affording relief in cases of fire. After a short address of the commandant, five medals were distributed—one to an officer, and four to men of the rank and file.

*Enlargement of Prisons and Penitentiaries in Austria.*—The provincial house of correction and the foundling-house have to be increased at Prague—while the number of paupers, and the unwillingness of the inhabitants to support them, are also on the rise.

*Terrible State of the Public Roads in the South of France.*—The late inundations, conjointly with the carriage of an unusual quantity of bread, have ruined the public roads of Marseilles, Avignon, and Arles. That from Avignon to Arles is completely relinquished, and no vehicle can pass it without great risk. Orders have been sent for the immediate reparation of these lines of communication.

*Chinese Samples of Industry.*—The Secretary of State for Commerce and Agriculture has forwarded to the different chambers of commerce in the provinces, copies of the reports of the commissioners sent to China for the purpose of studying their state of industry. These reports, accompanied by original samples, will guide the French manufacturers to what will be best calculated for the China market.

*New System of French Penitentiaries.*—As it had been at first found, that the prison of the Rue de la Roquette (conducted on the exclusion system) exhibited a great proportion of young people dying under this treatment, a number of ingeniously planned walking spaces (*promenoirs*) have been constructed to the effect, that every one of the 480 prisoners are now taking an hour's exercise every day, without, however, being able to meet each other. Since these *promenoirs* have been erected, the mortality has decreased in the proportion of 3½ : 1.

## DRAINAGE OF IPSWICH.

The council met a short time since, to appoint a committee to consider the propriety of proceeding with a proper system of drainage for the town to be provided for by a sufficient rate, without waiting till forced by Government into a probably more expensive measure, for which loans at 4 per cent. interest would be requisite. The mayor introduced the subject of plans made out by Mr. Fleury, architect, for the consideration of the council, according to which, a sufficient system of drainage might be effected at an expense of about 10,000*l.*; whereas it appeared probable that grants from Government to an extent of 20,000*l.* to 30,000*l.* would be necessary, without a special rate and a previous well-economized system, to cover the heavy expense of a commission of inquiry and a system of drainage forced upon them. A report by Mr. Fleury was read, in which it was pointed out that the fall or declination of the town was much superior to that of London in the main, and would admit of considerable economy in the size of sewers. Drain pipes, however, were recommended in certain circumstances as less expensive than brick sewers. Strong 9-inch, 12-inch, and 18-inch drain-pipes might in many cases supersede the necessity of building brick drains. Where these latter were necessary, sewers of an oval form, with the lower part semi-elliptical and the upper semi-circular, were recommended as best for affording depth of current favourable to good flushing. And besides, the oval sewer giving a sectional area leaving a higher ratio to its periphery than any other figure does to its boundary line, the circle excepted, there is much economy of materials in the construction of oval sewers. Radiated bricks would be a further saving in work, mortar, and consequently expense. The lower bed of the sewer should be built with sharp sand and stone lime, to save cement in the lower joints. The smallest size recommended would be 1 foot 9 inches, by 2 feet 6 inches clear; the largest 3 feet 3 inches by 2 feet 2 inches, the latter with man-holes. Effluvium traps, flushing-doors, &c., were also of course attended to in the report, and it was hinted that a question might arise as to saving the sewerage for agricultural purposes. The town clerk recommended that nothing should be done without previous acquaintance with the Government plan. The committee for consideration of the subject was then appointed to report their opinion to a future meeting of the council.

## DEATH IN ST. JAMES'S.

"A retired churchwarden,"—report says the Hon. Frederick Byng,—has issued "An Address to the Inhabitants of St. James's, Westminster," on various local circumstances affecting the health of rich and poor, and which ought to have a powerful effect. If such a list of abominations as he points out is to be found in the parish "where the court is held, where palaces, and palatial club-houses, and the mansions of the great, the rich, and the powerful are situated, where the bishop of the diocese and a large staff of the clergy reside," what must be the state of things in other parishes evidently much less favoured.

The drainage the writer considers bad, for "It would appear that the greater portion of the sewers may be compared to an elongated cesspool! For the advantage of living over, and inhaling the noxious exhalations from this wide flat-bottomed cesspool, the inhabitants of the district have been taxed, in the course of the last 22 years, to the extent of 565,000*l.*, exclusive of the enormous outlay of upwards of one million, calculated to have been expended by private individuals, in new sewers and drains. Scarcely credible as this statement may seem, not the less startling is the fact, that simply to correct the errors of construction, on which such sums have been lavished, a rate must forthwith be levied to produce 40,000*l.*, and a like rate continue to be levied for several years. Nothing can shew more clearly the mal-construction of the sewers in question, than the fact, that upon examination of the deposit of soil and filth accumulated in them, the lowest calculation of the sullage amounted to 2,500,000 cubic feet. The sewer water also, mixed with the exudations from cesspools, is represented as filtering through the porous walls of the sewers,—percolating the earth,—sapping the foundations of the houses,—rising in the lower walls,—and tainting the atmosphere with gaseous fumes of the most noxious description.

Until recently, though heavily taxed in common with their neighbours, the inhabitants of St. James's Place have had to put up with a sewer so utterly inadequate as to render cesspools absolutely necessary. In excavating for the new sewer, besides five others in its line, no less than three cesspools were discovered in a single house. Though fresh air might enter during the day, in what state must this house have been during the night, with every modern contrivance to exclude ventilation, and the vapours from these poison-pits ascending and vitiating the air of the whole interior. Before 1841, the greater part of Piccadilly was without a sewer at all! These facts are cited, because, if this has been the state of things in two such respectable localities, it is easy to imagine the neglected condition of less important parts of the parish."

The state of some of the cow-sheds and slaughter-houses in this parish is abominable, and some of the close courts and alleys present such scenes as defy description. The simple fact, that in one district, St. James's-square, the proportion of deaths to population is one in ninety; while in another, and not the worst, the Berwick-street district, it is one in forty-two, speaks volumes. We shall be glad to see in every parish throughout the metropolis, some other "retired churchwarden" making a similar examination and exposure. "If without health, the rich man is poor, what must the poor man be?"

The Academy Gold Medal, and the Discourses of Reynolds and West will be given for the best "design for a Gothic church;" the whole comprised in one general and regular composition. The design is to be as large as an entire sheet of double elephant will admit, and to consist of a plan, elevation, section, and perspective view. A silver medal will be given for the best figured drawing of the "Entrance and interior of the Temple Church."

## RAILWAY JOTTINGS.

Deposits for the present session to the amount of 4,200,000*l.* have been placed, in compliance with the standing orders, to the credit of the Accountant-general of the Court of Chancery. More than half of this sum consists of stock and exchequer bills in nearly equal amounts. Several of the companies, it is understood, will be large losers by their recent Exchequer bill investments.——The Eastern Counties Company are enlarging their goods depôt at Bethnal Green to nearly three times its original extent. To make way for new warehouses a number of miserable thoroughfares crowded with wretched dwelling-houses have been of late demolished. The application of this company to Parliament for an extension to Guildford-street, appears to have led in some way to the mistaken idea that a terminus has been already formed in Gray's-inn-lane, out of a prison.——Since a new town has sprung up around the Paddington station of the Great Western Railway, extending to the Birmingham line at Kilburn, a subscription has been set on foot for the means of erecting another new church. The new church in Hamilton-place, about the centre of this new district, is about finished, and will be consecrated during the present month. Some difficulties have arisen between the builder and the architect. Another new church is to be erected adjacent to the Regent's-park, where the Commissioners of Woods and Forests have set apart a site for the purpose.——In the sinking of shafts at Birmingham, for the opening of the tunnel to the intended central station in New-street there, one of the superintendents was nearly suffocated at the bottom of a shaft, by inhaling the sulphur from a blast of gunpowder, and unfortunately, while being hastily withdrawn, fell midway from the top, and was frightfully injured. Some other *test* than the presence of a human being ought, in the first place, to be applied in such cases, as it easily could be, by transmission to the bottom of the shaft, and withdrawal for examination, ere a human life should be needlessly risked. The gaseous results of the explosion of gun cotton might perhaps be found to be more easily dissipated than those of gunpowder, and hence less dangerous.——The tunnel at Dorchester is progressing under disadvantages of no ordinary kind. The sub-contractor, after laying out some thousands, it is said, beyond the amount of his undertaking, has been obliged to throw up his contract. One great shaft is alleged, "by no incompetent judges," to have been quite unnecessarily sunk, and two almshouses, at the rear of which another "immense shaft" has been opened, have themselves, too, quite as unnecessarily sunk—"from the treacherous nature of the soil underneath," it is said, but primarily and more correctly, as it probably should have been said,—from the treacherous undermining of the "immense shaft in their rear."—— The South Wales Company, like another of whom we had lately occasion to speak, are urging on their contractor, and affording him too good an after excuse for defective works and probable disaster, by the temptation of "a large premium" for the completion of the works still earlier than the limits of the period which even the interests of all concerned must have originally prompted them to limit already, as far as possible, and perhaps further than prudence, if not also further than true interest, would have prompted.——The area of the central terminus at Bedford has been staked out by Messrs. Tattersall and Walker, C.E., and according to the *Bedford Times* "will be of most extraordinary extent. The Company," it adds, "have probably purchased sufficient experience to understand the meaning of 'come first, served first,' and it needs but little foresight to predict that many of us will see a larger town the other side of the Ouse, than 'Poor old Bedford.'"——It is expected that henceforth "one of the greatest boons a railway could confer" on Bedford, will be the reduction of the price of coals, at one sweep, from 1s. 9d. per cwt. down to 11d. Messrs. Stephenson and Co. appear to have been prepared beforehand to confer on the inhabitants a graceful foretaste of this future benefit, and to prove to all, whether interested *pro* or *con*, that such was one determinate end to be thus at once accomplished. They had 1,000 tons of coal at Fenny Stratford, ready to pour into

Bedford so soon as the way was clear.——Great part of the wooden viaduct in course of erection at Denby Dale, on the Sheffield and Huddersfield Junction Line, has been literally blown down by the wind; and such was the depth which the supporters (twenty-seven in number) had to fall (namely 100 feet), that the strongest were broken to splinters. The damage is estimated at about 5,000*l.*——Another insatiable bog near Bingley, described by the *Globe*, is at present hungrily at work, devouring "sixty tons of earth and stones every hour of the day,"—a liberal contribution, in the thankless administration of which, notwithstanding previous experience and advice, and in spite of the discouraging fact that "all is swallowed up every morning," men and horses are engaged, as well as steam, and all to no end, of course, as heretofore. "It is a question at what time it will be completely filled up," which had better be asked at Stowmarket or Chat Moss, where, as our readers, at least, well know, heavy matters of a similar sort were, in like manner, at first so industriously poured into the insatiable gulph, and where, as in the present instance, the inevitable consequence was merely this, that the heavy matter thrown in sunk down to the bottom, forcing up the lighter bog above it, to a higher and still higher level, in exact proportion to the quantity of stones and earth thrown in. And this the bog would probably in every case continue to do, were the accumulations of heavy matter continued to a sufficient extent, until its equilibrium would be overturned, when, of course, it would become one of those fearful and strange phenomena, a moving bog, spreading itself abroad, and swallowing up every thing in its way, until it attained to another settled level.——The South-Western Scottish line,—the Glasgow, Dumfries, and Carlisle,—is making rapid progress in Ayrshire. The centres of the great bridge over the Ayr are now in, and give a good idea of what this great structure will be, as they are seen towering far above the tops of the highest trees which grow at the top of rocks 100 feet in height.——An abuse in the treatment and disposal of tenders for 8,000 tons of railway iron, by a German company, to the prejudice of three parties in England tendering, was exposed by the *Times* in its City article the other day, as one which, on national grounds, requires immediate publicity. The prices stated by the English parties, on special request, were 10*l.* 10s., 10*l.* 5s., and 10*l.*, per ton; but the directors of the German company, instead of completing the contract with the English party offering at the lowest price, only made use of that offer to induce the agent of another party to reduce the amount of his tender by 7s. 6d. per ton, thus bringing it 2s. 6d. below the 10*l.*, and upon this adroitly concluded an agreement, which is likely to injure German companies themselves in future as well as English ones at present.

## STOCKPORT IMPROVEMENT BILL.

Two surveying officers, an architect, and a barrister-at-law, have been sent by the Woods and Forests to Stockport, where they have made preliminary inquiries relative to the improvements there contemplated, which, according to the *Stockport Mercury*, comprise four bridges with streets connected, to cost 19,072*l.*; widening, and otherwise improving streets and opening new ones, and roads, 20,101*l.*; besides which it is proposed to supply a deficiency in the quantity and quality of water by an arrangement between the corporation and the Manchester and Salford Water Works Company on the one hand, and the Manchester, Sheffield, and Lincolnshire Railway Company on the other; the latter to supply surplus water from extensive localities in Derbyshire and North Cheshire, and the former from their reservoirs, fed from their sources in Lyme Park. Evidence was led to shew that by the present company, whose supply is chiefly from artesian springs and bore holes, only 4,000 out of 12,000 houses had a limited supply, out of 259,863 gallons a day; whereas, for a population of 61,000, twenty gallons a day on an average, for each individual, or 1,220,000 gallons a day in all, are requisite for sanatory and other purposes. The immense difference is accounted for, partly by the deficiency of supply and partly by the irregular and expensive addition to that supply from other sources than those of the company. A clause in the proposed bill, prohibitive of smoke, was also discussed.

## THE PROVINCIAL GAS MOVEMENT.

The expiry of another week brings with it another series of notes to chronicle on a subject which appears to be exciting an interest surprisingly general, and a determination as remarkably unanimous in favour both of the establishment of gas-light where it has not hitherto been, and of the thorough reformation of the quality, the quantity, and the expense of it where it hitherto has been, long a source of enjoyment or annoyance, or both combined.——Arrangements are in progress at Birmingham for the lighting of that part of the parish of Edgbaston which is within the boundary of the parliamentary borough.——Two commissioners have been at Runcorn making preliminary inquiries as to the gas company's bill for the supply of additional townships in this "main outlet of the internal navigation of the country." There, at present, forty-two streets and courts are partially lighted with gas, both within and without, at 7s. 6d.—or, for 130,000 feet upwards, at 4s. 6d—per 1,000 feet.——The Liverpool (incipient) Guardian Gas Company are exhibiting, just now, a gas-meter said to be so simply constructed, that any consumer can check the quantity consumed without official interference.——The impurity and feebleness of the gas-light at Wakefield, as well as its high price, and its deficient quantity, have at length aroused the inhabitants to a determination to support the bill of the proposed new company there, in preference to that of the old, also applied for. They very naturally think that from the local situation of Wakefield, in the very midst of an excellent coal-field, gas ought to be as low, if not lower, in price, and as good, if not better, in quality there as any where else. The grievance at Newcastle, however, as well as there and elsewhere, appears to shew the fact, at least, if not the inference, to be the very reverse.——The Wakefield parish church clock is lighted with gas at the expense of the drapers' apprentices and assistants there.——The surveying officers have made the inquiries at Shipley and Bingley, already referred to in our previous notes. Bingley, with 5,000 inhabitants, has its gas yet to come, as Shipley with 3,000 also has; and strong cases were made out in favour of the passing of the proposed bills for both these thriving districts.——At Cockermouth a public vestry has voted 200*l.* for lighting the town for the next twelve-months.——The Gas Committee at Newcastle, it appears, lately proposed to purchase the present company's works at 50 per cent. advance on their original property, but fortunately the company rejected the offer; since which the committee has found that new works can be provided for about one-half the sum thus offered. A correspondent of the *Gateshead Observer* states, that one reason why the gas is so bad in such a locality appears to be the improvidence of the company, in not supplying themselves with a stock of good coals when the collieries, as they usually do, cease working for a time at the close of the year; so that they are compelled to use all sorts of inferior rubbish! The vulgar but shrewd and truthful adage, that "the shoemaker's wife is ever ill shod," was never perhaps more curiously illustrated than in the present instance. In Edinburgh, where the gas is made from this very coal, the gas is so pure, that it may be burnt in every room of a house—and indeed is frequently used even in bed-rooms. Many houses, even of the lower orders there, and at Glasgow, having one or more (some all) of their rooms fitted up with gas burners, for the sake of economy as well as of improvement.

Master Carpenters and New Buildings Bill.—On Thursday, the 4th inst., a very full meeting of the committee upon the intended New Buildings Bill was held at the Freemasons Tavern, Mr. H. Biers in the chair, when the present Bill up to Section 20 was discussed, and such alterations made therein as appeared to the committee necessary to amend it. The committee adjourned to Tuesday the 16th inst.

## MOSAIC WORK, ANCIENT AND MODERN.

At a meeting of the Society of Arts on the 3rd inst., Mr. W. F. Cooke, V.P., in the chair; Mr. Digby Wyatt read an essay "On the Art of Mosaic, Ancient and Modern." The author commenced by stating, that the most cursory glance at the subject must convince that this art, taking the form of either pavement or mural decoration, has been connected with most of the noblest efforts of architectural genius in all ages; and as it is the wish of many at the present time to effect the revival of this art, he would endeavour to convey as clear an idea as possible of the nature, history, and condition of this graceful handmaid to the science of decoration. The first positive notice of the existence of such an art occurs in the sixth verse of the first chapter of the book of Esther, wherein an account of the riches and luxury of the Palace of Ahasuerus is mentioned, and that passage clearly establishes the fact, that the Persians were acquainted with the art, and it is supposed communicated it to the Greeks, from whom the Romans obtained their first specimens. Ciampini divides the art into four principal varieties called tesselatum, sectile, figlinum, and vermiculatum. The first, the opus tesselatum, probably the most ancient; this kind of mosaic consisted of small cubes of marble, seldom averaging more than three-quarters of an inch square; the best specimens of this description of tessela occur at Pompeii, and in the Vatican. The second division of the art, the opus sectile, was also applied to pavements, and it is in this description of mosaic that the simple, yet magnificent pavement of the pantheon at Rome is executed. This variety of mosaic was formed of thin slices of different coloured marbles cut into slabs of a given form. The opus figlinum was more generally employed in mural decoration, and, according to Pliny, was first used in the decoration of the baths of Agrippa behind the pantheon; it consisted of figures, fruits, ornaments, &c., formed by means of small cubes of vitreous composition, composed of allumini and some metallic oxide to colour it; no specimen of this description of mosaic has ever been discovered in England. The fourth description of mosaic, or opus vermiculatum, is subdivided by Ciampini into three varieties. The opus major, generally employed in large pavements or ceilings, to represent the figures of gods, centaurs, &c. The opus medium was a much finer kind of work, and was generally applicable to walls. The third division, opus minor, or opus vermiculatum, was the finest and most elaborate of all the ancient Roman mosaics, and consisted of the most delicate pictures, formed entirely by minute pieces of marble and fictile work, many of the stripes being only the twentieth of an inch across. The most beautiful specimen that has been preserved to us is the one usually known by the name of Pliny's Doves, a copy of which in mosaics was exhibited. There is one kind of mosaic which the author had observed at Pompeii, and which he considers may not be inaptly termed the opus incertum of mosaics, composed of all sorts and kinds of marbles put together in irregular shapes, and when united into a mass with cement, and laid on the floor prepared to receive it, it is reduced to a polished face by friction. In completing the sketch of this art under the Romans, the author stated that the preparation ordinarily made by them for the reception of the mosaics consisted in their first placing a layer of large stones or flints, but with very little cement, on the ground. Upon this was placed a course of concrete, composed of smaller stones, and lime beaten and rammed with great care; upon this a third layer of cement was placed; the tesseræ or mosaics were then placed; and over the whole was poured liquid cement, so as to perfectly fill up the interstices between the cubes. During the reigns of the twelve Cæsars this art rose to an unexampled popularity. During the reign of Hadrian (A.D. 138) to that of Caracalla, the art appears to have lost in quality. After the year 220 it became obscured by the clouds which swept the Roman empire. From the time of Constantine three varieties arose, which obtained universally in Italy from the fourth to the fourteenth century, and during nearly 1,000 years changed but little either in principle or design. The emperor, Alexander Severus (A.D. 222 to 235) brought with him from Alexandria great quan-

tities of porphyry and serpentine, which he caused to be worked into small squares and triangles, and variously combined, thereby laying the foundation of this art, which formed the pavement of all the rich Italian churches. We have an interesting specimen in Westminster Abbey, referred to the year 1260.

The author, after tracing the history on to its decline, and giving some account of the encaustic tiles, proceeded to state the circumstances which had of late years led to its partial revival. He also gave a detailed description of the process of manufacture employed by Messrs. Singer and Pether, and Messrs. Minton and Co., and concluded by urging on architects, and the public generally, the applicability of the manufacture to the purposes of decoration.

## INSTITUTION OF CIVIL ENGINEERS.

On the 2nd instant, the society met for the first time in the new theatre, and a paper by Mr. W. E. Newton was read, giving a description of the method employed by Mr. Herron for the construction of the permanent way of the Philadelphia and Reading, and other railways in the United States. The method was a deviation both from the systems of the longitudinal and the transverse sleepers, crossing each other and spiked together at the intersections with wooden trenails or iron pins, according to circumstances, forming an extended platform, upon which their longitudinal bearers were laid, supporting bridge-shaped rails with wrought-iron chairs. The paper gave an account of several deviations from the general system, such as making the trellis-work of iron laid in bitumen, &c., and also a detail of the amount of traffic conveyed along the railway; whence it appeared, that within one year and five days from its being opened for general use, one million four hundred thousand tons of goods had been conveyed along it, without any prejudicial effect, and, in fact, with less wear and tear than was usual upon railways in the States. The cost of a single line of permanent way was about 850*l.* per mile. From the discussion that ensued, it appeared to be the opinion, that although the system might succeed in a country where timber abounded, it was inapplicable for English railroads; and exceptions were taken to the general features of the construction for high speed, as the rails, which weighed only forty-four pounds per yard, and were of a bridge form, could not resist the impact of the wheels at great velocity: the junction of the diagonally laid sleepers would become loosened, and there would be too much deflection between the bearing points.

## Correspondence.

### URBAN BURIAL.

Sir,—I trust you will kindly give admission to a few very concise remarks from a former correspondent, whose experience, brought to bear on the above subject, has certainly been of use, and had a degree of usefulness felt, if not acknowledged, in conclusions drawn as to the general necessity of a novel and substantially ameliorated system.

For, while several have given sketches, or filled up representations of individual "horrors,"—in *your pages alone* has appeared an orderly systematic notice of London churchyard deficiencies, caused by the utter disproportion of room to population; also some suggestions for "joint parochial cemeteries;"—the two having been, at any rate, and claiming a humble merit, *useful* in the reception of any comprehensive general design.

Whilst the grand abuses have been sufficiently dilated upon, the grief to private Christian and human feeling, owing to the miserable and disturbed wretched places in which survivors are compelled to leave a loved corpse, has certainly not had the mention (though it may have been thought of), which might have been expected or wished.

The writer would be the last to forward any *Gallo-Mania*, but will submit that, as in *Abattoirs*, and extra urban markets, preventing a *load* of cruelty and insalubrity, seen and unknown, so in sepulture; Paris having in three grounds, full *four hundred* acres for one million inhabitants, and London (besides new cemeteries, which are not compulsive) *one hundred* for *two millions*. They "manage these things better in France."—I am, Sir, &c.,

Feb. 8th, 1847. J. D. Parry.

### STATE OF THE TEMPLE CHURCH.

Sir,—I attended the morning service at the Temple Church yesterday, and was rather surprised and sorry, considering how lately it had been restored, to see the serious effect produced by the thrust of the groining, on the two opposite piers nearest the altar; especially the one immediately behind the pulpit, which appeared to me to sway from the perpendicular to the extent of at least 6 inches. I should feel obliged by your informing me whether this has been noticed, and whether any precautions are being taken to arrest the mischief.

I am, Sir, &c., F. C.

P.S. For your satisfaction, I inclose my card.

London, Feb. 8, 1847,

## Miscellanea.

Chalk Fuel.—The original paragraph, quoted from our columns by the press throughout the country, on the subject of the use of chalk, surrounded by coal, in producing intense heat at a small expense, has led to various experiments as well as considerable discussion, in the latter of which Dr. Murray, of Hull, has thought it advisable,—and very properly too, as a mere precaution, but not as a prohibition,—to object to the use of chalk for fuel from the liberation of carbonic acid gas during combustion. This, it is obvious, would form a fatal objection to its use in aboriginal huts where no proper means of ventilation are provided; but, as observed by the *Cambridge Advertiser*, which has ably advocated its use, or at least the trial of its quality, chalk would not be one jot or tittle more dangerous than charcoal, which, as our readers all know very well, can be, and constantly is, burned, without any danger, if proper precautions are observed.

Metropolitan Sewage Manure Company.—At a special meeting of this company, held last week to receive the draft of a bill for altering the line of their works, it appeared that it was proposed to construct an aqueduct in the parish of St. George, Hanover-square, near Skew-bridge, on the King's Scholars' Pond sewer, in the Vauxhall-bridge-road, and terminating at or near the Broadway in Hammersmith, together with the necessary works by which the aqueduct or conduit would pass through the parishes of St. Luke Chelsea, St. Mary Abbot's Kensington, through Fulham and Hammersmith. The tunnel here proposed was stated by their engineer to be preferable to iron, and would remove the opposition that existed to the erection of steam works in the metropolis. 30,000*l.* is the sum intended to be applied to the construction of the works.

Projected Works.—Advertisements have been issued during the past week for tenders for the erection of a large dwelling-house in Ipswich; and of new schools at Towlaw; for partly taking down and rebuilding the parish church of Wolsingham; for the excavation for and construction of sewers in the parish of St. Luke's, Chelsea; for best Guernsey granite, flints, and pit ballast for St. James's, Clerkenwell; for the regular supply of cliff stone at Hull; for the working of limestone and other quarries, or hauling stone for the repair of roads in Herefordshire; and for masons', carpenters', plasterers', slaters', plumbers', smiths', glaziers' and painters' works for three years at the fortifications, barracks, and other buildings at Edinburgh Castle, Leith Fort, Piershill, Queensberry, Greenlaw, and Blackness Castle.

French Plate-glass.—We have lately seen specimens of French plate-glass, at the Soho warehouse, in Soho-square, of great brilliancy and beautiful colour. The price is about the same as that of English glass. We are not anxious to recommend foreign productions over those of our own country, but as our plate-glass manufacturers shew little desire to improve, or to let the public have all the advantages which the reduction of duty should bring, a little competition will perhaps be serviceable. Plate-glass ought to be cheaper in England than it is.

Mr. Kearns Deane, Architect.—This gentleman, who, in connection with Sir Thomas Deane, his brother, has executed many works in Ireland which are well spoken of, expired in the prime of life, on the 30th ultimo. The *Cork Examiner* says, "Architecture, in the South of Ireland, has lost in him one of her most gifted exponents, one of her most enthusiastic upholders. His sorrowing friends justly attribute his death, in the maturity of manhood, to that spirit of zeal and unwearying devotion with which he toiled at his profession—wasting those precious hours that exhausted nature requires for her restoration, in incessant toil." The bow should not be always bent.

Competition.—Plans have been called for, by advertisement in the current newspapers, for a Fever Hospital at Bedford.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, Feb. 15.—Statistical Society, 12, St. James's-square, 8 P.M.

Tuesday, 16th.—Institute of Civil Engineers, 25, Great George-street, 8½ P.M.

Wednesday, 17th.—Society of Arts, Adelphi, 8 P.M.; Association of Architectural Draughtsmen, 33, Southampton-street.

Thursday, 18th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*Water Wheels.*"—A correspondent asks—"What power of water is necessary to carry a wheel for grinding corn and threshing, &c. from four to six-horse power; and the fall necessary to obtain a sufficient amount of water for a breast or over-shot wheel."

"*L. J. K.*"—Yes. Ask for the last editions.

"*Veritas.*"—We will examine the work in question. We have a different account of it from another quarter.

"*Tiles.*"—A correspondent wishes to know "where he can obtain tiles that represent brickwork, to cover vertical timber work."

"*Peckham Investment Company.*"—The name of the lowest contractor is Pettipher, and the amount £1,983, not £1,943, as stated.

"*Architectural Roofing Tiles.*"—We advise "T." to call on Mr. Hughes, at the Company's office, 158, Strand, who will give all information that may be required. They have a very good appearance.

"*Kensington Workhouse Competition.*"—Correspondents must bide their time. We will review this matter presently. We insert one letter elsewhere.

*Received.*—"E. D." (Pimlico), "J. J.," "W. C." (Smethwick), "H. D. G.," "W. B." "Report of Mr. Henry Austin, C.E., on the Sanatory Condition of the City of Worcester," with an Appendix; by Mr. Edwin Chadwick. "The Antiquary and Geologist's Companion; by Mr. W. Downing Bruce, F.S.A. (Longman, 1847). "A Collection of Useful Tables, compiled from good authorities."

Note.—A number of correspondents must excuse us till next week.

Erratum.—In letter respecting mill at Pleasley, p. 68, for *one* Mr. Burton, read *our* Mr. Burton.

NOTICE.—Covers for Volume IV. of The Builder, may be obtained at the Office, 2, York-street, price 2*s.*; or the publisher will bind sets at 3*s.* each.—A few volumes for 1846 remain on sale, price 21*s.*

## ADVERTISEMENTS.

BUILDERS, CARPENTERS, and others, are respectfully informed, that they can be supplied with IRON COLUMNS, GIRDERS, RAIN-WATER PIPES, AREA and TRELLIS GRATINGS, SASH-BARS, RAILING, GATES, and IRON COPING, BALCONIES, VERANDAHS, CONSERVATORIES, FANCY STAIRCASES, IRON DOORS, STOVES, RANGES, &c.

BAKERS OVEN WORK always in stock at JONES'S IRON FOUNDRY and MANUFACTORY, 9, Brick-lane, Old-street, St. Luke's. A great variety of Patterns for Lathe-work, &c., &c.

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Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
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| £3 0s. | £3 13s. | £3 16s. | £4. | £4 10s. |

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| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in | 4 ft. |
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| £2. | £3. 15s. | £3. 5s. | £3. 10s. | £—. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do. at 9½d. and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

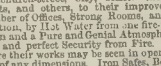
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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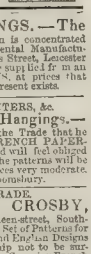
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| Pan Water-Closet, complete, with | 0 | 4 | 6 |
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| | C.C.C. .... | 2 | 2 | 0 | |

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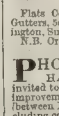
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| 3-inch Pipe .....per foot | 4½d. | 24-inch Gutter....per foot | 4½d. |
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Including Fixing.

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| Inch. | s. | d. |
|---|---|---|
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| 1½ Four panel square | 0 | 7 |
| 1½ Ditto, moulded front | 0 | 8 |
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| 1½ Moulded one side | 0 | 9 |
| 1¼ Ditto, both sides | 0 | 11 |
| 1½ Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch. | s. | d. |
|---|---|---|
| 1½ Ditto, bead, flush, and ditto | 0 | 11 |
| 1½ Ditto, ditto, and moulded back | 1 | 0 |
| 1½ Six panel square | 0 | 9 |
| 1½ Ditto, moulded one side | 0 | 10 |
| 1½ Ditto, ditto both sides | 1 | 0½ |
| 2 Four panel square | 0 | 10 |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto ditto, both sides | 1 | 0 |
| 2 Ditto, bead, butt, and square | 0 | 11½ |
| 2 Ditto, bead, flush, and square | 1 | 0½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2½ |
| 2 Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
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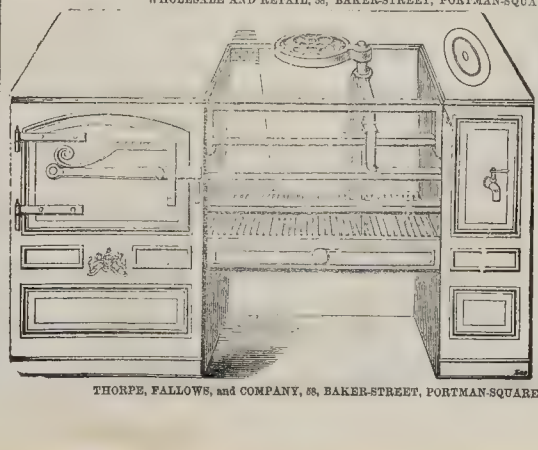
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Pembroke College, February 5th, 1847.

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TO CARPENTERS AND JOINERS, WOOD CARVERS, AND MASONS

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St. Neots, February 8th, 1847.

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A Ground Plan of the proposed sites, and other particulars, may be obtained on application to the Commissioners' Clerk.

By order,

J. T. VINING, Clerk.

Yeovil, Somerset, Feb. 11th, 1847.

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This staircase is well adapted for any situation WHERE ELEGANCE, SPACE, and LIGHT, are desirable, as both ends are framed to shew, and may be put up in a central situation, and suitable also for imposing appearance, with a very genteel Residence, if required. The above possesses many acquisitions, and is an unusual opportunity to any Builder of active business habits who can command a moderate capital.—For cards of address, apply to Mr. CLEMENTS, 21, Bartlett's Buildings, Holborn

TO BE DISPOSED OF, at a great sacrifice, having been recently made for a GENTLEMAN'S MANSION, and not now required, consisting of twenty-nine steps fitted with ornamental cast-iron heads, and risers full three-eighths in thickness, perforated with quatrefoils in panels, moulded nosings, and open bracket ends, framed on wrought-iron carriages of 3 inches by 1 inch.

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PIERCE and KOLLE, 5, Jermyn-street, Regent-street, Radiating Stove-Grate Manufacturers.—DISSOLUTION of PARTNERSHIP.—In consequence of a Dissolution of Partnership, a large portion of their SPLENDID STOCK will be DISPOSED OF, and is offered to purchasers at a great reduction. It consists of Chimney-pieces, Stove-Grates, Fenders, and Irons, in suites, Kitchen and Laundry fittings, comprising Ranges, Ovens, Boilers, Hot Plates, Turbolt, and Fish Kettles; Bain Marie Pans, and every article for kitchen use; PATENT WARM AIR and ARNOTT STOVES, BATHS of all kinds; LOCKS, and general furnishing IRONMONGERY.

N.B. PIERCE takes this occasion respectfully to acquaint the nobility, architects, and gentry, that the business will continue to be conducted by him without interruption, as usual, 5, Jermyn-street, Regent-street.

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Do Elliptic do., at 8d., and 9d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
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| 2½ inch Lift Pump on Plank ..... | 3 | 9 | 0 |
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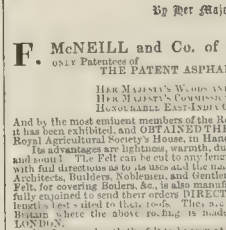
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| ½ inch, Bib, Ball, or Stop Cocks. | 0 | 1 | 8 |
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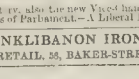
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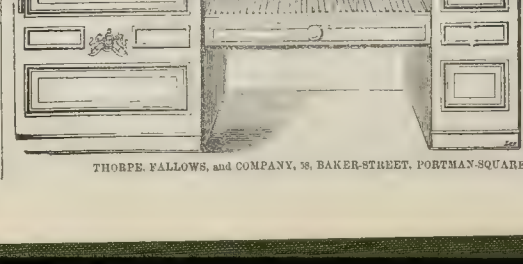
And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover square.

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As is covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade

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The Builder.

No. CCXI.

SATURDAY, FEBRUARY 20, 1847.

HOW best to construct a THEATRE where the largest number of persons may sit most at their ease, be most secure, and see and hear most perfectly, is still a question, and probably will long remain so. The form, arrangement, best materials in respect of the transmission of sound, and mode of obtaining security from fire and completeness of the approaches, must be investigated by every architect for himself, when about to design a theatre for dramatic representations, as points unsettled. More than one of the latest erected theatres in London, so far from being superior to those which preceded them, and giving evidence of greater knowledge of the subject, are positive retrogressions. In many of the seats, seeing and hearing are quite out of the question; the ventilation is abominable, draughts universal; and if the occurrence of fire, or any other cause of alarm, should lead to a hasty attempt, on the part of the audience, to escape from the house, the consequences could not fail to be dreadful.

We may have occasion to speak more fully on this subject before long: the inquiry suggested is full of interest to a large class of persons; and, moreover, would apply to many other structures besides theatres. As regards the arrangement of apartments with reference to the laws of sound, all are avowedly ignorant, and are unable to obtain with certainty any desired result. Some notes under this head will be found on another page in the present number of our journal, and may be referred to in connection with this remark.

At the present moment too, when a new theatre is about to be erected in London, and one of the "royal" houses is undergoing alterations little short, in extent, of an entire reconstruction, this subject would seem to have more than ordinary claims to notice.

This consideration, with others, leads us to place before our readers the plan of the "Théâtre Montpensier,"* just now completed in Paris, and a view of the entrance front on the *Boulevard du Temple*, together with some particulars, for which we are chiefly indebted to an ably-conducted French journal, known as *L' Illustration*.

Most of our readers are aware that the privilege of erecting this theatre was obtained by M. Alexandre Dumas, through the Duke de Montpensier, a staunch friend of that distinguished and most prolific writer. A company was formed to build the theatre, and by them the ancient *Hotel Foullon*, and land whereon it stood, were purchased for 24,000*l.* sterling. For a long time expectation has been on tip-toe in Paris concerning the new theatre, and the most marvellous stories have been circulated concerning the arrangements, fittings, and decorations; almost sufficient, indeed, to ensure disappointment when opened. Whether or not, however, this has been the case, we have yet to learn.

An examination of the plan† shews, that the site was an awkward one, and called for the exercise of skill in adapting it to the required purpose. This and another circumstance tramelled the architects considerably, and materially influenced the arrangement of the theatre. The circumstance alluded to was the necessity of providing for the accommodation of two widely differing audiences, and this is dwelt on by the French journalists as a matter of greater difficulty than it seems to be to us. The audience of the theatres of the boulevard ("that dramatic Acropolis so picturesquely termed the Boulevard of Crime") is of a peculiar, well-known, and fixed character, while the directors of the new theatre (the popular theatre, too, *par excellence*), looked to the most brilliant society of Paris as its patrons, in consequence of the peculiar circumstances under which it was erected. What was desired, therefore, was a building so arranged, that the *élite* of Parisian society might find in it every provision for their comfort without in any way trenching upon that of the ordinary public of the theatres of the boulevard. To obtain this, the directors associated with M. de Dreux,—who had obtained the chief prize for architecture in the Academy of Beaux-Arts, and had been sent to Rome by that body,—M. Séchan, an eminent painter of architectural scenery; and committed into their hands the entire direction of the works.

Provision for the inferior audience mentioned appears to have been made by two large amphitheatres, or, as we should term them, galleries, extending behind the second and third tiers of boxes; one of these is shewn on the plan, and is marked D.

The form of the house is that of an ellipse, and differs from most modern theatres in having the transverse axis, like Palladio's theatre at Vicenza, parallel with the scene, that is so far as relates to the principal part of the audience. The longest diameter, from the back of the boxes to the back of the boxes, is about 65 feet; the shorter, to the front of the stage, is 52 feet. The opening of the stage is about 36 feet.

It is laid down by B. Wyatt, in "Observations on the Principles of a Design for a Theatre," that as the reach of the human voice, when moderately exerted, is about two-ninths further in a direct front line than laterally, and the voice being distinctly audible on each side of the speaker at a distance of 75 feet, it will be as plainly heard at a distance of 92 feet in front of him, therefore, "that the geometrical figure which comes nearest to the extreme limits of this natural expansion of the voice is a semicircle of 75 feet radius, or 150 feet in diameter, continued on each side to the extent of 17 feet, or in the proportion of about two-ninths of its lateral expansion beyond the limits of the semicircle, and then converging suddenly until the two lines meet behind the back of the speaker." There are many reasons, however, why a theatre of this extent should not be erected.

"Taking 75 feet (says Mr. Gwilt, commenting on this passage) for the distance at which the voice can be heard laterally, as the space between the front line of the stage and its immediately opposite boxes may occasionally be in the lateral direction of the voice, the greatest distance from the front wall of the stage to the back wall of the boxes opposite the stage should not exceed 75 feet, the limit of the voice in its lateral direction, because of the turns of the head which the actor must often make for the business of the scene, when that which was opposite might become lateral; and thus those persons sitting in the opposite boxes would be 92—75=17 feet beyond the reach of the voice.

The use of a semicircle, without a modification would, however, involve the extension of the stage opening to an inconvenient width; and Mr. Wyatt very properly considers that the whole area of a theatre should contain little more than one-third of the space over which the voice can reach; "the one," he says, "being (independently of the space behind the back of the speaker) a superficies of 11,385 feet, and the other of 4,003." This, he thinks, will compensate for the absorption of sound consequent on the number of the audience, the woollen garments they wear, and the state of the atmosphere, and would insure a good hearing in every part of the house.

According to the author's statement, he recommends that the distance from the front of the stage to the back wall immediately opposite should be about 54 feet; in the old Drury-lane it was 74 feet, and in the old Covent-garden, built about 1730, it was 54 feet 6 inches. In the Opera House, built by Vanbrugh, it was 66 feet. At Milan it is 78 feet. At the old San Carlos, at Naples, 73 feet; and at Bologna, 74 feet.*

This, however, given for the reader's consideration, is leaving the Théâtre Montpensier, where it will be observed a large proportion of the audience are brought very close to the stage. The arrangement here adopted has the effect of reducing in appearance the size of the house; but those who have been into it assert there is no place in it, whether it be in front or at the sides, in the boxes or the amphitheatre, where the whole scene is not distinctly visible.

The front of the boxes is white, with continued garlands of fruit, flowers, and foliage, painted on it. The front of what we should call the dress-circle is a balustrade. The proscenium and curtain are very elegant.

The number of persons the house is said to contain is 2,000. We may mention, that instead of one central chandelier, which would have interfered with the view from the galleries, constructed as they are, there are two, one on each side, by which means inconvenience is avoided.

The frontage on the Boulevard is very small,—not more than 26 feet, and gave little opportunity for display. The arrangement of this front, as shewn by our engraving,† is not unlike that of the Adelphi Theatre, although the details are widely different. The cariatides on the ground story represent Tragedy and Comedy; the upper groups, supported on brackets represent, on the right hand, Hamlet and Ophelia, and on the other side the Cid and *Chimène*. The central figure, for the admission of which the circular pediment is inexcusably broken, represents the genius of modern art. The whole of the sculpture is the work of M. Klagmann, and is said to be well executed.

The total cost of the building and fittings is stated at 32,000*l.*

* We use the name by which it has been known up to this time. What it will, after all, be called, we cannot say with certainty at this moment.

† See p. 87.

## STOPPAGE OF THE WORKS IN WELLS CATHEDRAL.

WE much regret to find that the restoration of Wells Cathedral, to which we alluded some time ago, has been brought prematurely to a close. The alleged excuse for suspension, with the dean, is this, "When I have *all the money requisite* to carry out the projected works, then we may proceed." To this doctrine all who *really* feel a desire for the restorations object, and truly say, let us spend all we have WELL, and let the blame rest with the county gentlemen and public, if by their failing in subscriptions we cannot go further.

The nave is thoroughly cleansed and restored, and the ancient painting on the groining renewed: the beautiful vaulting of the choir is still choked by whitewash. The intention was to take on the scaffolding to the choir, and by gilding the bosses and cleansing the choir, &c., at least to secure a harmonious effect from east to west. For this there was abundant money; but the new dean, giving

* Encyclopædia of Architecture, p. 805.

† See p. 86.

the reason before stated, has ordered all the scaffolding away, and the men who had just got into the spirit for their work were dispersed. The cost of scaffolding, &c., for such an undertaking is not small, and this must be entirely re-erected if ever the works go forward.

An encaustic tile floor is about to be put down in the Ladye Chapel, at some considerable cost.

## THE INTERIOR FORMS OF BUILDING,

### WITH REFERENCE TO THE LAWS OF SOUND.

A MEETING of the Institute of Architects was held on Monday, the 8th instant, Mr. Bellamy in the chair, when a paper on the above subject was read by Mr. Scott Russell.

Mr. Russell, in commencing his remarks, said, in excuse for interfering with what might be considered not his province, that although extreme division of labour might, and did, carry science forward, yet, by confining particular departments to classes, it induced narrow views. He thought good resulted from the professors of different sciences mixing together and interchanging opinions. It was difficult to excel in more than one, still there were many examples of those who had done so,—as Michael Angelo, Leonardo da Vinci, and others. If in any thing extra-professional aid was needed by architects, it was in the arrangement of buildings with reference to the transmission of sound, where all were avowedly at fault. All architects admitted that nothing was more difficult. Mathematicians, when applied to, gave widely different forms as the best. Even an ear-trumpet was no better made by the most profound mathematician than by the merest rule of thumb; and if it were so difficult to arrange an instrument by which sound might, with every advantage, be conveyed to one individual, how much more must it be to arrange a room so that every one in it might hear what was said. The problem was to enable 1 or 1,000 to hear equally well. The waves of sound were generally thought to be like the waves of water: he had been led to investigate the latter, and in so doing, had arrived at some conclusions not generally entertained. He proposed to divide the subject into five parts. The first principle to be mentioned was this, that sound travels in straight lines: light and sound are the same in this respect. Sound does not easily go round a corner; and this should be remembered in arranging buildings. The question was how to make the greatest number hear and see well. In the theatre of the Royal Institution in Albermarle street this had been successfully worked out: he thought that from every seat in it the lecturer could be most distinctly seen and heard. This was arranged by Count Rumford and Sir Humphrey Davy.* The human voice, the lecturer remarked, could be heard 500 feet with ease; and he believed that a building might be arranged to seat 20,000 persons where all would hear: the fact that Wesley, preaching in a natural amphitheatre of hills, was heard by that number of persons justified his opinion. He had noticed that a reader in the choir of Canterbury Cathedral could be heard 200 feet off distinctly, and afterwards making the experiment himself with a friend, had found that he could be heard that distance when he spoke in a clear whisper.

Mr. Russell then proceeded to explain a curve which he had discovered, and recommended for the sectional arrangement of the seats, and the mode of obtaining it, but which we find it difficult to convey without diagrams. It was first necessary to fix the position of the speaker, and to decide how much of the voice and sight of the speaker each auditor should have: he thought an area 18 inches high and 3 feet broad sufficient. Drawing then a series of radial lines from the mouth of the lecturer to points decided by these dimensions, a curve was obtained for the rise of the seats, which was found in practice of good effect.†

The second principle he would allude to was the spontaneous oscillation of air in a chamber, which was the source of much trouble, but might be turned to good account. A long chamber of air, if caused to oscillate, continued to do so, and would produce a tone depending on the length,—as in an organ-pipe. Thus a gallery, 64 feet long, would produce the note C; and if 32 feet long, it would be an octave higher. Every chamber, in short, has a voice. A speaker should find out the key-note of the room, and speak in it if possible. This fact opened the question whether we could improve rooms for hearing by attention to the dimensions and proportions. Length, breadth, and height should be in harmonious proportions, or the sounds produced would jar: there was a more intimate connection between music and architecture than is now generally admitted. Simple multiples for the proportions were desirable; as, for example, 48 feet long, 24 feet wide, and 16 feet high, and so on.* Incongruous sounds, he said, neutralize each other, and produce dead points, or points where the speaker would not be heard. Care was necessary in this respect.

Harmonious arrangement of an apartment might sometimes be obtained by means of pilasters, or partition with doors. The choirs of our cathedrals usually approximated to simple multiples in their proportions, and bore out his view, he thought, by their effects. Incongruous forms made the worst apartments for hearing. The lecturer was then proceeding to speak of the third division of his subject, reflection of sound, but was invited to postpone the consideration of it till the next meeting.

* Mr. Godwin remarked, after the reading of the paper, that the arrangement of this theatre was usually attributed to the late Mr. Webster, the geologist, who built it, being then an architect.

† This was published by Mr. R. some years ago, and is illustrated in Gwilt's "Encyclopædia."

## AWARDS OF OFFICIAL REFEREES.

### RIGHT TO INTERFERE WITH ADJOINING BUILDINGS.

A WAREHOUSE, situate No. 21, Bermondsey wall (call it A), consisting of two square stories and one in the roof, which was curbed, having been in a great measure destroyed by fire, and the warehouse adjoining (call this B) being of a greater height, with *dripping eaves all round*, it was desired to rebuild or reinstate the first-mentioned warehouse, A.

The front and rear walls had been entirely rebuilt, and new floors and roof formed, except the first or ground-floor, and part of the second or one-pair floor. Under the schedule C, part 4, the district surveyor required that the curbed roof should be replaced by a square story; and under schedule D, part 3, required that the party-wall should be carried up three feet above the gutter. Under sec. 31, he was of opinion that the wall was sufficiently secure to allow it to be raised.

The adjoining owner maintained that schedule D, before mentioned, did not justify interfering with an old adjoining building, which is not out of repair; that the form of notice, schedule M, No. 8, shews that it was not the intention of the law that a wall should be condemned on account of its being insufficient for a building owner, and that the previous section, 26, is the only one under which the building owner could proceed; that the common-law prescriptive right of possession for a sufficient number of years cannot be set aside, excepting by the express words of the statute ("Wells and Ody") and that the present words do not justify the claim.

Further, that section 31 does not enable a building owner to do all that is necessary to raise a building, but only to do so if he has the assent of the district surveyor, and can do it without interfering with the adjoining owner's property; this intention is clearly shewn by his being authorized to do it without any notice.

The official referees were therefore requested to determine,

"1stly. Whether the warehouse A has been, in the intention of the Act, rebuilt, or has been only reinstated or altered.

2ndly. Whether the party-wall is required to be raised above the gutters of the adjoining building B, and can be so raised by the building owner without the consent of the adjoining owner, all notices and formal proceedings being supposed to have been taken.

And 3rdly. Whether the building owner or adjoining owner should be at the expense of forming the lead gutter, and making good the roof of the adjoining owner's building."

The referees determined "that the warehouse (A) has been rebuilt within the meaning of the first-mentioned Metropolitan Buildings Act, and that the party-wall in question is by the said Act required to be raised above the gutter of the adjoining building (B), and that subject to the proceedings directed and required by the said Act to be taken in that behalf, such wall can be so raised by the building owner without the consent of the adjoining owner; and that the wooden plate, and eaves upon the said party-wall are, so far as they go, of the nature of a party timber partition, and subject to the provisions of the said Act in respect thereof, and that such timber should be removed, and, the party-wall, being otherwise sufficient, should be raised at the joint expense of the building owner and of the adjoining owner, but that the required new gutter, and making good the roof of the adjoining owner's building, must be made and done at the sole expense of the *adjoining* owner."

* See paper on this subject, p. 2, *ante*.

### PROJECTION OF SHOP-FRONTS.

In the case of a proposed addition to a shop-front in Upper Baker-street, Pentonville, on which an award had been made, the building-owner thought, on considering the award, that the proposed projections might be made to the extent required, provided they consisted of fire-proof materials. He thought his opinion was confirmed by the latter part of the clause in schedule E, headed, "Projections from face-walls, &c.," and remarked, that in his opinion a fence-wall, inclosing the present garden of the said house, and standing before the line of fronts to the extent of the line of the proposed projections, would invite nuisance, and be a much more objectionable projection than the proposed shop possibly could be. He proposed, therefore, to construct the said projections with fire-proof materials. It must be added, that he had the written approbation of the owner of the adjoining house in Upper Baker-street.

The district-surveyor (of Clerkenwell) considered that it would be contrary to the said Act to build the said shop-front to the extent proposed, and the question was sent to the referees.

The award was,—"that inasmuch as the extent proposed for the projection of the shop-fronts (namely, the line of the fence-wall inclosing the garden of the house in question) would exceed the ordinary and reasonable width of stall-boards to shops similar to the proposed shop, and such projection would be an extension of the shop, and not the mere addition of a shop-front before the line of the present external wall of the house, it will be contrary to the Metropolitan Buildings Act to build the shop-fronts, or any of them, in the line proposed, or to make any such projection, whether the same be or be not of fire-proof materials; but that if such front be formed of fire-proof materials, and do not exceed in projection the ordinary and reasonable width of stall-boards to shops similar to the proposed shop,—which width is, in our opinion, not more than two feet,—and if no extension of the shop, as distinguished from the shop-front, be made beyond the present line of the front wall of the house, then it will not be contrary to the said Act to erect the same."

## ARTIFICIAL LIGHT FOR PAINTING.

IT is well known, that ordinary artificial light, such as that obtained by the combustion of wax, tallow, oil, or carburetted hydrogen gas from coal, produces a tinge of colour very different from that produced by the white light of the sun. This very much affects the appearance of colours exposed to artificial light, and prevents the continuance of some operations after the sun has gone down. For artists it would be especially important to obtain light free from this tinge: and we therefore think it desirable to point attention to a paper on this subject, by Mr. Tait, a vice-president of the Scottish Society of Arts, published in the *Edinburgh New Philosophical Journal* for January.

The writer remarks,—"The sensation of colours is caused by objects reflecting or transmitting colours produced by the rays of light to which they are exposed. There are three primary colours, yellow, red, and blue; of two, or all of which, combined in various ratios, all other colours are composed. Light, with very rare exceptions, is compound or heterogeneous, producing two or all of the primary colours. The pure light of the sun produces them in

such ratio, that when wholly or proportionally reflected or transmitted, they neutralize each other, and produce white or neutral grey (which is merely a shade of white, having no predominant colour); and light producing them in such ratio is often called shortly *white* or *neutral light*. In 100 parts of white, there appear to be about 18 parts of yellow, 32 of red, and 50 of blue, all of equal intensity, or nearly as 3, 5, 8. When two only of the primary colours occur, yellow and red, yellow and blue, or red and blue, they form the secondary colours, orange, green, or purple; and when they occur in the ratio in which they are produced by white light, they form perfect or normal secondaries. The colour of those objects which are called coloured, is caused by their having the quality, from their peculiar structure, or otherwise, of reflecting or transmitting different parts of the rays forming the compound light to which they are exposed, the remainder being absorbed and extinguished."

In ordinary artificial light, the rays producing red and yellow appear to occur nearly in the same ratio in which they occur in white light. "And as there is an excess of them over the rays producing blue, all that is necessary, in order to produce white light, is to interpose a transparent medium of such a depth of blue as to absorb that excess, allowing such a portion of them to pass as is necessary to neutralize the rays producing blue, all of which have been allowed to pass. It appears that that excess may be best absorbed by interposing coloured glass, of a proper depth of blue, according to the ratio of orange in the flame. It ought to be 'coloured' glass, that is, coloured in the melting-pot. Glass 'stained' blue, that is, partially coloured by applying the colouring matter to the surface, and fixing it by a heat sufficient to soften the glass, but not to melt it, is not transparent; in which respect, blue differs from other stained colours in general."

"The artificial light is to be inclosed in a box or lantern of a suitable size and construction, or otherwise, as circumstances may require, and in such manner that none of it may escape by the openings for admitting and discharging air or otherwise, except what is modified by passing through the coloured medium."

The paper shews how best to adjust the depth of tint of the glass. In obtaining white light by the method proposed, there is of course a loss of a large portion of the artificial light, and a corresponding increase of expense; but it appears that the objection on this ground is not so great as might be anticipated. "Dr. Fyfe states the following among the results of observations made by him with regard to the expense of a variety of materials for producing light, taking as the unit the expense of good coal gas, yielding 12 per cent. of matter condensible by chlorine: — Gas argand, 1·00; gas swallow-tail, 1·40; solar oil in solar lamp, 2·00; solar oil in common argand lamp, 3·98; whale oil in ditto, 5·00; sperm in ditto, 8·00; moulded candles (short sixes), with two wicks, 12·70, with one wick, 13·50; wax candles, 25·90; spermaceti and composition candles, 29·20. So that, supposing the expense of white light to be six times that of ordinary artificial light, it may be produced by a gas argand lamp for little more than the expense of the same quantity of orange light from common whale oil in an argand lamp, for about half the expense of tallow candles, and for less than a fourth part of the expense of wax candles; and if gas cannot be obtained, the solar lamp may be used, which will produce white light at the same expense as orange light from tallow candles, and at less than half the expense of wax candles, independently of the diminution of the ratio of orange, in consequence of the great brightness of the flame of that lamp."

We look upon these hints by Mr. Tait, for the production of artificial daylight, as likely to prove of considerable value.

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GROSVENOR-SQUARE.—A resident in Grosvenor-square implores us to urge the importance of completing the sewers in that neighbourhood, which have long kept the inhabitants in a state of great discomfort. In cases of this sort every effort should be made to get the works completed with the utmost rapidity, whereas it would seem here that those engaged are in no hurry to get done. Who is to blame?

## THE NEW HOUSES OF PARLIAMENT AND PROGRESSIVE RISE OF THE RIVER.

SIR,—As you inserted a paper of mine in yours of the 9th of January ult. (and to which I now refer), on the effect of the rise of the river Thames, I take the liberty of submitting my opinion as to the cause of such an interesting hydrographical consequence.

The basin of the river Thames is considered to comprise an area of about 5,500 square miles. The bed of the upper part of the river probably is not much altered, owing to the descent there; it being computed, that the fall from Oxford to Maidenhead is about 25 feet per ten miles, from Maidenhead to Chertsey about 22 feet, from Chertsey to Mortlake about 16 feet; and from Mortlake to London about one foot per mile.

Rivers occupy the lowest part of the valleys through which they run, and when rivers are large, the declivities are generally small, and the downward impetus, when diminished, and particularly when opposed by a flood or returning tide, produces a considerable *deposit of sediment*. At the mouth, or more correctly speaking, the *end* of the Thames, the river being so wide there, it will be found, by comparison of the level of the upper surface of the adjacent marshes, that the deposit is less in depth in that part of the river, owing probably to its being more diffused. The narrower part of the river, such as between Sea Reach and Wandsworth, has the most to do in this business; and *there*, affected by the flood tides, is the greatest deposit. This, I have calculated, may amount to a rise of from 18 to 24 inches in each century. Upon this principle, I imagine that the bed of the river Thames, many centuries ago, was much lower than it is at present; and that all the marshes at that time, and also the ground at Millbank, &c., were above high-water level. The water of the Thames in the part alluded to is frequently so turbid as to resemble in colour and consistence thin pea-soup; this matter cannot return and ascend the river, where is no returning tide, but only obeys a downward stream, and the sea appears inclined to reject it, and therefore much of it remains and disfigures the river. I have no doubt the quantity of this stuff is greater now than it was formerly, owing to the very increased extent of the metropolis, and the consequent greater discharge from its sewers.

*As the bed of a river becomes higher*, the whole body of the water must rise in a proportionate degree;—for the river acts as a gutter, and it must be evident, that if a gutter has a certain quantity of work to perform, and the lower part be loaded with sand and dirt, the upper surface of the travelling water must be higher. I am confident that there can be no objection to my theory on account of a supposed level of the tidal wave, because the same is not uniform: for instance, the difference between low water and high water is great at Guernsey, and but small at Weymouth.

To revert to an early period, I have seen at low ebbs, a little above Rainham Ferry-house, the remains of large trees in position, with their roots. These are *not in a fossil state*; they are black, and like soft charcoal. This soddened decomposed wood is frequently found in the river, and is called by the fishermen and sandmen "moor logs." The same occurred at Greenwich at about the same level, and occasioned much inconvenience as to the driving of the piles for the pier there. It is probable that these woods were in existence about our Saviour's time. I should observe, that my attention was at first attracted only to the question as to the origin of the formation of the marsh walls; I afterwards referred to ancient buildings to support the position I had taken. These marsh walls have hitherto been attributed to the Romans, probably under the idea that no other people in this country could have undertaken a work of such great labour as the *recovery* of so much land, many feet below the ordinary level of high water. In 1734 a breach occurred in the marsh wall at Dagenham, and as the repair of it cost 25,000*l*., how is it possible that the whole marsh wall on both sides of the river could have been made by any nation at one time? It appears evident to me, that when the bed of the river became so elevated that the rise of the upper surface of the water began to injure the marshes, that the *walls were then commenced*; and this at first, being a work of comparatively slight labour, was not noticed by historians, any more than the first formation of roads in a country when nearly uninclosed would be. In my time, I remember additions in the height of the marsh wall at many places after high tides.

Another proof of the alteration of the upper surface of the river is in respect of St. George's-fields, where the Romans, it is said, had an important station. This has been disputed by modern historians, who have considered that place to have been a swamp, owing to its being now a little below the present line of high water.

My attention has been particularly called to this point, because I have seen, on excavations being made in the New Cut, and in several parts of St. George's fields, that within about a foot of the present surface there was *clean bright gravel*, from which it is evident that that neighbourhood had never been subject to inundations.

Three years ago they were digging a section from the deeply-situated sewer at Westminster-bridge (the northern boundary of Thorney Island) to low water mark. The progressive deposit of the river was here evident; they came at last to a floor of sand, which I have every reason to consider was the shore when Westminster was selected as the site for the royal palace. The sands on the shores of the Thames have been decreasing, from what I have seen, during the last fifty years, for which I can give many proofs. (I may perhaps be allowed to mention, that I am descended from a family that was occupied at least two centuries in the Thames sand trade).

Even the gravelly portion of the bed of the river is not a permanent floor, for it is continually shifting in every direction. The material brought up from the bed of the river by the ballast engines is invariably *soiled river deposit*. In the Tunnel Report, March 7, 1843, it is stated that the ground excavated there varied greatly, being sometimes merely a loose river deposit. The Duke of Buccleuch's causeway, and that at King's-Arms-stairs, opposite, are now buried several feet in the mud, and have disappeared.

As my theory has hitherto been met by universal contradiction, I beg to add, that I have recently ascertained that the waters of the river Po have risen, owing to that stream carrying down and depositing so much mud and gravel; and that, consequently, the embankments there have from time to time been raised; and that they are now at least 22 feet higher than the general level of the adjacent plains. And I have just read in the Rev. Dr. Russell's "Egypt" (1832), that the river Nile has risen about 41 feet in 4,000 years.

I regret that my attention was only lately directed to the subject of the palatial Houses of Parliament.

February, 1847. T. HIGGS.

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## FOX-HUNTERS AND SANATORY REFORM.

IT was a striking and gratifying sign of the times to find Lord Lyttleton, the Lord-lieutenant of Worcester, at a fox-hunting dinner the other day, calling the attention of the company to the importance of sanatory reform. It speaks volumes for the cause, and more so still that the subject was actually received with "cheers" by the assembled fox-hunters! However strange it may appear, such was the fact. The remarks of the chairman were in allusion to Mr. Austin's recent report on the sanatory condition of the city of Worcester. "He (Lord Lyttelton) was most anxious to express his sense of its value, and hoped most sincerely that the mayor and all other authorities of the city would apply their very best energies to the recommendations of that report." * * * "He (Lord L.) felt deeply impressed with the subject, and therefore he had been anxious to take the first opportunity of introducing it." (Cheers.)

Imagine the puzzled look of the fox-hunters of the last generation on being so addressed! And that their successors in the field should actually cheer such an intrusion over their wine, was enough to disturb them in their very graves! But all honour to the men of high birth who, like Lord Lyttelton, shew their true nobility in efforts and examples such as this, for the welfare and improvement of their fellow-creatures!

## THE BOND QUESTION.

MR. EDITOR,—In THE BUILDER of the 23rd ult. are some observations on "hoop-iron bond," and a recommendation that it "should be strained tightly the whole length of each wall in one piece, if possible, and secured at the end by turning it up at right angles, and lapping it over the upper courses."

Now, Sir, although it is known well enough that, with the exception of water, all bodies are expanded by heat, I beg to remind your readers that bodies of a *different* nature are *not equally* expanded by an *equal* increase of the degree of it. This is strikingly demonstrated by Wedgwood's pyrometer,—an instrument formed of clay for ascertaining high temperatures by measuring in its gauge the expansion of metallic rods previously submitted to the temperature required to be known; and also by the fact which every architectural draughtsman must have observed, of the different expansion, in hot and damp weather, between his wooden or ivory rules, and his drawing paper.

Since, therefore, brickwork cannot be lengthened by heat or contracted by cold, precisely in the same degree as iron is, it seems to me that unless dry brickwork be compressible,—or unless (which I much doubt) iron be elastic, *i.e.*, capable of itself resuming its pristine dimensions after any casual extending force may have been removed from it,—it seems to me, I say, that all courses of brickwork, however tightly bonded with iron in the first instance, will only remain effectually so when the atmosphere possesses that precise temperature which it had when the brickwork was originally bound; and that in extraordinary hot weather the restraining power of the iron for keeping the brickwork in its intended situation will cease to act, and the iron thus become detached and useless,—iron being much more expansible than brickwork.

This, then, is a very important question that should be forthwith experimentally answered, and which might easily be done by any of your practical readers, when they may have occasion next to build a common garden wall, or some such like unroofed and untied structure.

I am, Sir, &c., W. BROMET.
February 3, 1847.

P.S. Since writing the above I have seen, in your number of the 6th instant, a letter, in which "elasticity of iron" is spoken of as a fact proved by "great experience." But this is rather flexibility, and not *true* elasticity, being merely such mechanical and permanent extension or stretching of its particles, as a blacksmith gives to iron by his hammer, and not the elasticity caused by a "*vis insita*," like that possessed by India-rubber. The iron, however, of whatever size, would still retain its susceptibility to change by the influence of heat and cold, and, therefore, would be liable to the objections of your last correspondent on this subject, unless such change (but which I hold to be impossible) were "by some means counteracted;" and would, moreover, as I have before said, cease to bind, because it would loosen itself not only at its "ends," but throughout its "whole length."

P.P.S. Feb. 12.—Some gentlemen may suppose that, when iron is enveloped by thick walls, it would be protected from the temperature of the circumambient air. But this I doubt; because Heat, although conducted at a comparatively slow rate by brick or stonework, is an all-pervading agent, and exists often in a latent state, undiscoverable either by our sense of touch, or by thermometers.

It has been inferred that, if iron-hoop bond be bedded in cement, it cannot move. But, supposing this to be a just inference (although I believe that in no possible circumstance is the natural expansion of iron by heat controllable), I beg to ask whether any such power as could prevent this expansion would not, *à fortiori*, act as a sufficient binder, and so render useless any iron applied for that purpose?

If iron be ever employed for binding stonework, it should, I think, be employed as at Dover, where, in the construction of the new sea-wall, a stout iron chain has been laid, but without straining it, over one of the central grouted courses of the large unwrought boulder-stones with which the wall is made.

What, however, will be the effect of this chain bond, we must wait for old Neptune, some stormy day, to discover. W. B.

## ART IN MONTREAL AND QUEBEC.

A CORRESPONDENT writes us that art is beginning to bud in these provinces. The booksellers' shop windows shew some of the best London and Paris prints exposed for sale. On the 6th of January an exhibition of paintings by artists living in Montreal was opened, and though they were mostly copies from modern artists in Europe, and some very bad copies too, the exhibition, as a whole, was better than might have been expected. Numbers of very bad imitations of our favourite artists, and copies of their works, are brought in from the States, and sold at high prices. The London Art-Union has honorary secretaries in Montreal, Quebec, Toronto, and Kingston, who have sent a fair list of subscribers.

## CONSTRUCTION OF BATHS.

SIR,—The Public Baths and Washhouses Act has been adopted, it is said, by the metropolitan parishes of St. Martin-in-the Fields, St. Mary-le-bone, St. James, Piccadilly, and St. Margaret and St. John, Westminster, and by the boroughs of Leeds, Birmingham, Stockport, Bath, Newcastle-on-Tyne, Plymouth, Bristol, Worcester, &c. These make but a beginning. Still they create a new demand for an article of manufacture to which sufficient attention has not hitherto been paid. I allude to the baths with which they are to be fitted up.

There are two most important requisites for those baths. 1. Durability. 2. Cleanliness. There is a third, though of less importance. 3. Beauty.

Allow me to suggest, in your columns, that attention should be paid to the manufacture of baths, and to give a few hints.

1. Durability. Where baths are to be kept in constant use, it is of great importance that they should not be liable to oxidation or corrosion; that they should not be brittle; and that when they are formed of several pieces, their joints should not be liable to "weep." Zinc, galvanized iron, copper, lead, marble, varnished wood, and slate, among others, are deficient in durability; for as a part of durability, the preservation of a polished surface is to be considered.

2. Cleanliness. Where a bath is to be used frequently in the same day, it is essential that it should be capable of being easily and rapidly cleaned. A bath which can be cleaned by merely passing a mop over its surface and dashing two or three pails of water on it, is infinitely better adapted for a public establishment than one which needs the friction of a scrubbing brush or sand-paper to keep its surface bright. All metal baths, at least, will require considerable scrubbing to make them bright or attractively clean.

3. Beauty. A dull-coloured bath will give a dull hue to the water it contains, and will render it less easy to detect any want of clearness in the water itself. Baths of zinc, lead, and slate are particularly open to this objection.

I understand that the Parent Baths and Washhouses' Committee are having some cast-iron baths enamelled for their model establishment at Goulstone-square, Whitechapel; and that they are having some of their baths of white porcelain tiles. The chief objection to tiles seems to be, that the joints between them must present a rough surface, which will "catch the dirt." If the enamelled baths can be made at a reasonable cost, they may probably answer well, as combining the three points to which I have alluded. But, Sir, however earnest a committee may be in their endeavours to obtain a thoroughly good article, there must be a far larger amount of inventive talent among our manufacturers than any committee can possess; and I shall be glad if my hints may be the means of inducing some of your readers to turn their attention to a subject which involves the two points, essential to the success of commercial enterprise, public good, and private emolument.

Your subscriber, N. R.
London, February 13, 1847.

WATER.—According to the *Gloucestershire Chronicle*, the Gloucester Water Company have determined to give the city the benefit of a constant instead of intermittent supply of water. We hope to find this example followed.

## THE GAS MOVEMENT.

RAYS of light occasionally interfere with each other's progress towards their respective destinations, and the result is a diminution of light for the time being instead of an increase. The mutual interference of old and new gas companies, in their Parliamentary and other struggles for supremacy, is here and there producing,—negatively, at least, by prevention of intended increase and improvement,—just such a temporary "darkness from excess of light." So is it, for instance, at the present moment, in the city of Worcester, where obstacles in the way of an intended increase of light have arisen in consequence of Parliamentary proceedings between the old and new dispensers of the light. The new have promised to reduce the charges of the old by no less than 20 per cent., although the latter do not exceed 6s. per 1,000 cubic feet of gas. And the old, in order not to be outdone by the new, now offer to light the public lamps at as low a charge as that of the new. The public are thus, at all events, likely, in the long run, to benefit, as usual, by the "fair competition" of the caterers for its staple requirements; and the only limit to one's reasonable satisfaction with a consummation so desirable would be the every way unprofitable conversion of such fair and profitable emulation into "ruinous competition." But we are probably a long way off such a limit to the benefits to be derived from cheap and good gas light.

—— The variation of the price of gas in various localities is very great. This probably in part arises from the variation in the expense of coals; but that is by no means sufficient in many cases to account for the differences. At Salisbury the price is 10s. per 1,000 cubic feet, and at Romsey it is even 12s. 6d., while at Southampton it is only 6s. 6d., and, at Liverpool, as already noted, 4s. 6d., with the immediate prospect of a reduction to 3s. 8d.; nay, from the extraordinary evidence of Mr. Cox, *a practical gas producer*, on his examination, lately, before the Commissioners of Inquiry there, as to the cheapness with which the article can be supplied in connection with the sale of the coke, it appears that companies might sell gas with a profit at 2s. 8d. per 1,000 cubic feet! and moreover that in one manufactory at Bristol it actually costs less than nothing! It is quite clear, in short, that dust has been already thrown into the eyes of the public far too long for patient endurance:—Witness the fruits of competition at North Shields.—"In 1843," says the *Gateshead Observer*, "the improvement commissioners, thinking 52s. per street lamp too much, offered 45s. The terms were rejected:—'45s. could not possibly pay.' Both parties were stiff, and the town went one whole winter unlighted. A new company was formed, and contracted to supply the lamps with gas of the best quality at 17s. per annum! In the first year the shareholders divided 3 per cent.; in the second, 5 per cent.; and in the third it continues to prosper. The supply from both companies is abundant and good. On the other side of the Tyne—at South Shields—there being only one company, 5s. 9d. is charged for what only costs 3s. 9d. in North Shields."—The Sunderland Corporation Gas Works were scarcely finished, the other day, when all the leading plumbers in the town were almost constantly engaged in fitting up new meters and new service pipes, and the quality of the article is so superior to that of the old company, that nearly all who are not personally interested in upholding the latter are said to be applying for the new article, which is found at length to obviate the chief objection hitherto to the introduction of gas into private dwellings,—a circumstance which will in all probability lead to a very great increase of general consumption there. In the benevolent aspiration of the *Gateshead Observer* we most cordially concur: "May the successful example of Sunderland stimulate other towns to secure for themselves the two-fold advantage of cheap and pure gas." The new works at Sunderland have, it is said, a handsome exterior. The front is of freestone, 246 feet long; breadth of whole 117 feet. The retort-house has a cast-iron roof, made by Messrs. Burlinson, of Sunderland, and contains sixteen ovens, with five retorts each, made of fire clay for expeditious production and saving of fuel, as well as comfort to the workmen.

The whole work was contrived by the engineer, Mr. Forest. The masonwork was done chiefly by Messrs. Steel and Appleby, of Newcastle. The ironwork was supplied by Messrs. Vernon and Son, and Messrs. Simpson and Co., of Aberdeen.——The official inquiry at Liverpool is going on. The most interesting portion of the evidence, hitherto lead, is that of Mr. Cox, the engineer of the new Guardian Gas Company, to which we have just alluded, and from which it appears that by means of the profit arising from the preparation and sale of coke, gas, in some circumstances, can be reduced in cost to little or nothing: that in fact gas manufactories ought to be really if not ostensibly coke manufactories. It is under a patent, however, "for the creation of heat," that Mr. Cox proposes to form his coke; and he declares that he has supplied the Great Western Railway Company at Swindon with gas "at 1s. 8d. per 1,000 feet, and did not lose by it!" The patented process he observed is peculiarly applicable to every place where there is a large demand for coke; and at Liverpool there is one firm who would purchase double the quantity which the new company could make, although they calculated on supplying 100,000,000 cubic feet of gas a year. That firm, he added, is at present selling the coke made by the patent process; and he has a tender from them to deliver coal to the works at 8s. 6d. a ton, and to take back the coke, after the gas of course is got out of it, at 13s. 2d. a ton, for sale at 23s. 6d. a ton! Why gas, it would appear, even taking such evidence *cum nota* as the lawyers say, should be sold for nothing at least, if not for "less than nothing," in order to get rid of it as a nuisance in the profitable manufacture of coke! There are financial wonders here, it would appear, to be opened up to us, nearly akin to, and no less astonishing than, those statistical and economical subversions of all common notions that are thought to be on the eve of realization, by chemical and other companies, for the profitable disposal of the old and venerable nuisance of sewage and manure. Mr. Cox, as incidentally observed, has literally declared in his evidence, that "at one manufactory at Bristol, they made their gas for *less than nothing*." This evidence has very considerably astonished and enlightened the natives of Liverpool, and no wonder.

## RAILWAY JOTTINGS.

The new system of propulsion advocated by M. Andraud, an antithesis of the atmospheric, in which air, compressed by a single atmosphere, is said to be sufficient to propel trains at the rate of fifteen to fifty miles an hour, or more, if requisite, has been tried, successfully, it is said, at Paris, on 100 yards of line laid down for the purpose. The train is impelled by means of a tube in the middle of the road, with a pipe by the side which keeps up the motive power. The cost of working is said to be no more than a tenth of that of the atmospheric, and a half of that of the locomotive, means having at length been devised for the compression of the air at a very small cost. Besides the safety and smoothness of transit, this system is said to possess all the other advantages of the exhaustive or common atmospheric system without any of its disadvantages, and to cost, in formation, as well as in working, a comparatively very small expenditure. We shall see.——Colonel Sibthorpe, who declares that "he would rather see a highwayman or a burglar on his premises than an engineer," has given notice in the Commons, that if no more competent member bring in a bill for the better regulation of railways, he himself will, on an early day, move for leave to bring in a bill to compel railway companies to give ample compensation to the survivors of those persons who may have lost their lives by accidents on railways.——Mr. Henry Booth, says the *Manchester Advertiser*, has addressed the chairman of the railway commissioners on the inconvenience experienced by travellers, post-office keepers, and railway managers, from the differences of time, caused, of course, by the differences of places in longitude; and he strongly urges the adoption of a uniform time for all England. At present, the difference of time between Liverpool and Manchester, not to speak of Leeds and Hull, produces many troublesome miscalculations, unless persons are at the trouble of altering their watches when they reach the different towns.—If proprietors of railways, highways, &c., says the *Hereford Times*, "were to plant a small sweetbriar at every yard amongst the thorns when planting hedges, how delightful they would be in the summer months to travellers. If they were but to sow a few pounds of mignonette and white clover-seed on the slopes and banks every year, how fragrant and refreshing they would be. In a few years, too, they would become naturalized and sow themselves. The weaker they grow the sweeter they are."—— A chemical alarum, or whistle, invented by Mr. Mowbray, chemist, of Paternoster-row, was lately inspected by Captain Coddington on the atmospheric line at New Cross. The *Morning Post* describes it as consisting of a copper cylinder, with the usual whistle at the top, and a stone funnel within, giving the interior a sectional form, somewhat like the letter V standing within the letter U. At the bottom, or bason of the U, is placed a piece of marble (carbonate of lime), and muriatic acid is then poured into the funnel, or V, which, as it flows on the marble, liberates the carbonic acid gas, or fixed air, which forces back the remaining acid into the funnel, and thereby suspends all further chemical change, even for months, if necessary, till the charge of gas already accumulated is let off to sound the whistle, when immediately the charge of gas is replaced, so that the sound may be repeated even so rapidly as once in every fifth second, if the instrument be set to that precise effect. The sound is said to have been distinctly audible at the distance of half a mile. The weight of the instrument may be reduced to thirty pounds without diminution of power, so that it may be readily lifted off and on the carriages or engines.—— The London and York Company have become their own iron-founders at Lincoln.——The Great Western have instructed their engineers to institute a series of experiments with a view to discover, if possible, a more perfect mode of welding, by which the tiers may be perfectly secure from accident in breaking either by rapidity of motion or changes in the weather. ——The directors of this company have made arrangements for letting all their servants have coals carriage free, by which means those in their employment will be able to buy Welsh coals at 15s. per ton, or 9d. per cwt. They have also granted an additional allowance of 10*l.* per annum to their clerks while engaged in night duty. It is further intended to give premiums for good conduct to all who have served satisfactorily during five years and upwards. Such consideration, on the part of the directors, cannot fail to strengthen the ties between the employers and employed.—— There are now 500 masons employed by the contractors for raising the piers for the Britannia iron-tunnel bridge over the Menai straits on the Chester and Holyhead line. These men are earning 5s. to 6s. a day.——The first bar of American railway iron was forged in 1844, and there are now 16 to 18 foundries, making 120,000 tons of the same per annum. An American paper also states that there are now in operation, throughout the United States, 11,000 miles of railway, laid down at one-twentieth of the cost per mile of the English lines, and with fares one-fifth lower than those charged for passengers and parcels in this country.——Improvements in the electrical telegraph are said to have been effected, by the American inventor, Professor Morse, by which communications are impressed on paper at the rate of 50 letters per minute.—— Messrs. Brett and Little, of High Holborn, have patented an improvement called the electro-telegraphic converser, from the alleged facilities which it affords to the means of conversation between parties distant from each other in space. Moderate expense, great simplicity, freedom from vibration, and non-liability to derangement from atmospheric influences, are enumerated amongst the more obvious advantages of this invention over those at present in use. The patentees propose to lay down at their own cost any portion of line that may be required to convince railway companies and other public bodies of its unquestionable superiority to every other. Freedom from the influence of thunder-storms would be a decided improvement, as the needles of the telegraph, even on short lines, are then violently affected, while the bells are kept incessantly ringing.

## ANCIENT IRONWORK IN WESTMINSTER ABBEY.

At a meeting of the Freemasons of the Church on the 9th, Mr. French in the chair. Lord Hastings exhibited a curious bronze spur of the 14th century, engraved with foliage and a lion's head, and having in the incisions remains of gilding. Mr. C. R. Cockerell, R.A., and Mr. J. B. Papworth were elected honorary fellows. Mr. Isaacs contributed two singular coffers of early date; in doing so, he said it may not be generally known that there is a class of coffers denominated BOUGE, BOULGE, BOUGETTE, BOULGETTE, terms signifying in the 17th century, any small trunk, but applied at an earlier period exclusively to those in which ladies carried their jewels and trinkets when travelling.

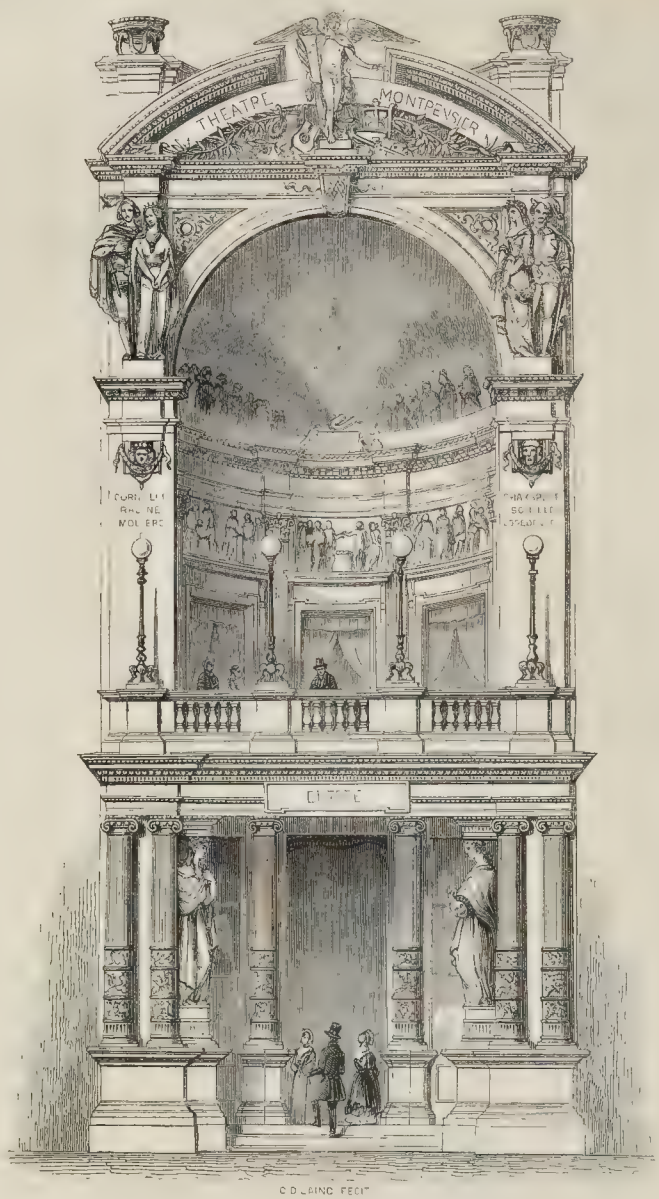
A paper was then read by Mr. John Brown upon the mediæval ironwork existing in Westminster Abbey. Mr. Brown stated, that in the Blaize chapel, in the Abbey, is deposited the iron canopy which formerly surmounted the beautiful tomb of Queen Eleanor. The queen's effigy (a cast of which was exhibited), would lead any one to expect that the adornments should be in proportionate taste, and it so happens there is no disappointment on viewing this curious specimen of ancient art. Neale, in his "History of Westminster," mentions that "since the coronation, a considerable improvement has been effected in the interior appearance of the Abbey Church, by a general cleaning of the monuments and the removal of the iron-work which screened them;" now, at this coronation, which must have been that of George the Fourth, the iron-work not only of the tomb of Queen Eleanor, but that of Henry V., were placed in the dark recesses of the Blaize chapel, where they have been seldom viewed by parties who have visited the Abbey. This is to be regretted when we consider the scarcity of remains of ironwork of this period, particularly as it is desirable to have authenticated specimens of such work. The canopy of Queen Eleanor's tomb is about 15 feet long, and is divided into various compartments, each of a different pattern, which are designed and executed with the greatest skill. Mr. Brown was of opinion that it is not generally known, the ironwork of Henry Fifth's tomb is in existence; however, in this chapel nearly the whole of it may be found. The tomb of Henry V. is at the east end of the confessor's chapel: the head of the king, which the vergers say was made of silver, was taken away in the time of the troubles. Neale says "*all the damage in the Abbey was not done in the time of the troubles.*."

In the tenth volume of Rymer's "Fœdera" is the copy of an order for the payment of 12*l.* to John Ardum, clerk of the works, for thirty-six tons of Caen stone by him purchased, to make the king's tomb, and 23*l.* 6s. 8d. for making the tomb. This order bears date in the first year of Henry VI. In the same volume is also an agreement with Roger Johnson, smith, of London, for executing the ironwork of Henry Fifth's tomb. The recess in which the tomb is placed is nearly a square, inclosed by iron gates, which open under a fine pointed arch of stone, surmounted by an elegant arrangement of canopied niches, turreted, including statues and other ornaments, and flanked by octagonal towers. The general pattern of the open work of the gates consists of small squares, each containing four trefoils; their imposts and fascia are divided into thirteen compartments, which have been painted alternately blue and red; on each blue space are placed three gilt fleur-de-lis, and on each red space, three gilt lions. Below these, near the middle of the gates, were fixed alternate rows of swans and antelopes, and only one swan and two antelopes are now remaining. Mr. Brown concluded by expressing a hope that these valuable lessons in art might be placed in some position where they would be useful to students.

"A colloquial lecture on the architectural remains of London," and a paper "On the antiquities of Scotland," were announced for March 9th.

PRINCIPLES OF ENGINEERING.—The council of University College, London, has instituted a professorship of the mechanical principles of engineering, and appointed Mr. Eaton Hodgkinson to the chair.

## ENTRANCE FRONT OF THE "THEATRE MONTPENSIER," PARIS.*




### MR. EASTLAKE AND THE NATIONAL GALLERY.

THE minutes of the trustees of the National Gallery, moved for by Mr. Hume, and printed by order of the House of Commons, afford a triumphant reply to Mr. Eastlake's accusers, or rather abusers. Mr. Mulready, Mr. Etty, Mr. Uwins, Mr. Edwin Landseer, Mr. Stanfield, and others, bear willing witness to the judicious manner in which the pictures (spoken of as ruined) have been cleaned, and the absence of any foundation for the charges brought against Mr. Eastlake.

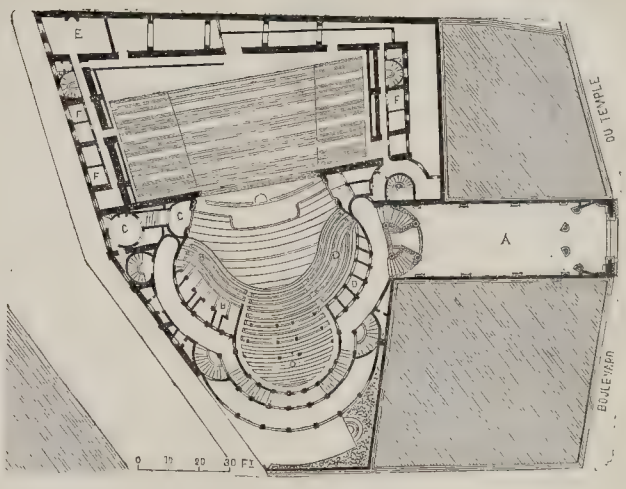
The minutes point out another circumstance requiring immediate remedy, which is, that many pictures are annually lost to the nation through want of a place to put them into. The list of gifts declined is a long one, and has led to the following resolution on the part of the trustees :—

"That considering the limited space which it is possible to appropriate to the exhibition of new pictures or works of art that may be presented to, or acquired by, the directors of the Royal National Gallery, it is desirable to stipulate, in the case of pictures or sculpture gratuitously offered to the directors, that the directors shall be at liberty to appropriate them, if they shall think fit, to the use of public museums that may be now or hereafter established in different parts of the United Kingdom."

This, however, will not remove the necessity which exists for enlarging the National Gallery, as urged by us long ago.

* See page 81 in present number.

## PLAN OF THE "THEATRE MONTPENSIER."




REFERENCES.

A Vestibule, forming the entrance: over it, on the first-floor, a saloon.
B Dress-circle.
C The box of the Duke de Montpensier, and circular saloon adjoining.
D The upper boxes and one of the galleries.
E Green-room.
F Actors' rooms.

### CANOPY AND STATUE AT COLOGNE.

During the middle ages the struggle between the nobility and the merchants for power ended in a rivalry of state between the latter bodies and the former; and the Hotels de Ville, and other buildings connected with trade, in many instances eclipsed the private mansions of the nobility. The wealth of the merchantmen of the low countries enabled them to erect edifices that, as works of Art, are the admiration of their posterity. The utmost elaboration of ornament and costliness of decoration were indulged in, and even the store-houses of the cities came in for some share of ornament. From the year 1260, when Cologne, uniting with Lubeck, Danzig, and Bruges, became one of the principal of the Hans towns, its traders enjoyed, for a long period, the exclusive privilege of supplying the growing wants and rising luxuries of that portion of the world. The advantages afforded by the Rhine, and the central situation of the city in the western part of Germany, secured a monopoly of trade, and an abundance of wealth, which did not decrease until the interference of the clergy (rendered powerful and wealthy by rich endowments and by the celebrity of the relics contained in its many churches, which brought pilgrims from all parts of Europe), occasioned the banishment of the Jews in 1425, and of the Protestants in 1618. This occasioned the loss of upwards of 1,400 of the most opulent families, who, settling in other and less bigotted towns, became destructive rivals to the commerce and wealth of Cologne, which gradually sank into comparative decay. The subject of our cut is a relic of its ancient glories,—it is a statue and canopy over one of the doors of the Store-house. The statue is of freestone, and much decayed, but the canopy is in a less ruinous state. The tracery is of lead-work, in the *flamboyant* style, and is rich in its detail.

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Oxford Diocesan Society for Building Churches and Parsonage Houses.—On the 8th inst. a numerous meeting was held in Oxford to establish a diocesan society for building churches and parsonage houses. The Earl of Abingdon presided; and the Bishop of Oxford, Mr. G. Harcourt, M.P., and others, stated the scheme, and moved resolutions establishing the society, which were carried unanimously. In making grants, the merits of the plans proposed are to be considered: in cases of doubt, the opinion of an architect on the plans may be taken, provided that not more than two guineas be required for that opinion.

## ANCIENT GOTHIC LEADWORK.



## NOTES IN THE PROVINCES.

There is a spirit of life and progress at work in Nottingham, where new streets and public buildings, such as a post-office and corn exchange, mechanics' institute or theatre are talked of and planned, at least, if not fully determined on. Designs have been lately prepared for a new street (originally proposed some years since) from the market-place by Peter's-square to Lister-gate, and communicating directly with the railway-station and Carrington-street. Public buildings, such as a mechanics' institute, theatre, or hotel, post-office, corn exchange, tontine, &c., are proposed to be included in the details of the design, which has been prepared by Messrs. Surplice and Son, architects, in accordance with the previously talked-of project, which was originally suggested in preference to the intended expenditure of a considerable sum in widening Wheeler-gate. The town council have, in the meantime, however, given their approval to the erection of one, at least, of the public buildings proposed to be included in the more comprehensive project, namely, a post-office, in the new street near the bottom of Castle-street. The *Nottingham Review* is of opinion that this is a very improper site.——The foundation-stone of the new town-hall at Doncaster was to be laid on Monday last, on the site of the Old Angel premises in Frenchgate. The new opposition to the locality of the new edifice will thus be nipped in the bud. The foundations will be formed of Hexthorpe stone. The material of the other portions of the stonework will, it is said, be of Darfield stone. The column blocks, which will be in three pieces, will weigh about six tons each. The capitals will each be in one block, 5 feet square. One of the Darfield quarries is the property of one of the contractors; the other belongs to Earl Fitzwilliam. The brickwork is said to have been relet by the contractors for the stone portion of the edifice to parties resident in Doncaster. About 300,000 bricks have been supplied by the Old Angel premises; and the additional number required will amount to about 400,000. Earl Fitzwilliam and almost all the gentry about Doncaster, in a memorial to the town council, have expressed their earnest wish that the ruins of St. Mary Magdalene may be preserved from further demolition. "As a specimen of ecclesiastical architecture in an early and interesting period of the art," they observe, "we consider the preservation of these remains to be very desirable. The art itself is now in the course of revival, and the need of it has never been felt more than at present. Together with a want of new churches, there is a growing desire to build them on principles of a correctly informed taste. But as they whose genius as well as piety raised our noble cathedrals and parish churches, have not left behind them any precepts for our guidance, it is only by observing their works, as we see them entire or in ruins, that we can gain the knowledge which is necessary for a successful imitation. And, therefore, every relic that can be saved, be its merits as a specimen of the art more or less excellent, is so far valuable as adding to the store of ancient examples, and supplying the scholar in ecclesiastical architecture with the wider means of comparison and study. * * * May we therefore, gentlemen, be allowed to hope that you will take into your favourable consideration the propriety of sparing them? In this hope we are encouraged by the precedent shewn to us by the metropolis of this great county, and by several other places in the kingdom, where similar ruins, having been brought out of obscurity and neglect, have been carefully preserved, and now afford an object of attraction to the antiquary the architectural student and the ordinary visitor seeking intellectual gratification." An address from the Archæological Institute was also read to the council, but the earnest and even pathetic prayer of the memorialists in favour of the interesting but condemned relic was unheeded; "public utility" being held to be a thing of more moment than mere public taste and public feeling. The sorrowing petitioners, however, were consoled with the promise that "pictorial and architectural drawings" of the doomed object of their regards would be "furnished by draughtsmen of acknowledged ability," and "deposited with the muniments of the corporation."——At Keighley, where fevers have prevailed in some districts, along with nuisances obviously occasioning them, the Improvement Act Commissioners and the district magistrates have determined to carry out the powers conferred by the Act with vigour, for the suppression of all such nuisances.——In Birkenhead, last week, a sale of ground was effected at 25s. a yard, which so lately as October last would not have realized 18s.——The subscription for new schools at Liscard, for which the site offered by the Rev. Mr. Mainwaring, at New Brighton, has been accepted, amounts now to about 900*l*. According to the plans, by Mr. Charles Reed, architect, which have been approved of, these schools are to be in the old English style, with quaint-looking porches, seated within, and roofs of open framing stained oak.——It has been decided not to remove the ancient town hall of Leominster, as was formerly rumoured or intended. This interesting old building, which is cotemporary with the market houses of Hereford, Weoble, Hay, Kington, and Brecon, and was built by John Abel, the architect, was thoroughly repaired at great expense, and the carriage way round it widened, during the present century.——The Guildhall Assembly Room at Worcester is to be improved by raising the ceiling and taking away the columns at the ends so as to admit of altering the circular extremities to a square form; by which means also accommodation will be obtained for the Harmonic Institution or Society.——The Lye church, near Stourbridge, enlarged so as to afford 200 additional seats for adults and 400 for children, was re-opened on Wednesday week.——The newly erected church of St. Luke, at Cradley Heath, parish of Reddall Hill, is to be consecrated on the 22nd instant. It has accommodation for 1,216 persons.——The Board of Ordnance, says a Southampton paper, have sold twenty-one houses at Broad-street, Point, for demolition, to make way for the new Royal Artillery Barracks there.——The committee formed to raise funds for a new church at Deal, having obtained promises to the amount of 2,000*l*., have determined to proceed with the building. The site is not yet decided upon, but it is to be somewhere at the north end of the town.

## KENSINGTON WORKHOUSE COMPETITION.

Sir,—Your publication contains so much really valuable matter, that few of its readers will desire the pages occupied with professional bickerings, and perhaps as far as I am concerned, it might be wise to allow the gentlemen who have honoured me by their attacks to pass unnoticed; for who cares to know if I am immaculate in the matter of Kensington Workhouse-competition? Who on earth cares to sift the truth from the falsehood? Who would cross the road to clear it up, or who, in fact, feels the slightest interest in the affair, save and except those who, with vague insinuations and deductions, keep up, like hungry curs, their perpetual bark, in the individual hope of picking up the bone for themselves. Should there be, contrary to my expectations, some with so much virtuous jealousy for the *honour* of the profession as will stimulate them to present their cards at my office, I pledge myself to send them back perfectly satisfied that it has not suffered in my keeping.

If a man lurking behind a mask strikes down and destroys another, whom he has just before left with expressions of amity, he is justly execrated as a cowardly assassin, and declared unfit to live in any community. I see little difference between this and the moral assassin, who, willing to strike, shrinks with dastard cunning from the responsibility of his malignant efforts. Your correspondent, "G. H. S.," has, with a lively imagination, drawn (what we will call for politeness' sake) the line of beauty over the straight line of truth.

I declared the quantities false before, and not after, the opening of the first tender. I offered to prove them so, and I did, and can do so again if required. The present quantities are not mine, but taken by a respectable surveyor, and having tested them, I believe them correct. The assertion that I declared an eminent builder would take the contract at 9,800*l*. has just as much truth in it as the rest. The tender accepted is 10,645*l*., and not 11,020*l*., which includes large additions and part of fittings.

But I am ashamed to take up your space with a subject which can scarcely be interesting to the general reader.—I am, Sir, &c.,

T. Allom.

P.S. Since writing the above, I have found out your worthy correspondent G. H. S. (one in authority), who some days since acquiesced in, and applauded, a considerable addition to the building; and a few hours before communicating with you, actually offered to bear a share in the extra expense which he thus assisted in swelling. In his own words I say, "Comment is altogether unnecessary; I am content to leave the subject to the consideration of your readers."

### ERRORS IN QUANTITIES FOR ESTIMATES.—KENSINGTON WORKHOUSE COMPETITION.

Sir,—Allusions have been made, in several communications to your valuable publication, to the Kensington workhouse competition, and in your last number I see a letter on the subject containing the list of tenders last delivered. In that letter it is said (and it had been before stated, though not quite so broadly), that upon the delivery of the first tenders, and their being found to be so much beyond the architect's report (a usual thing in competition matters) that the architect accounted for the difference by a discovery he had made of an error or errors on the part of the person taking out the quantities. Now, Sir, this is a charge of a serious nature, and which I think should not be passed over lightly. I would ask by whom was this "person" employed to take out the quantities, whether by the architect or the builder; by what means the error was discovered; and whether it has been proved that there were errors of such magnitude as to warrant the whole affair being gone into "*de novo*." If not, what recompense has this person, whoever he may be, for his labour in the first instance, and for being publicly accused of inaccuracy afterwards, an accusation which, if not refuted, must be of serious consequence to any man who values his professional character. I presume that the plans have been altered since the first estimates were made, but looking at the difference in both cases between the architect's reports and the estimates delivered, it must be confessed that he, at least, is liable to error, and that any charge of error on the part of others does not come from him with a particularly good grace. On the whole, Sir, it appears to me to be another specimen of the unhappy results of competition designs, a system which, as at present managed, leads to all sorts of injustice and ill feeling. I would add, in conclusion, that I think the principle of an architect furnishing his own quantities is one by no means to be encouraged, and which no architect who wishes to preserve his independence would adopt.—Apologising for this hasty letter,

I am Sir, &c., A Surveyor.

Feb. 12th, 1847.

*** We have seen a letter from a highly respectable surveyor, employed to examine the first quantities, confirming the statement that they were grossly inaccurate.

Fall of Two Old Houses in Long-acre.—Two of the old buildings requiring to be demolished to make way for the improvements connected chiefly with the opening of a principal thoroughfare between High Holborn and the Strand, gave way on Tuesday week, and were further levelled immediately thereafter. It is rather curious that the intended improvements have for some time remained in abeyance in consequence of the determination of the proprietor of one of these very houses, the George Inn, rather to perish in the fall of his house than surrender without what he considered adequate compensation. The district surveyor, a few evenings previous to his declaration to this effect, had pointed out to him the danger to which his determination subjected him and his household and customers, and recommended the adoption of precautionary measures, but without avail until a few moments before the fall, when he intimated to his inmates that they had better evacuate the premises. A way has thus been opened, sooner than would have otherwise happened, for the advancement of the improvements further contemplated.

## THE NEW ENTRANCE TO THE GREEN PARK.

The gateway to the park, recently formed in Grosvenor-place, though too unpresuming to call for criticism, seems to us to display inattention which ought not in such a position to be visible. It is a simple rusticated gateway, of stone, with a cornice and blocking course (surmounted by a lamp in the centre), let into the existing brick wall; but instead of projecting, even a couple of inches before the face of the wall, which (without opening the door for any inconvenience) would have sufficed to shew the outline of the plinth, rustics, &c., it is actually placed rather behind it, and so has a very unfinished and inartificial appearance. A little thought would have made it much more satisfactory.

## INSTITUTION OF CIVIL ENGINEERS.

### THE HELDER CANAL.

At a meeting on the 9th inst., the president in the chair, a paper was read on the "Helder or Great North Holland Canal," by Mr. G. B. W. Jackson, Associate. This canal was constructed by the late Mr. J. Blanken, engineer, during the six years between 1819 and 1825, for the passage of frigates and first-class merchantmen, and extends from Amsterdam to Nieuwediep in the Texel. The state of the navigation through the Zuyder Sea, in the early part of the 17th century, having become so defective, in consequence of accumulated sand-banks and shoals, that camels were necessarily made use of to lift the vessels over the shallows at Pampas, thereby incurring both extreme loss of time and inconvenience, the Dutch Government deemed it necessary to consult Mr. Blanken on the possibility of remedying the evil. That engineer accordingly projected the above canal, which has three divisions, the summit level being only 3 feet 8 inches above the outlets. Its length is fifty-one miles. It is 123 feet 7 inches broad at top, 30 feet 10 inches at bottom, and 20 feet 6 inches deep. The pile-driving and boring experiment undertaken by him to ascertain the probability of success, shew that the original sea shore, being the only really hard ground in the north of Holland, is to be met with at 43 feet under the present surface of the ground; and as the foundations of the locks were laid nearly at that depth, the result of the experiments was considered to afford sufficient guarantee for the stability of the works. The character of the soil in that part of Holland is exceedingly treacherous, and it reflects great credit on our foreign neighbours that they were able to overcome the various difficulties with which they had to contend.

The constructions generally consist of floating and swingbridges, tide-locks, passage-locks, &c. The floating bridges are peculiar on account of their flexibility, consisting of two platforms, one fixed to each shore on piles, the end of each of which is worked by sets of double levers and resting on two boats, so that when the bridge is required to be opened, both boats are withdrawn, one towards each shore. The Willem lock is 297 feet 8 inches long, 51 feet 5 inches wide; the height of the lock walls being 32 feet 6 inches, and the gates being each 29 feet 5 inches by 29 feet 4 inches.

The total cost amounted to one million and a half pounds sterling. The time required by vessels to make the passage from Amsterdam to the Helder varies according to their size, and the means of haulage; fly-boats, with six relay of four horses each, making it in ten hours, whilst large East-Indiamen require two, three, and four days, according to the wind. The details of construction of the whole of the works were given very freely and with illustrative drawings. In the discussion which ensued, it was stated that the canal in this country which could be contrasted with that of the Helder, was the Caledonian Canal, which was projected upon a report by Watt, commenced by Jessop, and in a great part constructed by Telford, a few years previously to the Helder canal. The principal difference between the two consisted in the nature of the ground through which they were cut, the former being excavated entirely out of alluvial deposit, whilst the latter had to be cut out of hard gravel, and in some cases rock. An interesting account was given of the mode of forming the spot for the entrance-lock at the Inverness end of the Caledonian canal. The object was to carry the work out into deep water. A large mass of earth was deposited in the sea to the full extent intended. Upon this mound, a heavy load of material was laid to consolidate the mass. After settling for a considerable time, the upper mass was removed, the excavation was made for the lock-pit, and the construction was effected with comparative facility, and had endured much rough weather since, without any symptoms of failure. The superincumbent weight which was removed, being greater than any subsequent strain, there was no danger of the lock ever sinking.

On the 16th inst., this paper was continued, and treated principally of the art of building with fascine work, as practised in Holland and Germany.

The usual construction of these dykes was described to be, by sinking successive layers or beds of fascines or faggots of almost 30 inches thick by from 8 to 16 yards in width, and of proportionate length, weighted with gravel and stones mingled with clay, sea-weed, and silt. These layers were continued until they reached above the sea level, when the top was constructed of more solid materials and sometimes capped with brickwork, as the public roads were formed upon them.

The slopes of the faces of the dykes vary considerably: some of the low dykes are in section of the form of an arc of a circle of 6 to 10 feet chord and 10 inches to 1 foot versed sine, covered with fascine matting, staked down upon a clay-bed. Others have a base of 19 feet wide and 5 feet of a triangular section, also made up of fascines and stakes, secured by hurdles and wattling, with clay, peat, sea-shells, and sand, well rammed in, and then covered with turf. Others are formed with rows of piles, 16 feet long, with their heads 6 or 7 feet above the shore, joined longitudinally and laterally by waling timber, filled in and around with fascine beds and weighted with stone. Baskets filled with sand are also used in certain situations, as well as various modifications of all these kinds of protections. It was stated that these constructions were found to succeed better and last as long as stone, being at the same time about half the cost.

## THE IPSWICH COMPETITION.

Sir,—The profession owe you many thanks for your excellent remarks in last week's Builder; I trust they will have due effect. The insertion of the following, sent by me to the *Ipswich Express*, may be useful.

I am, Sir, &c.,
A. B. C.

Sir,—Your worthy London contemporary The Builder, has, to my great satisfaction, been pleased to notice the *very liberal premium* offered by the Mechanics' Institution of this town for a design for a new building suitable to their purposes. Now, Sir, if you allow me, I would add one or two words to his excellent remarks, which, in my humble opinion, every one of the committee ought to be made to learn by heart.

In the first place let me dismiss the premium. *Five guineas* for a design. Well, we will reckon the architect or builder, for they are not particular which (in fact, for my own part, I don't believe they know the difference), sends in a design, comprising elevations, plans, sections, and perspective view. I will defy any one person to get them up under a fortnight. Now, allowing a sovereign for papers, colours, &c., there is 2*l.* a week for the architect's remuneration—a sum that I have no hesitation in saying many of Messrs. Ransome's men are realizing. So much for the professional man's pay.

Again, they want a piece of ground 100 feet by 60 feet, covered for what? why for 1,600*l.*!! Now, the contents of that piece of land are nearly 670 yards, and at 30 feet high (the height required) I will defy the most speculating builder to erect a house of the commonest description under 5*l.* a yard. Thus we see *it is impossible to build an edifice any thing like the size they require under* 3,000*l.*

Cheadle Church.—In reply to an inquiry for views of this church, we have pleasure in pointing attention to a series of very good illustrations of it, from drawings by Mr. J. L. Williams in *The Illustrated News* of the 9th ultimo. They include an exterior and interior view, the rood-loft, brass screen, &c.

## NOTICES OF IRON BRIDGES.*

The introduction of cast-iron for the construction of bridges commenced about the year 1779, when that over the Severn, near Coalbrook Dale, by Darby, was the first. It consists of a circular arch 100 feet span, and a versed sine of 45 feet, approaching nearly to a semi-circle. The height of the springing is 10 feet above low water, and the total height to the underside of the soffit is 55 feet. The banks of the Severn being high, this form accords well with them. It is formed by five ribs of cast-iron, with perpendicular spandril pieces, resting upon them to support the roadway. This, for a first attempt, is well adapted to the situation, and has answered the purpose. This was followed by the bridge over the Wear, at Sunderland. The design for this was said originally to have been made by Thomas Paine, the well-known political writer, and was cast at Rotherham, being intended for erection in America; but the materials were subsequently employed in constructing Sunderland Bridge, under the direction of Wilson, in 1796, the idea having been suggested by Rowland Burdon. The curve of the arch is that of a segment of a circle. The length of the chord or span is 200 feet, and the versed sine or rise 30 feet. The total height from low water to the underside of the soffit of the arch is nearly 100 feet. It consists of six ribs, each composed of 105 cast-iron radiating pieces, connected at the top and bottom by the circular pieces which form the curve of the arch; these ribs are united in their transverse direction by tie-pieces; the spandrils are filled in with cast-iron circles, touching each other at their circumferences, and supporting the roadway, which consists of a strong frame of timber, planked over and covered with a cement of tar and chalk, upon which a layer of marl lime-stone and gravel is placed. The centre deserves notice on account of the difficulty and confined nature of the situation, which rendered it necessary to preserve a constant passage for ships with their standing rigging; this was effected by a perpendicular framing resting upon piles in the bed of the river, with a sufficient opening on each side for the vessels. Upon the top of this perpendicular framing, the transverse framing or centre for supporting the arch was fixed, and answered its purpose well. Some time after the removal of the centre, the arch was observed to swerve bodily in a horizontal direction to the eastward, forming a curve having a versed sine of about 12 or 18 inches; if this had continued to increase, it would no doubt have soon occasioned the downfal of the structure; it was, however, very skilfully remedied by the introduction of transverse and diagonal tie-bars and braces, assisted by wedges and screws, so that ultimately the whole was brought back and secured in its original form and position, where it has since remained in a substantial state without alteration. The width of the bridge is 30 feet; the abutments are of stone, founded on rock; they are 24 feet thick, and from 42 feet to 37 feet wide. This bridge, for boldness of the design and construction, as well as for its elegance and lightness, must be considered a work of peculiar merit; particularly if the period in which it was constructed be remembered.

About the same time the bridge at Buildwas, across the Severn, by Telford, was erected. It consists of a single arch, segment of a circle, whose chord or span is 130 feet, and versed sine or rise 27 feet, the depth of the iron frame forming the arch being 3 feet 10 inches; it consists of three ribs, 18 feet wide from out to out, connected together in their transverse direction by tie-bars. The spandrils for supporting the roadway consist of vertical pieces, resting upon the segments forming the arch; the abutments are of stone. There is a novelty in the construction of this bridge worthy of remark. The two outer ribs consist of two segments of circles each struck from different centres, the crown of one terminating immediately below the roadway, the other at the top of the parapet, so that the platform forming the roadway is both suspended and insistent; the object of this being, it is presumed, to increase the depth of the truss supporting the roadway, and thus to add to the strength of the bridge; but it was un-

* From Sir John Rennie's address to the Engineers.

necessary, and does not appear to have been adopted in any of Telford's subsequent designs, which are numerous. Amongst them may be mentioned that of Bonar, Tewkesbury bridge over the Severn, also that over the Dee, near Corwen, &c. Bristol bridge over the Avon, by Jessop, is a neat simple structure. Boston bridge, by Rennie, over the Witham, of 100 feet span, with a versed sine of 4 feet, is remarkable for its boldness and lightness. The principle of construction resembles that of Sunderland, but is an improvement upon it, in having a better system of transverse and diagonal braces, and the spandrils consisting of vertical instead of circular pieces. All these have, however, been far exceeded by the Southwark bridge over the Thames, by Rennie: This consists of three arches, all segments of the same circle; the centre arch is 240 feet span, with a versed sine or rise of 24 feet, and the two side arches are 210 feet span each, with a versed sine or rise of 18 feet 10 inches each. The arches are formed by eight solid ribs in each, and each rib consisting of fifteen pieces, 6 feet deep at the crown of the arch, increasing to 8 feet deep at the springing, 2½ inches thick in the middle, and 4½ at the top and bottom: these ribs are connected together in their transverse direction by cast-iron tie braces of the same depth as the ribs, but open in the centre, and in the diagonal direction by another series of ribs. The whole of the segmental pieces forming the arch, as well as the transverse and diagonal tie braces, are kept in their places by dovetailed sockets and long cast-iron wedges, so that bolts for holding the several pieces together are unnecessary, although they were used during the construction of the bridge to keep the pieces in their places until the wedges had been driven. Thus the ribs formed, as it were, a series of hollow masses or vousoirs similar to those of stone, a principle which, it is believed, is new in the construction of cast-iron bridges, but it has succeeded so well, that it is worthy of adoption elsewhere. The spandrils are composed of cast-iron diagonal pieces, connected together in a similar manner, and the roadway is formed by solid plates of cast iron resting upon the spandrils, and joined together by iron cement. The piers and abutments are of stone, founded upon timber platforms, resting upon bearing piles, and surrounded by sheathing piles, driven sufficiently deep below the bed of the river. The masonry is tied throughout by vertical and horizontal bond stones, so that the whole acts as one mass in the best position to resist the horizontal thrust. The ribs forming the arches were commenced in the centre, and were continued regularly on each side towards the piers and abutments, upon which a cast-iron bed and connecting-plate were laid, nicely let into the masonry to receive the ribs forming the arches. When the last segment of each rib was fixed in its place, three cast-iron wedges, each 9 feet long and 9 inches wide, were placed behind each rib, and nicely adjusted and fitted to them; these having a very slight taper, were driven simultaneously by heavy hammers, and thus the arches were nearly lifted from the centres, so that the wooden wedges upon which the segment pieces rested were easily removed by a few blows of a hammer; the arches were thus relieved from the centres in a very simple and efficient manner. The whole of the ironwork had been so well put together by Messrs. Walker, of Rotherham, the founders, and the masonry by the contractors, Messrs. Jolliffe and Banks, that when the work was finished scarcely any sinking was discernible in the arches. During the progress of the work, some experiments were made, in order to ascertain the extent of the expansion and contraction between the extreme range of winter and summer temperature, and upon taking the average of numerous trials by different gauges, it was found that the crown of the arch rose in the summer about an inch to an inch and a half. The work was commenced in 1813, and the bridge was opened in 1819.

Whilst upon the subject of cast-iron bridges, we must not omit the swivel or turning bridge. The invention, if it may be so termed, is, it is believed, due to England, and one was first made of iron about the year 1810. They are now almost universally adopted over locks, to the extent of fifty feet span, in preference to the old lifting bridge. Since the introduction of the railway system, cast-iron bridges have become very general, and have been particularly serviceable, being formed of girders, where the height was too limited to admit of the arch principle being adopted. Experience of the value of wrought iron in roofs and for other building purposes has induced R. Stephenson to propose that material for constructing the bridge to carry the Chester and Holyhead Railway across the Menai Straits. His design consists of a close wrought-iron tunnel or tube, 14 feet wide, 30 feet deep, and 1,500 feet long, supported in the middle by a stone pier built upon a rock in the middle of the straits, with two other piers at the low-water mark on either side, leaving four openings, two of them 460 feet, and two of 230 feet each, and 100 feet above high water, so as to admit of masted vessels sailing under it. Cubitt has also proposed to adopt wrought-iron on a great scale, for constructing landing platforms at Liverpool, where the difficulty of building docks or quays, which large steam-vessels can approach at all times of tide, render works of this kind necessary to accommodote the immense traffic frequenting Liverpool. The landing platform designed by Cubitt, and now in course of construction, consists of a wooden frame, 500 feet long by 80 feet wide, floated upon a number of wrought-iron pontoons, each 80 feet long, 10 feet wide, and 6 feet deep; it is connected with the shore by two bridges, each formed of two hollow wrought-iron beams, 150 feet long, carrying the platform of the bridge. The attachment with the shore and the stage is so made as to admit of motion, both vertically and horizontally, to accommodate itself to the rising, falling, ebbing, and flowing of the tide, which there rises about thirty feet.

## VALUE OF LAND.

The following proposals, recently submitted to the Court of Aldermen, for the sale of not less than five acres of freehold ground for the site of the proposed House of Correction, in reply to an advertisement, serve to shew the value put upon land in two or three localities:—

Nine acres at Tuffnell-park, Holloway, the same being leasehold, 416 years unexpired, at 5,000 guineas, or for any portion thereof, not less than three acres, at 700 guineas per acre.

Thirteen acres of grass land at Holloway, near Hornsey-lane, being copyhold, at 7,000*l.*, leaving the purchaser to enfranchise the same, if he desires so to do, at an expense of about 3,600*l.*—total, 10,600*l.*

Eleven or twelve acres of freehold ground in Tollington-lane, Upper Highbury, at 1,000*l.* per acre.

Fourteen acres, two roods, twenty-two perches of freehold ground, part of the late Lord Thurlow's property, on the road from Camberwell-green to Norwood, at 400*l.* per acre; the land-tax redeemed.

6½ acres of freehold ground at Central-hill, Norwood, for the sum of 2,000*l.* This is near the Annerly station on the Croydon Railway.

## PENALTIES TO SECURE PUNCTUALITY IN THE EXECUTION OF BUILDING CONTRACTS.

Penalties for delay in the execution of contracts are, it is well known, with rare exceptions, mere moonshine. The following plan has been acted on recently in some important transactions. The tender, for instance, is to complete the works, by a given day, for 10,000*l.* The contract signed is to pay 8,000*l.* at all events, but to pay 10,000*l.* if the works are completed by the given day. If they are completed by that day, according to the tender, the 10,000*l.* must be paid; but if that day passes without their completion, the contractor has no remedy except for the 8,000*l.* The legal difficulties attending the enforcement of penalties are thus avoided.

The Whittington Club, founded to give increased facilities for moral and intellectual education, and for refined social intercourse, to classes hitherto debarred from their enjoyment, held their first *soirée*, on Wednesday evening, at the City of London Tavern. Douglas Jerrold took the chair, and an immense crowd enjoyed a pleasant evening.

## Correspondence.

### STATE OF THE ROADS IN NEW QUARTERS.

Sir,—The sanatory state of the metropolis has so often engaged your attention, and is a matter in which the public are so much interested, that perhaps no apology is necessary in troubling you with a few remarks the subject has suggested. I propose to allude to the very unwholesome state of some of the streets and thoroughfares in the remoter parts of the town. In many instances the houses have been finished and inhabited for years, while the carriage-way remains in an impassable state, with deep ruts and pools of green and stagnant water standing in all directions.

Of course, during the greater part of the year nothing can pass off these streets: there they remain the receptacle of decaying vegetables and other abominations exhaling a damp and pestilential air. And where, as in some instances, the sewers have been made, how can the superfluous water ever reach the gratings, or heavy falls of rain scour the road, and put it into a healthy state?

In Liverpool and elsewhere, I believe, it has been proved, that by paving or otherwise making hard and compact the surface of certain courts and lanes, which had always been the abodes of fever and ague, in their former state, such places have been rendered healthy, becoming soon dry, after the heaviest rains scouring off all impurities. How far disease is prevalent in the localities I have alluded to, I am not competent to assert; but to a casual observer the abodes on the borders of such bogs and quagmires must be any thing than healthy, and, in a moral point of view, any thing than conducive to cleanliness and comfort. If the abodes of our middling and lower classes should be made as clean and respectable as circumstances will admit of, it is very important that the approaches to such abodes should be passable, hard, and easy of access,—easier by any carriage heavier than a wheelbarrow, which such streets are not at present, except on the footpaths.

That the facts are not overstated, any inhabitant of Pentonville, Bethnal Green, &c., I think, would affirm; and in the hope that these few remarks may tend to some improvement, your insertion of them will much oblige,

yours, &c., A Subscriber.

Islington, 16 Feb. 1847.

### EXPENSE OF PRIVATE BILLS. SEWERS, &c., FOR VENTNOR.

Sir,—Seeing in a recent number of The Builder your remarks on the great expense of obtaining private bills, I would state as an instance, that through a factitious opposition, the expenses in obtaining an Act for sewering, lighting, and improving this place, were *two-fifths* of the amount of money empowered to be raised for these purposes, and from this circumstance they cannot be carried out but very partially. It is time some change was made.—I am, Sir, &c., T. P.

Ventnor, Isle of Wight, Feb. 13th, 1847.

Proposed Great Public Building at Sheffield.—Plans have been prepared by Messrs. Flockton, Lee, and Flockton, architects, of "a most extensive edifice, which would be distinguished as the building of the borough," and which appears to be at present under consideration of the council. The *Iris* and the *Times* calls it a "mansion-house and public buildings," or a "council-hall." It is proposed to erect it as a detached edifice, on a very central site, comprising a large area between Bank-street and Hartshead. The purposes to which it is proposed to devote it are manifold, comprehending, in fact, "all public purposes;" but it is chiefly to consist of a hall, with standing room for 10,000 people, a council-hall, &c., a court of bankruptcy, stock-exchange, school of design, museum of arts, mechanics' institute and athenæum, literary and philosophical, and various other societies' rooms, banqueting-room, and numerous other rooms for public institutions. Other towns must look out.

Fruits of Camdenism.—According to a local paper, the architect employed to build the Protestant Church at Leeds, to which Mr. Haigh was to give ten thousand pounds, has followed the example of Mr. Haigh, and been received into the Roman Catholic Church.

## Miscellanea.

Projected Works.—There are advertisements in the current newspapers for contract-tenders for the erection of a union workhouse at Calne; church at Alderney; national school and master's house in Derbyshire; lock-up houses at Chesham and Slough; new banking-office and manager's house, with other premises at Inverness; three double goods' warehouses at Nottingham station; cast-iron bridge, two stone land piers, and two aqueducts, on Matlock, Buxton, and Manchester Railway; for rebuilding six bridges in Cardiganshire; repairing North Quay, extending shed, and erecting ten-ton power crane at Glasgow; extending steamer jetty eighty feet, at Kircudbright; restoring, repewing, &c., interior of St. Neot's Church; altering and adding to Manchester Exchange; taking down and rebuilding about 140 feet in length of agricultural buildings, with slating and repairing near Manningtree; altering and improving almshouse at Wells; excavating, forming, and completing 880 yards of tunnel with four shafts and approaches, also embankments, at Cromford, and executing the whole of the railway works, except bridges, on two miles eight chains of Manchester, Buxton, and Matlock; nine miles of North Western; nine miles of Newport and Hereford; nineteen miles of Malton and Driffield, and five miles and six miles of Bristol and South Wales (extension of time); also for vans, trucks, boxes, and waggons for Leeds, Dewsbury, and Manchester, and eleven cranes for East Lancashire Railway; for boring on line of water-works tunnel, near Glasgow; paving jail at Bury St. Edmunds; repairing pavements of town of Portsea for five years; making 550 yards of road at Carlisle; putting up 700 feet of fencing near Southampton; building 160 feet of sewer in the Strand; and executing various usual works at Bristol barracks.

The Liverpool Surveyor.—We find that although there appears to have been some ground for "the talk," that, notwithstanding the application of so many candidates, according to a requisition, a suitable engineer had been elsewhere sought; and although a discussion, indeed, took place in the council on an amendment to the effect "that the report of the Health Committee be referred back to the committee, with an instruction to place themselves in communication with Mr. Hawkesley [the other suitable engineer supposed to have been referred to], and to ascertain upon what terms his services could be secured," it has been finally decided, by a majority of 9, that Mr. James Newland, the gentleman selected by the committee out of the original list, be elected as the most eligible to discharge the duties of the office.

St. George's Hall, Liverpool.—At a meeting of the town-council, held last week, on a question as to deferring the erection of the organ until the completion of St. George's Hall, it was stated that the architect is still kept back because Dr. Reid has not furnished his plans for ventilating the building. Mr. S. Holme said some ill feeling had been produced, and he thought it requisite that some practical man should inspect the building, for it had been cut, and hacked, and altered by Dr. Reid with his tinkering. He censured Dr. Reid for his plan of making flues for the purpose of ventilating the building, which he declared was, in consequence, not properly tied together.

Lord Northampton's Conversazione.—Lord Northampton's first *conversazione*, on the 13th inst., was attended by a numerous and brilliant party, including his Royal Highness Prince Albert and many of the *corps-diplomatique*. The interest manifested by the prince in all matters of art, science, and literature, makes us hopeful for the future. All are not aware of the proceedings of the prince in this respect,—proceedings which shew how narrowly he watches what is going on, and how well disposed to aid where necessary.

Electric Telegraph in Paris.—A system of electro-telegraphic communication is being formed round Paris, between each of the octroi stations (where the city dues are collected), at the several barriers; thus establishing between them all a much more rapid and direct correspondence than has hitherto existed.

Fall of a Stone Granary.—A large portion of an extensive granary, at Port Dundas, the principal harbour on the Glasgow terminus of the Forth and Clyde Canal, fell down last week. According to the *Gloucester Chronicle*, it is a stone building from 70 to 80 feet in length, and six stories in height. On the day in question one or two cracks were heard proceeding from the building, while it was seen that the centre of the front facing the street was slowly making its way outwards, and after a lapse of three or four minutes, about three-fourths in length of the building came down with a crash resembling thunder. For about 50 feet of the length of the building, the whole five floors had fallen simultaneously, tearing the heavy beams from their sockets in the eastern gable, and snapping them through at the iron pillars, about 20 feet from the west gable,—the walls, pillars and floors to the westward being unaffected by the shock. The cross-beams were also snapped through a few feet from the north wall, leaving the staircase for the whole height of the building untouched. In a case of this sort, the public safety demands that a strict investigation of the cause of the disaster should be made. The thickness and arrangement of the walls, the size and position of the timbers, and the *quantity of grain* in store at the time, ought to be correctly known. The weight of grain is often too little considered.

Open Drains in Oxford.—A committee of medical men have reported their opinion, that the open drains and ditches in and about Oxford are a principal cause of disease. Mortality in Oxford has greatly increased lately, and attention is being directed to it with a view to discover a remedy. At the last meeting of the town council, Alderman Butler gave notice of his intention to move for a survey and report on the sewerage, drainage, scavenging, and water supply of the city. He said he had received a letter from a very eminent individual, who, out of regard for the city of Oxford, had offered to make the survey, stating that if his expenses out of pocket were paid, he would not ask for any thing beyond that.

The State of the Temple Church.—In consequence of an inquiry on this subject which appeared in our pages a short time since, we have received a letter from a party connected with the church, stating "that the columns have not moved since the restoration, having plumbed them once every year since. I have done so this morning, and find them incline $2\frac{7}{8}$ inches to the south and $2\frac{3}{4}$ inches to the north. The four columns on the north and south aisle have the same inclination, but when they first became so no person knows."

Royal Academy Gold Medal.—In reply to more than half-a-dozen letters of inquiry now before us, competitors for this medal *must* be students in the Academy. The subject, as stated in the printed notice issued by the Secretary, is "A Design for a *Cathedral* Church,"—style is not mentioned. Candidates must declare their intention, by letter, to the keeper, on or before the 1st of October. The designs are to be delivered on the 1st of November.

Compressed Peat-Charcoal.—Mr. Jasper W. Rogers proposes to cut up the peaty superstratum of the Irish bog-land into portions, subject these to hydraulic or other pressure, and then convert them into charcoal; thus affording employment to multitudes, preparing the land for useful purposes, and affording the means of smelting British iron into material equivalent to that of Sweden. Turf, too, at 5*s.* a ton, will produce as much steam as Scotch coal at 10*s.* a ton.

Church at Alexandria.—The building of the Protestant church at Alexandria, illustrated by us sometime since, has been brought to a stand, the funds being exhausted.

The Society of British Artists.—The charter of incorporation sought for by this society has received the great seal.

### MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, Feb. 22nd.—Institute of British Architects, 16, Grosvenor-street, 8 P.M.

Tuesday, 23rd.—Institution of Civil Engineers, 25, Great George-street, 8½ P.M.

Wednesday, 24th.—Society of Arts, Adelphi, 8 P.M.

Thursday, 25th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

Friday, 26th.—Archæological Association, Sackville-street, 8½ P.M.

### TENDERS

Delivered for additional buildings to the Hackney Union; from quantities given by the architect, February 17, 1847.

| | |
|---|---|
| Mansfield | £5,500 |
| Wilson | 5,340 |
| Jeffrey | 5,320 |
| Hicks | 5,157 |
| Yeoman | 5,145 |
| Elston, Wormwood-street | 5,100 |
| Walker and Soper | 5,066 |
| Hill and Son | 4,987 |
| Curtis, Stratford | 4,884 |
| Trego, Coleman-street | 4,698 |
| Cooper and Davies, Southwark | 4,548 |
| Crook and Son, Hackney | 4,487 |
| Norris, Hackney | 4,437 |
| Hawk, City | 4,123 |

### TO CORRESPONDENTS.

"H. C. T."—We cannot give an opinion as to his plan for opening carriage-gates without seeing it.

"T. C."—The ordinary "sound-boarding and pugging," if carefully done, will prevent the noise of feet from being heard. Felt might be introduced usefully.

"J. M." next week.

"A Carpenter."—We cannot furnish valuations, unless applied to professionally.

"G. R."—We accidentally omitted to state some time since, that the Mr. Jackson named is not the party he supposes.

"A. F."—To become a member of the Master Carpenters' Society he must have in his employ journeymen carpenters at weekly wages. The subscription is two guineas annually. Write to Mr. H. Biers, 13, Carlton Villas, Edgware-road.

*Vertical Tiling.*—The correspondent who inquired for the *tiles* to represent brickwork upon timber framing may obtain them from Messrs. Norman, Outford, Kent.

"A Subscriber" (York).—Write for full particulars to "The Secretary of Society of Arts, Adelphi, London."

"Subscriber."—Our volumes are out of print. An advertisement would perhaps obtain them.

"W. J. L"—The conditions to which our correspondent objects were not unusual.

"Subscriber from the first."—There are, we believe, both a Clerks' Provident Society, and a Guarantee Society, but we cannot give the addresses.

"W. M."—We are glad to find that our excellent correspondent reads us so closely.

*Received.*—"G. R. W.," "R. M. F.," Subscriber" (Leeds), "Spectator," "A Londoner," "H. H. R." "Mr. Gale," "E. R.," "Constant Reader," "A Subscriber" (London), "A Pupil," "G. H." (Leicester), "J. L. Y.," "G. E. M.," "J. K.," "T. W.," "B. A" "Josephus," new translation, by Dr. Traill. Illustrated. Part II. (Houlston and Stoneman, London)

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


### ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.—CHEMICAL LECTURES by Dr Ryan, with collateral and varied Experiments only, and on the Evenings of Mondays, Wednesdays, and Fridays. During LENT, C. Bamforther will deliver a series of Lectures on ASTRONOMY, exhibiting the latest discoveries, on the Mornings and Evenings of Mondays, Wednesdays, and Fridays, with short and appropriate MUSICAL Illustrations on the Grand Organ. The Mornings and Evenings he will lecture on the ELECTRO-MAGNETIC TELEGRAPH, including the recent Patent of Messrs. Bain and Gamble. The Models and other Works in the Useful Arts are daily described. The beautiful OPTICAL EFFECTS include the NEW DISSOLVING VIEWS, EXPERIMENTS by the DIVER and DIVING-BELL, &c., &c—Admission, 1s.; Schools, Half-price.

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THE following are the present Prices, for Cash, of Ironmongery at W. YOUNG, and Co.'s, 194, Oxford-street:—3-inch Cast Butts, 1s. 3d. Doz.; 3½ Do., 1s. 6d. Doz.; 3-inch, 2s. 1d. Doz.; 1½ Iron Sash Pullies, 11d. Doz.; 1¾ Do., 1s. 4d. Doz.; 1½ Brass Do., 2s. 6d.; 1¾ Do., 3s.; Sash Weights, 8s. 6d. Cwt.; Sash Lines, 6s. 6d. Doz.; 2½ Rain Pipe, 1s. 7d. Yard; 3-inch Do., 1s. 10d.; Mortise Locks, 38s. Doz.

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THE above or such Persons as may require assistance, can have Drawings of any sort traced and coloured; Plans enlarged and copied, and every description of Builder's Business undertaken and promptly executed and abstracted with dispatch by the Advertisers on very moderate terms.

N.B. Drawings of residences furnished complete. Address, prepaid, to A. M., 38, Dartmouth-street, Westminster.

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**ARCHITECTS, BUILDERS,** and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balustres, vases, capitals, casts, flowers, ovolos, bed mouldg, &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade

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**PORTLAND CEMENT.**—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it admirably calculated for use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers. J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of proper stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it checks the progress of Fire and the attacks of Vermin.

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**GREAVE'S LIAS CEMENT,** stone-colour, free from vegetation, does not crack, and is well adapted for every description of modelling and casting.

GROUND LIAS LIME, for concrete, or as mortar for sewers, dock walls, and all situations where extraordinary support to any other lime, or cement offers. 2 S. all Wharf, Paddington, and Stratford-on-Avon

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For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given to the Right Hon. Peto, Plasterers' Hall, and Coade and Seely, Esqrs., Parliament-street.

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TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

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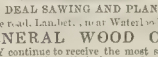
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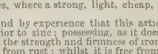
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It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes above-named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without the liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

This article is now manufactured in flat sheets, and also corrugated sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.

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**JENNINGS'S SHUTTER FASTENER.**

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and frequently are when left up. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the invent-r, and testimonials of every-day use and efficiency can be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal allowance will be made to Builders taking numerous shutters. Who introduce it to the notice of persons whose shops they decorate — To be had of the Inventor, 39, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 90, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction in confidently recommends both for security and durability, the close being beathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest facility and expedition without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cost, though not more than half the price of others, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**REVOLVING SAFETY SHUTTERS,**

WITH PATENT CONVEX IRON LATHS.

PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great imperfections of the ordinary metal laths of REVOLVING IRON SHUTTERS, in affording increased security is obvious, and it is only necessary to point out the fact, that the patent convex laths are 10 times stronger than the ordinary flat laths, to insure their general adoption.

The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw (pinion and wheel) cannot, even by wear, be liable to run down, and entirely avoids the necessity of using the ratchet wheel, and is at once simple and strong, requires little, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters are fixed horizontally (either above or below the window or door) or vertically, for which position the greatly increased strength of the convex laths renders them peculiarly suitable. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS WITH CONVEX IRON LATHS. Engravings and prospectus forwarded on application. IMPROVED BRASS METALLIC SASH BARS, ASTRIGALS, MOULDINGS, STALL BOARD PLATES, &c. Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 115, Old-street, London.

INJUNCTION.

**BUNNETT and CORPE'S Patent RE-**VOLVING IRON SHUTTERS. Since the verdict found in favour of the Patentees in the Court of Exchequer, in the action for infringement of their patent, they have secured a perpetual injunction to restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENTS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering the shutters, is entirely covered with iron, and is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Several thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have been in use) fully warrants the Patentees in their ability to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any on the old plan, for the same price.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired), at the same prices as other makers, and protect their shutters by their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-boards, Perfect-working Fastenings, and Universal Brass Fittings, of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Bracket and Sliding Sash Cords.

Office at No. 28, Lombard street, London; Works, at Deptford, Kent.

Screw cutting, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

A General Meeting will be held on Thursday, 24th February, in the Theatre of the Marylebone Literary and Scientific Institute, Edward-street, Portman-square, to enrol Members and receive Subscriptions.

NOTICE! Attendance will be given three hours previous to the Meeting, to receive Subscriptions and Deeds. Advantages of Building Societies. Immediate Advances made to Members on eligible Property they may be desirous of purchasing, to the full extent of its value, including all expenses, &c. Vide the Rules.

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Mr. George Streeter . . . . 11, Stepney-place, North Brixton
Mr. Robert Wollaston . . . . Westbourne-terrace, Hyde-park.

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Messrs. Thompson and Morgan, Conduit-street West, Hyde-park.

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Sir Claude Scott and Co., Cavendish-square.

MANAGER.
Mr. W. C. Rouse, 3, Stuceley-terrace, High-street, Camden-town.
N.B.—Persons desirous of being appointed Agents must apply immediately to the Manager, 4, Commission, 18 per share.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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**WORCESTER ENCAUSTIC TILES.** Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. GRIEVE and GRELLIER, Marble-wharf, Belvidere road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

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**ENCAUSTIC, VENETIAN, and other** PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON and Co.'s warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge.—J. M. BLASHFIELD, Agent. The above tiles have lately been considerably reduced in price.

N.B. An assortment of plain and ornamental door furniture, slabs, and tiles for fire-places, &c.

---

**FRENCH PAPER HANGINGS.—The** ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 59, Princes Street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

---

TO BUILDERS, DECORATORS, PAINTERS, &c.

**DEPOT of FRENCH Paper-Hangings.—** M. JULES RIGTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market, and the prices very moderate. S. BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

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CHEAP PAPERHANGINGS.

**C. LEE begs to inform Builders and the** Trade in general that he has an immense stock of genuine French and English PAPERHANGINGS, of every description, at the lowest possible prices, for Cash. To avoid all doubt of a spurious imitation, C. LEE can assure the Trade he is sole agent for P. MABRUN, of Paris. Warehouse, 30, Cranbourn-street, and 13, St. Martin's-court, Leicester-square.

N.B. The Trade supplied with Canvass, Lining Paper, Tin Tacks, Brown Paper, &c.

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PAPER HANGINGS—TO THE TRADE.

**MESSRS. HENNELL and CROSBY,** Manufacturers of Paperhangings, Queen street, Southwark bridge road, have just completed their New Set of Patterns for 1847, consisting of French Designs cut in Paris, and English Designs by the First Artists, for Style and Workmanship not to be surpassed. Retail Prices. Satins from 3d. per yard; Superior French Flocks from 6d. per yard. A liberal allowance to the Trade. A Large Stock always ready, and orders promptly executed. The Cheapest House in London for Panel Decorations.

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**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

---

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

---

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars-road; sold also at the office of "The Builder," 2, York street, Covent Garden, London; Hodgins, Widemarsh street, Hereford; R. Sutton, "Review office," Nottingham; H. Wills, 39, High-street, Lynn; and in Manchester at Crake's Marble Works, Garratt-bridge. In bottles of 6d. and 1s. each, and at 10s. per gallon. The oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain. N. B. The Trade supplied.

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By Her Majesty's Royal Letters Patent

**WILKINS'S "SILENT" WATER-** CLOSET.—To Architects, Surveyors, and Builders.

Gentlemen.—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

This Closet is simple in its construction, the whole of the apparatus (including the trap), being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

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DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG begs to inform his Friends** and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King-street, Portman-square.—Terms, Cash only.

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**SOHO PLATE GLASS WAREHOUSE,** 26, Soho-square, depot for the sale of the slate glass manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands unrivalled for brilliancy of colour, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

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TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen** Tables, at the following low prices, for ready money:—

| | | £. s. d. | |
|---|---|---|---|
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ...... | 4 4 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d per foot. |
| | Fourths ... . | 3 10 0 | |
| | C C ....... .. | 2 10 0 | |
| | C.C C ... .... | 2 2 0 | |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

N B. Sashes glazed at 4½ and 5d. per foot.

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SASHES PRIMED, GLAZED, and sent to any part of London at 5d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, shew cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.

Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 22s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

For complete Lists, priced—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

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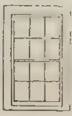
**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sun-blind; all simple, cheap, and effective. Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed Feather Factory, 14, Kingsgate-street, London.

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**CHAS. WM. WATERLOW,**



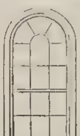
MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices. Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N B. This Establishment is worth the notice of all engaged in building.



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SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

**JOHNSON and PASK,**



1, AMWELL STREET, Clerkenwell,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiner's work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



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**HOWARD'S TRANSPARENT** TRACING PAPER combines the several requisites desired by Architects, Engineers, &c., toughness of substance, the capability of retaining ink or colour undisturbed on its surface, a high degree of transparency and every quality from the finest tissue to the thickest drawing paper. Prices low. Books containing nine samples, with sizes and prices, sent per post to any part of the kingdom. 23, GREAT RUSSELL STREET, BLOOMSBURY.

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**H. MORRELL'S FINE PREPARED** DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East-India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.

Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

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ZINC WORK.

**MESSRS. F. and J. HARLAND beg to** call the attention of Builders and others to the following list of prices, for cash:

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|---|---|---|---|
| 2-inch Pipe ......per foot | 4½d. | 3½-inch Gutter....per foot | 4½d. |
| 2½ ditto .......... " | 5d. | 4-inch ditto ...... " | 5d. |

Including Fixing.

Flats Covered and Cisterns Lined from 4½d. to 6d. per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington, Surrey, opposite the Fishmongers' Alms-houses.

N.B. Orders by Post punctually attended to.

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**PATENT VULCANIZED INDIA-** RUBBER, CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are—its uniform elasticity in various temperatures; it does not become hard by exposure to cold. It is of greater strength and less liable to injury from heat than native Caoutchouc. It is insoluble in essential oils. It resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully used for Washers for Joints in Water, Gas, and Steam Pipes, and for the Flap and Foot Valves, &c., of Steam Engines; and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of flooring boards.

The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

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IMPORTANT TO BUILDERS.

**THE ARCHITECTURAL CARVING** COMPANY Irvine's Patent, beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston-place, Pimlico, leading out of Ebury-street. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

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**CARVINGS IN WOOD.—The unrivalled** perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal enrichments—thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 44, West Strand, or at the Works, Ranelagh-road, Thames bank.

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TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

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TO ARCHITECTS AND BUILDERS.

**DOOR SPRINGS AND HINGES.—** GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES in Brass and Iron for Doors to open one or both ways, and Rising Hinges for the convenience of Doors opening on uneven Floors. Likewise Swing Centres, which consist of a combination of power unequalled by any made at present.—Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

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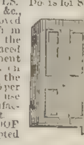
**JOSEPH FENN, 105, Newgate Street,** London, Manufacturer of Turning Lathes, Flatting Mills, Stocks and Dies, Circular and other Saws, Files, Tools, and Materials for Engineers, Millwrights, Die Sinkers, Coach Makers, Locksmiths, Lamp Makers, Pianoforte Makers, Plumbers, Wood and Metal Turners, Gun Makers, Engravers, Print-cutters, Watch and Clock Makers, Lapidaries, Jewellers, Gold and Silversmiths, Sadlers, Curriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c.

Amateur Mechanics and others can be supplied with every description of Mechanical Apparatus, viz.:—Wheels and Pinions, Racks, &c. &c. Sets of Mining Tools. Sets of Tools and prepared Wood for Wood Engraving. TOOL-CHESTS FITTED UP COMPLETE. Cutlery of the finest quality. Horticultural Tools. Ironmongery of every description. Brass, copper, steel, zinc, &c., in sheet, bar, and wire. Wholesale, Retail, and for Exportation. Railways supplied on the best terms.

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**LEADBEATER, many years manufacturer** for Chubb, of St Paul's Churchyard. PERFECT SECURITY is afforded to PROPERTY of every description by LEADBEATER'S strong Wrought Iron Chemical compound filled FIRE-PROOF SAFES, CHESTS, and BOXES. Doors for Strong Rooms and Party Walls, &c., all secured by his Improved Detector Locks throwing from 3 to 20 bolts, which defy the skill of the most experienced burglars. A large Assortment of Fireproof Safes, &c., on Sale. Made to order at the shortest notice at prices 25 per cent under any other house in London, at his Manufactory, 127, Aldersgate Street.





A large FIRE PROOF REPOSITORY, well adapted for Solicitors, to be SOLD a BARGAIN.

Improved Detector Locks and Latches, affording PERFECT SECURITY, for Street and other Doors.

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CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.

**P. FORNARD and W. TUCKWELL,** Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf imported July last, exclusively from their quarries at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr. TUCKWELL at the Wharf, and at the offices of Mr R. ATTITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Fornard, at Caen.

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CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender pier, adjoining Caen Wharf.

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PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-** tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney pieces and FONTS.

Estimates given for building generally.

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**LADYSHORE TERRA COTTA.—The** attention of Architects, Builders, and others engaged in building, is respectfully called to this material, which combines the beauty and durability of the best Freestone at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the entire building of two churches; one in Manchester, and one at Bolton-le-Moors, and a parsonage-house and the ornamental parts of a school, also in many other churches and buildings, &c. Its advantages are, that it is not a "Composition," nor of the nature of Stucco, but HARD BURNT CLAY. In rich ornamental work, its value will be found to be great, being so much cheaper than carved stone or wood, and equally durable.

The principal ornaments manufactured are capitals, trusses, bosses, brackets, royal arms, foliated mouldings, panels, panelled bench-ends, with poppy heads; pinnacles, finials, chimney-tops of all sizes, vases, fountains, pedestals, busts, chimney pieces, indented tiles and other tiles for churches, halls, &c., and every variety of ornament that is used for building purposes.

This material is warranted to stand the weather. Specimens may be seen, and every information obtained, on application to the Proprietors, E. P. WILLOCK and Co., 10, Exchange Arcade, Manchester.

# THE BUILDER.


## SOCIETY OF ARTS.

PRESIDENT
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 8th of May, 1847.—A List of the subjects for which Premiums amounting to £200 in Money, Medals, &c. are offered, will be sent by Post to all persons who furnish their Names to the Society's House, Johnstreet, Adelphi, London.

2. An EXHIBITION of select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. A NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had (gratis) at the above address. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.

TO BRICKMAKERS.

WANTED, a large supply of Stock Bricks, to be delivered at Cowes, Isle of Wight. Terms addressed to M. GILLAM, House Decorator, No. 25, Tottenham-court-road, will meet with attention.

WANTED, in the vicinity of Oxford-street, to rent or purchase, a piece of Ground or Premises capable of being converted for building purposes to be of the extent of 100 feet by 50, or thereabouts. A frontage next a thoroughfare would be preferred.—Apply to B. M., by letter, p. p., stating particulars, at Messrs. BOTTOM and CRASKER, No. 54, Oxford-street.

A MANUFACTORY, with Coach-houses and Stabling, TO LET, near Soho-square. Apply at J. T. MERRICK and Co.'s, 451, New Oxford street.

TO RAILWAY COMPANIES.

TO LET, in Little Queen-street, near Storey's Gate, some PREMISES, well adapted for offices.—Enquire at the next door.

GRAY'S INN ROAD.

FREEHOLD BUILDING GROUND, in this vicinity, TO LET, for Third and Fourth-rate Houses.—Terms on Particulars may be had of Mr. WATSON, 126, Wood-street, Cheapside.

BATTERSEA PARK.

MOST eligible Freehold Building Land TO BE LET, in the immediate neighbourhood of the proposed Bridge. Apply to Mr. F. P. THOMPSON, Surveyor, &c., Battersea Works, Battersea Bridge, or 3, Craig's-court, Trafalgar-square, where Plans and Particulars may be obtained.

UPPER PART of a HOUSE TO LET, unfurnished, Burlington-street, Regent-street, with superior conveniences, and in perfect order, adapted for a business. Apply to Messrs RUSHWORTH and JARVIS, Saville-row.

TO LET, Extensive Premises situate in Bridge-street, Blackfriars, convertible into the most desirable Premises, at the West End, either for a bank offices, show rooms, [illegible] and may be let separate. For particulars and plan apply to Messrs RUSHWORTH and JARVIS, as above.

TO TIMBER MERCHANTS, DEALERS, or Commission Agents. TO BE LET, a very large Timber, Deal, Coal, Slate, &c. Yard, with Wharf and Dock, in the Hull Road, Hedon, near Hull, Yorkshire, containing about 2 acres 3 roods of land, with a frontage to the River Humber of 270 feet. Rent £70 per annum. Further particulars may be had of Messrs. WARD and HUGHES, 29, Old Jewry, London; or of Mr. LLOYD, on the premises.

CHELSEA, NEAR THE STEAM-BOAT PIER.
BUILDING LAND

TO BE LET, on advantageous terms, for the erection of a Public house, together with several plots for Building Land, which is in great request. The site is situate in one of the most improving districts, and is most eligibly placed to and from the City, and all parts of the metropolis. Leases direct from the freeholder. Term of lease, 87 years. Apply to Mr. Thomas Turnbull, Cheyne Walk, Chelsea; or to Messrs. Lee and Pemberton, 44, Lincoln's-inn-fields.

TO BUILDERS, MATERIALS AND MONEY ADVANCED

TO BE LET, on BUILDING LEASES, for ninety-nine years, several very eligible plots of Freehold Building Ground, land tax redeemed, for fourth rate houses, situated in streets leading from the Queen's-road, Dalston, to Landsdown-place. This is one of the most rapidly improving neighbourhoods in London, and will be the principal thoroughfare from all parts of the New Road to Victoria Park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

BUILDING GROUND

TO BE LET, direct from the Freeholder, on Building Leases, in Single Plots or by the Acre, HARLESDEN, Middlesex, near the Turn Gate Hotel, Park-road, consisting of Twelve Acres of Meadow Land, with a Frontage of about 300 feet to Harlesden Road, between the Canal and Railway, and about the same distance to the Wood Road, and Harlesden Green, and is the first station on the London and North Western Railway. The Plans may be seen, and particulars obtained, by application to Mr. H. E. KENDALL, Jun., Architect and Surveyor, 4, Basinghall-street.

ST JOHN'S WOOD PARK. IMMEDIATE CONNEXION WITH REGENT'S PARK.

BUILDING PLOTS TO BE LET in this most desirable and salubrious situation, commanding pictures[illegible] the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Metropolis, and the most favourable for the erection of the first and second rate Residences, all the fashionable localities of the West End, in the City, Regent's Park, and Palaces, being easily accessible. Plans may be seen, and Terms known, at the Offices of Messrs. MONTAGUE and BENTYMAN, Esqrs., 14, Rodney-street, Pentonville, Second gate.

TIMBER SAWING FRAME FORSALE, a well-built, large, and in complete working order, with two saws, lathe, and other fixtures, being a curve, feather purchase. Apply to W. G. WARDLE, Stangate Saw Mills, Palace-road, Lambeth.

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MORTICEING MACHINES are now FOR SALE, the first and only ones ever invented that will cut a mortice any depth or width in one minute, through hard or soft wood, at work to be seen at the Patentee's Factory, JONES'S, 127, Goswell street, between 10 A.M. and 4 P.M. daily.

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TO BE SOLD, the Lease and Goodwill, together with the Stock in Trade, of a valuable business in the Lead Trade, carried on for upwards of Thirty years past and Eaton square, which has been successfully carried on by the present proprietor for a period of Forty-two years, and which will be found a most desirable opportunity for any person wishing to enter into business. For further particulars, apply to Messrs. FOREBROTHER, CLARK, and LYE, Solicitors, 3, Lothbury, Bank, London.

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## SALES BY AUCTION.

TIMBER SALE, ON THE WYTHAM ESTATE, near Oxford, will take place on Tuesday, the 23rd of February, (having been deferred from the 16th on account of the snow,) when

MR. FISHER will SELL by AUCTION, at the Bear and Ragged Staff, Cumnor, at Twelve o'clock, about 400 fine Maiden Elms and Ash, standing on the farms at Botley, Wytham, Cumnor, and Whitley, well situated for carriage, and within a short distance of Oxford. Catalogues may be had of Jas. Walkin, the woodman, who will show the lots; at the place of sale, and Lion, Cumnor; Carpenters' Arms, Botley; Swan, Ensham; all the inns and public houses in the neighbourhood; and of the auctioneer, Littlegate, Oxford. Credit will be given on approved security.

VALUABLE FREEHOLD PROPERTY, situate in the midst of the Improvements now taking place in the neighbourhood north of Farringdon-street.

MESSRS. BULLOCK are instructed to SELL, by AUCTION, at the Mart, near the Bank of England, on TUESDAY next, Feb. 23, at Twelve, an important FREEHOLD GROUND, having nine brick-built houses and other erections thereon, situate between Sharp's alley, Cow-cross, West Smithfield, and the new street north of Farringdon-street, named Victoria-street, suitable for any large building, or a trade requiring considerable space; or for the formation of back premises to the houses when built in the new street. Printed particulars and plans may be had at Mr. DODS, 39, St. Martin's-lane; Mr. DUPLEX, 61, Lincoln's-Inn Fields; Mr. SMITH, Barnard's-Inn, Solicitor; at the Mart; and of Messrs. BULLOCK, 241, High Holborn.

KENNINGTON-ROAD, opposite Walcot-place, LAMBETH.—Valuable Leasehold Estate, desirable for Occupation or Investment.—By

MESSRS. BLAKE, at Garraway's Coffee-house, on FRIDAY, March 12th, at Twelve o'clock, a very neat, genteel RESIDENCE of Five Stories, and containing Ten commodious Living Rooms, besides other conveniencies; having a spacious forecourt, and a well-walled garden, with an outlet in the rear in hand, being No. 19, East-place, a fine open situation, where the road and footways are particularly wide, forming one of a handsome and well-occupied row of houses facing the east. The premises are in good order, and let for an unexpired term of 36 years from Midsummer last, at a ground-rent of £4 10s. per annum. May be viewed on days by the cards to be had of CHARLES FORD, Esq., Solicitor, No. —, Bloomsbury-square, at Garraway's Coffee-house Change-alley, and the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

TOOTING, SURREY. Timber Merchants and Builders' Stock in Trade, the property of Messrs. HICKS, relinquishing business at that place.

MESSRS. BLAKE, on the Premises, on WEDNESDAY, March 10th, and following day, at Eleven for Twelve o'clock, the Stock in Trade, Implements, &c., of the above old-established Firm, consisting of oak, elm, and other round timber, oak, ash, and deal sawn and framed; also a capital quarter-ing, whole deals, and deal slar-ing, long boards, stocks of coffin boards, and the usual variety of carpenters' converse stuff; a good assortment of rails, and superior pine mouldings. Implements consist of brac, timber carriages, trucks, chains, carts, harness, capital scaffolding, ladders, iron pipes, jacks, and pulleys, gear, saws, benches, brackets, trestles, and a handsome assortment of every description of large stone landings, some marble chimney-pieces, a pair of handsome wrought iron gates and piers, suitable for a cabinet or lodge entrance, a large well-constructed Barn Building, a compact Granary on piers, and several tiled Sheds; iron hurdles, rick and stump-cutting machine, &c. &c. May be viewed three days prior to the sale, and catalogues had on the premises, at the Castle Inn, Tooting; Plough, Clapham; Spread Eagle, Wandsworth; Bells, Putney; Griffin, Kingston; Spread Eagle, Epsom; Greyhound, Sutton; Red Lion, Epsom; Wheat Sheaf, Reigate; Greyhound, Streatham; Messrs. HICKS, 56, Nash Inslane, Lombard-street, and Sequare; at Garraway's, the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

EXTENSIVE SALE OF BUILDING MATERIALS, GREENWICH, BY ORDER OF THE COMMISSIONERS OF GREENWICH HOSPITAL.

MR. GARDINER will SELL by AUCTION, on the Premises, on TUESDAY, February 23, and following Days, at Ten each day, the whole of the valuable MATERIALS of FIVE TAVERNS and PUBLIC HOUSES, known as the Crown and Anchor, the Chatham Chest, the Red Lion, the Admiral Hardy, and the White Horse, with a great number of dwelling-houses, adjoining and forming the whole west Paper-lane, and the north side of Stable-yard-street, and comprehending a large quantity of capital bricks, 100 rod boards, timbers, joists, sashes, doors, tiles, slates, &c., 1200 a great quantity of lead gutters, pipes, &c. The whole to be immediately taken down and removed about to be made to the Hospital. May be viewed three days prior to the sale, and catalogues obtained at the Works' office, Greenwich Hospital; of Messrs. LEE and MACKRELL, solicitors, 25, Basinghall-street, Westminster; at the Ship Tavern, Greenwich; the Crown and Anchor, Woolwich; of the auctioneer, 17, Hatton-garden.

BUILDING MATERIALS, WHITTON, NEAR HOUNSLOW AND TWICKENHAM.

MR. M. ADAMS will SELL by AUCTION, without reserve, on the Premises, on Tuesday, March 2, 3rd, and two following days, at eleven o'clock each day, precisely, on account of the number of lots, all the excellent BUILDING MATERIALS and FITTINGS of a Mansion and Offices, distinguished as Argyll House; formerly the seat of Archibald, Duke of Argyll, comprising about 420,000 of excellent Malm and Stock Bricks, 14 tons of Lead, 3 tons of York and Portland Paving, Stone Staircases, 4 squares of Flooring, 2000 feet of capital Oak Floor Boards, Elegantly Carved Doors and Mantles, Marble and Portland Vases, beautifully executed Original Casts, Works of the most Eminent Artists, all Royal Academicians, and copies at a great expense by the late Sir WILLIAM CHAMBERS, &c. &c. Sculptured Frames, elaborately Carved Mantles and Modillion Bases, Cornice Pieces, Register Stoves, Grates, Bells, &c. &c. &c. Real Floor Boards, Coppers, Cisterns, Pumps, and the whole of the Valuable Materials. May be viewed with Catalogues only a week prior to the Day of Sale, and the Sunday excepted, and had gratis and 14 each fourteen days prior to the Sale, at the Red Lion and White Hart Inns, Whitton; Kings Head Inn, Twickenham; George Inn, Hounslow; Chequers, George, and Northumberland Arms Inns, Isleworth; Royal Oak, Worton Lane; at the Office of "The Builder," York-street, Covent Garden, and of the Auctioneer, Mr. Adams, Isleworth.

STONE MERCHANT'S STOCK.

MR. H. BIERS has received the directions of Messrs. Mowlem, Freeman, and Burt, to prepare Catalogues for SALE by AUCTION upon their premises, their BOROUGH DEPOT, No. 13, South Wharf Road. This very VALUABLE STOCK COMPRISES SEVERAL THOUSAND FEET OF YORK PAVING, LANDINGS, STEPS, KERB, and COPING, Portland, Mansfield, and Bradley Fall, in Block, Slab, Steps, and Landings, Purbeck, Port-land Sinks of superior quality, Granite Kerb and Spur Stones, a Portland Stone Staircase in wood and iron, a small quantity of Sienna and other Marble; a Powerful Stone Truck with Patent Boxes, capable of carrying Ten Tons, and many useful articles. Catalogues when ready, will be sent gratis and free, to any part of the kingdom; and an unusual facility presents for Water-carriage, the stock being close to the Grand Junction Canal. APPROVED BILLS at Three and Four Months' Date. 13, Broad-street, Golden-square.

BUILDER'S BUSINESS OF FIRST CHARACTER.

MR. H. BIERS has been instructed to dispose of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST-RATE PRACTICE; declining health of the proprietor is the sole reason for parting with the same. No considerations as regards goodwill, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from £1000 to £2000. Further part. plans and cards to view may be obtained on application to Mr. H. BIERS, 13, Broad-street, Golden-square, between the hours of One and Three. Written applications cannot be attended to.


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MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only.
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Shortly will be published, price 6d., separate from the general transactions,

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For 1846.

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"The Builder," Nov. 7, 1846.

THE BUILDER'S FRIEND. Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices of plank, deals, battens, and timber, bear to each other, from 20l. to 45l. the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. The information is given in a concise form, so as to fit the pocket-book.

"Hernpath's Journal," Nov. 28th, 1846.

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"Sunday Times," Dec. 6th, 1846.

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LONDON: Printed by CHARLES WYMAN, of 28, Cumming street, Pentonville, in the County of Middlesex, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent-Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, February 20, 1847.

# The Builder,

A JOURNAL FOR

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No. 16, Grosvenor-street, 24th February, 1847.

TO ARCHITECTS.
GLAMORGANSHIRE—TOWN OF CARDIFF.

**THE Committee appointed to superintend** the building of a COUNTY HALL, to consist of a Crown Court, Nisi Prius Court, and a Police Court, with their requisite concomitant Offices, in the above town, GIVE NOTICE, that they are desirous to receive DESIGNS for the foregoing purpose by COMPETITION, upon the following terms:
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A Lithographed Plan, and admeasurement of the ground, will be supplied, with such further information as may be required for the guidance of architects desirous of competing, upon application, by letter, to CHARLES CROFTS WILLIAMS, Esq., Chairman of the Committee, Cardiff, to whom all plans for selection are to be forwarded, on or before the first day of June next.
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**MR. H. BIERS has been instructed to dis-**pose of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST-RATE PRACTICE; declining health of the proprietor is the sole reason for parting with the same. No consideration is asked for good-will, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from 1,000*l.* to 2,000*l.* Further particulars and cards to view may be obtained on application to Mr. H. BIERS, 13, Broad street, Golden-square, between the hours of One and Three. Written applications cannot be attended to.

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CONTRACTS.


TO BUILDERS.—WALWORTH LITERARY AND SCIENTIFIC INSTITUTION.

**PARTIES desirous of sending in Tenders** for the contract of the above Building, may see the plans and specifications at the office of Mr. O. JORDAN, the architect, No. 12, John street, Adelphi, on TUESDAY next, March 2nd, and the following day. All tenders to be delivered on or before the 5th March next. No pledge is given that the lowest tender will be accepted.

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**THE Phœnix Gas-light and Coke Company** are ready to receive TENDERS for taking the Breeze made at their Works at Bankside during the next twelve months, the quantity will be about 2,500 Chaldrons. The Contractor will be required to enter into an agreement under a penalty not to leave more than 30 Chaldrons on the Works at any one time, and to pay for the same quarterly. The Tender is to state the price per Chaldron of 40 Bushels delivered into craft alongside or carts, and to be marked with the words "Tender for Breeze" on the cover, and to be delivered at their office at Bankside, on or before Twelve o'clock on Wednesday, the 10th March.
Office, Bankside, Feb. 25, 1847. CHARLES PRIDDEN, Secretary.

TO BUILDERS. CALNE UNION NEW WORKHOUSE.—EXTENSION OF TIME FOR TENDERS.

**THE Guardians of the Calne Union** HEREBY GIVE NOTICE that they will receive TENDERS for the erection of a new workhouse, on WEDNESDAY, the 10th day of March next, at Twelve o'clock, at the board room. The drawings, specification and conditions may be seen and the quantities obtained at my office on or after the 4th of March, or they may be viewed previous to that day at the office of Mr. ALLOM, the architect, 11, Hart-street, Bloomsbury, London. The Guardians require Tenders to be given in one amount for the whole work, and do not pledge themselves to accept the lowest estimate.
H. S. HEATH, Clerk to the Union.
Calne, Feb. 18th, 1847.

TO BUILDERS.

**PARTIES desirous of TENDERING for** the Erection of Archbishop Parker's Grammar Schools, on Sparrow Hill, Rochdale, are informed that the Plans and Specifications may be seen at the Counting-house of Mr. ABRAHAM BRIERELEY, Town Meadows, Rochdale, from Wednesday, the 3rd of March. The Tenders, endorsed at the corner, are to be delivered, post paid, on or before Wednesday, the 17th day of March, addressed to Mr. JOSEPH CLARKE, Architect, No. 1, Lincoln's-Inn Fields, London. The parties Tendering will be required to take out their own quantities, and the Committee do not bind themselves to accept the Lowest Tender. Any further information may be obtained on application to Mr. CLARKE.

TO BUILDERS AND OTHERS.

**NOTICE IS HEREBY GIVEN, that the** Commissioners of Sewers for Holborn and Finsbury Divisions, Middlesex, will meet at their office, in Hatton garden, on FRIDAY, the 12th day of March next, at One o'clock in the afternoon precisely, to receive TENDERS in writing for building a sewer in Bayham-street, Camden Town, for a length of 550 feet, conformably to a plan and specification, which may be inspected daily, between the hours of Nine and Three. The parties offering must attend at the time of meeting, with their tenders sealed up, which must contain the names and address of two sureties for the due execution of the works. The commissioners will not consider themselves bound to accept the lowest tender.
By the Court,
STABLE and LUSH, Clerks.
Office of Sewers, Hatton garden, 23rd February, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.—COURT OF SEWERS, TOWER HAMLETS.

**NOTICE IS HEREBY GIVEN, that the** Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on WEDNESDAY, the 10th day of March, at Three o'clock in the afternoon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive Tenders (sealed up) from any persons or person willing to enter into contract for the works necessary in extending the Sewer from Glass House-street, along New Martin-street and Blue Anchor-yard, being a length of 650 feet or thereabouts, and also in Lambeth-street, across Hooper-square to Leman-street, being a length of 1,035 feet or thereabouts, in the parish of Saint Mary Whitechapel. Plans and specifications of the said several works, with the forms of Tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. Separate contracts will be required for each of the said works respectively. The contractor will be required to sign provisional agreements to secure the due execution of the said contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners: no Tender will be received after the hour of Three o'clock, or in any other form than that prescribed by the Commissioners, nor unless the party tendering or some person duly authorised, attend in his behalf to answer when called upon.—Dated this 25th day of February, 1847.
JOHN WILLIAM UNWIN, Clerk to the Commissioners.
N.B. The Commissioners do not pledge themselves to accept the Lowest Tender.

NOTICE IS HEREBY GIVEN, that a Special General Meeting of Members of the INSTITUTION OF BUILDERS' FOREMEN will take place on WEDNESDAY evening next, March 3rd, at the Salisbury Arms Tavern, Durham street, Strand, to elect a Board of Directors, and make other arrangements for carrying out the benevolent intentions of the Institution. W. ALLARD, Secretary.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office. By the Court, STABLE and LUSH, Clerks.

TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES.

HER MAJESTY'S JUSTICES and COMMISSIONERS of SEWERS for the City and Liberty of WESTMINSTER and part of Middlesex, HEREBY GIVE NOTICE, that they have approved a plan, whereby an efficient drainage, at a very moderate cost, may be obtained for property in the above situations, abutting on streets where there are sewers. The plans and sections may be seen at the office of the Commissioners, No. 1, Greek street, Soho.—LEWIS C. HERSLET, Clerk to the Commission.

TO PLASTERERS.

LIME FOR PLASTERING, that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORREST'S WHARF, Earl street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other style, trusses, pilasters, vases, capitals, centre flowers, soffits, bed moulds, &c. &c., on the most reasonable terms by JNO. HERBERT and SON, Modellers, &c., 42, Parker street, Drury lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete in patent cement, cheaper than papier mache.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 20 inches the head, inside measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Sole Consignee, CHURCH-STREET, ROTHERHITHE.

PORTLAND CEMENT.—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other cement.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally distinct in composition and manufacture from every other, and being a neutral compound, is not only free from chemical action upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, it is of an equal uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being at the same time much less expensive. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 86, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 29, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced. It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be safely shipped for export. It is the only Cement that can be used with confidence by the Sea side. It may be used at all times of the year, at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by time, and does not require renewing [illegible]. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered or painted [illegible]. Parts lathed or painted with this Cement will remain unharmed by the severest storms. As it hardens, it is applied in the least time for use being very short and direct. The first cost of the material does not exceed that of the cheapest Cement now in use, but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen and a Prospectus, fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden lane, Queen street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT STONE COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is much more suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical action with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, produceable by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

FRENCH PAPER HANGINGS. — The ONLY WHOLESALE DEPOT wherein is concentrated ALL the finest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 59, Princes Street, Leicester Square (established 1835), where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

TO BUILDERS, DECORATORS, PAINTERS, &c.

DEPOT of FRENCH Paper-Hangings.— M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market, and the prices very moderate. S. BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

PAPER HANGINGS—TO THE TRADE.

MESSRS. HENNELL and CROSBY, Manufacturers of Paperhangings, Queen street, Southwark bridge road, have just completed their New set of Patterns for 1847, consisting of French Designs, cut in Paris, and English Designs by our First Artists, for Stained Workmanship not to be surpassed. Retail Prices, Satins from 6d. per yard, Sets of French Flocks from 1s. per yard. A liberal allowance to the Trade. A Large Stock always ready, and orders promptly executed. The Cheapest House in London for Panel Decorations.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented despatch.—1, King-street, Portman square. Terms, Cash only.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

| | | s. | d. | |
|---|---|---|---|---|
| Crown Glass cut to size from one foot upwards, 3d. per foot. | Thirds ...... | 4 | 4 | 0 Squares of Small |
| | Fourths ...... | 3 | 10 | 0 crown glass at 1d. |
| | C.C. ......... | 2 | 10 | 0 and 2½d. per |
| | C.C.C. ........ | 2 | 2 | 0 foot. |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FANNING'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West street, Smithfield, London.

N.B. Sashes primed and glazed at 4½d. and 6d. per foot.

SASHES PRIMED GLAZED and sent to any part of London and part of

BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon the lowest terms:—

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Plate, Crown, and Sheet Plate, for shop fronts, [illegible] Glass in [illegible].

[illegible] Brushes, Pipes, and every [illegible].

[illegible] GENUINE WHITE LEAD, MILLED LEAD, SHEETS [illegible] per [illegible], Lead Pipe, [illegible] per [illegible], Private Water-closets, Basins, Brass-work, and all materials used [illegible].

For [illegible] Lists, priced. Address to P. [illegible]'S WINDOW GLASS, LEAD and COLOUR WAREHOUSE, 5, Princes street, Leicester square, London.

HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sun-blind, [illegible] Apply to the [illegible] and to [illegible] HERRING'S Patent Steam Bed Feather Factory, 14, Kingsgate street, Holborn.

CHAS. WM. WATERLOW,

MANUFACTURER of Sashes and Frames and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames [illegible] the country [illegible] Mouldings [illegible] N.B. This Establishment [illegible] with the [illegible] all charges and lighting.

GAS. The Introduction of Gas into private dwellings is rapidly increasing: it is therefore of the greatest importance not only to the consumer, but to the gas company and gas fitter that the most secure [illegible] CARTER'S SAFETY GAS VALVE can from many years' experience [illegible] persons interested in gas lighting, as being more secure, more durable and [illegible] It has the advantage of [illegible] adapted to any [illegible] LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, 30, New-cut, near the Blackfriars road.

LEAD WORKS, HAMMERSMITH, AND AT READING, BERKS.

C. H. and F. CLARK beg to inform Plumbers, Builders and others, they may be supplied with Goods of best manufacture at the following prices, for cash:—

| | | |
|---|---|---|
| Sheet Lead .. per cwt., 19s. 6d. | Genuine White Lead, warranted .. per cwt., | 26s. 6d. |
| Pipe ........ „ 19s. 6d. | Second ditto.. „ | 24s. 6d. |
| Pumps ...... „ 20s. 6d. | Third ditto .. „ | 22s. 6d. |

A Crate of Crown Glass, 18 Tables, 2l. 2s.

Lift Pumps, Water-closets, Cocks, and Brass work of every description; Crown and Sheet Glass for Building and Horticultural purposes. Oils, Colours, and Varnishes of first-rate quality.

Old Lead bought or exchanged. Credit given upon receipt of satisfactory references.

January 23rd, 1847.

BUILDERS AND IRONMONGERS are requested, when writing for JENNINGS'S SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also to which end of the front they commence putting up the Shutters, RIGHT OR LEFT, as they face the front.

JENNINGS'S SHUTTER FASTENER. Shop Fronts are more damaged and disfigured by the Shutter-Bar than from any other cause. Bars are a trouble to put up and take down, and trouble the whole day. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and [illegible] on the stall board in damp weather. Hundreds of shops have [illegible] to prevent [illegible] and testimonials of them [illegible] may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 25, Great Charlotte street, Blackfriars road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 95, Regent street, and 129, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them, both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease, without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent [illegible] now in use for iron shutters can have them removed and these [illegible] to draw up in any part of the [illegible] without machinery, thereby avoiding the unpleasant use of oil.

REVOLVING SAFETY SHUTTERS, WITH PATENT CONVEX IRON LATHS. PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles and in [illegible]. The great [illegible] of REVOLVING IRON SHUTTERS [illegible] increases security [illegible], and it is only necessary to point out the fact that the patent convex laths are 12 times stronger than the ordinary flat laths, to [illegible].

The Patentee [illegible] to his greatly improved gearing for raising [illegible], possessing all the advantages [illegible] and [illegible] and entirely avoids the necessity of using the ratchet-wheel; and is at once simple and thoroughly effective, and is SAFER and MORE DURABLE than any [illegible] Patent Revolving Shutters the SAFEST and MOST EFFECTIVE [illegible] greatly increased [illegible] peculiarly suitable. THE PATENTEE IS ALSO SOLE MANUFACTURER OF REVOLVING SHUTTERS WITH CONVEX IRON LATHS [illegible] ORNAMENTAL BRASS [illegible] SASH BARS, ASTRAGALS, MOULDINGS, STALLBOARD PLATES, &c. Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 115, Old street, London.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS. Since the verdict found in favour of the Patentees in the Court of Exchequer, on the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving shutters, secured by this Patent, is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have been adopted in all parts) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them [illegible] last twice as long as any with thin convex laths.

B. and C. [illegible] REVOLVING WOOD SHUTTERS [illegible] at the same price as [illegible] makers [illegible] metallic hinges, without which no shutter can be safe [illegible].

BUNNETT and CORPE are also the Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

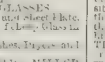
Shop fronts fitted with Iron Shutters, Patent Bars of Zinc, Brass, Plain or Ornamental, [illegible] Moulded Stall-board Plates, [illegible] and [illegible] fittings of all kinds, [illegible] in town and country.

Metal Brewers' and Stable Utensils [illegible].

Office at No. 26, Lombard street, London. Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting Machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster Bridge, London.

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | [illegible] which also renders it very appropriate for the |
| Kitchen Floors particularly where it is essential to keep damp from rising. | Dog kennels. | Covering of Railroad and other Arches. | Lining of Tanks, Fish ponds, &c. &c. |
| Garden Walks and Terraces. | Barn Floors. | The most effectual mode to prevent the percolation of water, | |
| Cattle Lanes. | Granaries. | | |
| | Threshing Floors. | | |
| | Malt-house Floors. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the utmost promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to the Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

The Builder.

No. CCXII.

SATURDAY, FEBRUARY 27, 1847.

A FEW days ago we looked down, through a clear sky, on the mighty world of London from the top of Wren's noblest work, St. Paul's Cathedral. In truth, it is an extraordinary sight, and is felt to be so more and more on each succeeding visit. We counsel those of our readers who have not yet enjoyed it; when they are seeking instructive, mind-developing recreation, to wend their way to the "golden gallery" on the summit of the dome, whence they may note, to use a phrase of Leland, "a whole world of things *very* memorable. Look which way they will,—

> "Ten thousand objects hurtle into view,
> Of interest wonderful;"

filling the mind with thought,—almost oppressing it indeed by a multitude of absorbing associations. Provided always, however, that the view be looked upon *with the understanding*. To the barren all things are barren. The mere sight-seer, the gazer with the eye only, will be struck by its immensity, gratified by the novelty and beauty it presents. But those to whom we speak would have in addition a higher enjoyment than this, bounded only by the extent of the knowledge that is within them. No one denies that, "To him who is of a mind rightly framed, the world is a thousand times more populous, than to the man to whom every thing that is not flesh and blood is nothing." A building, which by one visitor may be glanced at and forgotten, inciting no inquiry, inducing no recollections,—will in another, differently instructed, lead to long trains of thought, exercise the mind, strengthen or question previous conclusions, and so carry forward his education.

The extent of modern London is astounding. Towards the east flow out streets, scarcely known to the denizens of the west, seemingly interminable, although the wealth and power of the metropolis are marching westward, as they have always done, and are raising masses of new palatial edifices, far away from the point on which we are now standing. A few centuries ago the Tower of London was a royal residence, and our nobles were clustered about it. Then the river banks,—naturally called the Strand,—became a fashionable site; but these shortly after gave place to localities farther and farther west, and soon, the only lord to be found in the city was the lord mayor.

Contrast the London of to-day with London as it appeared in Queen Elizabeth's time, represented in a well-known old map; and if the difference be not sufficiently striking, endeavour to realize London in the time of the Romans, when (even at the close of their long and prosperous settlement here), it extended only from Blackfriars to the Tower in length, and from the Thames to Moorfields in width. It is curious to trace its progress, still more so to watch the changes in the habits and manners of its occupants which have succeeded one another. Roman London lies below us; in places, many feet; its boundaries defined; the state of the arts therein tolerably well understood; the coins, dresses, and ornaments used by the people, known;—and all owing to the exertions of a once ill-understood and much laughed-at class of men, the "musty" antiquaries. If you know where to look for it, you may still trace the outline of the city as it was when under Roman dominion; you may see some of the walls they raised, the pavements they formed; and people its streets with the men and women of that day. This was long ago; and yet not long enough to destroy the characteristics of a simple tuft of moss, placed in a Roman vase, as a cover probably to bones and ashes, and found in Lothbury only a few years since! The incident seems to us a pretty one, and worth a thought.*

The number of churches clustered together within the limits of the city (seventy-five!), as compared with the parts beyond, is very observable from the position we have taken up. Many of them are full of interest, and well deserve a visit if you have not seen them. Several of them date long before the great fire of 1666, the ravages of which they escaped, and have long stories hanging to them (as have others of more recent date), that throw an additional charm over the time honoured structures. There, for example, in Smithfield (that blot on the modern city shield) close at your feet, is the church of St. Bartholomew the Great, the major part of which belongs to the twelfth century. St. Andrew's Undershaft, in Leadenhall-street, with its tale of evil May-day and the Cornhill shaft, is the resting place of poor John Stow, the chronicler of London; and St. Catherine's Cree-church, where some of the earliest "mysteries," or holy plays, were performed, was rebuilt with a curious mixture of styles, as some writers say, by Inigo Jones.

Allhallows, Barking, in Tower-street, is a very interesting old church; and, going a little farther east, there is the miniature church of St. Peter *ad vincula*, in the Tower, built in the time of Edward I., which furnishes a sad confirmation of many disgraceful chapters in English history.

St. Giles's, Cripplegate, is the burial place of three noted Johns,—John Fox, John Speed, and John Milton. In the church-yard, is a portion of old London wall. Bow church was the scene of most singular events; and indeed there is scarcely one church in the city that is not for some cause noticeable. We must pass them by, only stopping to mention St. Edmund's, Lombard street, because in the church formerly on this site, John Shute, "painter-stainer and architect," who published one of the earliest practical works on the art, called "The First and Chief Groundes of Architecture," was buried. Stow says his epitaph commenced thus:—

> "This monument declares, that here the corps doe lye,
> Of him that sought in science sight to publish prudently,
> (Among the rest of things, the which he put in ure.)
> That ancient practice and profound, that hight of architecture.
> A knowledge meet for those, that buildings doe erect,
> As by his workes, at large set forth, is shewne the full effect.

The observer, situated where we have placed him, will find matter, too, for ample reflection in the works of Wren, which there come prominently forward; and if he be himself an architect, may find consolation under many difficulties in the remembrance of the treatment received by that great artist. The steeples of the city attest Wren's powers as a designer in a remarkable manner. Note their extraordinary variety; the difficulty with which a spire can be made a part of the style in which he designed; the elegance of their proportions; the skill displayed in their construction; and an acknowledgment of the power of the master cannot be refused.

The city, as all know, was greatly improved in consequence of the Great Fire, but would have been much more so if its re-arrangement had been confided to Wren. Look, now, upon its tangled streets, and the pile of ill-constructed and decaying buildings. One might be excused for wishing for a second fire to clear away the seats of ill-health, moral degradation, and consequent crime and misery, which are seen on every side. Ignorance is the fruitful parent of all evil. Let us all steadily aid in the endeavour to dispel it.

We have but touched our subject, not exhausted it. If our readers rebel not against such gossip,—gossip, nevertheless, which has a good intention, we may return on another bright day to the top of St. Paul's.

* Those who would know more of Roman London should read some interesting papers on the subject by Mr. Roach Smith, published in "The Archæologia."

## THE ROYAL MEDAL FOR ARCHITECTURE.

*Report of the Council of the Royal Institute of British Architects to the General Meeting of the Members, on the designs offered in Competition for the Royal Medal of the Institute, for the Soane Medallion, and on the Essays submitted for the Medals of the Institute for the year* 1846.

The Council have to report that, for the royal medal, the subject being a building suitable for the purposes of the Royal Institute of British Architects, eleven designs have been received.

The council deem it proper, in the first instance, to advert to the printed conditions prepared for the guidance of the competitors, and which were issued in May last, as follows:—

> "Royal Institute of British Architects,
> 16, Grosvenor-street, London, 26th May, 1846.
>
> Her Majesty the Queen having been graciously pleased to grant to the Institute an annual medal for the promotion of Architecture, it has been resolved, that it shall be applied to the encouragement of the junior members of the profession by a competition in designs, composed in a style calculated to promote the study of Grecian, Roman, and Italian architecture, and further, that the designs shall be judged of, not only with reference to their merits as works of art, but likewise as to the knowledge of construction they may exhibit.
>
> In order to secure, as far as possible, uniformity in the conditions under which the designs are submitted in competition for the royal medal, it has been determined that the age of the competitor shall be limited to twenty-five years, and that with this limitation the competition shall be open to the profession in general.
>
> The successful competitor will be further entitled to draw upon the treasurer of the Institute for the sum of 50*l.* after his arrival in Rome in the pursuit of his professional studies, at any period within five years from the time of the medal having been awarded to him, upon sending to the Institute a satisfactory study of some existing building, either ancient or modern.
>
> The royal gold medal for the year 1846 will be awarded to the best design for a building suitable to the purposes of the Royal Institute of British Architects; comprising a room for general meetings and lectures, with seats for 350 persons, arranged with a view to the reading of papers, the exhibition of drawings and diagrams explanatory thereof, and for facility of discussion; a council-room for twenty-five members; a library for 10,000 volumes, with suitable depositories for drawings, prints, medals, &c.; a gallery for models, casts, fragments, &c.; an exhibition-room for architectural subjects, and suitable residences for a secretary and a curator.
>
> The cost of the building not to exceed 20,000*l.*
>
> The design to comprise not less than one plan of each story,—two elevations, two sections, and a perspective view.
>
> The scale of the drawings to be one-eighth of an inch to the foot, and to be tinted with Indian ink or sepia only.
>
> DIRECTIONS FOR CANDIDATES.
>
> Each set of drawings is to be accompanied by a sealed letter, containing the name of the competitor

within, and on the outside the same motto as that attached to the drawings; this is to be inclosed in a sealed envelope, containing an address, to which a communication may be sent of the decision of the Institute, and directed, "To the honorary Secretaries of the Royal Institute of British Architects. Design for royal medal (motto).

The drawings to be delivered at the rooms of the Institute, on or before Thursday, the 31st December, 1846.

The Council will not consider themselves called upon to adjudge the medal, unless the designs and drawings be of sufficient merit to deserve that distinction.

GEORGE BAILEY, J. J. SCOLES. } Honorary Secretaries."

In detailing thus minutely the accommodation to be provided in the building, to render it suitable for the purposes specified, and by fixing a limit to the proposed expenditure, it was obviously intended by the Institute to impress the candidates with a feeling that in forming their designs they were expected to treat the subject practically, and direct their efforts to the production of a design adapted to the requirements of an existing working Institution.

They observe with much regret that the well-considered and clearly-expressed conditions of the Institute have been almost entirely disregarded, and that in consequence of the uncalled for magnitude of the rooms, halls, staircases, and other approaches, together with the lavish and injudicious introduction of columnar and other extraneous decoration (in some instances actually unfitting the rooms for the purposes demanded), not more than one of the designs, possessing the slightest pretension to consideration as an architectural composition, could be properly executed for less than double the sum specified.

When the council reflect on the enormous amount of injury occasioned to the public and to the profession from competitors so frequently disregarding the conditions given with respect to the proposed expense of an intended structure, and consequently presenting designs of much higher pretension than could be produced with an honest and conscientious adherence thereto; and when they likewise reflect on the strong reprobation the Institute has had occasion more than once to express on this most irregular and improper practice, they feel that it would ill become the council to recommend to their fellow-members of the Institute to countenance such dereliction from honorable professional practice, even in a competition like the present one, where the public interests are not directly affected. The fact being so apparent entirely precludes the council from recommending to the members of the Institute the awarding of the Royal Medal to either of the designs presented this year.

They regret to be compelled, on grounds which they consider too important to be disregarded, to come to this decision, especially on the first occasion of a competition for so high a distinction as the Royal Medal, and the more so, since the design marked "Quanto rectius hic qui nil molitur inepte," possesses a high degree of merit, and displays much taste and artistic talent.

The Soane Medallion, for the year 1846, was offered for "The best design for an edifice, suitable to the congregational worship of the Church of England, and capable of accommodating one thousand persons, without galleries. The design to be Roman or Italian, expressive of its purpose both internally and externally, presenting as little obstruction to sight as possible. The chancel to be properly marked in plan and decoration, with reference to its Protestant uses. All the windows to be charged with stained glass. There must be a conspicuous belfry, but the body of the church is not to be surmounted by a dome. The drawings of the elevations and two sections to be to a scale of one-quarter of an inch to a foot,—the plans and perspective view to one-eighth of an inch to a foot, and tinted with Indian ink or sepia only."

It was further notified that the competition is not confined to members of the Institute, and that the council will not consider themselves called upon to adjudge a premium, unless the drawings be of sufficient merit to deserve that distinction."

Two designs have been received, No. 1, marked "Utile dulci." 2, bearing the device of a Scale and pair of Compasses.

With respect to these two designs, the council most reluctantly observe that they do not consider either of them as deserving of the reward offered.

Three Essays have been received "On the adaptation and modification of the orders of the Greeks by the Romans and Moderns."

No. 1, with two drawings—motto—"Hæ tibi erunt artes." 2. Device "⊕." 3. "Entablature."

The council are of opinion that the essay marked by the motto "Hæ tibi erunt artes," is distinguished by considerable research and knowledge of the subject; the style is clear and unaffected, and the reasoning good. The council consider that the treatment of the subject is somewhat too historical, and that not sufficient attention has been paid to the various social causes which operated in effecting the modifications of the orders. The council are of opinion that this essay stands first in the order of merit, and is well deserving of the medal of the Institute.

The essay marked "⊕" evinces considerable study and able treatment of the subject,—the council therefore recommend that a medal of merit be awarded to this production.

For the medal offered by the Institute for the best essay on drainage, viz.:—

"On the best system to be adopted with regard to the arrangements for the thorough drainage of a town house, and of a nobleman's mansion and offices in the country, respectively. Comprising the general arrangement for carrying off the waters and sewage, the sizes and most convenient forms for the drains or conduits, the requisite fall, the description of material to be employed, and the several precautions for the prevention of damp, smell, and passage of vermin;—to be accompanied by block plans and details,"—

One essay, accompanied by two plans, marked "Hygeia," has been received.

On a careful perusal of the essay, it appears that the author has not treated the subject in the terms of the programme; that he has neglected the main subject proposed, and altogether omitted those details to which his attention was directed by the published particulars. The writer has shewn much diligence, and some knowledge of the matter on which he has treated, but this also is in too general a manner, and upon points not properly within the scope proposed by the Institute.

Under these circumstances the council cannot recommend the medal to be awarded to this production.

February 22nd, 1847.

## INSTITUTE OF BRITISH ARCHITECTS.

### ADAPTATION OF THE ORDERS OF THE GREEKS BY THE ROMANS.

At an ordinary meeting, held on the 22nd inst., Mr. S. Angell, vice-president, in the chair, various donations of books and prints were acknowledged, and the Foreign Secretary read a letter from Signor Bolsato, of Venice, containing some remarks on the state of architecture there. The writer said that, surrounded as they were by the works of celebrated architects of past time, their chief efforts were directed to the maintenance and restoration of those monuments. The new constructions, instead of aspiring to rival the existing buildings, displayed a simplicity and nudity characteristic of the age; and he remarked, that such was the meanness of employers, that architects were sometimes *obliged to imitate the works of the middle ages:* generally, however, he was glad to say the works of pure Italian architecture were adopted as models.

This remark seems to us not uninstructive when properly reflected on.

The chairman having adverted to the completion of the catalogue of the books and works of art belonging to the Institute, a vote of thanks to the honorary secretaries, for the care they had bestowed on the preparation of it, was passed.

The foregoing report of the council on the designs submitted in competition for the medals offered by the Institute, was then read. The sealed letters which accompanied the successful essays, on the adaptation of the orders of the Greeks by the Romans, being opened, the author of the first was found to be Mr. J. W. Papworth, and of the second Mr. James Bell.

Dr. Bromet, in a letter to the honorary secretary, gave an account of certain vases inserted in the thickness of the walls, and the quadripartite groined vaulting, of the Choir of St. Martin's Church, at Angers, and supposed by the architects of that city to have been employed for increasing the sonorous property of the choir, in a similar manner as the "Echeia," described by Vitruvius, are said to have increased the sound of theatres.

These vases were described as of grey baked earth (still in sonorous condition) 12 inches deep, 10 inches in extreme diameter, and from 1 to 3 inches at top and bottom. Their mouths are flush with the face of the walls and vaulting, so that when seen from below they appear to be nothing more than small holes for ventilating purposes. There are three in each cell of the vaulting, and these are placed as if at the points of a triangle having its apex towards the intersection of the groining, while the vases in the side walls are in a horizontal line—all being at some feet from one another.

Mr. Donaldson remarked, that when he was abroad he had taken much pains to find remains of the vases described by Vitruvius, but did not succeed in doing so in any one case. Mr. Banks discovered them in one instance, but he was not aware that any one else had done so.

Mr. Russell, who was to have completed his paper on the acoustic arrangement of rooms, not being present, Mr. Papworth read the essay to which the medal of the Institute had been awarded.

Mr. Papworth commenced his paper by arguing that Hellenic art when introduced by Cossutius at Rome was corrupted by the influence of a previous style, in the same manner as the architecture of Alberti was degraded through a Gothic feeling into the Elizabethan, the Renaissance, and the Tedesche variations. He then treated of the remains of the Etruscans in art, repudiating the testimony of their vases, and holding that they exercised little influence on the early style of the Romans, which he considered to be Alban or Latin: he used that term to denote the simplest order of classic architecture, gradually superseded in Rome by the Ionic and triglyphed Doric. In justification of a table which dictated the employment of Corinthian columns only for a height of 50 feet, and gave average heights to each order, ending with only 11 feet allowed to the Latin Tuscan, the author appealed to several tables of calculations, which showed that, according to his formula, passages of equal widths between pairs of columns of each order of one diameter, demanded lengths of architraves not exceeding the powers of simplest mechanical construction, and greatest when capping highest columns; whereas the usual acceptation of the directions of Vitruvius absurdly tended to shew, that greatest lengths of architraves would seem most consistent with lowest columns, although the ancients always expected narrowness of intercolumniation and slimness of pillar to accompany each other.

The most important modifications made by the Romans, while retaining the scientific conventionalities of the Greeks, were in the proportions of their plans, and in the arrangement of their columns, in the proportions of their entablatures, and in the contour of the mouldings, in the use of square columns often allowed to be predominant, and in debasing the circular pillar to a mere pilaster, and in the practice of supercolumniation: and they adopted the Eustyle intercolumniation, and the pseudodipteral and hypæthral arrangements.

Reference was made to a drawing exhibiting a moiety of the same building in each style, entering into a comparison of the different results accompanying various coincidences; and stress was laid upon the sentiment of a rectangular and statuesque simplicity visible in nearly all Greek edifices, in opposition to that of curved and picturesque grouping in the enlarged sphere of action of the Roman imperial artists.

The author defended the revivalists for establishing a standard for each order, on the ground that they were justified in suspecting all the antiques (of which they really saw very little) to be barbarous, and in trying to bring them to a correspondence with Vitruvius; each publishing his own idea of perfection, in which the great masters were wonderfully agreed; and he exposed the fault of making their illustrations formulæ, to be applied without change on any occasion, at any height, in any situation, for any purpose. He examined the practice of

the great masters and the pupils in the several modern schools, and mentioned, in a list of their additions to the store of the architect, the use of the niche, of pedestals, of balustrades, of sculpture (of all sorts), as mere decoration; of the aræostyle disposition of the basement and attic stories as features, of spires, and steeples, and bell towers, and of an extraordinary luxury of internal and external architecture.

The paper closed with the observation that, with Chambers, Mylne, Dance, Holland, and Soane expired the race of architects in one style only, but in a style of which they were masters; their successors being condemned to exposure to the caprice of patronage for a command, to summon up the resources of any style to clothe even an impracticable idea; and that the current of taste was undeniably tending toward an art altogether different from that of Greece in its construction, or else to that of Palladio and Chambers.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.*

BY PROFESSOR GRIFFITHS.

FROM the dawn of experimental chemistry to the year 1808, LIME was regarded as a simple or elementary earth. Sir Humphry Davy then suspected that it might contain a *metal*, or be a *metallic oxide*, and the manner in which he proceeded to verify this suspicion by the test of experiment presents an admirable specimen of his philosophical skill. It was as follows:—

The metal *mercury*, is *fluid* at all ordinary ranges of atmospheric temperature, and in such state it is capable of exerting affinity for several metals that are *solid*,—silver, tin, and lead, for example,—in forming *compounds* with these, it loses its fluidity. The results are extremely soft, unctuous solids, technically called *amalgams*. Mercury can be boiled or distilled by heat, with nearly the same facility as water can be so treated; and when the metal is *pure*, like pure water, it leaves no residue in the vessels employed during the experiments; but the metals silver, tin, and lead cannot be boiled or distilled at the same heat as mercury, or in other words, whilst it is *volatile*, they remain *fixed*.

Accordingly, if an amalgam of mercury with silver be placed in a distillatory apparatus, a moderate heat will *volatilize* the mercury, whilst the silver will remain *fixed*, and thus an analysis, or a separation of the compound into its two elementary constituents, will be effected.

A *metallic oxide* will not form an amalgam with mercury; but the powerful agency of *electricity* is capable of *reducing* an oxide, or of eliciting its elementary *metal*, which then, in the generality of cases, *can* combine, or form an amalgam with mercury.

All these facts had been ascertained previous to the year 1808, and, therefore, Sir Humphry, in the true spirit of "inductive philosophy," proceeded from the *known* to the *unknown*, with the view of effecting the decomposition of lime.

He selected a piece of pure *lime*, and made in its centre a small cavity to hold a globule of pure *mercury*; he then placed the lime in connection with the positive pole of a voltaic battery, and the mercury in connection with the negative pole, to complete the electrical circuit. In this arrangement the mercury gradually lost its fluidity, as though it were amalgamated with a known metal, but no such element being present, the phenomenon of amalgamation could only result from the elimination of an *unknown* metal from the lime.

The new amalgam was then carefully removed into a small distillatory apparatus, constructed of a glass tube, filled with the vapour of pure *naphtha*, a substance containing no oxygen, and which experiments, with potassium and sodium,—the metals of the alkalies potassa and soda,—had taught Sir Humphry would protect or varnish such readily oxidizable elements from the action of the atmosphere, and some other sources of oxygen.

Upon the application of heat to the part of the apparatus containing the amalgam, the mercury volatilized or distilled, whilst a fixed substance, having a silvery lustre, remained; in fact, it was a *true metal*, evidently *educed* from the *lime;* for when heated in the air, it instantly kindled, and the *result* of the combustion was pure *lime, produced* by the union of such metal with the oxygen of the surrounding air.

The new metal was accordingly named *calcium*, in allusion to its source (*calx*), and *lime* was named *oxide of calcium*, as, during the formation of the amalgam, oxygen had evidently been expelled from the lime by the agency of the voltaic battery; and the newly-educed substance, when heated in contact with *oxygen*, produced *lime*, chemically the same as that in which for ages it had remained concealed.

It is probably correct to state that no experimenters excepting Sir Humphry Davy and his assistants, at the Royal Institution of Great Britain, ever saw *calcium*, and this on account of the great difficulty and expense attendant upon the process for its eduction, but all chemists agree in regarding *lime* as its *oxide*, because the above direct evidence of the existence of calcium was followed up and corroborated by indirect evidence of the most satisfactory nature: this fortunately admits of explanation in a very few words.

All pure metals have an affinity for the non-metallic element *chlorine;* the resulting compounds are termed *chlorides*, and it is found upon presenting the *generality of metallic oxides* of known composition to *chlorine* that they are decomposed, *oxygen* is expelled from them, and *chlorides* of their respective *metals* are *indirectly* produced, exactly similar in their chemical properties to those which are *directly* produced, by the presentation of the pure metals to pure chlorine.

*Lime*, or *oxide of calcium*, acts, with *chlorine*, in conformity with this general law, *oxygen* being expelled in true and definite weight, whilst the *chlorine* combines in its stead with the *metal*, producing *chloride of calcium*.

It would be pedantic, and also inconvenient not only for the chemist, but for the architect, the builder, and every practical man, to speak in strict accordance with chemical nomenclature, and say *oxide of calcium;* accordingly those who work in the laboratory, and those who design and construct its walls invariably call the extraordinary compound by its universally known name of *lime*. For the sake of euphony in chemical language, the term *calcia* might be adopted, the terminal letter *a*, as in the case of potass*a*, sod*a*, alumin*a*, silic*a*, baryt*a*, strontia, magnesi*a*, and lithi*a*, implying the fact of oxidation: but leaving opinions regarding names, and proceeding to experiments upon things, it is an established truth, that twenty parts by weight of *calcium* and eight parts by weight of *oxygen*, are found in twenty-eight parts by weight of *lime*, and it is a substance of inestimable value to the chemist, architect, engineer, operative, and artist.

*Lime, quicklime*, or *live lime*, is seldom if ever presented by nature, excepting in volcanic districts, and there only in very small quantity, apparently resulting from the action of volcanic heat upon limestone, or other calcareous compounds, or probably from the combustion of the metal calcium in subterranean recesses.

There are many kinds of limestone, and by submitting these to a strong artificial heat, as in the common process of "lime burning,"—the theory of which will be examined in the sequel—abundance of lime, sufficiently pure for all practical purposes, may be obtained: therefore an examination of its leading chemical characters may now be entered upon.

For all practical purposes, the weight of a cubic foot of pure water at the temperature of 62 degrees may be taken at 1,000 ounces avoirdupois. This is the standard to which the weight of a similar bulk of any other liquid or solid substance can be referred; and in the case of *lime*, a cubic foot of it will generally weigh 2,300 ounces, so that it is nearly twice as heavy as water, or the fact may be expressed thus, the inherent particular weight or *specific gravity* of *water* being = 1,000, that of *lime* is = 2,300.

There is no mystery whatever regarding the subject of *specific gravity;* on the contrary, it simply consists in ascertaining the weights of equal bulks of different liquid and solid substances, in reference to water as a standard of *unity*. This is extremely important in most branches of practical science, and in many instances, when accurate tables of specific gravities are once constructed, the deviation of a substance from the exact specific gravity that it should possess, immediately points out to the experimenter, that it is not absolutely or chemically pure.

Lime is excessively infusible, it shews no tendency to pass from the solid to the fluid state in the most intense heat of a furnace fire; if it be subjected to the far superior heat of the voltaic flame, it then slowly and imperfectly melts, so that for all practical purposes, lime may be regarded as infusible when heated *per se*. If lime be mixed with other substances that are popularly called *earths*, then upon exposure to the heat of a furnace, it facilitates their fusion in a very remarkable manner, it combines with them forming vitrifiable compounds, hence the extreme utility of lime as a cheap and powerful *flux* in many operations of practical chemistry, but particularly in the operation which relates to the reduction of iron from the clay iron-stone.

This ore contains clay, and other earthy matters, in combination with carbonate of oxide of iron; it is therefore first of all heated to redness, or "roasted," to expel the carbonic acid, and leave an oxide of iron; this is mingled in due proportions with coke and limestone, and then subjected to the intense heat of a "blast furnace." The carbon of the coke exerts affinity for the oxygen of the oxide, and the iron is liberated or educed; but this iron would immediately burn, or return into the state of oxide, by combining with a portion of the oxygen of the blast of air, so that the operation would be futile, did not the lime of the limestone at the same time combine with the clay and other earthy matters, to form an extremely fusible glass, which envelopes and protects the globules of newly-reduced iron from the oxygen of the blast, and permits them to sink down and accumulate in the lower part or hearth of the furnace, from whence at due intervals the molten iron is run off into moulds.

The scoria, or "slag," produced by the lime when withdrawn from the furnace and cooled, is of very little value, excepting for the construction of rude fences, and for repairing roads; but as it has an exceedingly sharp vitreous fracture, it is scarcely admissible for the latter purpose.

When a fragment of lime is held in the pale flame of a spirit lamp, or, better still, in the pale flame resulting from the rapid combustion of oxygen and hydrogen gases; as the lime becomes highly heated, an intense white light is evolved; but the lime undergoes no chemical change in this experiment, it merely volatilizes or *sublimes* to a slight extent, and its vapour, when condensed upon a cold surface, forms a white solid *sublimate*, which is identical in composition with the fragment of lime from whence it ascended. The experiment presents an example of the phenomenon called *ignition*, which, chemically defined, implies the evolution of light from a solid substance when its temperature is raised, and its chemical nature unchanged.

The light evolved by the *ignition* of lime rivals that of the sun in its intensity and purity; it admits of refraction by a glass prism into the seven primary, or prismatic colours of solar light, and in the "lime light," as it is now popularly called, there is no excess of the yellow ray, consequently, it is admirably adapted for artificial illumination, whilst the artificial light, derived from the more ordinary sources of oil, wax, tallow, spermaceti, and gas, contains a considerable excess of the yellow ray. Thus an apartment exquisitely finished in the beautiful colours of decorative art displays them all during the day time as they were intended to be displayed by the artist, but upon artificially illuminating the apartment, an effect that he never contemplated is very frequently produced by the yellow ray changing, or modifying, all the colours, and especially some of the blue colours to various shades of green.

Water is a compound of oxygen and hydrogen gases, and in a small quantity it admits of ready decomposition by voltaic electricity, so that both these gases may be collected and burned to reproduce water. Now, if it were possible to decompose a large quantity of water at a cheaper rate than by electricity, the *combustion* of its gaseous elements, conjoined with the *ignition* of lime, would probably supersede most methods of artificial illumination; for

* See p. 69, *ante*.

the "lime light" is so pure and intense, that all common flames placed in its rays are thrown as dark *shadows* upon surrounding objects.

If a given weight of lime be placed in a glazed earthen plate, and set under shelter from rain, yet freely exposed to the air for a few days, and then replaced in the balance, it will manifest a considerable increase of weight; and if it be afterwards transferred into a clean dry Florence flask, and then its bulb gently heated over the flame of a lamp, an appearance like dew will be observed in the upper part, or neck, of the flask: the theory of this experiment is readily explained.

Even in the driest weather the air contains the vapour of water, and for it, lime has a strong chemical attraction, consequently, increases in weight by exposure; then upon subsequently heating the lime the water vaporizes and condenses into the liquid form within the upper, and colder part, of the flask.

If the lime be exposed to the air for many days it will increase in weight from another cause,—this will demand future attention,—but the above simple experimental fact of the absorption of water, points out to the architect and builder the necessity of placing lime in perfectly closed vessels, if it be required to remain as "*quick*-lime."

If the bulb of a mercurial thermometer having a long range of scale or graduated to 620 degrees be thrust into a heap of quicklime, it will indicate a certain temperature which for the sake of example may be 60 degrees; if the instrument be removed, its bulb carefully wiped and then plunged into a bucket full of water, it will indicate the same temperature. Let the water be suddenly thrown upon the lime, which will rapidly imbibe it by capillary attraction, and then in the course of a few seconds the individual lumps of lime will swell, crack, and crumble asunder, whilst a copious volume of vapour arises from the *slaking heap*, and now upon thrusting in the bulb of the thermometer, it will probably indicate a temperature not far below 500 degrees. The operation of "slaking lime" is so very common, that it rarely excites attention, but its close examination by the chemist reveals an extremely curious and important fact.

Why should two substances of the same moderate temperature, or familiarly speaking, *cold* become *hot* when mixed together?

Many practical men, if they happen to condescend an answer to such an apparently simple or trivial question, will say, "because the lime has been well burnt, and has plenty of fire in it." But this will not satisfy a chemist, and it is only after a variety of accurate experiments that he can give a true explanation of the phenomenon, for it is a phenomenon, although the term may be deemed too grandiloquent when applied to such an everyday occurrence. Divested as far as possible of technicalities, the explanation runs thus:—Water in its ordinary liquid state contains a certain amount of heat, which being inappreciable by the thermometer, is called *latent heat*, and when water changes from the liquid to the *solid* state, as, for example, in freezing, this *latent heat* being no longer required to maintain the new physical state of *ice*, is therefore expelled, or becomes *sensible heat*.

When water is suddenly thrown upon lime, its immediate disappearance within the lumps of lime is due to an attraction purely mechanical, or the capillary attraction of their pores, The two substances being thus brought into close contact, then chemical attraction or affinity commences between them, and during their combination the lime actually *solidifies* the water, whose *latent heat* of original liquidity being no longer required, escapes as *sensible heat*, which even raises a certain portion of the water in the form of vapour, or steam.

The lime thus *slaked* or *hydrated* is materially increased in bulk and weight, but feels perfectly *dry*, for the water is only *solidified* by being deprived of heat, it is *not decomposed*, and if a portion of this slaked lime be heated in a flask as already directed, the chemical affinity between the two substances will be overcome, the solid water will gain heat to assume the *liquid* state, this will gain more heat to assume the *vaporous* state and ascend to the upper part of the flask, which being cold, will deprive the vapour of part of its heat or condense it into the state of liquid water containing a definite amount of *latent heat*, and if this liquid water be again solidified the *latent heat* will be expelled as *sensible heat*.

All practical men are aware that it is rather dangerous to slake large quantities of lime near wooden sheds, stacks of timber, or heaps of shavings, for the evolved heat may become sufficiently intense to cause the inflammation of these combustible materials, and if the lime be extremely "quick" it is occasionally dangerous to stand near the slaking heap, for the rising steam carries up an acrid dust of lime which is extremely irritating to the lungs, whilst very frequently particles of lime are violently projected from the expansive force of the steam within the heap: such particles striking the eye might deprive it of sight, not only by mechanical force, but by chemical action on the cornea, for lime exerts a caustic or corroding power upon most organic bodies.

The heat evolved during the slaking of lime in closed iron cylinders, has been proposed and even introduced for warming apartments and cooking food, but very little can be said in praise of such *calcareous* warmth and *al fresco* cookery.

The addition of more water to lime than is absolutely essential to the formation of its definite *hydrate*, produces a semi-fluid, practically known as *cream* or *milk of lime*. This chiefly consists of lime in a state of mechanical suspension throughout the water, and upon leaving such mixture at rest for a short time, the lime will precipitate to the bottom of the vessel in which the experiment is conducted, whilst a perfectly transparent, colourless liquid, will occupy the upper part. This liquid is not pure water, but an aqueous solution of lime, commonly called *lime-water*, and although containing only a very small quantity of lime, it exerts a powerful alkaline action upon the generality of organic matters, and there is a very curious chemical fact, presented during the formation of "lime-water," namely, that the *colder* the water the *more* lime will it actually dissolve: thus water at 33 degrees, or near the freezing point, will dissolve exactly twice as much lime as water will do at 212 degrees, or its ordinary boiling point.

Lime-water for experimental purposes is always formed and kept in green-glass bottles accurately stoppered, and it will remain transparent and colourless as water. Let a portion of it, say a quarter of a pint, be decanted into a perfectly clean and dry Florence flask, the neck of which must then be closed by a perfectly clean cork, having a slit or groove cut from its upper to its lower part, large enough for a small crow-quill to pass through; fold a strip of woollen cloth four or five times around the neck of the flask, to form a non-conducting handle, by which it may be held over the flame of a spirit or argand lamp; or suspend it in such position by a wire, without the cloth if more convenient; allow the bulb of the flask to warm gradually, the lime-water will soon boil, steam will rapidly escape through the groove in the cork, and the originally transparent colourless lime-water will become milk-white from the deposition of lime, thus illustrating the fact of that substance being less soluble in hot than in cold water.

Reference will be made, in the course of a few more paragraphs, to lime-water, and a change that it undergoes without the application of heat; therefore the uses of "cream of lime," which consists of mechanically suspended and chemically dissolved lime, may be now detailed. When "cream of lime" is kept of an uniform degree of semi-fluidity by constant stirring or "rousing," it is an invaluable "wash" for old walls, as, on account of its causticity, it effectually dissolves, or destroys, all organic filth that may be adherent to them; at the same time a peculiar odour, somewhat resembling that of impure "hartshorn," is very frequently exhaled from the walls thus "lime whited." Old walls, especially of stabling, contain a large proportion of ammoniacal compounds. *Ammonia* consists of nitrogen and hydrogen gases; organic matters, especially those of the animal kingdom, contain the same gases, generally in addition to oxygen gas, and the element carbon.

When organic matters, so constituted, run into putrefaction, a portion of the nitrogen and hydrogen assume a new affinity, and produce *ammonia*, at the same time a portion of the oxygen and carbon produce *carbonic acid*; these newly formed compounds then unite to produce *carbonate of ammonia*, or "volatile salt," which the walls receive; and when they are lime-whited, the lime, by its superior affinity for the carbonic acid, unites with it to produce *carbonate of lime*, whilst the ammonia is expelled as a pungent vapour, having the odour of "hartshorn," because it is actually existent in that well-known stimulant. For the cream of lime to be active in destroying organic filth, and decomposing ammoniacal compounds, it must be formed of *quick-lime*, and applied to the walls immediately. One simple test of its fitness is to place a slice of the yellow turmeric root in a portion of it: the yellow should become reddish brown. Another, and a better test, is to pour a wine-glass full of the "cream of lime" into an ale glass containing half a fluid ounce of "spirit of salt" (hydrochloric acid), diluted with an equal quantity of water; and if no effervescence, like that produced by "soda-water powders," appear, the cream of lime may be deemed fit for use. Generally speaking, workmen are extremely reluctant in applying "lime white" to walls, because it corrodes their brushes (this is a test of its goodness); and for it they will gladly substitute "white-wash." This dries beautifully white, certainly; but old walls, so treated, must be regarded as mere "whited walls, or whited sepulchres," their filth being merely hidden, and not destroyed, by the purity of their coating; because "white-wash" is made of *carbonate of lime*, or *whiting*,—a neutral compound, having no causticity.

In addition to oxygen and nitrogen gases, carbonic acid is invariably present throughout the atmosphere. Now lime, either hydrated, diffused, or dissolved in water, has a strong attraction for carbonic acid, and will soon change into carbonate of lime; this is the cause of the increase of weight, as already noticed, that lime acquires after a protracted exposure to the atmosphere, the first action being its conversion into hydrate, by the absorption of watery vapour, the second action being the combination of the lime of such hydrate, with carbonic acid, to form *carbonate of lime*.

This is also the reason that quick lime, cream of lime, and lime water, all require to be kept out of the contact of air, or they will soon become carbonated, and then instead of remaining or quietly dissolving in dilute hydro chloric acid, they will effervesce, like "soda-water" from the expulsion of the *carbonic acid*. The thin white pellicle or film that forms upon the surface of lime water or cream of lime, when exposed to the air, announces the transition of the caustic lime into the inert carbonate.

## CURRENT COMPETITIONS.

We have received information from parties in whom we have confidence, that the invitation to compete for the fever hospital at Bedford is a mere cloak, a London architect having sent in plans and estimates for it, which have been approved by *most* of the committee.

We shall be glad to find that our informants are in error: the result will shew. If, unhappily, the statement be correct, the committee shall hear from us.

Relative to the Army and Navy Club-house competition, several correspondents have directed our attention to a plan which has been circulated of the site of the intended new edifice, on which is marked certain dimensions of "limited" and "unlimited heights," having reference to "rights of light." One says:—"The law on the subject we all know is quite undefined, but in reference to the particular building in question, it may so happen, that from local knowledge, or other means, certain parties may be more in the secret of these rights than the majority of their architectural brethren; allow me therefore to suggest through the medium of your paper, that in the present case, and in others of a like nature, the Institute of Architects should appoint some surveyor to prepare a proper plan, with all particulars in reference to the site of such intended new building, and have the same lithographed for distribution among its members. The successful architect to reimburse the Institute for the cost of the plan."

We should be sorry to see the Institute engaged on any such profitless work. As to the lights, competitors must use their own judgment; the committee, by drawing attention to them, have done perhaps as much as could be expected from them. In connection with

this competition, we have been officially requested to contradict a report that the committee have already fixed upon an architect to be employed. Some members of the committee manifest a great desire that this competition should be conducted and decided in the fairest and most satisfactory manner. Let us urge upon them two important points:—First, that they exhibit the designs for a certain time *before* coming to a decision, and, secondly, that one or more professional men of ability and integrity be called in to assist them in the examination and selection.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Excavations for Antiquities figuring on the French Budget.*—The Home Minister at Paris has issued a decision to the effect, that excavations, made for the sake of searching after ancient ruins, are to be henceforth classed amongst the works of *communal utility*, and be, therefore, defrayed (assisted) from the fund of four millions of francs, which the minister is charged to distribute amongst the parishes (*communes*), which will have provided workshops, or other establishments, for the occupation of poor people. In consequence thereof, some excavations have been recently made at Limny, near Serrière (*Loire*), when, at a depth of only 60 centimètres, a splendid public road, and three deep artificial wells were found; the waters of which, however, had dried up, and been diverted by the lapse of twenty centuries. Other proprietors, also, intend to dig at a place where a large *souterain* bids fair for further discoveries. On the making of a new road, two bronze statuettes have been found, which were bought by a Lyons antiquary for 1,800 francs. Numerous silver coins, also, here found, promise a new mine of antiquarian treasure.

*Oil Lighting of Paris.*—It would seem incredible, but is still so, that only from the 1st of March next, all the public thoroughfares of Paris will be lighted with gas. In the Quartier St. Joseph, for example, oil is still the lighting medium.

*The Gothic Church of Ste. Clotilde, at Paris.—Contest between two Systems of Architecture.*—Although the love for the structures of the *latter* part of the middle ages is decidedly on the wane in France—those giants of the twelfth, thirteenth, and fourteenth centuries are, deservedly, retaining a large portion of art-favour; a fact best proved by the erection of the above cathedral, decreed by the municipality of Paris, to whom, certainly (with Mr. Arago at their head) retrograde principles cannot be reproached. At this the *Academy* seems to have taken a little umbrage, as will appear from the following utterance, made through the medium of their *Secrétaire perpetuel*, Mr. Raoul Rochette:—"If Gothic architecture—*conjointly* with painting and sculpture, as necessary assistants, under those previous circumstances which have created this *style*—has found its death (?); shall we attempt, in our days, to resuscitate what has ceased to exist for the last four centuries? But, we ask, where are the elements of such unheard-of, in the annals of art resuscitation? Where is, amidst the conditions and circumstances of our present social life, any ground or necessity for so doing? Where is that mighty arm, which may pull back a whole nation to the state of four hundred years previous existence? The Academy cannot believe in those miracles of human will, which would have to triumph over the whole nature of things—and necessarily encroach upon all the æsthetic wants, usages, and impulses of society. She may well admit that a Gothic church or castle may be built for whim or *ennui's* sake, although an *administrative* predilection of the kind would be always a hazardous experiment; firmly convinced, moreover, that a reversion to antiquated types would remain effectless as it is groundless. The Academy think that the *new Gothic*, which has to be as much as possible adapted to the taste of the day—will never exercise the effect of the ancient and real Gothic, sprung from other circumstances, art-wants, and art-tendencies; and that the people, however affectionate to the former, would remain always cold and feelingless, at the sight of these plagiates and counterfeits of something quite antiquated and exploded."

*Monument to the Viceroy of Hungary.*—The members of Parliament for the county of Pesth have met, and unanimously voted the erection of a monument to H. R. H. the late Prince Joseph—the founder of the Hungarian Museum, the Academy of Sciences, &c. Mr. Kossuth, the leader of opposition, was the mover, and alluded to the difficult task the late Viceroy had to effect any desired improvement.

*Work on the Wallhalla.*—The large printing firm of Messrs. Cotta, at Munich, have undertaken a work, shortly to be published, which will comprise exact copies of those marble busts and statues of great Germans, contained in the above building, on the banks of the Danube. The images of those great men (some of them of colossal size) may be considered the most authentic, as in cases, where no coeval pictures were at hand, even the seals appended to charters, &c., were called into aid. Where even these were wanting, a tablet was, of course, the only thing available to preserve a great memory. It is known that the Wallhalla was one of the objects which occupied even the youthful years of King Louis of Bavaria, on which account he corresponded with Mr. Johannes Müller and others. It is to be regretted, that the illustrations are to be merely on wood, distributed within the pages of the text.

*The Winckelmann Monument—Programme.*—The great merits of this original and striking art-critic are being every day more appreciated in Germany, as well as in France—and a committee has been formed at Berlin, to erect a statue at his native place Stendal. It comprises the names of Tölken, Olfers (director-general of the Royal Museums), Professor Rauch and Professor Wichman, whose model of the statue attracted much attention at the late art-exhibition at Berlin, and who has made a present of it to the committee, and H. M. the King, has ordered that the metal for the founding should be supplied from the stores of state. The programme says— that "the committee appeal to the public (*Welt*) *instructed* by Winckelmann's *reforms* in the whole province of art-science, and by his then untried and unequalled introduction of *spirit* and mind in the viewing and appreciating of all the relics of classic antiquity."

*Murillo's paralytic at the Piscina.*—Field Marshall Soult has sold this splendid specimen of art, being one of the great collection he *made* in Spain, for the sum of 160,000 fr., it is said to some English collector. The French duly blame the general for this questionable deed, reminding him, that he did surely not give so *much* for it, and that it would have been better to leave a picture acquired by dint of national prowess to the National Gallery of his country.

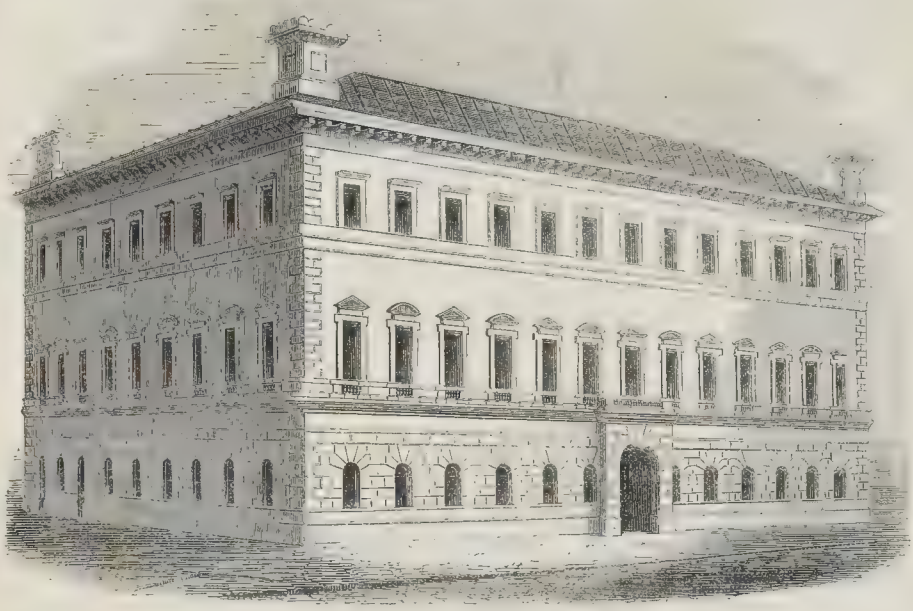
## NOTES IN THE PROVINCES.

Plans and specifications have been ordered to be prepared for the erection of a new barrack adjoining Haslar Hospital, at Gosport, for occupation by the Portsmouth Division of the Royal Marines.——The new public bridge to cross the river Thames at Ashton-under-Lyne has been let,—the stone-work to Mr. Lawton, and the iron-work to Messrs. Gimson, Yates, and Ainsworth, of Staley. The bridge will be 50 feet span, and 30 feet wide, and will have two ornamental lamps.——The new church erected at Cradley heath, near Dudley, was to be consecrated on the 22nd instant.——For a new church at Lytham, Mr. Talbot Clifton has given the site, with 500*l.* towards the erection.——Another experiment to prove the possibility of extinguishing fires by means of jets of water from street mains without the aid of fire-engines has been tried at Liverpool by the Harrington Water-works Company, in presence of the Government Commissioners of Inquiry relative to the supply of water to the town. The result is said to have been highly satisfactory. "The spot selected," says the *Mail*, "was by no means the most favourable—being at the top of Lord-street, and close to the east end of St. George's Church, a site of considerably more elevation than many of the mercantile portions of the town. Short lengths of hose, with pipes of 7 8ths of an inch in the nozzle, were attached to a stand pipe from the main, and from one up to four of these branches were played for upwards of an hour, the addition of one, two, or three, to the first, appearing to make little or no difference in the respective power of any of them. The quantity of water which they projected was very great and continuous. It completely lashed the east end of the church, and not only went clear over the blockings above the cornice, and on to the roof in heavy volume, but at times ascended to the top of the flag-staff, a height, we should think, little, if at all, short of eighty feet. A great number of persons were gratified by witnessing the experiment, albeit many of them were pretty well drenched by the respective jets being dashed into heavy showers by the force of a strongish northerly wind, which was rather against the experiment. One of the pipes also played clear over a lofty house on the south side of Lord-street. The plan, which combines hydraulic pressure with engine power, is decidedly much more effective than hand-worked engines, and if adopted will afford great and rapid protection to property in cases of fire—especially the lower parts of the town, and that, too, with a large saving of expense."——The Canbley National Schools, says the *Doncaster Gazette*, are nearly completed. The whole erections are in the Tudor style of architecture, and in the shape of the letter I. The exterior is built of Everton brick and white stock brick from Newport. The windows have stone mullions with diamond panes, while portions of the exterior walls are ornamented with black headers; and the roof is covered with blue slate. The schools are capable of accommodating nearly 200 scholars. The length within the walls is 90 feet 9 inches, and the width 20 feet, with a partition between the boys' school and that of the girls. These are approached by separate porches, containing closets for cloaks and coats. There are dwelling-houses on each side of the building for the master and the mistress, and built in a corresponding style with other portions of the edifice. The architect is Mr. S. S. Teulon, of London; and the builders Messrs. Lister and Son, of Doncaster.—— The foundation-stone of the new townhall of Doncaster was laid, in French-gate, on the day appointed, namely, Monday week.——The bridge across the Tees, at Stockton, is to be widened, both carriage road and footpath being too narrow. The fund to be raised for the purpose appears to amount to 1,400*l.*——The surveying officers have made their inquiries at Wakefield as to the proposed new market bill. The design is not so much to erect expensive buildings as to open up a central area in "one of the most disgraceful and filthy" parts of the town, full of pig-styes, slaughter-houses, chandlers' factories, &c., and notoriously unhealthy. The expense of substituting such a paved area with sheds, for the present merely four-pillared market cross, with drainage, is estimated at 16,000*l.* The surveyors, however, thought that sufficient provision was not made, or regard had, to sanative improvements in such a locality, which they had examined, and found to be exceedingly ill-drained and ventilated. It was therefore very properly suggested, that further attention should be given to this important subject. The Exchange Buildings in the middle of the town at present form the focus of the corn trade.——A number of turn-out sawyers, lately in the employment of Messrs. Birtwistle, joiners and builders at Bury, in Lancashire, last week waited upon that firm, and made the following proposal:—They would return to their work if Messrs. Birtwistle would discharge all the new hands, and pay 5*l.* to the sawyer's union for using a quantity of saw-mill timber.—The proposal was declined. A saw-mill has been purchased at Birkenhead, and as soon as the weather will permit, preparations will be commenced for the necessary buildings.——The town council of Newcastle have determined on erecting baths and washhouses for the poor of that town. See also "The Gas Movement."

Ventilation of Stables.—Horses are liable to consumption when kept in badly-ventilated stables; and we are informed by Mr. Edwin Chadwick that a discovery was only lately made as to the effect of defective ventilation on the cavalry horses in some of the Government barracks in England; and it is stated that a saving of several thousand pounds per annum was effected by an easy improvement of the ventilation of the barracks near the metropolis.

## THE BRITISH AMBASSADOR'S HOUSE, IN CONSTANTINOPLE.

MR. W. J. SMITH, ARCHITECT.



### THE BRITISH EMBASSY AT CONSTANTINOPLE.

THE palace for the British ambassador in Constantinople, of which the annexed engraving is a representation, was erected from the designs of Mr. W. J. Smith, architect to the embassy. It was not commenced, we understand, till 1845, and is now completed, so that its progress has been very rapid. Its style, as may be seen, is the domestic Italian, after the same model as the Reform Club-house, in Pall Mall. It is built of white stone, with a slated roof, and is wholly fitted up internally with fine mahogany and *papier mâché*. It stands in the Frank quarter, adjacent to the Russian palace.

Mr. Smith, as some of our readers may remember, made the sketches from which Mr. Bulford painted his fine panorama of Constantinople.

The illustration, although, through circumstances not under our control, somewhat inferior to those usually given in our pages, is interesting, as affording evidence of the style in which England lodges her representatives in foreign climes.

### ON SOME ANOMALIES OBSERVABLE IN THE EARLIER STYLES OF ENGLISH ARCHITECTURE.

THE current number of "The Archæological Journal" * contains several interesting papers on architectural subjects. By the kindness of the committee and the publisher, we are enabled to transfer to our pages one on some anomalies observable in the earlier styles of English architecture, by the Rev. C. H. Hartshorne.—The main object of the writer seems to be, to shew that what is called *long and short work*, taken by itself, furnishes no criterion of early date.

It has been usual, with those who have made inquiries into the style of our early ecclesiastical buildings, to assign all those exhibiting marks of long and short work to the period of the Anglo-Saxons. Yet it may be reasonably doubted whether construction of this nature, taken by itself, affords sufficient evidence to favour such conclusions: and unless this kind of masonry be found united with proofs of another character less ambiguous, there is great room for disbelieving such buildings to have been erected before the Norman conquest.

It is indeed not a little remarkable, that the church of Brixworth, a building whose claims to priority of age are better established than most others by historical inference, is entirely deficient in the marks so universally assumed to be decisive of the question.

This church, as it is well known, does not shew the least fragment of this peculiar kind of construction, yet there is perhaps more extrinsic evidence in favour of its age, than most other buildings that can be adduced. The history of its erection seems simply to have been this: that from its site having been fixed upon close to a great Roman thoroughfare, leading from the Watling-street, at Stoney Stratford, through Northampton to Leicester, as is sufficiently indicated by the direct trending of the line, and the etymologies of the places bordering upon it, such as Pottespurry, Alderton, Barrow Dykes, Lamport, Market Harboro', Stonyland, Stony Gate, &c.; and also being on the very edge of a Roman single walled entrenchment, there were already on the spot most of the materials which the Romans themselves had used for building purposes. Within this entrenchment, some kind of building had existed, and the bricks that were employed were found, when the church was in progress of erection, extremely useful to work up with the bad materials already dug. We are told by William of Malmesbury, that Benedict Bishop, on his return from Rome, introduced a new kind of architecture into this country,—what he calls building *more Romano*. Now, in whatever sense these two words are interpreted, I think they will still be applicable to the masonry of Brixworth Church; and this, coupled with the casual passage quoted in Leland's "Itinerary," will go very far to confirm its Anglo-Saxon pretensions; in fact, it is more evidence of an early practical kind than can be brought to bear upon any other building of a Christian character in England.

It is now some years since I became entirely convinced that Brixworth Church presented no proof whatever of being a Roman building. I have examined its foundations, its construction, and the nature of its cements, all of which are totally unlike the substructions, the masonry, and the mortar so invariably adopted by the Romans.

Whilst, however, its Roman claims are completely untenable, it certainly offers very strong marks in favour of an Anglo-Saxon origin. They are not only as convincing as any we may ever hope to obtain elsewhere, but they are moreover capable of being divided into two periods.

It has already been stated that Brixworth does not present any specimen of long and short work; this peculiarity is not visible in any portion of the building. It is desirable to state this distinctly, because, having presumptive historical evidence of being an Anglo-Saxon church, it is deficient in that feature which is accounted the leading characteristic of Anglo-Saxon architecture.

It is not my intention to disprove (for that would be a difficult matter), the title to great antiquity those churches may claim, where long and short coignings are used, but I wish to throw out a caution to inquirers, lest this appearance should lead them to assign all these buildings to the same age.

That they are for the most part early structures there can be no doubt, and this epithet may be even extended above the Norman conquest, if we are justified in applying the words *lapidei tabulatus*, as used by William of Malmesbury in his description of Benedict Bishop's churches, to those towers rising in stages from the perpent blocks of stone that run transversely on their four sides.

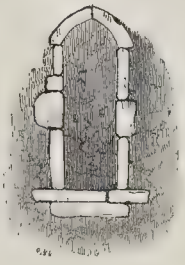
For instance, at Earl's Barton and Barnack,

* Published at the office of the Institute, 12, Haymarket, J. H. Parker, Oxford.

## ILLUSTRATIONS OF ANOMALIES IN EARLY ARCHITECTURE.



WINDOW, OXFORD CASTLE.



WINDOW, HEADBOURN WORTHY.



STANTON LACY CHURCH.



WINDOW, CAISTOR, NORTHAMPTONSHIRE.



DOOR, STANTON LACY.

this system occurs, at both of which places the towers rise in stages, diminishing as they rise, and forming separate divisions or stories, marked also by the horizontal bands of perpent stone, from which the superior portions of the building alternately spring.

This mode of construction was clearly borrowed from the Romans, who, as is sufficiently known, employed bonding courses of brick, running parallel with the ground, to strengthen their walls, so that the inferior materials used in the intervening space might become more effectually tied together.

The Romans, as may be observed in all their military buildings now remaining in England, used their bonding courses horizontally; the Anglo-Saxons used them perpendicularly. At Pevensey there are courses of tile laid flat, at fixed intervals; at Earl's Barton there are perpent stones placed upright, also at fixed intervals. The object of both was the same; namely, to supply the want of good building materials by such materials as would hold them best together; and the English masons, placing these large blocks of Shelly oolite or Barnack rag (for Earl's Barton is supplied with this Shelly oolite from that distance), had merely to fill in the rubble between them, much in the same manner as brickwork is used in timber-framed houses.

The talus table of Colchester castle is geologically of this formation, and, owing to the want of native materials, the architect used the Roman bricks he found in such abundance on the spot, both for coigns and bonds, in the same way as they were used in the castle church at Dover, and in nearly all the town churches of Colchester, and in several of the neighbourhood.

This being, as I conceive, the origin of long and short work, and its primary intention, I come next to consider two varieties that are observable, which shews that, taken by itself, it furnishes no criterion of early date.

Long and short work is, first, that used for coigning; secondly, that used for upright bonding, and appearing like strips on the face of the wall.

Of the former kind there are examples in the towers at Barnack, Earl's Barton, Brigstock, and Green's Norton, and in the nave and chancel at Wittering. Of the latter kind, they may be seen at Barnack, Earl's Barton, and Stowe Nine churches, all in Northamptonshire; also at Sompting, in Sussex, Headbourn Worthy, in Hampshire, and Stanton Lacy, in Shropshire. At each of these four last-mentioned places, the long and short differs from the previous examples at Barnack, Brigstock, Earl's Barton, and Wittering. The difference may be thus described. In the Northamptonshire churches the long and short work is an important member of the angle of the towers, whilst the short stone considerably projects beyond the line of the long one: in the other examples both long and short stones are in the same line.

Of the second kind of long and short, namely, that used for perpendicular bonds,

apparently only ornamental strips, but in reality very essential for the stability of the building, we have numerous examples besides those at Sompting, Headbourn Worthy, and Stanton Lacy. It is to some of these examples that attention shall now be directed.

In the first place, by stating my conviction that the buildings where they occur are not, in reality, churches of so early a period as the preceding ones, although presenting certain marks of resemblance common to each other; and in the next, their resemblance to work of a later, in fact, the early English period, may be readily shewn.

In illustration of this I have selected examples taken from the churches of Headbourn Worthy and Stanton Lacy (see engravings), which shall be contrasted with the masonry of these Northamptonshire churches, as well as with the upper portion of Oxford castle. It will be at once seen that these, although in some measure analogous to parts of Barnack and Earl's Barton, do yet materially differ from them in appearance, whilst they are also the creation of a later time.

For instance, though in Headbourn Worthy we find the perpendicular long and short bonds as at Earl's Barton, they are in conjunction with work belonging to the time of Henry III., or Edward I., that is, long and short work in union with equilateral arches; or as in the uppermost stages of the castle at Oxford, long and short work united with late Norman, or as at Stanton Lacy with earlier Norman.

It might naturally have been supposed that a reference to the Doomsday Survey would have tended to settle a question of so much obscurity as the age of several of these rude and unquestionably early churches. But little that is conclusive is supplied from this source. The precept issued for the direction of the surveyors laid no injunction upon them to make a return of churches, and therefore their notice is extremely irregular, and for this reason no direct conclusion can be drawn, nor can the question be settled by reference to this document. * * *

Two sources of information bearing upon the history of ecclesiastical architecture seem hitherto to have met with little, if indeed any, attention. The abbatial chartularies of Great Britain probably contain a vast amount of matter bearing on this subject that deserves both carefully sifting, and comparing with the buildings to which it relates. This manuscript knowledge might very profitably be brought to bear on churches that are known to have been connected with those great establishments. To the importance of viewing ecclesiastic architecture by the aid of manorial history, as exhibited in the Inquisitiones post mortem, a more decided testimony may be borne. These illustrations may be very briefly, but conclusively, explained by the following examples, where such a method has been pursued. Passing over the noble specimens of regal architecture of a military description at Harlech, Conway, Beaumaris, and Caernarvon, where the identity of styles, age, molds, and architecture must be undisputed, we cannot help being struck with the extraordinary resemblance in certain points of detail existing betwixt the churches of Crick in Northamptonshire, and those of Bilton and Astley in Warwickshire, all built or re-edified by Sir Thomas Astley. The same method of comparison will also be found deserving attention when applied to the churches built or enlarged by Sir Ralph Crumbwell, the lord treasurer to Henry VI., at Colly Weston in Northamptonshire, Lambley in Nottinghamshire, and Tattershall, in the county of Lincoln: and equally so the works of Bishop Burnell at Acton Burnell in Shropshire, and the chancel of the great collegiate church of Wolverhampton in Staffordshire, one of the twenty-eight manors belonging to this talented and wise prelate. The buildings in Sussex marked by the Pelham badge and buckle are well known. The students of William of Wykham's works will probably find no difficulty in detecting at St. George's Chapel, Windsor, at Adderbury and Hanwell, in Oxfordshire, and probably at Wolverhampton, the same kind of analogy. This may, when pursued out fully, also tend to explain further the family likeness that exists between village churches throughout particular parts of a county. It is well known that the Cistercian and Cluniac orders had their own peculiar ritual and monastic arrangements, and is it therefore too unreasonable a supposition, that the friends of those and other orders likewise, should have endeavoured to copy on a smaller scale the ornaments, the decorations, and the mouldings they admiringly observed at the great church of the district? At the present day, the handling of a chisel indicates to his fellow labourers the workman who was employed: the style of a building often shews, by unmistakeable marks in its proportion, its design, or general character, who is the architect; and it is not hoping too much when I express the conviction that we may still obtain, by means of the present practical knowledge so generally diffused on these subjects, if united to a research of the foregoing nature, a clearer insight into, a better classification, and a positive assignment of certain structures to the piety of tenants in capite whose mouldering effigies still lie within the walls themselves, or else to other individuals whose memory may only be preserved by the national archives.

These examples will not unappropriately serve to shew how desirable it is to refrain from drawing crude and hasty generalisations, from attempting to affix precise dates to structures simply because there are found co-existing in them some features in common with similar ones elsewhere. For this reason, then, caution should be observed in coming to conclusions from anomalous or isolated portions of a building, seeing that as yet we have much inquiry to make from careful measurement, as well as from records, knowing that churches were progressive in their erection, built by degrees, as the money could be obtained for the purpose, or as the masons could proceed with their undertaking, frequently commenced by one person and finished by his successor, or built by one, and improved and decorated by another. An instance in proof of this occurs in the church of Stratford in Suffolk; the lower part of the north aisle shewing in the flint-work the name of the builder and the date of 1430, whilst the porch where the inscription terminates is marked 1432. This will at once explain why incongruities so frequently exist, why we see such perpetual modifications and adaptations, and it will supply the reasons for those transitional appearances that exist at Romsey, at St. Alban's, and at many other of our most important edifices. Nor is it undeserving consideration, when chronological difficulties arise, that many of our parish churches were built by country workmen, by men who had little creative genius, and few opportunities of examining the purest ecclesiastical models, and who therefore were constrained to copy the best things near them (which I think will at once help to account for local styles), and whilst they were necessarily to a certain extent imitators, they would often, through negligence or through a want of fully appreciating the merits of the original, disfigure their own works by introducing into them some of its defects, probably reducing the depth of the mouldings, or disregarding the relative proportions on which much of its beauty might depend, or depriving it of those decorations which enchanted the eye, and caused it to dwell with admiration on the harmony that prevailed throughout the whole structure.

There is also another reason why we should be cautious in drawing direct and positive conclusions respecting the age of village churches, namely, that the styles were always in advance in cathedral or collegiate, whilst they were retrograde in parochial buildings. It was with architectural taste as with modern fashions, the rural population were the latest in catching the new mode.

It has, indeed, often excited astonishment, that so many beautiful fabrics should have been erected in the middle ages, when the difficulty of finding resources to build a church at the present day is so well known that the fact only needs stating. But the surprise will be diminished upon considering the altered circumstances of each period. When monastic buildings and parish churches were erected, the ecclesiastics were both influenced by different feelings than what guide them at present, and their condition also was dissimilar. At that earlier time, it is true, they were personally more indigent, especially the parish priests, but they had fewer wants, necessarily fewer from the vow under which many of them lived; they were also more zealous and skilful in carrying on the architectural works that surrounded them; they lived moreover amongst those who were animated by kindred feelings, amongst brethren, equally enthusiastic and self-denying, who sympathized and helped in the labour; thus, whilst it constituted a part of their duty, as it were, it became one of their recreations to decorate the religious house where they worshipped; and this again caused them to infuse the same ardour and the same taste at once into their superiors and their dependants.

The materials that were wanting for the purpose were usually at hand, and cost them little; the stone and the marble and the wood were easily wrought by their own tenants, whose unremitted toil they could always command; or when wages were paid they were extremely low, an opinion which is not to be negatived by urging that human wants must always keep pace with human demands and expectations, and that the difference in this respect between different periods is merely in terms of money. For after all the fact is not true; the wants of these men were the wants of nature, less artificial than those of the same class at present: their fare was coarser and simpler, beans supplied the place of wheaten food, their beverage was less stimulating and expensive, and their general habits of life were disproportionably cheaper than those of a modern artizan; added to which, these poor men believed themselves, whilst occupied in such works, to be serving the cause of God and religion, and therefore they submitted to privations and toil with patience and even joy. * * *

It would be unfair to conceal the results of such a system; its defects were apparent in the popular insurrections that from time to time broke out and marked a progressive extension of liberty, in the gradual emancipation of the human mind, and in the naturally inherent right of following up private conviction by private judgment; it is needless to do more than barely allude to what followed. Yet in concluding the explanation I have offered it would be incomplete if I did not add that the spirit of the age was both warlike and devotional at the same time, and whilst a love of military glory inflamed the mind and aroused the fiercest passions, it was the influence of the religious orders that served to soften and lull them again to rest. * * *

The sight of those sacred buildings which still rear their hoary pinnacles in silent praise to heaven, inspired our countrymen of old, as they should us, with a veneration for holy places. And we discharge no superstitious debt of gratitude by separating the exalted deeds of our forefathers from the lawless confusion that was mixed up with many of their actions, and giving them praise for executing the buildings we must all admire, and but vainly hope to excel.

It was no selfish or sordid spirit that was then so actively at work, no mercenary desire to aggrandise themselves by nicely balanced calculations, no speculative visions of worldly profit, from sharing in which others were excluded, but the motive power impelling them onwards through their earthly journey, was untainted by avaricious love of gain, or private gratification. The rising church absorbed every consideration; within its walls was entombed the love of native home, and family attachment and personal ambition; and thus the strongest affections, being withheld in their natural current, they were poured forth with all the increased energy of impassioned devotion upon the service of God.

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The Architectural School of Design is now in a fair way of being established, in connection with the Society of Architectural Draughtsmen. Mr. Jayne, of 33, Southampton-street, Strand, is the Secretary, and will be happy to afford every information to inquirers. The preliminary meeting will be held in the rooms of the Society of Architectural Draughtsmen on Wednesday evening, the 3rd of March, at half-past eight o'clock, when all who take an interest in the scheme are invited to attend.

More Money to be Wasted.—Are there no members of the Wellington Statue Committee who will interfere to save the subscribers' money? To take down the scaffolding in the face of the decision of the Government, founded on universally expressed opinion, is simply to throw the cost of doing so and of re-erecting it into the kennel. Lord Morpeth is too good-natured.

## THE GAS MOVEMENT.

Had the present agitation in favour of the nearest possible approximation to the purity and clearness, and the cheapness and diffusion of the light of day arisen as the natural result of some extensive organization, league, or association, for the express and determined purpose, then the motive to, and the reason of, the simultaneous, sudden, and universal interest and effort in the cause would have plainly manifested itself; but, with the exception of our own reiterated efforts, no vis insita within the range of our experience is sufficient to account for this remarkable phenomenon. The subject of gas-light is evidently at this moment undergoing a complete and rapid revolution: it is labouring in the wholesome throes of a new birth, and is destined soon to assume an altogether novel aspect and economy of distribution. Demands for its reduction in price, its improvement in quality, its more diffusive abundance, are everywhere urged and everywhere forcing themselves into successful antagonism with the state of things as they are, and evolving the germs of the state of things as they will be; and now it is found that even the most preposterous expectations and demands for reduction of price are more than justified, by the revealment of the enormity of the profits that must have been already reaped, and the immensity of the reductions that may yet be profitably made. "If the Gas Company are getting a profit still, at 6s. per 1,000 cubic feet," says a witness, whose evidence before the Government Commissioners we may here adduce,—without, however, being at the trouble to specify or instance time or place on a point of evidence far from being solitary or limited to either place or time,—"they must have realized an enormous profit heretofore at 10s. to 12s. per 1,000 cubic feet." And that many a company has realized such profits at 10s. to 12s., and that all may still realize sufficient, and far more than sufficient profits, not only at 6s. or even 4s. but at 3s. or even 2s. per 1,000 feet has already been clearly proved. "Resolved," in public meeting assembled, says one recent formal petition to Parliament, "that we, the inhabitants of Ashton-under-Lyne, being gas consumers, having attentively listened to the evidence tendered before the Government Surveyors, and that evidence showing that gas *can be produced at less than three shillings* per 1,000 cubic feet, pray that the Ashton Gas Company be restricted to 4s. 6d. per 1,000 cubic feet, and that the gas be manufactured from cannel coal." Too liberal by half, as has been already plainly evidenced at Liverpool and elsewhere. "At Exeter," says one witness, in his evidence before the Commissioners at Southampton, "the present price is 6s., and a new company has offered to supply it at 3s. 8d. per 1,000. Mr. Short has told me that at Sheffield *it was supplied at* 2s. 6d. (!) and many manufacturers considering [probably knowing] *even that to be too high*, manufactured their own!" Moreover, we have already adduced corroborative evidence to much more than this effect from before the Government commissioners at Liverpool, and from all of which it appears that in many districts *coke manufactories are likely altogether to supersede mere manufactories of gas.*—As to the manufacture of the article, by the way, we may here note down a piece of rather interesting intelligence derived from the *Hampshire Independent*, which, interested, as who must not be, with the present progress of events towards the light of a new day, says, "We have been gratified by the inspection of a small gas apparatus, calculated for private use, constructed by Mr. D. Snaggs, ironmonger, of Middle Brook-street. It is now in full operation, and Mr. Snaggs states, that *after deducting the value of the coke*, the quantity of coal daily required for the manufacture of gas enough to supply five burners, from five o'clock till ten, does not exceed twopence! The cost of the apparatus would be 25*l.*; but a very trifling addition would enable it to produce gas enough to supply twenty or thirty more burners; the only alteration being an increase in the size of the gasometer, and an additional retort. The apparatus appears to be admirably adapted for railway stations, gentlemen's mansions, or public manufactories, in places where no gas works exist. It appears, too, to be capable of application for shops with great advantage, if the present charge for gas in Winchester is to be continued."——The inquiry at Southampton progresses; and the evidence goes far to prove the absolute necessity of the "fair competition" which is even already, by anticipation as it were, producing its good fruits. Until the proposed new company was started, the old, and only company, was waxing fat and kicking; for it not only persisted in its "enormous profits," but when any one dared to complain of the abominable quality, the provokingly deficient quantity, or the by no means deficient price, of what they pleased to give, he was replied to by "a man to cut off the pipes." No sooner did their incipient antagonist make his appearance, however, than down came the price from 10s. or 12s. to 6s., and up came the quality, and even the quantity, to par; but such amendments are by no means symptomatic of repentance, and they therefore merit no mercy, and none have they met with, for none have they deserved. The case of the new company appears to prosper.——The high price of gas at Cowes, still no less than 12s. 6d. per 1,000 cubic feet, has roused the indignation of the inhabitants, who were led to expect a considerable reduction in the charge for "this indispensable and only lately afforded boon;" and in a numerous meeting they have embodied their feeling on the subject in a series of rather mild resolutions in the meantime, to be laid before the directors of their company.——The diminished price of gas supplied by the present company at Worcester, namely, 6s. per 1,000 feet,—for which the citizens are indebted not to the present but to the prospective company, who have offered to supply it at 4s. 4½d.,—is already, it is said, leading to an increased and extensive consumption.——Another huge gasometer, to hold 200,000 cubic feet, or if made on the telescopic plan to contain even 400,000 cubic feet of gas, is to be forthwith erected at Manchester by the corporation. It was only last year that just such another addition was made to their enormous, and, as it ought to be in the eyes of all other corporations, their *model* establishment; and as to when that corporation mint will reach its full maturity is a question for the multitude of Manchester in future generations, not for those alone to whom it now gives wealth as well as light.——The capital, a bill for which the Liverpool "Guardian" is applying, is 133,000*l.*; and 3s. 8d. is the maximum price, with 7½ per cent. as the maximum dividend. The present Liverpool "Gas Light Company" is also now applying for power to raise 200,000*l.* of additional capital; the maximum price of its gas being 4s. 6d. with an assured dividend of 10 per cent.——At Cambridge, the gas proprietors have condescended to offer the citizens a reduction of 1s. per 1,000 cubic feet with a promise of more *in futuro*.——A reformation has already actually begun at Newcastle, or at least been something more than merely promised. The price has been reduced from 5s. to 4s. 6d. per 1,000 feet, with a scale of discounts from 10 to 20 per cent.; and the *Gateshead Observer* informs us that "an assistant manager of the gas works has been appointed, and a change for the better has been the consequence." The lamps, however, are said to be still too dim to do justice to the improved quality of the gas. The suggestion which appeared in our pages, to line the upper portion of the interior with mirror has been not only received with favour but almost universally quoted by our contemporaries. Perhaps the Newcastle gas, which now, it seems "need not be ashamed to shew itself," might thus be able to bear the reflection of its own more purified aspect now without a dimning blush.——Down to the year 1839, by-the-by, the price of gas at Newcastle was 10s. per 1,000 cubic feet—more than double the price of its present improved quality! The fear of a worse condition of things leads sometimes to a better.

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Isle of Alderney: new Breakwater.—The foundation stone of the new breakwater, or harbour of refuge, was laid on Friday week in the Bay of Crawley. The little island was in universal commotion. A whole ox was roasted for the workmen and the poor in general, and "a splendid banquet" was given by the judge, M. Gaudion, to the rich in general, and to many of their Guernseyite neighbours in particular.

## REMARKS ON STAINED GLASS.

The chancel of Horfield Church, near Bristol, which has been rebuilt, and was opened for public worship a fortnight ago, is fitted up with stained glass, executed by Mr. M. O'Connor, of Berners-street, London. The principal events in the life of our Saviour, including the Birth and the Ascension, are the subjects represented, and entitle the artist to much credit. These windows display thought as well as skill, and are altogether good specimens of modern imitation. The style of the chancel is the decorated.

At the west end of the same church, we hear, there is a window, by Mr. Bell, of Bristol, representing St. Michael, to whom the church is dedicated, triumphing over the dragon. The former windows we saw in London.

A new stained glass window has been put up in the church of St. Andrew Undershaft, London, but we have not seen it.

At the Decorative Art Society, on the 10th instant, the application of design to stained-glass windows formed the subject for discussion. Mr. Dwyer commenced it by remarking, that in the earlier instances of ecclesiastical embellishments of this kind, the ideal was frequently well expressed. But although the examples of medieval art were generally well appreciated, yet the admirers of it were rarely satisfied with modern imitations. This he attributed to the absence of a peculiar feeling and tone which pervade the more remarkable of the ancient specimens. An acquaintance with precedents, and a clearly defined knowledge of symbolism in form and colour, he considered to be essential to the artist who desired to produce any thing beyond exact imitations. He, however, maintained that ancient art ought not necessarily to be modern art, but that decorative design at the present day ought rather to appeal to and gratify the understanding, than to offer mementos of superstition. He preferred simplicity in the composition at all times to attempts in producing historical pictures; and observed, that the decline of this, as of other arts, had been manifested by endeavours to produce incompatible effects. Geometrical combinations, it was said, are in almost every respect more suitable for windows; but the leading forms should at all times harmonize with the architectural character of the building.

Several kaleidescopes were then examined, which had been arranged by Mr. Cooper for exhibiting geometric design. The pieces of coloured and other glass in circles, squares, and triangles, were variously classified. Several of the developments were very beautiful, closely resembling windows of the thirteenth century; and the counterparts of the contents of a kaleidescope afford simple and ready means of accurately delineating a desired result on paper. Descriptions were given of windows in Germany and at Hampton Court, as also some observations on the extraordinary chemical influences possessed by colours.

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## RAILWAY JOTTINGS.

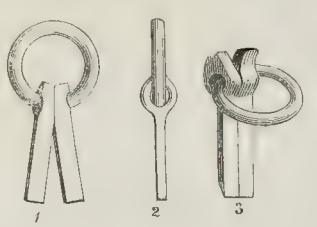
The "matchless pier" at Southend, whose peculiar merits, or intrinsic value, no one, at the late unsuccessful attempt to get rid of it, appeared to be *able* to appreciate, has at length been taken off the hands of the Public Works Loan Commissioners, who were the mortgagees, by the Eastern Counties Railway Company, who have now become the purchasers of it and its revenues, of the latter of which they doubtless meditate an increase when the projected railway to Southend is completed.——The Secretary of the Great Western, Mr. Saunders, has the very handsome salary, it is said, of 2,500*l.* a year; the locomotive Superintendent, Mr. Gooch, one of 1,000*l.*; another Superintendent, Mr. Clark, 750*l.*; another, the Bristol one, Mr. Clark, 550*l.*; the Exeter, Mr. Ashbee, 325*l.*; and the Gloucester, Mr. Graham, 180*l.* The head accountant, Mr. Pyke, has 550*l.*——The tenders for the construction of the works included in Nos. 1 and 3 contracts on the Birmingham, Wolverhampton, and Dudley line have been disposed of. The first, which embraced that part of the line between Great Charles-street and Vyse-street, Birmingham, was obtained by Mr. G. C. Pawling, of Manchester; the second, which included the line

between the junction at West Bromwich, Staffordshire, to Priestfields, near Wolverhampton, was obtained by Messrs. Frost and Bates, of Wednesfield. Nine tenders were sent in; those accepted are under the parliamentary estimate, and the works are to be completed by the 1st of August, 1848.——The directors and contractors of the North Staffordshire have placed 1,000*l.* at the disposal of the Bishop of Lichfield, to be employed in promoting the spiritual welfare of the labourers engaged in constructing that line.——The works of the Victoria tunnel, at Liverpool, have been recently begun. The Messrs. Holme and Mr. M'Cormick are the contractors. Several acres of land are in process of excavation at Edge Hill, to be added to the present station, where there will thus be abundant space for the thousands who, in the summer season, avail themselves of the "cheap trains." The grand entrance of the tunnel is under the road leading to the Railway Hotel. It is to pass in an oblique direction across the town, being carried in a direct line under the King's Monument, Christ Church, the Friends' meeting-house, the chapel in Byrom-street, the North Dispensary in Vauxhall Road, and then under the Leeds and Liverpool Canal, to a station, comprising several acres, between Great Howard-street and the Waterloo Dock. Considerable progress has been made at the various "eyes," as they are termed, along the whole of the line. The entire costs of this gigantic undertaking, says the *Mail*, will be about 200,000*l.*——The tunnel on the Trent Valley line is driven through and nearly all bricked. All the cuttings on this line are executed, so also are all the bridges, and the whole works will be completed in a few weeks; but to afford time for the consolidation of the works, the opening will not take place till the 1st May, a more commendable course, and likely, *ceteris paribus*, to lead to results much more satisfactory to all, than any to be consistently expected from companies so eager to reap a premature harvest as those are who have lately been offering contractors premiums so tempting to hurry their works with break-neck speed into shape and action.——At the present time, says the *Preston Guardian*, "the number of trains arriving at, and departing from, the North Union Railway Station in this town daily, amounts to no less than 133; surpassed, or even equalled, we think, by no other station in the kingdom."——Many of the Highland labourers hitherto employed on the railways in the Lowlands of Scotland,—thus industriously earning a subsistence for themselves and families,—have, it is said, thrown up their employment and gone home to the distressed districts in the Highlands, where, they boast, that they will now "get plenty of porridge for nothing." The improvident and fearful fruits of such a dependance on the Government for future support are said to be also manifesting themselves in the refusal of men,—who must be without *employment* in these very districts, if there be any real *distress* there at all,—to embrace the opportunity offered them by one of the Edinburgh and Northern Contractors, while on a tour in the counties of Inverness and Argyle, to employ three hundred of them at 2*s.* 4*d.* to 3*s.* a day. He could only obtain from 30 to 40! At Greenock, too, where a number of the "distressed" Highlanders had been provided with work at 10*s.* a week each in wages, so *independent* of such work and such wages does their debasing dependance on "porridge for nothing" appear to make them feel, that they impudently demanded a rise of wages; and on refusal, "headed by a bagpiper," they "marched away" to their "porridge for nothing," in preference to industrious employment and 10*s.* a week!——A railway carriage, or wheeled saloon, of gigantic dimensions, is in course of construction at Hamburg for the use of the King of Prussia. It will be 30 feet in length, and from 15 to 16 feet in height. It will be furnished with an antechamber, a bed-chamber [! An unlikely circumstance, surely, that the King of Prussia should be obliged to travel all night by railway, even "in meditatione fugæ"] a dressing-room, a chamber for his majesty's aides-de-camp, and a saloon, the whole fitted up with great magnificence, and adapted to the most improved ideas of comfort.——All the American railway shares are said to be now at a premium.——A line of electric telegraph, says a correspondent of *Galignani's*, has been completed across the Alleghany Mountains, and it has worked admirably between Philadelphia and Pittsburg, a distance of 300 miles. The journals of Pittsburg have published the proceedings of congress of one afternoon on the following morning; and this is the case with all the news from the great cities of the Atlantic coast.——A correspondent of the *Edinburgh Chronicle* states that Mr. Rowland Hill intends to make a new and important use of the electric telegraph for postal communication.

## RUSSELL'S "SPEEDY LEWIS."

SIR,—Through the medium of your valuable and useful journal, I beg to submit a description of the accompanying design for *a lewis*, for the purpose of speedily raising and setting stones prepared for masonry.

The ordinary lewis, so well known and generally used by masons, requires no further description than a reference to the present claims of advantage, at least in its readier application, even where small stones are specified to be lewised, which by this process can be effected in at least one-third the time, as will be seen by the accompanying sketch. Fig. 1 and 2 represent front and side view of the lewis when expanded and carrying the weight, and of which the model of the following dimensions has been tested to five tons without any symptoms of defect or inadequacy. The dowels or prongs are each four inches long, one inch wide, and half an inch thick, with proportionate shoulders to form the eylet (for ring of three-quarter bolt iron), countersunk




on the outer side, so as to form an inclined plane for the ring to act upon, the back edge above the ring of each dowel being champhered with a curved shoulder, to allow the lower ends to spread when the ring is raised, the hole to receive the lewis, as usual, being cut larger at bottom, or as it is termed *dovetailed*. The lewis is simply inserted, as shewn in figure 3, and by raising the ring the lower ends expand, as described above; and upon lowering the same, it is immediately released without the tedious process of knocking out the pin, bolt, shackle, and the centre dowel of the ordinary lewis. Provision is also made in case the lewis hole, by error or *ignorance*, should be cut too large; the ring being of egg form, by reversing the smaller end downwards the dowels or prongs become more extended, by which means the evil is obviated without inserting slips of iron or lead, as usually applied at the risk of flushing the stone or giving out of the lewis.—I am, Sir, &c.,

H. H. RUSSELL.

## RESTORATION OF CHICHESTER CATHEDRAL.

AN appeal to the inhabitants of the diocese for assistance in this work has been issued by the dean and chapter, shewing strong claims to their co operation. Much has been done at a heavy cost to the chapter; the estimated sum now required is 22,000*l.* This does not include some alterations in the choir, concerning which the following remark is made in the appeal:—

"The dean and chapter are sensible that the actual choir is not in all respects what might be desired. But they feel the greatest reluctance, at the present time, to propose any definite plan for its alteration. This is a department of cathedral architecture in which much information and experience are yet to be acquired. The dean and chapter at present can do no more than express their entire conviction that the most magnificent church which serves merely to gratify the eye of taste has entirely missed its proper end and object.—And greatly will they rejoice, if, after some longer time for observation, they shall be able to devise a plan, whereby, without violating the rules of architectural fitness, a larger portion of their fabric may be made more directly available toward the great purpose for which every church is designed,—the worship of Almighty God."

We are not quite certain that we understand exactly what this means, we should like to do so.

A large recessed and canopied arch, ordered to be raised by Mr. John Abel Smith, M.P., to the memory of his late father, is now completed, except the effigy, which the sculptor, Mr. E. Richardson, is now engaged upon. It is placed under the great window in the south transept, opposite to St. Richard's shrine and tomb, and near to the recessed canopied tomb of Bishop Langton. It is at length decided to insert a triplet in the Wren mullioned window, so long a disfigurement at the west end of the cathedral.

## KENSINGTON WORKHOUSE COMPETITION.

SIR,—My attention having been drawn to two or three letters in THE BUILDER respecting the competition for building the proposed new workhouse at Kensington, in which the good faith of your correspondent G. H. S. is impugned, I have the honour of forwarding to you the following plain statement of facts respecting the plan now adopted by the guardians.

Mr. Allom estimated the original plan without the chapel at 8,700*l.*; when the tenders were sent in for building the same, they ranged from 13,700*l.* to 17,500*l.* Mr. Allom, who was present when the tenders were opened, then accounted for the difference between those tenders and his own estimate, by stating that he had discovered an error in the quantities of the person employed by the builders to take them out, to the amount of at least 500*l.* in one of the trades, namely, the bricklayer's. It is true that he had communicated this discovery to the guardians before the tenders were sent in; but it is absurd to suppose that your correspondent G. H. S. meant to insinuate that he could have discovered this error only at the moment the amount of the tenders was briefly read over to him. I requested Mr. Allom to inform me what were the other trades concerned in this error, and he replied, "the principal ones are the carpenter and the mason." I then observed, "Allowing 1,500*l.* for these trades, Mr. Allom, the lowest tender will still exceed your estimate by 3,500*l.*"

The guardians, or rather the building committee of the guardians, then concerted with Mr. Allom to reduce the expense of his plan, and in my presence, the vice-chairman of the board assured the Poor-law Commissioners, that Mr. Allom and one of the builders who competed for the work had undertaken to carry the amended plan out for 9,800*l.*, and that that undertaking was so strong, that it was almost as good as a tender. I ridiculed the idea, and appealed to the common sense of the Poor-law Commissioners, whether they could believe such a statement. But the Poor-law Commissioners bowed civilly, and proceeded to adopt it, and to calculate and reason upon it.

When the tenders for the reduced plan were sent in, they ranged, as I expected, from 11,000*l.* to 13,000*l.* in round numbers. Mr. Allom accounts for this now by additions, which are explained to me to be that of 199*l.* for the relieving officer's store-room and office-rooms essential to our parochial provisions for the poor, which must be provided for at a greater expense elsewhere, if not included in the workhouse, and without which the new workhouse would have been inferior to the present one, which is in some measure provided with them.

Besides this addition there was a sum of about 170*l.* or 180*l.* for a superior kind of brick for parts of the building.

I am, Sir, &c.,—JOHN PERCEVAL,
Guardian of the Parish of Kensington.
Campden Cottage, Kensington,
Feb. 20, 1847.

LECTURES ON ARCHITECTURE.—Mr. T. L. Donaldson commenced a course of four lectures on architecture at the London Institution, on Thursday last. The works of the Egyptians formed the subject of the first lecture.

## BRUNETTI'S MODEL OF ANCIENT JERUSALEM.

A visit to this very interesting model, in Piccadilly, will be found to give a lasting enjoyment; clear ideas are gained of places and events described in the holy writings; and facts, all-important for mankind, are fixed in the mind more indelibly by an hour's examination of it than would be done by a month's reading. Of all localities Jerusalem has the strongest claims upon our attention,—"that city, where, of old, Jehovah dwelt,—where David sung,—and where Jesus suffered." To have its walls and gates and buildings,—the scene of the crucifixion, the Temple, the pool of Betheseda,—brought tangibly before us at our own doors, is a great advantage for which many thanks are due to the artist who produced this model. Like all similar works, the first view of it disappoints, but after a little time, the mind becomes accustomed to the scale, and the various objects, viewed relatively, grow into importance.

Admitting the difficulty of the work, and recognizing as we have done the ability with which, generally, it is executed, we are nevertheless compelled to find fault with the architectural appearance given to the Temple: it has all the character of a cinquecento Italian building, none of the Temple raised by Herod. Mr. Brunetti would do well to cancel it.

The site of the new protestant church about to be built on Zion, by Mr. Johns, is pointed out by a small block of stone from the spot, placed there by the architect himself.

## ENGRAVINGS.

Mr. George Raphael Ward has just now completed two engravings in mezzotinto, which will tend to advance his reputation. One of the two is of Mr. Mackenzie, the well-known railway contractor, in Paris, and the other of the venerable Archdeacon Thorp, Warden of Durham University.* The first is from a picture painted by Mr. T. H. Illidge, and presented to Mrs. Mackenzie by public subscription in Paris, Dec. 31, 1846. The second is from a painting by Mr. J. R. Swinton, and is to our minds by far the best work. The head is exceedingly well executed, and the general effect artistical and good. They are both rather dark picture prints: when it is remembered, however, that the chief excellence of mezzotinto is exhibited in shadows and not in lights, which present much difficulty, and often appear cold and poor when compared with the lights in a line engraving, even when treated with the greatest skill, the reason is obvious. Most of our readers probably are aware that in mezzotinto engraving, the whole ground of the plate is at first black, and the lights are produced by scraping away and burnishing parts of the surface: whereas, in a line engraving, the ground is white, and the lines and shadows are formed upon it by the "graver."

Fall of more Old Houses.—The metropolis is being gradually purged of its old and crazy edifices, happily without any great fatality. The fall of two of these we had very recently occasion to notice, and since then three more have fallen, one in Ratcliffe and two in Kent-street, Southwark, by which latter, however, seven lives were placed in imminent jeopardy, although they all escaped with almost miraculous impunity. Besides the one at Ratcliffe, four others there have been shored up until razed to the ground, which they are forthwith to be. The two at Southwark, as well as these, have been long under the surveillance of the district surveyors, or at least long known to have been in a very crazy condition, although poverty has tempted many poor people, knowingly, to risk their lives in them, in order to save their rents.

Battersea new Church.—A new Church to hold 800 persons on the ground floor, is about to be built at Battersea, Surrey, near the Princes' Head. The plan is cruciform, with a tower and spire at the north-west angle; the style, decorated gothic of the date Edward III. The builders are now making their estimates, and it will be commenced in about a month. Messrs. Lee and Bury are the architects.

* Published by the Engraver, 31, Fitzroy Square.

## Correspondence.

NEW PLOTTING SCALE FOR SURVEYORS.

Sir,—Perceiving in your number of the 6th instant a communication by Mr. Edward Blake, wherein he gives an explanation and illustration of a surveyor's plotting scale devised by him, I beg to forward you a drawing of one invented by me, and laid before the Committee on Mechanics of the Society of Arts, on the 3rd of April, 1845, to which his scale bears an extraordinary similarity.

Although the invention is not one of very high importance, I am of opinion that it is fair that the inventor should in every case claim his due, and that proper acknowledgment should be made where there is a title to it. However, I should not have troubled you in the matter, but that Mr. Blake's scale appears faulty in several respects as compared with the one previously in use. The most important is the impossibility of using more than one offset scale to the same line scale; whereas in that which I have been in the habit of using, many line scales being marked at the sides, and the groove being left open at the end, the different offset scales necessary from time to time may be introduced into the same frame.

There is a decided objection to the position of the brass pins in Mr. Blake's scale, as the paper is thereby injured in the very place where it should be most perfect, namely, on the measured line.*

Probably these suggestions may be of value to those of your readers who have not already had the original scale in use.

I am, Sir, &c., J. Murray.
H. M.'s Dockyard, Portsmouth,
Feb. 16th, 1847.

## Miscellanea.

Soup-Kitchens for the Poor. — The scheme for the erection of soup-kitchens for the poor, which is considered to have some merit apart from the cheap preparation of soup, lately questioned, is likely to be extensively acted upon, not only in Ireland, where Mr. Soyer is about to superintend the working of his scheme under the direction of Government, but also in London, and many parts of England. The building originally projected by Mr. Soyer, for which the plan first laid before the Government was arranged by Mr. Edward Hall, architect, has a central area, of square form, in which are a boiler, a large pan, tables, and every convenience for preparing the ingredients. The soup is finally made in large oblong pans, ranged round the area, and beyond these is a passage for the attendants, who can thus readily serve out the soup into basins fixed in a frame, which forms the other side of the same passage. The liquid in these pans is heated by steam from the boiler. The building is enclosed on the four sides, a narrow space being left for the poor, and much attention seems to have been paid to prevent confusion. It will be covered with canvass. This plan has since been modified in size, and in some details. The present scarcity renders such schemes worthy of examination, although it may be questioned by many whether they are free from injurious results. At Manchester and Liverpool, soup-kitchens, on an extensive scale, have been sometime in operation.

Effect of Frost on Stone.—Sir,—In passing through Clifton some time since, I observed a circumstance that I think ought to be generally known to builders. It was after the late frosts. Some new balconies had been put up about nine months before, and some of the parties had taken the precaution of painting the bottoms and edges with several coats of paint. The consequence was that the water falling on the top lodged in the stone (the paint preventing an outlet), and froze there, and the result was that it burst the lower part, which fell off, paint and all, in large spawles, very much to the danger of the passers by.—Yours, &c. H.

The Regent's Canal Company's Bill. —The Government having refused assent to this bill, the second reading has been postponed at the request of its promoters, to enable them to submit some modifications to the House.

* In Murray's scale the ends are elongated to receive a lead weight instead of a pin.—Ed.

Projected Works, &c.—Advertisements have been issued for contract-tenders for the various works necessary in erection of church at Congleton; improvement of church in Cornwall; partial razing and rebuilding of church at Wolsingham, and erection of school at Towlaw (extension of time); partial rebuilding and restoring of church at Trowbridge; alteration and erection of farm-offices, cottages, &c., near Edinburgh; excavation, masonry, &c., of aqueduct and main pipes, cast-iron sluices, cocks, and other metal works, and a quantity of 20-inch cast-iron and other pipes, all for Bristol Water Works; the various usual ordnance works in masonry, carpentry, &c. &c. at Dorchester, Weymouth, Trowbridge, and Sheffield barracks, and Portland Castle; the working of limestone, and other quarries or hauling-stone for repair of roads in Herefordshire; 600 cubic yards of good Kentish rock-stone, at Rochester; repair of pavements, for 5 years, at Portsea; large supply of stock bricks at Cowes; various works necessary in formation of 9 miles of Newport and Hereford Railway; 3 miles of Glasgow and Ayr, &c.; 11 miles and 9 miles of London and North-Western; 21 miles and 4 miles of Glasgow and Dumfries; and for erection of a bridge at Dumbarton; Cast-iron Viaduct at Liverpool; stations, warehouses, 8 cottages and walls, on London and Brighton Railway; also for a quantity of railway bars at York Station, and 6,500 tons of malleable iron rails, 1,850 tons of cast-iron chairs, and 70,000 sleepers, for Caledonian and Dumbarton Junction Railway; for the erection of Archbishop Parker's Grammar Schools at Rochdale; and the Walworth Literary and Scientific Institution; and for building sewers in Camden Town and Whitechapel.

Continental Glass Manufactories.—The first window-glass manufactory in the province of Hainault commenced in 1625, soon after which two others followed, and there are now no fewer than thirty-six houses in full blast: sixteen work eight pots, employing 128 blowers; twenty-six with six pots, and 120 blowers; thirty-six with three stokers; thirty-six glass cutters and fifteen potters—the total cost being 43,384*l.* per annum. There are five new glass-houses being built for 1847, and two new companies forming to commence extensive works in every description of glass. The quantity of coal, charcoal, sand, &c., used in glass manufacture, is immense.

Mr. Collins, R.A.—The death of Mr. Collins must be regarded as a great loss by all lovers of art. His beautiful representations of nature, suffused with tender sentiment, will be missed on the walls of the Royal Academy. He had been twenty-seven years an Academician, and was in the fifty-ninth year of his age.

Competition. — Fifteen pounds, and employment at the usual commission in superintendence of works, are offered for the best plan of a town-hall and other buildings at Yeovil, Somerset.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, March 1st.—Archæological Institute, 25, Great George-street, 4 P.M.

Tuesday, 2nd.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

Wednesday, 3rd.—Association of Architectural Draughtsmen, 33, Southampton-street, 8½ P.M.; Society of Arts, Adelphi, 8 P.M.

Thursday, 4th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*C.R.*"—A reply would occupy more time than we can spare.

"*A Youngster*" will find the information he wants in our present number.

"*B.A.*"—Old travellers say one pound per day will carry you any where but over England. A stay in any one place, of course, lessens the expense. Cost of travelling depends greatly on management.

"*W.A.*" (Rochester).—Mr. Henry Shaw (37, Southampton-row) has published a work containing what our correspondent wants.

"*G.H.*" (New Town.)—We do not know that the details of the window in question are published.

"*E.D.*" (Pimlico).—Will our correspondent send us the extract he alludes to.

"*J.L.C.*"—Shall appear.

"*A Londoner*" is unavoidably postponed till next week.

"*Brickbat*" next week.

"*J.W.*"—Ditto.

*Received.*—"W.G." (Ryde). "W.G.P." "H.T." "M.S." "C.G.G." "Jackplane." "H.H." (Bromley). "H.C.L."

"*Books, Prices, and Addresses,*"—We have not time to point out books or find addresses,

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ARTISTS, DESIGNERS, and Amateurs are informed that the General PRACTICAL SCHOOL OF DESIGN, 18½, Maddox-street, Hanover-square; Master, J. M. Leigh, Esq., is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Terms, [illegible] Male and Female—with Weekly Lectures on Art. Terms, One Guinea per Quarter. R. W. HERMAN, Hon. Sec. [illegible]

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OFFICE for PATENTS of INVENTIONS and REGISTRATIONS of DESIGNS.—Full Information on the subject of PATENTS for the United Kingdom or Foreign Countries may be obtained (gratis) on application either personally or by letter, to JOHN GEDGE, British and Foreign Patent Agent, 4, Wellington-street South, Strand. MM. les Etrangers sont invités d'écrire pour l'information [illegible] des Brevets d'Invention.

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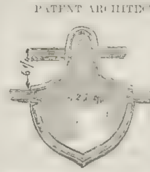
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TO THE TRADE.—Parties desirous of delivering Timber, Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find [illegible] of Wharfage, Cranage, or Delivery, [illegible] A weigh-bridge and drawdock.—N.B. Depôt for [illegible] Pantiles.

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SILCOCK and Co.'s PATENT PLANES, may be had at the following places:—Archer, 45, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cock, 424, Oxford street; Dean, 46, King William street; [illegible], Newgate-street; Holtzapffel and Co., 64, Charing; [illegible] in the United Kingdom.

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STAIRCASES.—To Builders and others engaged in Building.

MR. THOMAS MITCHELL, Carpenter, &c., at 40, Brown's-lane, Spitalfields, begs to inform the [illegible] all kinds of staircases [illegible] of the above description [illegible] the above T. MITCHELL.

---

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, [illegible]

Many substances [illegible] time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the [illegible] is put on to the work [illegible] used in all climates and [illegible]

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

---

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

[illegible] of this Paint [illegible] preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water pipes; Hot-houses, [illegible]. Its adhesion is so great [illegible] will scarcely remove it. [illegible] affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well [illegible] white-lead. For houses painted during occupation, it is most preferable, being [illegible] innoxious.

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By Her Majesty's Royal Letters Patent

WILKINS'S "SILENT" WATER-CLOSET.—To Architects, Surveyors, and Builders.

Gentlemen, your attention is [illegible] invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and [illegible] communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., [illegible] fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

[illegible] the whole of the apparatus [illegible] between the [illegible] of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, [illegible] which is generally embedded [illegible] The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least [illegible] whatever.

[illegible] at No. 26, Gower-place, University College, London.

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PHOTOGRAPHIC PORTRAITS, at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the [illegible] Establishment, 18, Strand (between Norfolk-street and St. Clement's Church). Portraits, including case, from 10s. Satisfactory ones guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvass, combining the truth of the daguerreotype with artistic skill. Hours from Ten to Four.

# THE BUILDER.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. H. WILLIAMSON'S Wholesale Warehouse, No. 89, Chiswell-street, Finsbury square, near Whitbread's Brewery.

| | Best Patent Cut Clasp. | | | |
|---|---|---|---|---|
| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
| 6d | 7d | 8d | 1s. | 1s. 6d. | 2s. per 1,000 |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 4s. per cwt. 1lb. pockets, 6d. per cwt.

| Best Patent Sash Line. | | | | | |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross |

Elliptic Springs, 3d. per inch. Registers, 6d., 7d., 9d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.

| Wrought Bar- and Bright Fittings. | | | |
|---|---|---|---|
| 3 ft., £3 3s. | 3 ft. 6 in., £3 12s. 6d. | 4 ft., £4 |

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 136, Blackfriars road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3 13s. | £3. 16s | £4 | £4 10s. |

Henly's Patent Improved, with Tack Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 4½d., and 5d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

IRON-WORK FOR BAKERS' OVENS.

**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces: Plates, Furnace bars, Top and Fall Pieces, Stoppers, Chimney-slate Ins. de. Outside, and Ash pit, Doors and Frames, Bolters and Frames, Lamps, &c., &c.—all of the best description, at very moderate prices.—CAST IRON UPSETS.

**S**TOVES, FENDERS, FIRE-IRONS, and KITCHEN RANGES, combining every improvement. A superb choice of Drawing room and Dining room Register Stoves, Steel and Bronzed Fenders, Stove Fire Irons of the most elaborate and elegant Patterns, adapted for every taste and state of the Improved Cooking Apparatus, suitable for its simplicity and capabilities, viz. Roasting, Baking, Boiling, Stewing, Steaming, Hashing, and Frying. This Range will generate sufficient steam, with the aid of pipes, to warm a large dwelling and conservatory; is well deserving the notice of architects and surveyors. To be seen in full operation daily, at DEANE, DRAY, and DEANE'S, the Finsbury Iron Works, 86, Chiswell-street.

**W**ARMING.—STEPHENSON & PEILL, 61, Gracechurch street, City, beg to call the attention of Bankers, Merchants, and others, to their improved method of Warming any number of Offices, Strong Rooms, and other apartments at any elevation, by Hot Water from one fire place, combining Free Ventilation and a Pure and equal Atmosphere, with Economy, Cleanliness, and perfect security from Fire. References to eminent firms where their works may be seen in operation. Strong-rooms constructed of any dimensions, Iron Safes, Bookcases, &c. Manufactory, 17, New Park-street, Southwark. SAMUEL HALL'S Patent Ventilating Stoves from 30s upwards.

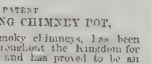
**H**OT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, hot-houses, hot-beds for forcing timber, and every variety of purpose to which warm air or steam is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved principle in boilers, which requires no brickwork, may be seen in action up in the premises. BENJAMIN FOWLER, 15, Dorset-street, Fleet-street.

**B**UILDERS, CARPENTERS, and others, are respectfully informed, that they can be supplied with IRON COLUMNS, GIRDERS, CAST PIPES, AREA and TRELLIS GRATINGS, SASH WEIGHTS, RAILING, GATES, and IRON COPING, BALCONIES, VERANDAHS, CONSERVATORIES, FANCY STAIRCASES, IRON DOORS, STOVES, RANGES, &c.

BAKER'S OVEN WORK always in stock at JONES'S IRON FOUNDRY and MANUFACTORY, 9, Bell-lane, Old-street, St. Luke's. A great variety of Patterns for Lathe work, &c., &c.

IRONFOUNDRY.
108, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER,)

**B**EGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business now left by him, and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price and punctuality. The Stock of patterns has been re-arranged, to give every facility for selection. A stock of Main, Water Pipes, Heads, Sluices, &c.



TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.

**T**HE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, of Penbedw. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and in the Continent, are stronger, lighter, cheaper, and more durable than Riveted Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and renewed without additional trouble or expense.—Address, 42, Cambridge-street, Cresent, Birmingham; London Warehouse, 68, Upper Thames street.

SMOKY CHIMNEYS EFFECTUALLY CURED.
WILSON AND CO.'S
PATENT
VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been erected extensively throughout the kingdom for the last two years, and has proved to be an effectual remedy.
The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.
They are now manufactured of artificial Stone cement.
The trade supplied with them at the Manufactory,
VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.
N.B. License granted to Manufacturers.

**P**ATENT VULCANIZED INDIA-RUBBER, CHARLES MACINTOSH and Co., Manufacturers, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are its uniform elasticity in various temperatures; it cannot become hard by exposure to cold. It is of great strength and is liable to no injurious heat than caoutchouc. It is different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully used for Flap and Foot Valves, &c., of Steam Engines, and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of floor to boards.
The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.



N B The above are also made without the discharge hole being turned downwards.

**S**OCIETY OF ARTS.
PRESIDENT
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be achieved on or before the 5th of May, 1847. A List of the subjects for which Prizes, Lams at one, to 50 Sovereigns, with Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, Johnstreet, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in June.

CHEAP PAN FOR WATER CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their
CLEANLINESS AND CHEAPNESS.

**J**AMES BARKER, SASH MAKER and JOINER to the TRADE, 83, Theobald's road, Hedford-row, respectfully invites the attention of Builders and gentlemen building, to the subjoined list of prices for joiners' work, prepared from the very best materials, in a most superb manner, and ready money.

SASHES, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo | 0 | 4½ |
| 2 Ditto | 0 | 5 |
| 2 Lamb's Tongue, or Gothic | 0 | 5½ |
| 2½ Shop Front | 0 | 6½ |
| 1½ Green-house, or Skylights | 0 | 5 |
| 2 Ditto | 0 | 5½ |

French Casements, Sash doors, Fan lights, and Circular Sashes, made to order at proportionate prices.

SASHES WITH FRAMES, per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo, sashes and frames | 0 | 9 |
| 1¼ Ditto, both sashes to hang | 0 | 10 |
| 2 Ovolo sashes and frames | 0 | 11 |
| 2 Ditto, both sashes to hang | 1 | 0 |
| 2 Lamb's Tongue, or Gothic, ditto | 1 | 0½ |

Gothic Frames and Sashes, Mullion Windows, Wainscot and Mahogany Sashes.

SHUTTERS, at per Superficial Foot.

| Inch. | s. | d. |
|---|---|---|
| 1¼ Square Sliding Shutters | 0 | 6½ |
| 1¼ Ditto, moulded one side | 0 | 7½ |
| 1¼ Moulded, bead and butt back | 0 | 8½ |
| 1¼ Boxing Shutters, with front moulded, and back, with 1 inch Inch flaps, bead and butt | 0 | 8 |
| 1¼ Shutters and back flaps, moulded front and head, and butt back | 0 | 9 |

DOORS, at per Superficial Foot.

| Inch. | s. | d. |
|---|---|---|
| 1¼ Deal square | 0 | 6½ |
| 1¼ Ditto, raised front | 0 | 7½ |
| 1¼ Four panel square | 0 | 7 |
| 1¼ Ditto, moulded front | 0 | 8 |
| 1¼ Ditto, square | 0 | 8 |
| 1¼ Moulded, bead | 0 | 8 |
| 1¼ Ditto, both side | 0 | 9 |
| 1¼ Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch. | s. | d. |
|---|---|---|
| 1¼ Ditto, bead, flush, and ditto | 0 | 11 |
| 1¼ Ditto, ditto, and moulded back | 1 | 0 |
| 1¼ Six panel square | 0 | 9 |
| 1¼ Ditto, moulded one side | 0 | 10 |
| 1¼ Ditto, ditto both sides | 0 | 11 |
| 2 Four panel square | 1 | 0½ |
| 2 Ditto, moulded one side | 0 | 10 |
| 2 Ditto ditto, both sides | 0 | 11 |
| 2 Ditto, bead, butt, and square | 1 | 0 |
| 2 Ditto, bead, flush, and square | 0 | 11½ |
| 2 Six panel square | 1 | 0½ |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto, ditto, both sides | 1 | 0½ |
| 2 Ditto, bead, butt, and square | 1 | 2 |
| 2 Ditto, bead, flush, and square | 1 | 2½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2½ |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto, ditto, both sides | 1 | 0½ |
| 2 Ditto, bead, butt, and square | 1 | 2 |
| 2 Ditto, bead, flush, and square | 1 | 2½ |

Front, jib, and covered doors, to any design.

Prices for Architraves, Base Mouldings, &c. and Ribbons of Joiners' Work in Wainscot or Mahogany, TO BE HAD ON APPLICATION.

**T**HOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.
87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per 100 feet. |
|---|---|
| Patent Sheet, in 16 feet Boxes | 2nd |
| Do. do. superior | do. |
| Crown, Squares, in 8 feet Boxes: | |
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. | 9d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. | 1td. |
| 6 in. by 3 in. and under | 1d. |

Crates of German Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
of the most brilliant colours. 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES,
6d. per inch,
A ROSSETTE,
4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 16 feet case, 8d. per foot.

VARNISH

| | per Imp. Gal. |
|---|---|
| Super Pale Copal, for the ladies' use | s. |
| Carriages ..... | 20 |
| Very pale, will not crack, and is sure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish ..... | 16 |
| A fine pale Varnish for the lighter furniture woods. Dries in about eight hours. | |
| Super Carriage Varnish ..... | 12 |
| Very durable, and well adapted for Coachmakers, except for light Colours | |
| Linen Cha., Wainscot, or Mahogany Varnish ..... | 10 |
| Brilliant and durable for House-painters' use, and for all imitation Woods. | |
| Paper or Crystal, quite transparent | 10 |
| Gold Size for Gilders ..... | 10 |
| Also as a dryer in grinding Colours, which much improves their appearance | |
| Black Japan ..... | 12 |
| A split thin Jet Black, for Coachbuilders' use | |
| Brunswick Black ..... | 4 |
| A Black Varnish for Iron-work, Stoves, &c. It dries immediately. | 6 |
| Furniture Varnish for Japanners ..... | 1s. |
| Dries in two hours. | |
| White Hard Spirit Varnish, for Cabinet Work ..... | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods | 20 |
| Rather paler in use than the above. | |
| Maple Varnish, pale, for Pictures | 24 |
| Turpentine Varnish ..... | 5 |
| Liquid, Polish ..... | 16 |
| Naphtha ..... | 16 |
| Patent Liquid Wood Knotting ..... | 16 |

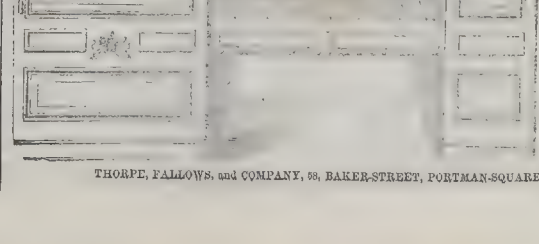
PLUMBERS' BRASS WORK, WARRANTED.

| | £. | s. | d. |
|---|---|---|---|
| 24 inch Lift Pump on Plank | 4 | 0 | 0 |
| 3 " do. do. | 5 | 0 | 0 |
| 4 " do. do. | 6 | 0 | 0 |
| 5 " do. do. | 9 | 10 | 0 |
| Well Pumps on Square Tails, with Iron Bow, equally low. | | | |
| ½ inch Bib, Ball, or Stop Cocks. | 0 | 1 | 8 |
| 3-8th " do. do. | 0 | 2 | 1 |
| ½ " do. do. | 0 | 2 | 6 |
| Pan Water Closet, complete, with White Basin, round Valve Crank, Ball, Lever, and Copper Wire | 1 | 10 | 0 |
| Blue Basin, extra | 0 | 4 | 0 |
| Ditto, with Sunk Hard Valve | 0 | 4 | 6 |
| Spring Valve Closet, on Brahma's principle, complete | 3 | 10 | 0 |
| Beer Machines, from one to six motions, to Lamson's design. | | | |
| Strong Iron Steam Cocks, with Unions, and every article in the Trade made to order. | | | |

PAINTS AND COLOURS.

Best White Lead, 27s.; Seconds, 23s.
Thirds, 20s.
Milled Sheet Lead and Lead Pipe, 20s.
Linseed Oil, 3s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 3s. 10d. per gallon.
Brunswick and Navy Greens, Cromes, Blazes, Blues, Reds, Patent Dryers.
Best Town Glue, 40s. per cwt.
Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

THE PANKLIBANON IRON WORKS,
WHOLESALE AND RETAIL, 58, BAKER-STREET, PORTMAN-SQUARE.



**A**RCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE GRATES, Fenders, and Fire-Irons, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Culinary Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially finer Sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Tea Urns, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.
The Patent Tuyeau above is in daily operation. Also,
CUNDYS
IMPROVED
HOT-AIR STOVES,
for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

# THE BUILDER.

GRAY'S INN ROAD.

**FREEHOLD BUILDING GROUND,** in this vicinity, TO LET, for Third and Fourth-rate Houses. Terms and Particulars may be had of Mr WATSON, 125, Wood-street, Cheapside.

TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS.

**TO LET, a Compact and Convenient Wharf,** between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of the above Trades, having excellent water an l land carriage ways. For particulars, apply to W. & WARDLE, Stangate Sawing and Planing Mills, Palace-road, Lambeth.

BUILDING GROUND FOR SHOPS.

**TO BE LET,** in One or more Plots, for the erection of Eight Houses, of a frontage of about eight-en feet each. Ground-rent 52 10s each house: no land-tax; lease 96 years, situated at St. Mary, Islington, in a neighbourhood where shops are much wanted.—Apply by letter, to Mr WOODS, 35 George-street, Euston square.

BRICKFIELD.

**TO BE LET, a Brickfield,** on the banks of the river Medway, near Maidstone. The materials are in readiness to work for the season. The field is capable of supplying Five Millions of Bricks during a season. A portion of the valuation money would, with proper security, be allowed to remain until January next. For rent and particulars, apply to Messrs. FEARON and CLABON, 8, Lincoln's Inn Fields.

BUILDING GROUND.

**TO BE LET, a very desirable Frontage of** nearly 800 feet, situate in a highly respectable neighbourhood a short distance from the high road, and within 3 miles of Hyde Park Corner. The premises measure nearly 2 acres, part containing good Brick Earth, which may be used or not. Apply to Mr BOND, House Agent, Hammersmith Road.

TO TIMBER MERCHANTS, DEALERS, or Commission-Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

**TO BE LET, on Lease, for 21 Years,** Excellent BUSINESS PREMISES, with Residence attached, eligibly situated, No. 4, Albion-place, on the High road, Holloway, near the Chapel of Ease. Rent, £70 per annum. Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Jewry, and of Mr LLOYD, on the premises.

CLAPHAM COMMON.—To Builders, Speculators, Building Societies, and others.

**TO BE LET, for 40 Years, a desirable** Building Frontage, with Park-road, adjoining the Common, 82 ft. and 85 ft. per foot frontage, with liberty of purchasing the free hold if wished, within a given period, at a price which the amount may remain on mortgage. Liberal advances made to parties of respect ability, upon good security, being given for the fulfilment of any agreement that may be entered into. Further particulars of Mr. LLOYD, Architect, 4, Warwick-court, Gray's-Inn square.

CHELSEA, NEAR THE STEAM-BOAT PIER.
BUILDING LAND.

**TO BE LET, on advantageous terms, for** the erection of a Public-house, together with several plots for Eight-roomed Houses, which are in great request. The site is situate in the midst of improvements; omnibuses and boats constantly plying to and from the City, and all parts of the metropolis. Leases direct from the freeholder. Term of lease, 97 years. Apply to Mr. E. HUTCHINSON, Cremorne Field, King's-road, Chelsea, opposite Cremorne Gardens.

TO BUILDERS, MATERIALS AND MONEY ADVANCED

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's-road, Pimlico, to Chelsea down place. This is one of the most rapidly improving neighbourhoods near London, and will be the immediate approach from all parts westward to the new Victoria-park, from which it is but a quarter of a mile distant. Apply to Mr. PALMER, on the premises.

ST. JOHN'S WOOD PARK :: IMMEDIATE CONNEXION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation, commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevation from a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and pleasure grounds of the West End and the City. For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue road, Regent's-park.

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**A DOUCEUR of Two Guineas will be** given to any person providing the Advertiser, aged Twenty-two, a Job in a Joiner's Shop, where he will have an opportunity of improving himself.—Address A. B., 36, Clerkenwell Close, London.

TO CARPENTERS AND BUILDERS.

**A FATHER is desirous of placing his** Son as an (In-door) Apprentice to the above trade. He is in his sixteenth year, and has been eighteen months at the business. A moderate premium will be given.—Address, post-paid, W. W., No. 8, George-place, near the bridge, Battersea.

TO BUILDERS AND OTHERS.

**A PERSON wants a Situation as Foreman** in a Joiner's Shop, or to Superintend Building in General, having held a similar situation before in one of the largest establishments in London for several years.—Address to K. L., 194, Edgware-road.

TO CONTRACTORS AND BUILDERS.

**A PERSON of Active Business Habits,** well acquainted with the management of large works, taking out quantities, estimating, measuring, &c., is open to an ENGAGEMENT. First-rate references. A liberal salary expected.—Address M. R. F., office of "The Builder," 2, York-street, Covent-garden.

TO CARPENTERS AND JOINERS.

**A YOUNG MAN who has served nearly** Three Years at the Business, would be glad of EMPLOYMENT in a shop, or serve his Time out, his master having failed. The most respectable references can be given.—Please address A. C., 33, King-street, Soho, London.

TO CONTRACTORS, ENGINEERS, &c.—BONUS.

**A YOUNG MAN who is a good surveyor** and leveller, an expert draughtsman, and quick at figures, wishes to be employed on works in course of construction. He is most industrious, and can give security. A Handsome BONUS will be given to any party introducing advertiser.—Address, with real name and address, BONUS, office of "The Builder," York-street, Covent-garden.
N.B. Advertiser is provided with the best instruments.

TO ARCHITECTS, SURVEYORS, AND BUILDERS, &c.

**A YOUNG PERSON, whose office hours** expire at 5 P.M., and is disengaged for the remainder of the evening, is anxious to engage himself in either of the above offices, where he can assist in drawing, tracing, squaring dimensions, reducing them into bills of quantities, &c.—Every satisfactory information can be obtained by addressing per post, paid, to J. H. S., care of Mr. Downes, chemist, Rathbone-place, Oxford-street.

TO ENGINEERS AND OTHERS.

**THE Commissioners of Rye Harbour wish** to Engage a respectable Person who has some knowledge of Engineering and of Harbour Works in general, and capable of Drawing Plans, Preparing Specifications, and Details of such works, to act as Superintendent of the works of the said Harbour. Salary, 100*l.* a-year, and the occupation of a house near the said Harbour.—Applications and Testimonials to be sent to Mr. MANSER, Solicitor, Rye, on or before Eleven o'clock in the morning of the 15th day of March next, at which time applicants will be required to attend personally on the said Commissioners, at the George Inn, Rye.—Rye, Feb 15th, 1847.

TO BUILDERS AND OTHERS.

**TO BE LET, at moderate Ground Rents,** for building upon, ELIGIBLE PLOTS OF FRONTAGE GROUND, possessing a good depth. Term above Sixty Years. Situation leading from Camberwell-green.—Apply to Messrs. Hill and Mathews, 1, Bury-court, St. Mary Axe.

BRICK-FIELD.

**TO BE LET on Lease, a BRICK-FIELD,** containing preparations for four Stools for the ensuing season. It contains excellent earth, is close to the water side, therefore commanding the best markets, and the Stock to be taken is not large. Royalty, 2*s.* per thousand, and a Surface Rent. Apply by letter only, with real name and address, to B. Y. office of "The Builder."

TO TIMBER MERCHANTS, DEALERS, or Commission-Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

**TO BE LET, on Lease, for 21 Years,** Excellent BUSINESS PREMISES, with Residence attached, eligibly situated, No. 4, Albion-place, on the High-road, Holloway, near the Chapel of Ease. Rent, 42*l.* per annum.—Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Jewry, and of Mr. LLOYD, on the premises.

CHELSEA, NEAR THE STEAM-BOAT PIER.
BUILDING LAND.

**TO BE LET, on advantageous terms, for** the erection of a Public-house, together with several plots for Eight-roomed Houses, which are in great request. The site is situate in the midst of improvements; omnibuses and boats constantly plying to and from the City, and all parts of the metropolis. Leases direct from the freeholder. Term of lease, 97 years.—Apply to Mr. E. HUTCHINSON, Cremorne Field, King's-road, Chelsea, opposite Cremorne Gardens.

BUILDING-GROUND, PUTNEY.

**TO BE LET ON LEASE, sundry** Plots of Building Ground, delightfully situated near Putney Bridge, the Steam Boat-pier, and the Richmond Railway, suitable for the erection of villas and other residences, having a view of the river Thames, with constant and cheap communication to all parts of the metropolis. Plans may be seen and particulars obtained upon application to Mr. J. B. SHEPHERD, Surveyor, 14, Buckingham-street, Strand, City.

TO BUILDERS.—MATERIALS AND MONEY ADVANCED

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's-road, Dalston, to Lansdown-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria-park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

# THE BUILDER.

FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long anxiously called for

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 84, Long Acre.

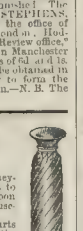
TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Forcing-pits, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, can be finished in one week by the process above named, and be more pleasing when finished. The Dyes or stains are prepared and sold by HENRY STEPHENS, 51, Stamford-street, Blackfriars-road; sold also at the office of "The Builder," 2, York-street, Covent-Garden, London. Hodgkinson, Widemarsh-street, Hereford; R. Sutton, "Review office," Nottingham; H. Wills, 39, High-street, Lynn; and in Manchester at Cruden's Middle Warehouse, Cannon-street. In bottles of 2d. and 4d. each &c., at 1s. per gallon. The dry colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N.B. The Trade supplied.

ROBERT STEDALL'S
PATENT SCOLECOTHIC VENTILATOR,
AND CURE FOR SMOKY CHIMNEYS



The most effectual and most ornamental Chimney-pot yet invented, entirely obviating the objections to which all others are open, namely, that of soon becoming clogged with soot, and, consequently, useless.

A large quantity have been made in various parts of the kingdom, which have given the greatest satisfaction.

Price, Strong Painted Iron ..... 33s.
" Strong Galvanized Iron..... 40s.

To be had of ROBERT STEDALL, 13, Nelson-street, Greenwich

THE TRADE SUPPLIED,
And also Licenses granted to Manufacturers.

SMOKY CHIMNEYS EFFECTUALLY CURED.



WILSON AND CO.'S
PATENT
VENTILATING CHIMNEY POT,

For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The Trade supplied with them at the Manufactory

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.



H. MORRELL'S FINE PREPARED DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly finished drawings.

Sold wholesale at the Manufactory, No. 10, Fleet-street, London, and may be had retail of all the principal Books-llers and Stationers in Town and Country.

ORNAMENTAL IRON STAIRCASE

TO BE DISPOSED OF, at a great sacrifice, having been recently made for a GENTLEMAN'S MANSION, but by some unforeseen circumstance is now left on hand, with ornamental cast-iron heads, and risers full three-eighths in thickness perforated with patterns in panels, moulded nosings, and newel-cased ends, formed on wrought-iron carriages of 4 inches by 1 inch.

This staircase is well adapted for any situation WHERE ELEGANCE AND LIGHTNESS are desirable, as both ends are framed to shew, and may be put up in a central situation, and suitable in a show-room, warehouse, or any out-door purpose, such as for decorating from a garden to the mansion of pleasure-grounds, &c. &c. Apply to PIERCE and KOLLE, Stove-Grate Manufacturers, 5, Jermyn-street, Regent-street

PIERCE and KOLLE, 5, Jermyn-street, Regent-street, Radiating Stove Grate Manufacturers DISSOLUTION of PARTNERSHIP.—In consequence of a Dissolution of Partnership, a large portion of their SPLENDID STOCK WILL BE DISPOSED OF, at prices offered to purchasers at a great reduction. It consists of Chimney-pieces, Stove-Grates, Fenders, and Irons, in suites; Kitchen and Laundry fittings, comprising Ranges, Ovens, Boilers, Hot Plates, Turbot, and Fish Kettles; Bain Marie Pans and every article for kitchens use. PATENT WARM AIR and ARNOTT STOVES, BATHS of all kinds; LOCKS, and general furnishing IRONMONGERY.

N.B. PIERCE takes this occasion respectfully to acquaint the nobility, gentry, and public, that the business will continue to be conducted by him without interruption, as usual.

5, Jermyn-street, Regent-street

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 3a, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| | | | | |
|---|---|---|---|---|
| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
| 6d. | 7d. | 9d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 13s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 32s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 13s. per gross. |

Elliptic Springs 3d. per inch. Registers, 6d., 7d., 8d. per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings

| 2 ft. | £2 2s. | 2 ft. 6 in. | £2 15s. 6d. | 4 ft. | £4. |
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Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 18s. | £4 | £4 4s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:

| 2 ft. | 3 ft. 3 in. | 3ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 9d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the country, accompanied with a remittance or reference, will meet with prompt attention.

CAST-IRON SOCKET-PIPES, RAIN-PIPES, AND EAVES GUTTERS.

F. A. TIDDEMAN, Purfleet Wharf, Earl-street, Blackfriars, keeps a stock of Socket-Pipes, Rain-Pipes, Half-round, and O. G. Gutters, &c. &c. &c. Contracts taken to any extent.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl-street, Blackfriars, keeps an assortment of Stocks, or moulding-pieces; Plates, Furnace-doors, Top and Fall Pieces, Steppers, Chimney-bars, Inside, Outside, and Ash-pit, Doors and Frames, Bolters and Frames, Lamps, &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

STOVES, FENDERS, FIRE-IRONS, and KITCHEN RANGES, combining every improvement. A superb Stock of Bronzed and Ormolu-mounted Drawing-room Register Stoves, Steel and Bronzed Fenders, Steel Fire-Irons of the most chaste and elegant Patterns, adapted for every taste and size. The Improved Cooking, warm-air, and Hot-plate Ranges, in smallest and capabilities, viz.—Roasting, Baking, Boiling, Stewing, Steaming, Boiling, and Frying. This Range will generate sufficient steam, with the aid of pipes, to warm a large dwelling and conservatory; is well deserving the notice of the public, and surpasses to be seen in full operation daily, at PEAKE, DRYE, and PEAKE'S, the Finsbury Iron Works, 89, Chiswell-street.

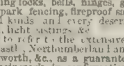
WARMING.—STEPHENSON & PEILL, 67, Gracechurch-street, City, solicit the attention of Bankers, Merchants, and others, to their improved method of Warming any number of Offices, Strong Rooms, and other apartments, at any elevation, by HOT WATER from one fire-place, combining Free Ventilation and a Pure and Genial Atmosphere, with Economy, Cleanliness, and perfect freedom from Fire. References to eminent firms who have for some time been in operation. Stronger rooms constructed of any dimensions. Iron Safes, Bookcases, &c. Manufactory, 17, New Park-street, Southwark. SAMUEL HALL'S Patent Ventilating Stoves from 40s. upwards.

BUILDERS, CARPENTERS, and others, are respectfully informed, that they can be supplied with IRON COLUMNS, GUTTERS, RAIN WATER PIPES, AREA and TRELLIS GRATINGS, SASH-WEIGHTS, RAILING, GATES, and IRON COPING, BALCONIES, VERANDAHS, CONSERVATORIES, FANCY STAIRCASES, IRON DOORS, STOVES, RANGES, &c.

BAKER'S OVEN-WORK always in stock at JONES'S IRON FOUNDRY and MANUFACTORY, 3, Bowl-alley, Old-street, St. Luke's. A great variety of Patterns for Lathe-work, &c., &c.

IRONFOUNDRY.
163, Drury-lane, and Charles street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER),

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that may will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain water Pipes, Heads, Shoes, &c.



TO ENGINEERS AND BOILER MAKERS.
LAP WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 43, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferrules, and can be taken out and fixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames street.

CHARLES SMITH and SON, 25, GREAT CHARLES-STREET, BIRMINGHAM late STANDLY and SMITH, formerly STANDLY and GALE, Bull-street, Locksmiths, Bell-hangers, Brass and Iron Founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS, and ENGINEERS to their inventions for prisons, lunatic asylums, &c.

C. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar designs, inspector squares, cinged door-fastenings, iron frames, hinges, &c., as supplied to the new MODEL PRISON, LONDON, and TWENTY-THREE SIMILAR GAOLS, where they have given great satisfaction.

Among other testimonials can be shown that of Major Jebb, attesting the efficiency of the labels, &c., invented by them.

The contracts will be taken for the approval of the inspector-general of prisons, and the architects.

C. Smith and Son also are prepared to contract for the supply of the whole of the ironmongery required for the residences of the governors, chaplains, and subordinate officers, as well as the workhouses, including locks, bells, hinges, grates, kitchen ranges, staircases, gratings, fireproof safes, bookcases, doors, metal sashes of all kinds, and every description of ornamental brass and iron work, light castings, &c.

C. S. and Son beg to offer for the ordinary works performed by them at Windsor Castle, Northumberland and Stoke House, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work, in confirmation of which numerous letters from noblemen and gentlemen can be shewn

N.B. C. SMITH and SON do not appropriate inventions or advertisements, nor label locks "Patents, Warranted, Secure," that are neither the one nor the other.

TO BUILDERS, CARPENTERS, &c.

THE following are the present Prices, for Cash, of Ironmongery at W. YOUNG, and Co.'s, 194, Oxford-street:—2-inch Cast Butts, 1s. 1d. Doz.; 2½ Do., 1s. 6d. Doz.; 3-inch, 2s. 1d. Doz.; 3½ Iron Sash Pullies, 11d. Doz.; 4½ Do., 1s. 4d. Doz.; 1½ Brass Do., 3s. 6d.; 1¾ Do., 4s.; Sash Weights, 3s. 6d. Cwt.; Sash Lines, 6s. 6d. Doz.; 3½ Rain Pipe, 1s. 7d. Yard; 3-inch Do., 1s. 10d.; Mortise Locks, 38s. Doz.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

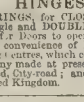
BENJ. FOWLER, 63, Dorset-street, Fleet-street.

TO ARCHITECTS AND BUILDERS.

DOOR SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES and Brass and Iron Centres to open one or both ways, and Rising Hinges for the convenience of Doors opening on uneven Floors. Likewise Swing Centres, which consist of a combination of power unequalled by any made at present.—Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

LEADBEATER, many years manufacturer for Chubb, of St. Paul's Churchyard. PERFECT SECURITY is afforded, or at a TRIFLING EXPENSE of every description by LEADBEATER'S strong Wrought-Iron Chemical compound-filled FIRE-PROOF SAFES CHESTS, and BOXES Doors for Strong Rooms and Parties' Safes, &c. all secured by his Improved Detector Locks, the mingdom of 20 bolts, which defy the skill of the most experienced burglars. A large Assortment of Fireproof Safes, &c., for Sale. Made to order at the shortest notice, at prices 25 per cent. under any other house in London, at his Manufactory, 125, Aldersgate-street.





A FIRE-PROOF REPOSITORY, well adapted for Solicitors, to be SOLD a BARGAIN

Improved Detector Locked Safe Bolts, affording PERFECT SECURITY, for Street and other Doors.

WORCESTER ENCAUSTIC TILES. Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. CHIEVE and CHILLCOTT, Manufacturers, Belvidere-road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester

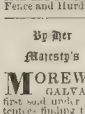
WILLIAMS'S PATENT SLATE RIDGES and HIPS. The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs, and possessing a solid Roll of various sizes, more elegant and durable than lead, and 30 per cent cheaper.—Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchants, Belvedere-road, Lambeth, London. May be had also of Country Slate-dealers.

TO BRICK AND TILE MAKERS

THE AINSLIE BRICK and TILE MACHINE COMPANY JAMES SMITH, Esq., of Deanston, Chairman, invite attention to their improved Brick and Tile Machines, which are fully seen at work at Alperton, and at the Company's Works, Hanwell Wells, from 9 to 4. Power by Mr. ROBERT SCRIVENER, who has been appointed manager in the room of Mr. JOHN AINSLIE, will shew them at the works at Alperton, which is within a mile of Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway. All communications to be address to Mr. WILLIAM GORDON, Secretary, at the office of the Company

London, 193a, Piccadilly. Feb. 27, 1847.

PATENT ARCHITECTURAL ROOFING TILES.



ARCHITECTS, Builders, and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and effect, surpass every other kind of roofing, whilst their cost but little exceeds the covering with common pantiles, and their superiority over slating is at once apparent.

For prospectuses and full particulars, apply to Mr. J. G. HUGHES, at the Company's Offices, 198, Strand.

Price, from 16s. to 22s. per square.

PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark Bridge, and the Lower, Southwark. At the above Works the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in his application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

By Her Majesty's Royal Letters Patent.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED METAL.—This article was at first sold under the name of Galvanized Tin Plate, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanized Iron, and that the cheapness of their metal has thereby sustained injury, are determined of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanized Iron has a plain, zinc-like appearance, while M. and R.'s Patent Galvanized Tinned Iron has a smooth crystalline surface.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON, Patronized by the Admiralty, and the Honourable Board of Ordnance, is now extensively used in Her Majesty's Dockyards, at the Tower, and elsewhere, for every variety of Roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the process of Galvanizing, and combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, by which oftentimes a leakage must of course result.

The material used likely to be destroyed by fire, as in the case with zinc and lead, will not readily be known, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes above named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal in use that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

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The Builder.

No. CCXIII.

*SATURDAY, MARCH 6, 1847.*

THE force of habit, dislike of change, and inability of men to invent, are strikingly shewn in architectural productions all over the world. The first rude habitations of a country, regulated by the materials at hand, the climate, the wants of the inhabitants, and the means at their disposal, or when obtained from another country, appear to have influenced all after productions. The original type is discoverable to the last; and, even where circumstances have led to the use of another material, or a change in the purpose of the structure, it has been, during a long period, but slightly departed from, and that by slow and almost imperceptible degrees. The buildings of the Chinese, to mention one country, afford a curious and striking illustration of the fact. The tents of their herdsmen-ancestors are to be seen in their houses, palaces, and pagodas of to-day; so much so, that their towns look like encampments; and Hope says, that when Lord Macartney, after crossing the whole of the Chinese empire, from south to north,—from Canton to the great wall, its furthest length,—was received by the emperor in a real tent, he scarcely perceived any difference between that and the thousands of stationary buildings he had viewed during his journey.

Egypt, India, Greece, Rome, would all afford corroboration of the remark if it were needed, although, perhaps, neither so much so as the extraordinary country before named, where progress seems forbidden, and expansion of mind is out of the question. "So far, but no farther," say there the rulers of the people in all things. If a Chinese does not acquire a certain amount of knowledge, he is deemed infamous, and loses certain rights; but if he pass the prescribed bounds, and gains more information than is legally necessary, he is looked upon as dangerous, and loses perhaps his life.

Oh! happy Englishmen, if we would but feel it so; to whose intellectual and moral advancement, no bounds are marked but those raised by our own ignorance, wilfulness, or weakness!

A few days ago we saw a very interesting representation of a Chinese house, made in that country. Immediately after the termination of the late war, Mr. Morson, of Southampton-row, sent to China for accurate drawings and descriptions of the principal druggist's shop in Canton. It was found difficult to obtain drawings which would clearly convey all that was desired, but not so to have a model made; and, accordingly, native artificers were employed to construct, in small, an exact counterpart of a shop and house complete; and this is now in Mr. Morson's possession, and supplies information as to the construction of Chinese dwellings, which was not to be obtained at "The Chinese Exhibition." The house is two stories in height, connected by a step-ladder; it has a room behind the shop, and two rooms on the upper floor, and is covered with an M roof, or roof of two spans from front to back. The upper room is lighted by a series of openings in the front wall, which have perforated wooden shutters. These openings also give light to part of the shop below, by means of a large trap in the upper floor. The upper back room is lighted by a narrow uncovered opening in the roof, at the junction of the two spans (the "valley"), extending the whole width of the house. A similar opening in the floor, protected by a light railing, as is the opening in the front room, gives light and air to the room below. The rudeness and wastefulness (in space) of this mode of lighting are too obvious to need remark. There are, moreover, two small openings on each side of the house to admit air. The frontage is about 20 feet, and the depth of the house about 24 feet.

The shop front is open to the street, but has wooden shutters to close it at night. The construction, even in this case, recalls in the mind of the observer the original type to which we have alluded, and will serve to take us back to the point whence the mention of this model has led us to digress,—the natural adherence of men to forms previously used, their love of precedent, and the deduction it was our purpose to make when we commenced these observations.

The deduction, an obvious one, but nevertheless little attended to, is this,—that nations who appreciate the influence of fine buildings and fine art generally on the character, and would advance in that direction, should keep a most jealous watch upon every public building that is about to be erected, with the view of preventing the increase of bad taste. Each building that is raised influences the appearance of many others; and one weakness or monstrosity begets a thousand. It is impossible to calculate the mischief which may be done to architecture as an art by even one building, or say how long its advance may be retarded by it. The extent to which a design affects the architecture of the time may be seen every day. Nothing is too ugly to be copied when once erected, and every repetition will play its part in further vitiating public taste, and preparing the way for worse.

To compare very small things and very trifling effects with large,—we may mention an exemplification under our eye at this moment. Two or three years ago, in the ordinary course of an every-day practice, we "beautified" with compo the front of an old house, up to that time rejoicing in the unadorned simplicity of brick; and one by one four neighbouring houses have since been made by their various owners to take precisely the same form, its defects, in particular, being scrupulously repeated.

We repeat what we have already said, that the art-loving portion of the public should watch most jealously the erection of every public building, and insist upon having the most satisfactory assurance that what is about to be done will be creditable to the nation, before they suffer the public money to be expended.

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BRITISH EMBASSY IN TURKEY BURNT.—The Constantinopolitan correspondent of the *Daily News* reports that the British Embassy at Pera, in Turkey, is a total wreck, together with no less than ninety houses adjoining it and each other, from fire, originating in a house next to the residence of the *attachés* of the embassy. The terror, as usual in such wooden and combustible food for flames as those consumed, was extreme and universal, being by no means confined to the neighbourhood suffering under the infliction. The embassy itself, however, was of stone, with iron shutters and doors, and so far withstood the flames but the furniture, window woodwork, &c., were destroyed. The Italian theatre, too, and some of the best houses in Pera, are involved in the ruin.

## THE PROFESSION OF THE ARCHITECT CONSIDERED:

### ITS OBJECTS, MODE OF OPERATION, AND OBSTACLES.

THE profession of the architect, and its position, generally, in the world, have afforded matter for comment in our pages on several occasions. We have endeavoured to call the attention of our brethren to the unsatisfactory position of many departments of the art and profession, in the hope that the vague complaints, many of which have found utterance in the letters of correspondents, might be so far analyzed as to induce an accurate conception of the present state of architectural practice, and some determined effort to place architecture in its proper position, as an art, as a science, as a means of success in life, and as a power, capable of conducing to the highest amount of mental gratification and improvement, of conferring benefits of the utmost influence upon general happiness and comfort, in the social state. It is extremely important to the welfare of the professors of architecture, that they should carefully consider the obstacles to which their peculiar profession is exposed, and clear away that opaque medium which seems to interfere between them and the notice of the public. Too often, the hurry of the daily struggle leaves little time for reflection on the means by which many difficulties might be removed, but we are sure, that greater impediments attend the progress of the architect than are ordinarily to be found in other professions, or than are to be classed amongst the difficulties, from which no man's lot is free. It is manifest, if this be the case, as we hope to be able to shew, that it is to the happiness and welfare, not only of architects, but of every member of the community, that these causes should be removed, that well-directed efforts should bring their expected reward to the individual, and not remain, as now, profitless to the public. It is painful in any case, to see the energies of a life wasted in incessant labour without result, when the mere indication of an aid would render the same exertions productive and beneficial; though the world will always supply instances of such circuitous and misapplied labour. But the case is pregnant with matter for deep reflection, when it is that of a whole profession, and one which has legitimate means of exercise, so eminently conducive to the public good.

To expose all the impediments, which beset the progress of architecture, and prevent its attaining its due rank as a study, an art, a science, and a profession, to terminate the reproach, that it is "the only branch of human ingenuity which remains an exception to this century,"—words which have been extensively quoted from our pages,—is a task difficult enough for one pen, yet worthy the effort. We long since reminded our readers, that the "ostensible profession" of architecture did not form the "main pursuit," and that in the actual profession, "valuations, surveys, arbitrations, and other kinds of business less connected with the art" occupied a larger amount of the architect's attention than they might be required to do, did architects exert themselves to diffuse a general knowledge of the value of their time and labours, when employed in the higher branches of their profession. Besides the space we devoted to different features of the subject, other efforts have been made, though not precisely in the same road, and as we considered at the time, somewhat misdirected, however much we concurred in their main intended object. It is essential that the important and leading features of the case should be stated, and that no further errors or misconceptions should be added to those which at present exist to the detriment of architecture. It must be recollected, that we address the public, rather than a profession; and we know well how hard it is to eradicate any erroneous conclusions extensively circulated. A certain degree of infallibility will always be attached by the general public to what has come from the press; and it greatly behoves those who know they are dealing with the vital interests of an art and a profession, to weigh well what will be the translation made of any particular statement.

The impediments to the progress of architecture, exerted mainly through the medium of the practice of its professors, we say, have never yet been enumerated. Perhaps no individual has occupied himself much in tracing to their causes, the obstacles of which from time to time, he

has had personal experience, whilst the full amount of the evils is, we are convinced, hardly suspected or understood, though so far important, if only as a matter of national concern, as to be worthy of attentive examination, even by the government of the country.—The existence of the art and science of architecture is, in brief, the consequence of two of the natural wants, that of providing a habitation, and of delighting the eye by the presence of beautiful forms; and he, the architect, who has made subjects connected therewith his entire study, is the fitting and proper guardian of the interests of those who have not, and the desirable medium between the person having the want, and the individual who supplies it, just as the physician is interposed between the patient and the druggist, who compounds the means of remedy. And to discriminate between the profession of architecture and the trade of building, we conceive to be alike important to the interests of both, though not usually so considered as regards the latter. The builder may otherwise, so readily lie under an accusation of having magnified the amount, or, to increase his profit, of having executed his work in an inferior manner, that it cannot but be his *interest* to relieve himself from such imputations. The vulgar notion, that perishable work is "good for trade," cannot be too soon exploded as fallacious,—whilst it leads to great dishonesty.—The anxiety of the architect to have work well executed, is the very reason, why he is seldom consulted. A speculative builder will always be found to do the work at any price, that may happen to be in hand; and the rashness or inability to estimate, shown in the lists of tenders, which we constantly publish, is the best argument in favour of a change, that we could give. But the existence of an architect to *these* men is fatal. They can no longer make their usual profit, and after defrauding their fellow tradesmen in competitions, and their employers in the work, they generally succeed in defrauding themselves. We have no implicit faith in "proverbs;" but that honesty is the best policy, and that penny wisdom is pounds-folly, we take to be, at least, capable of testimony from builders and householders. The general world, however, will not attend to these points, and draw conclusions from them, as we must; they will continue to send for builders, when they should apply to architects; bad construction will exist in architecture; self-delusion, chicanery, and loss in trade, and large annual expense to every body, until an effort is successfully made, to define the limits of the profession of architecture and the trade of building. What is for the benefit of the one, is certainly for the advantage of the other. The present practices are injurious to those who least deserve to suffer; namely, the builders who are proud of turning out good work, and it is for the interest of this class that an architect should be constantly engaged, and we submit, that the questionable interest of any who deal with less integrity, has no claim to consideration.

But the interest of the public is, indeed, the main argument for a more frequent appeal to the services of architects, and it is our object to urge architects to diffuse extensively the knowledge of the full scope of architecture, and its mode of operation, to make it a matter of popular knowledge, as it is of popular importance and economy. Why an architect should not be consulted in many other matters than those for which he is at present applied to, we are unable to say; for example, in taking a new house, how often might the advice of a competent person prevent the most serious injury to the health of a family, and great expense to the tenant. In nearly all the cases, in which it is now the practice for a householder to send for a builder, we submit that a direct saving of expense would generally follow the employment of an architect. Neither will architecture be valuable as a profession, nor will the profession act as it ought, and might do, for the benefit of the art, until *all* subjects which really are departments of the profession, are referred to the architect, just as now, in the case of each, the services of the medical man and the lawyer are enlisted.

But the more we examine into the causes of general evils, the more we find they become classed under a few heads. Want of information in the public, indifference of architects to the extension of such information, are in one way or other, the causes of every thing, to which we shall have to allude. The iniquitous management in competitions, and its evil results, is but one department of the general loss to the public, through its ignorance of the merits of architecture, though it is one which is so often presented in striking instances, that it cannot remain, as in the case of other matters, unheeded, and had not the general question of fairness in competitions, merged into discussion about the propriety or otherwise, of a few details,—whilst the great grievance remains, and no system could possibly be chosen, worse than the present, which is in fact, none—architects would ere this, have stood in a more favourable position, than that disclosed in a late number. We should regret the rejection of our own views by those who may find it difficult to agree at once with a few details; the great causes of the present unsatisfactory position of the art and the profession, are, as we have said, ignorance in the public, and indifference or want of unanimity in the profession, and no exertions should be diverted from these ends; the general question is too urgent to lose any single effort.

The full definition of the profession and art of architecture, is, we think, worthy of being attentively considered and pointed out. The science, and much of the art, is becoming enveloped in what the world calls "engineering," and the architect is seldom applied to in any thing which is supposed to require scientific construction. They must be up and stirring. During their long sleep, a new class has entered upon the practice of architecture; men not claiming to possess any knowledge of art, who were at one time makers of machinery, and are now called by a new name "civil engineers," have stept in for half their work, because they entered into the spirit of the time, and sought to qualify themselves,—because *they* met, and discussed, and published, and did real benefit to the world, whilst architects did not whisper the word "architecture," and forgot that bridge-building, excavating, embanking, and tunnelling were most important ends of their existence as a profession, and, though the architecture of Vitruvius, including all these, lay open before them, on the table.—We shall have to consider the important particular of education, since that may no doubt be one great cause of the present state, and it may be said, that it is to defects of early professional education or experience, that we owe many of our difficulties, and we may inquire into the propriety of making such an imputation. We do, however, say now, that the deficiencies of architects partly arise out of the want of a full conviction on their parts, of the extensive range of architecture, which would be found to include all that now passes under the name "engineering," and almost every thing that requires the arrangement of materials, and design in form. We long ago urged that, in not seeking the improvement of design in furniture and interior decoration, the architect neglected a most important department of his pursuit, and we have omitted no opportunity of enforcing similar views, though really, they form a very small part of what we contemplate under the general head of "architecture." The education and profession of architects is limited to only a few departments of *architecture*, but were both conducted on sound principles, there is no reason why they should not be made to conduce to the successful exercise of every branch. No good result will follow from an attempt to limit the requirements, necessary for the professional practice. The powers of the human mind are bounded only by the object, and the task, not by inability of comprehension. The study is one of unlimited extent, the profession of very wide range; no course has ever yet been indicated for the first, no good system inculcated in the other: as a profession, architecture has to attain a higher rank, and an increased sphere of benefit. Both require the devotion of the utmost ability, for which the rewards are more mental than pecuniary.

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THE SERPENTINE IN HYDE PARK.—"A Subscriber" wishes us to call the attention of the Chief Commissioner of Woods and Forests to the numerous holes which have been formed in the bottom of the Serpentine river, by removing the gravel at various times, and are extremely dangerous to bathers. If these were filled up so as to obtain a uniform depth of water, many accidents would be prevented.

## THE BOND QUESTION.

IRON *v.* WOOD.

THE letter of Dr. Bromet (p. 84, *ante*) having directed attention to an evil to be apprehended from the expansion and contraction of hoop-iron bond,—or, at least, from the disparity in these respects between it and the masonry or brickwork in which it is inclosed, and that gentleman having a doubt as to thick walls affording to the iron protection against the temperature without, the following memorandum will perhaps be deemed relevant to the point at issue, although not hoop-iron, but a bond of a stronger description, is referred to:—

"The consideration of the linear expansion of iron ties is one of great practical interest, seeing the dangerous influence which that property may exercise under particular circumstances; though, fortunately, its amount is not such as to be at all perilous in ordinary cases. The expansion upon the length of malleable iron by 180° increase of temperature is—

| | | |
|---|---|---|
| According to Smeaton | ..... | 1-794th |
| " Hassler | ..... | 1-798th |
| " Faraday | ..... | 1-812th |
| " Lavoisier and Laplace.. | | 1-819th |
| " Dulong and Petit | .... | 1-846th |
| " Borda | ..... | 1-865th |

The trifling difference here exhibited may be attributed to difference in the density of the material; and if we take the datum afforded by Smeaton's experiments, namely, the greatest, we find that with this increment of heat the gain in length is 1 inch in 66 feet.

During the erection of Girard College, Philadelphia, a few years ago, the architect, Thomas U. Walter, in order to settle some conjectures concerning certain iron bands employed for resisting the lateral pressure of a series of arches, as regarded the effect of their expansion and contraction, instituted experiments as follows:—At a season when the temperature was at 82° of Fahrenheit, a self-registering minimum thermometer was placed on one of the bands, situated in the middle of a wall 5 feet 5 inches thick (which was exposed to the full power of the sun in summer, but was sheltered by a temporary roof in winter); and the opening which had been left for that purpose was then built up. Ten months after, when the temperature was also 82°, the wall being re-opened, the thermometer was found to have descended to 42° during the intermediate winter—the extreme cold of which had been 3° below Zero. Again, during the same winter, but at a time when the temperature was at 24°, a self-registering maximum thermometer was placed on the band in the same wall, on the same level with the other thermometer, but about 60 feet distant from it, and the wall built up compactly, as in the other case: eleven months after, the temperature being also at 24°, the walling was removed, and the thermometer found to have ascended to 61° during the intermediate summer, the extreme heat of which was 94°. Thus it was found that, while the difference between the winter and summer temperatures was so much as 97°, that in the middle of the wall was but 19°, which, according to the datum afforded by Smeaton, gives a linear expansion of 1-7526th, amounting to 1-12th of an inch in 54 feet, the length of the iron bands referred to, and from which has to be deducted the amount of dilatation in the other materials in contact with them."

P.S.—By the way, I do not remember to have seen any reference made to the effect which may be expected to be produced by the action of the solar rays on Mr. Stephenson's great tubular bridge. I am not aware of its proposed geographical bearings; but it appears that 96° difference in temperature would produce about 1 foot of difference in length, and which would be bad enough supposing it alike on both sides, but *worse* if chiefly on one. Some telescopic arrangement over the central pier, I should imagine, would provide for such an exigency. JAMES WYLSON.

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DON'T FEAR A WARM BATH.—An impression being prevalent that the warm bath makes those who use it liable to take cold, the committee for promoting the establishment of baths and wash-houses have published a certificate to the contrary, signed by 144 eminent physicians and surgeons.

## THE BUILDINGS BILL AND THE MASTER CARPENTERS.

A THIRD meeting of the committee on the above bill was very fully attended at the Freemasons' Tavern on the 24th ult.—Mr. Biers in the chair—when the committee went through the present bill from the 40th section to the 73rd. The chairman read several communications from parties who considered themselves aggrieved under the provisions of the present bill, and particularly the following letter from Mr. J. T. Merrick:—

"Sir,—I beg to call your attention, as chairman of the Committee of the Master Carpenters' Society on the Metropolitan Buildings Bill, to that clause of the Act restricting the size of factories.

Having occasion to erect a manufactory for paper-hangings, which require a building of certain dimensions, I contracted with her Majesty's Commissioners of Woods and Forests for the largest plot of ground in New Oxford-street, and I have erected thereon a manufactory, under the superintendence of my own surveyor and the surveyor to her Majesty's commissioners.

I gave instructions to my surveyor to draw his plans for a building suitable for my tables and machinery, and at the same time to study the health and comfort of a large body of workmen, by having well-ventilated and lofty workshops; by so doing the cubical contents exceeded the limits required by the Act. I proceeded with my building under the impression that the official referees would modify the Act, as they have power to do, and allow of the improvement I had made. Such, however, has not been the case; and I have the satisfaction of knowing that had I made the stories of my building 2 feet less in height, it would have been built according to the Act of Parliament, and approved: in other words, had I erected low and confined workshops, which would have been inconvenient for the purpose I was erecting the building, as I require light and air for the manufacture of paper-hangings, and endangered the health of the workpeople, the building would have been perfectly in accordance with the Act of Parliament, whereas now it is condemned as a nuisance. The total height is even now less than the limits prescribed, but the superficial area, which is regulated by my tables and machinery, makes the cubical contents rather more than the 200,000 feet.

I may add, that my building has been surveyed and approved by the surveyor of her Majesty's Woods and Forests; it has also been surveyed and approved by the surveyor to three of the principal insurance offices in London, and is ensured even at a less rate than many workshops in the trade.

I trust that the Committee of the Master Carpenters' Society will endeavour to obtain an amendment for so arbitary and unnecessary an enactment, and one so prejudicial to the manufacturing interest of London. I shall be happy to shew you, or the committee, my premises at any time you may appoint."

A hope was expressed that parties who have really felt an annoyance, or what might, by any reasonable person, be deemed an unnecessary restriction, would forward to this committee such statements as might lead to a consideration of any point that may require amendment.*

Adjourned to Wednesday, the 10th inst.

DEPÔT FOR INVENTIONS CONNECTED WITH BUILDING.—"A Subscriber" says, "I have reason to believe it would prove very advantageous, not only to professional men, but also to the inventors and builders, if there was some central exhibition-room for the deposit of all intventions, and every thing connected with architecture and building, that parties could go in and inspect, with the several prices and prospectuses attached to them, rather than have to walk all over London to see what might be found useful or ornamental in a building. Could not a portion of such an edifice as they are now erecting for the Economic and Geological Institution be combined with it, and which will contain so much that is practically useful?"

* On the 1st inst. Mr. M. Forster asked in the House of Commons if it was the intention of the Government to bring in a bill to amend the Buildings Act introduced last session?—Lord Morpeth said, the amendments in the Metropolitan Buildings Act had been for some time under revision, and he was in hopes of being soon able to bring in a bill on the subject.

## WHAT IS DOING IN LONDON, AND WHAT OUGHT TO BE DONE

SIR,—As you kindly inserted my letter on the importance of a general scheme for the entire renovation of the whole of the metropolis, I take the liberty of again addressing you on the same subject; for really, the more I hear and see of the miscalled improvements that are, and have been, going on in London, and more particularly in the city, the more I become convinced that a different system must be adopted, or (to quote from Mr. Seeley's speech at the late meeting in Farringdon Without) "In ten years London will become like what Bartholomew fair used to be; nobody will go into it that can keep out, and when once in, a man's first effort will be to get out." In proof of this I will just mention some of the streets in the city, the widening of which the corporation have commenced. They are as follows:—Threadneedle-street, Gresham-street, Thames-street, Watling-street, Newgate-street, Butcher-hall-lane, Angel-street, the bottom of Holborn-hill, Fetter-lane, and Chancery-lane. Now, I do not object to any of these on the ground of utility, but simply on account of the great length of time they have all been in hand; and if they are left for the corporation to complete, about the middle of next century will be a moderate calculation of the time when they will all be finished. With the funds at their disposal, one would suppose that it would be the endeavour of the city corporation to carry out speedily what they have commenced, instead of which they are about to attempt two more "crooked lanes," viz., one from the west end of Cannon-street to Queen-street, or rather (which is the real object of the line), to Southwark-bridge, and another (for which an Act was obtained last session) from Tudor-street to Temple-street, across the end of Dorset-street, and which, by the bye, seems to make very little progress, like the rest.

In order that the public should have the benefit of improvements, some of which I grant are good in themselves, they should be carried out in a liberal and spirited manner; and the latter condition, at least, is at present an impossibility within the narrow boundaries of this narrow-minded city. I do not mean to say that outside the city these things are unexceptionally managed, but they are certainly better contrived, and when once commenced they are carried out within a reasonable time. New Oxford-street, for instance, which is one of the best lines of streets that has been formed in the metropolis, is decidedly too narrow; and an opportunity has also been lost for widening the narrow thoroughfare which runs by St. Giles's Church. Endell-street, too, is so much after the style of the city streets, that one would almost suppose it had been formed by the corporation. But the tardiness with which this street has been carried out is accounted for in some measure by the fact, that the greater portion of the property through which it runs belongs to the Mercers' Company. Of the improvements (I make use of this term, because it is generally understood to mean new streets, although it is in many cases a misnomer) now going forward in Westminster and Whitechapel, not having been in either neighbourhoods very recently I cannot say much; but that I have not formed a very high opinion of the former scheme, and that the latter is not progressing quite so fast as might be wished. However, the faults in these only shew more clearly the necessity of one efficient directing body, with ample funds at their disposal, and with one definite object in view, viz., the improvement of the whole of London in the best and quickest manner, so that those who pay for the improvements might have the benefit of them.

With regard to the necessary funds, I will again quote from Mr. Seeley's excellent speech at the meeting in Farringdon-without; he says:—"The sum of 20,000*l.* mortgaged by the corporation would not amount to 1,000,000*l* in fifty years. If there was no other way of raising the amount necessary for improvements, he would rather bear a little taxation than allow things to remain as they were." * * * "He would have a large sum to meet a great and comprehensive scheme of improvement, and instead of mortgaging the 20,000*l.* a year which the corporation proposed to sacrifice for this plant, he would retain that sum for the purpose of effecting small alterations year by year, such as the widening and improvement of streets, courts, and lanes, and other useful and beneficial objects which were constantly requiring attention."

I regret to say that the corporation have applied to Parliament for an Act to carry out their narrow-minded purposes, and that their bill is amongst the list of unopposed bills, so that although their plan when first propounded was so generally condemned, I believe it is not likely to meet with the least opposition in the House, and I am not aware that a single petition has been presented against it. I hope it is not now too late for this. In order to relieve the principal thoroughfares between the City and West-end, I consider that two lines of street are wanted, viz., one from London-bridge to Saint Paul's Church-yard, and the other, already urged in THE BUILDER, from the end of Cheapside to the end of Long-acre; the first would relieve Cheapside, and the second Fleet-street and the Strand. In addition to these, the Poultry should be widened, a viaduct formed from Holborn-hill to Snow-hill, Middle-row pulled down, Fleet-street widened from St. Dunstan's Church to Chancery-lane, and the Strand widened at the back or rather side of St. Mary's Church, somewhat in the same manner as round St. Clement's Church.

It has been often suggested that Temple-bar should be pulled down, but I do not think any good would be attained by that measure, as it would give very little more roadway, and it would be needlessly destroying a remnant of antiquity, whereas if it remains, it might be made of great use to foot passengers (particularly to the ladies) as a means of crossing Fleet-street, if a staircase were formed on each side of the street, for which purpose it would only be necessary to pull down the adjoining houses on each side.

When once the improvement of the whole of London is in the hands of one body, I think they may effect a great deal of good by altering the names of some of the streets, the great number of which of the same name causes endless confusion; for instance, King William-street in the City, and King William-street in the Strand, often get confounded, and the same with Russell-street, Covent Garden, and Russell-street, Bloomsbury; Wellington-street, Strand, and Wellingtou-street, Borough. Perhaps some of your readers may not be aware that there are upwards of seventy John-streets in London, forty-seven James-streets, fifty-two King-streets, forty-four New-streets, forty-six Queen-streets, thirty York-streets, fifteen Wellington-streets, twelve Grove-streets, and the like number of many others. These numbers I should say, are not taken from a very recent list, so that they are by this time considerably increased. A general alteration might certainly cause a little temporary inconvenience, but by writing up the old and the new name at first, that would be soon got over, and the great advantage of having only one street of the same name would soon be apparent to every body.

Another project which I think ought to be carried out either by or under the controul of the proposed improvement commission (or by whatever other cognomen they may be distinguished), is the formation of a line of railway which should completely encircle London (crossing the Thames twice), so as to connect all the railways which diverge from London. This grand connecting line should be formed at whatever distance from the centre of the metropolis is thought expedient (by the commission), say seven, eight, or ten miles. This plan, if acted upon, would do away with the necessity for any of the great variety of zig-zag lines which are continually being proposed (and in some cases carried out) to meet a crying evil.

The proposed railway street through Westminster furnishes a very good idea, which might be very well acted upon in the present case. In this scheme it is proposed to form an open cutting, with four lines of wooden rails, and a double set of rails to each line, one of the broad and the other of the narrow gauge, the whole to be worked on the atmospheric principle, and the banks to be planted with trees, and bridges to be built at the intersections of the roads. By these means an almost noiseless railway would be obtained,

and it would not present an eyesore, as most lines at present do.

As I said before, the removal of Smithfield market to Islington, and the formation of a central terminus for the Great Western, Birmingham, London and York, and Eastern Counties railways on its site, should form a leading feature in the scheme, as also the abolition of the tolls on all the bridges, and the completion of the Thames Tunnel (which is at present like the Soane Museum, a "mere useless toy"), and which should be also thrown open to the public without toll, as it is always found that tolls are avoided if possible. There are many other minor points which I should like to allude to, but as I have already extended this to greater length than I intended, I will conclude, hoping that some of your able correspondents will take up this important subject, to which I have not been able to do justice; and that you will also assist the good cause by a few more of your powerful leading articles, and thus awaken your brethren of the press and the public generally, to a sense of the absolute necessity for some change in the present mode of managing these affairs.

Feb., 1847. A Londoner.

## STEAM POWER WITHOUT FUEL.

A paragraph in a recent number of The Builder, on the alleged production of glowing red heat by friction of metallic plates, prepared as a machine for the purpose, has excited some interest. That a glowing red heat may be obtained by adequate friction of iron or copper plates properly adjusted, there cannot be the slightest doubt; and as in almost every really great and valuable practical discovery or invention, so in this, the wonder seems to be that machinery has never hitherto been expressly applied to an end not only practical and useful, but already frequently realized, by design as well as by accident, such as this has been.

If the savage Indian can cause a piece of dry cold wood to burst into flames by means of rapid friction alone; if the more civilized son of Vulcan can, with the power of his sturdy arm, and the weight of his rapid hammer, beat a piece of still colder iron into a glowing red hot taper, wherewithal to ignite his smithy furnace; if an iron axle will become red hot, and even be capable of setting fire to a carriage, by means of rapid friction; why should not the obvious possibility of thus evolving heat *ad libitum* by friction, and without fuel, be designedly and extensively applied, through proper machinery, to profitable purposes?

Might not the boilers of steam-engines, for instance, thus be heated, and the steam power generated, by means of *friction-engines and machinery worked by the power of the very steam thus generated*, and a perpetual circle of action thus be engendered, which would realize a much more intelligible and more practically useful form of perpetual motion than has ever hitherto appeared within the bounds of possibility, or at least of practical utility?

Let such an engine be once put in action till a glowing heat be accumulated, and, so long as a supply of water to the boiler is kept up, we do not see why the generation of the steam,—the motion of the friction-engine and machinery,—the friction itself,—and the accumulation of the glowing heat to sustain the steam and the power and the motion,—might not easily go on, and on, so long as the friction-plates and other mechanism are kept in working trim; and the only question then remaining for consideration is the adequacy of the power, thus once generated, to *do more* than merely sustain the friction requisite to keep up the necessary heat. At all events, for the mere domestic purposes of a kitchen or other range of grates, or, rather of red-hot friction-plates, a miniature-engine, worked by steam from a copper, heated by the red-hot friction plates themselves, would, it may be thought, supply enough of surplus friction-heat for all the boiling, frying, broiling, and roasting, requisite in even the most extensive cooking establishment in existence; and that, too, without the disagreeable and damaging adjuncts of dust, smoke, sulphur, &c.; no less than without the perpetual expense and trouble and interruption attendant on the alternate supply and waste of fuel.

That friction-machinery on the great scale, however, as a complete substitute for fuel, might be adapted to all manner of steam-engines, whether locomotive or fixed, but with peculiar advantage to locomotive engines, including those of ocean and other steamers, seems possible; and what a vast new field for enterprize and profit, even in the midst of immense reductions of prices, right and left, would thus be opened up; independently altogether of the more immediate advantages attendant on so total a riddance of the clumsy and cumbrous accompaniments of coals and wood! No hindrance, *then*, to the growth of mills, machinery, manufactures, where neither coal-fields, forest-timber, peat-bog, nor water-power exist! No dragging of heavy coal cargoes or tenders along with trains or steamers—no waste of stowage—no drawbacks on extensive trading voyages, or even on voyages of discovery round the globe, or to the poles themselves, by steam! The idea is surely worth serious attention.

Then, too, most truly might steam be said to be *weaned from its infant provender, fuel;* and able, at length, to *walk, or rather to fly, alone;* untramelled and free as the wind! And, in a more and more emphatically "iron age," we might be contented to derive both heat and comfort from that stern "cold iron," whose dread mission heretofore was much rather to deal forth the chilliness of death than to minister so immediately to the warmth of life.

## ON THE EMPLOYMENT AND REMUNERATION OF CLERKS OF WORKS.

In the employing and remunerating of clerks of works a fearful responsibility rests upon the employer.

In seeking to inculcate this truth, I address myself both to the employers and the employed, for if a responsibility rests upon the employer, it argues some importance in the employed, to establish which this paper is written; and if it should be the means of rescuing a clever and deserving, though under the present system oftentimes a besotted and dishonest, class of men from temptation and moral degradation, it will have answered the end desired.

In order to establish the responsibility of the architect in connection with the clerk of works, it will be necessary to enumerate the qualifications, duties, and responsibilities of the latter, for he has responsibilities as onerous as the former, and this it is which creates responsibility in the employer.

*Qualifications.*—A clerk of works is an artizan, a man of experience, a link connecting the operative with the architect; and as the term architecture is commonly understood, he is a kind of *between*, uniting the architecture of the one and practice of the other,—weighing with experience everything necessary, not only in the construction, but also in the arrangement of edifices. He must be a good accountant, because he has the management of the accounts, and oftentimes the buying of the materials. A measurer, for generally he has the measuring of the works at the conclusion, checking the accounts, and paying the smaller bills.

*Duties.*—His primary duty is the superintendence of the works, to see the drawings are fully carried out in all their dimensions, construction, and details,—that the specification is fully obeyed in all particulars, to prevent the admission of unsound, defective, or improper materials,—that things are of their proper sizes, weights, and qualities. For all these purposes it is absolutely necessary that he should be the first man on the works in the morning, and the last man off at night, and not to leave the building when in his judgment injustice may be done to his employer in his absence.

It is his duty, also, in case of his discovery of any defective construction, to report the same to his employer; for however carefully a set of drawings may be studied, there are generally some points arising in the course of execution that seem not to have been studied at all; in such cases, an instant report to his employer is required.

In measuring up, it is his duty to be strictly honest to his employer, however much his feelings may be in favour of the builder; and in paying bills, the pernicious practice of deducting commission should be especially avoided by the honest clerk of works. To sum up, his duty is honesty, integrity, and uprightness, both to his employer and the tradesman, favouring neither one nor the other; and as such he is in a place of great trust.

*Responsibilities.*—From the foregoing digest of his duties, it will be seen that the responsibilities of the clerk of works are of no ordinary character. His duty to himself, his employers, and, above all, to his Maker, renders it imperative upon him to be honest, to resist the temptations sometimes held out by the builder or his agents, to maintain his independence of mind, to be strictly just, and fear no man.

What is too often the position of the clerk of works now? I am sorry to say that too often the clerk of works is a debased and drunken mechanic, truckling to the builder, shutting his eyes for a consideration to all the dishonesty and injustice practised towards his employer, in allowing unsound and improper materials to be used, and weights, measures, and qualities under the specified value, and in many things in a clerk of works' responsible care, selling himself to a dishonest and cupidical builder.

What is the effect? His self-esteem is degraded, his vices are encouraged, his character destroyed. How can it be expected of such a man that he will perform his duty. Bear all this in mind, ye architects and employers, while I tell you the cause of it, and that you are responsible for that man's state.

I have shewn the responsibility of the clerk of works, his temptation, and too often dangerous fall from duty; and I will now prove that architects and employers are the causes of their clerk of works' dereliction of duty.

Architects have yet to learn the fact, that in all situations of trust, the holder should be well and handsomely salaried. Ask the bankers, merchants, railway contractors, and even builders: they will all answer, that where they place confidence and trust they give an adequate salary; it is not only necessary, but it is imperative. Look at your clerks of works, holding situations of great trust, temptation, and responsibility, what do you give them? Not sufficient to keep themselves and families in respectability, much less from peccability.

Some architects (standing high in the profession too) grind their clerk of works' salary down to the wages of a building mechanic; I have shewn the result in the degradation and abasement of the clerk of works, and I think it requires very little foresight to see that in the end nothing is saved, but a vast deal is lost, not only in the moral but in the monetary point of view. And now let me ask why should such a state of things exist? I call upon architects to do their duty to their clerks of works, to improve their moral condition, but first to improve their salaries; and the natural consequence will be that they will be above want, and consequently more above temptation. The fact is, that architects treat them as common mechanics, pay them as common mechanics, and expect them to be immaculate and honest all the while. Where want oppresses, and temptation offers, it is not in the power of poor human nature to resist. J. L. C.

Carving by Machinery.—At a meeting of the Society of Arts, on 24th ultimo, Mr. Jordan read a paper "On the New Carving Machinery," erected for the Houses of Parliament, and also employed at the works of Messrs. Taylor, Williams, and Jordan, Belvidere-road, as described by us some time ago, when it was first brought into operation. The author explained to the meeting the mechanism which forms the two floating tables, and which by a universal motion allows the vertical tracer and cutter to perform their work. A perfect pattern of the work to be carved is first modelled by the artist, and afterwards copied by the machine in wood with perfect accuracy, and in such a manner that two or three copies are made simultaneously. The carving thus prepared by the machine is then sent back to the artist, who introduces by hand the finishing touches, and thus the works have the merits of artistic productions at comparatively small cost. The decorations of the House of Lords are the most extensive works yet done by this machine; but groups of flowers and ribbon work, and sculpturing in the round, were exhibited, and covered the walls of the room.

## THE ACOUSTIC CURVE: AND THE RISE OF THE RIVER.

SIR,—Will you allow a non-professional old man, albeit a little acquainted with the subject in former days, to dare set younger and professional men right.

Mr. Russell, at the Institute of Architects, explained a curve which he had *discovered* for the sectional arrangement of seats. Upon searching, he will find that Mr. Brooks arranged the seats of the theatre of the London Institution some thirty years since, upon such, or at least a similar system; and if my jaded memory be not treacherous, Mr. Tite set out the gallery seats of the Scotch church in Sidmouth-street, upon a like principle; and even I, in a fit of amusement, made the *discovery* of the concave line, agreeably to which they ought to be set out.

Is Mr. Russell aware that the Indian wisemen hold, that there is some other medium than air by which the impulses of sound are transmitted? Some yet undiscovered agent, which allows us to hear a shrill bell through a massive wall,—a vast body which if set in motion by the bell at all, would doubtless produce a grave rather than a sharp sound.

Again, Mr. Higgs thinks that he is the first man who has *discovered* that the surface of the water of the Thames, together with its bed, has risen. Some forty years since I read, and I am not quite sure but it was in "Gwynn's Suggestions for the Improvement of London," a similar remark, and among the proofs adduced were the level of Westminster Hall, and the floors of the lime kilns at Nine Elms, at which place the larger portion of the lime was burnt for the rebuilding of London in 1666; those floors having been above the rise of the tide when constructed, but full 4 feet below when that work was published.

I recollect hearing Mr. Brunel say, that the deposit of the river is so thick, that they found one of their shovels had, by its own gravity, penetrated several feet (I am afraid to say twenty-five) below the present surface of the bed, and that they recovered it in their tunnelling. I had given to me an iron ball with a spike through it, which had been brought out from that tunnelling, and been met with at forty feet below the land-surface.

At the foot of the Southwark-bridge, in Upper Thames-street, I saw the remains of an old building with a window opening, of which the splayed jambs and the interior of the walls were plastered with red tile mortar, and which had apparently been fitted for residence, into which the tide then rose six feet, although it is fair to assume that when first constructed it was high and dry.

It has often occurred to me, that the river walls had no original constructor—that is, they were not part of one grand, comprehensive undertaking, under some master mind,—but simply the off-hand expedients of persons under present exigency; but the former president of the Institution of Civil Engineers has said they were Roman works.

Not only has the river risen, but the land has risen, and will continue to rise; and builders ought always to bear in mind the trite maxim of ignorant impudence, "*always take high ground*," and follow it out, in a much better spirit, by taking care to go up one step too many, rather than form one too few,

I am, Sir, &c., BRICKBAT.

STOKE NEWINGTON INSTITUTE COMPETITION.—In reply to an advertisement which appeared in our pages, eighteen designs were forwarded to the committee. The committee, having classified them according to their respective merits, invited several gentlemen resident in the neighbourhood to a conference, with the view of making a selection of those best adapted to the object contemplated; three were selected, and ultimately a design by Mr. Francis Cross, architect, of Newington, was chosen. It is a plain but suitable building, with a Grecian Doric hexastyle porch, and includes a lecture-room, 60 feet by 35 feet; reading-room, 28 feet by 22 feet; library, 22 feet by 22 feet, and six other rooms. The estimated cost of the erection and furnishing is 1,500*l.*; but this sum, we fancy, will not be found sufficient. We did not see the designs which were submitted, and therefore can say nothing as to the justice of the selection.

## THE GAS MOVEMENT.

THE agitation spreads as it flows, increases as it rolls, and, like the swollen flood or the avalanche, will ere long carry all before it. New towns are ever being smitten with the contagion, leavened with the ferment, that has hitherto been working out a healthy alteration and reduction of the whole system to a normal and consistent state. We hope, says the *Leicester Journal*, transcribing one of our articles on the subject, that the natives of Leicester will be no less enlightened than those of Liverpool have lately been by the evidence adduced. "This is no rash speculation," says the *Preston Guardian*, quoting that very evidence. "The proprietors of the Guardian Gas Company (who it will be remembered offer gas at 3s. 8d. per 1,000 cubic feet, with a profit to themselves of 7½ per cent.), are men of wealth and respectability, and their engineer (Mr. Cox, a practical gas manufacturer, who supplied gas 'at 1s. 8d. per 1,000 feet, and did not lose by it'—nay who in the profitable manufacture of coke produced it at 'less than nothing,') bears a high reputation." The Guardian therefore calls upon the people of Preston and other Lancashire towns, to bestir themselves in order to obtain gas for at least 4s. 8d. per 1,000 feet, as a set-off to 3s. 8d. in the more extensively consuming, and hence it may be more cheaply provided, districts of Liverpool. The Preston Company, however, have the self-preservative cunning not to impose the "injustice and extortion of which we now complain" upon the few large consumers there, who would otherwise effectually dispose of the usual "exorbitant charges" by making their own gas. ——In Manchester, where the profits derivable from the sale of gas are expended for behoof of the inhabitants themselves in extensive and noble improvements, a pretty smart price is quite justifiable; but even there the price is far more moderate than where the pockets of a few monopolists alone are filled at the expense of a whole community. Under 200,000 cubic feet per year, the charge at Manchester is 6s. per 1,000; above 200,000 and under 400,000 feet per year it is 5s. 9d. per 1,000; and where the quantity used is 800,000 feet or upwards per year, the price is 5*s.*——The inquiries at Southampton have been further carried out by the examination of engineers and practical gas manufacturers and others. From the evidence, it appears that a suggestion of ours for the obviation of the nuisance of disturbing the carriage ways of roads is intended to be carried out by the new company, namely, to lay the pipes generally under or along the side or footways, wherever that is practicable. Mr. Croll, who has a patent for the use of chloride of manganese in the purification of gas, made some observations, in his evidence, on the metropolitan gas to the following effect:—Gas is becoming very generally used in private houses at the West-end; and within the last six months it has been introduced into several large houses at Tottenham. Several gentlemen have had it introduced into the drawing-room, bed-rooms, &c., of their establishments, and in the neighbourhood of Finsbury-square it has recently been introduced into many large mansions. Since the reduction of price from 9s. to 7s., within the last few years, the rentals of the several works have not diminished, and the use of gas has increased in consequence of the reduction of prices. From 20 to 30 per cent. of the houses at the West-end have had gas introduced into them; and in Finsbury-square twelve houses out of thirty-seven have it introduced into the sitting-rooms. There are a large number of detached houses about a mile from Coventry, in which gas is generally used in all the rooms, and it is frequently used for culinary purposes. Mr. Johnston, whose patent for the purification of gas by the dry way with sulphate of iron we sometime since noticed, was also examined, and in course of his evidence he stated that the residual products of his process, namely, sulphate of ammonia, cyanide of iron, sulphuret of iron, and some oxide of iron, are so valuable, that he has offered to the companies adopting his plan to grant them a free license, and to supply all the purifying materials, on condition of having the residual products.——The usual Government inquiries have been gone into at Dublin relative to the merits of the proposed Consumers' Gas Company there. The opposition by the Hibernian Gas Company was grounded, of course, on the assumption that the proposed bill is unnecessary and uncalled for.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Rewards bestowed on Professional Men in Prussia.*—At the late Orders festival (*Ordens Fest*) in Berlin, H. M. conferred on Mr. A. Humboldt the knighthood of the order of the Black Eagle,—a distinction never bestowed on science before. Mr. *Schmidt*, superior building director at Berlin, obtained the second class of the Red Eagle, with the oak wreath. The knighthood of the same order was conferred on Professor *Bekker*; *Buchhorn*, professor of R. A. of Arts at Berlin; *Ellerts*, superior mining councillor; *Klöden*, director of the Municipal Industrial School at Berlin; *Auer*, superior inspector of Rhine navigation, Mayence; *Veit*, historical painter at Frankfort. The fourth class of R.E. received Mr. *Schadow*, jun., building court councillor at Berlin; *Wolff*, professor of Industrial Institute at Berlin. Besides these, Sir David Brewster, and Professors Le Verrier, Frähn, Mädler, &c., obtained divers honourable distinctions.

*Athletizing of the People in Germany.*—Besides numerous works lately published on physical invigoration (education!)—an especial fortnightly journal has just made its appearance, the *Turn-Zeitung*, or gymnastic journal, published by Prof. Schuch, at Bruchsal. To all such *demolishers* of hospitals, infirmaries, dispensaries, &c., we give a hearty welcome.

*St. Mark, at Venice.*—It is one of the anomalies of our times, that this venerable pile, one of the chief representatives of Occidental and Oriental art, should have been hitherto without illustrations equal to its importance. Mr. and Mrs. *Kreutz* of Vienna, both artists of note, are engaged in accomplishing this desideratum. Twenty-one plates of elephant folio size will comprehend the whole riches, architectural and ornamental, of that cathedral. Amongst the mosaics, the splendid picture of the Virgin in the Grave, which is to be found in the atrium, at the left-hand side of the entrance, claims particular notice, although it is yet doubtful whether it belongs to Titian, Pordenone, or Salviati. H. M. the *Emperor* of Austria has ordered from the artists a coloured copy of all the plates made after the originals. Mr. K. is very accessible to strangers visiting Venice. As Mr. K. has studied St. Mark in all its details, an historical and art-essay written by himself will add to the value of this work.

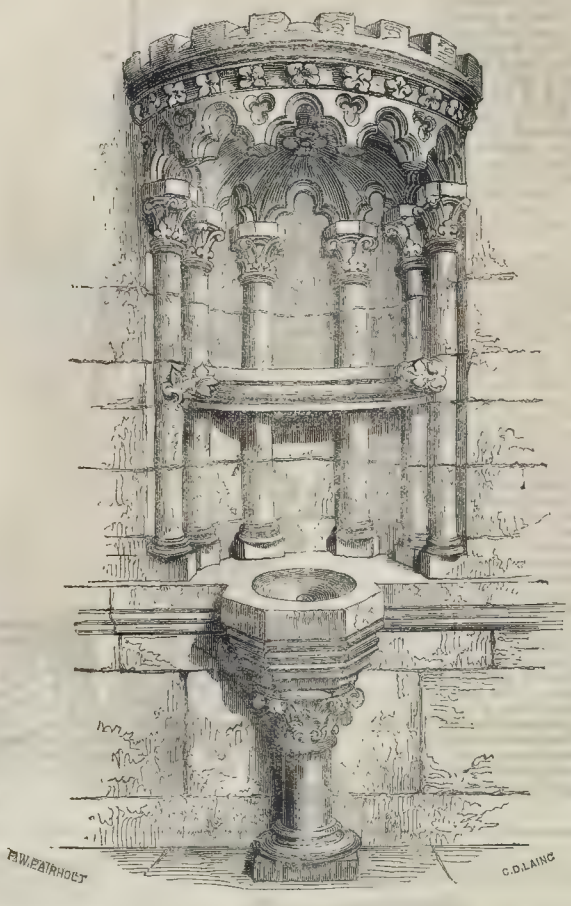
*H. M. the King of Bavaria*—has appointed to the two vacant professorships at the R. A. of Munich, Mr. Charles *Schorn* (known by his great picture—the Anabaptists), and Mr. Maurice Schwind, of Frankfort. It has excited general applause, that these two promising artists (one a foreigner) have been gained for the Munich art-world.

*Art—a Moral Preceptor.*—We are sorry to perceive that our French neighbours have taken from us the subject of a fine work on this topic, just published by Mr. Louis Desouches, under the title "*La Peinture Précepteur Moral.*" Speaking of Greuse, the most magnificent *historical* painter of domestic virtue, our author says, "If ever the works of a moralist, poet, or painter have exceeded his renown and reward, it is the case with Mr. Greuse. Deep reprover in 'the Father's Malediction,' faithful historian in the picture of the Prodigal Son, he becomes an idyllic poet in the *Accordée de village.*"

*Giessen.*—These head-quarters of Liebig—and therefore of German chemistry—will be placed in immediate communication with all parts of Germany, by means of a huge railway terminus to be erected there. The distance from London to Giessen is—*5l.*

*However incredible it may appear*—the Catholic clergy of Rome have taken up the cause of railroads, and a religious periodical of that city has, of late, devoted four columns to the topic—"Quanto alla Morale ed alla Religione giovi il vapore applicato alle strade ferrate e alle navi." Another Roman periodical also, the giant *Contemporaneo* (measuring 3½ Italian palms in length), takes up railways as one of the most important *material* questions of the present epoch.

PISCINA, NOTRE DAME DE SEMUR.




## PISCINA, NOTRE DAME DE SEMUR.

The church of Notre Dame at Semur, was principally constructed in the 13th century, and is remarkably rich in its sculptured decoration, so that it forms a fine study for architectural enrichments of that century, and the two following, during which period it was erected.

The piscina here engraved, and which we copy from a plate in M. Didron's *Annales Archéologiques*, is stated there to be a work of the thirteenth century, and is in one of the chapels of the apse of that church. It has unfortunately not escaped injury, as it has been concealed by wooden panelling, which has partially damaged it in front. The semi-circular shelf or credence-table, half way beneath the canopy, is a curious feature in this design, it is made to project considerably, and is furnished with a ridge to prevent any thing from slipping that is placed on it. It was intended to receive the small vessels termed *burettes*, and made to contain the wine used in the service of the mass, or the water used in washing the sacred utensils. The drain empties itself on the external wall of the church from a gargoyle, shaped like the head of an animal similar to those which surround the choir of the Cathedral of Notre Dame at Paris.

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Tavistock Church.—Mr. Robjohns, of that town, is about to publish three views of the interior of Tavistoc Church, recently restored.

## BRITISH ARCHÆOLOGICAL ASSOCIATION.

On the 26th of last month, the association met at their rooms in Sackville-street, Mr. Pettigrew, V.P., in the chair, and numerous matters of considerable interest were brought before them. Papers flow in, it seems, from all quarters, their provincial members being very active. Amongst the objects of interest exhibited, were two curious gold ornaments from Peru, which had been saved by Mr. W. D. Haggard from the melting pot at the Bank. They each exhibited a rude human figure worked in wire, as some thought, and soldered on to a flat piece of gold; others were of opinion that they were cast entire, and a long and not uninteresting discussion was the consequence, in which Mr. Wright, the Rev. Mr. Nicholay, Mr. White, Mr. Solly, Mr. Newton, and others took part.

Mr. C. Baily read a paper, by Mr. Laing, on the tower of Trinity Church, at Colchester, which has lately, at the suggestion of the association, been stripped of a coating of plaster and whitewash, by the Rev. Mr. Owen, in order to develop its original architectural features, which prove to be Saxon, at all events in part. The foundations the rector considered pure Roman. The door-way has a triangular head, formed of brick or tile. Mr. Vint, of Colchester, communicated an account of the discovery, in his grounds at St. Mary's-lodge, of an extensive Roman burial place. Mr. Roach Smith read a paper by Mr. Lukis, of Guernsey, on the primeval remains recently discovered by him in the Isle of Alderney, which drew forth remarks from Professor Worsaae, of Copenhagen. Some discussion on Saxon architecture ensued, and the importance of obtaining precise means of distinguishing such was urged. Mr. Wright, in connection with the subject said, Saxon MSS. shewed squares in plaster of different colours, and even castles were spoken of as being *painted* of various colours. The meeting passed off with much spirit and general advantage.

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The new number of the Journal of the association contains, amongst other interesting papers, an extended account of the proceedings of the council, a report on an archæological visit to Colchester, and an abstract of the proceedings at Gloucester. At one of the meetings of council Mr. Baily submitted a drawing of a

NORMAN DOOR AT HANSLOPE CHURCH, BUCKS,

afterwards engraved for the Journal, and as this presents peculiarities, we avail ourselves of the kindness of the council, and transfer it to our pages with Mr. Baily's own remarks upon it.

"The priest's door on the south side of the chancel of Hanslope Church, Bucks, although small, is at the same time a fine specimen of Anglo-Norman architecture, and possesses some features which do not appear to be very common. Amongst these, the overlapping the head of the inner jamb moulding by the series of small-pointed arches is very peculiar, as well as the conical-billeted moulding directly

under the dripstone. These features are met with in some doorways in Norfolk and Yorkshire, which have been published in Cotman's *Etchings*. The south doorway of Thwayt Church, and the south doorway of Framlingham Earl Church, also the south doorway of Mundham Church, all in Norfolk, possess moulded arches, in which appear ornaments with teeth-like points overlapping a large bead, somewhat in the manner as the pointed arches do at Hanslope, but in nothing like so beautiful a manner; and in the arch of the north doorway of Hales Church, Norfolk, appears the double cone ornament, separated by small round patras, as if intended to represent conical and flat beads threaded on a string. The doorway of Heckingham Church, also in Norfolk, has the same feature in the arch, but here the cones are separated by two, and in some cases by three flat beads, instead of one, as at the doorway at Hales Church.

The west door of Barton St. Mary's Church, Norfolk, has both the features which I have noticed at Hanslope Church; the inner shaft with the arch above it is beaded with double cones, and the outer jambs have the large teeth-like portions overlapping the round shafts of the columns from the square jambs. In the same doorway, in the outside arch and above the jambs last mentioned, is the beak-head ornament so common in Norman doors. It may not be impossible that this kind of ornament, and represented by small pointed arches at Hanslope Church, and by blunt teeth in the doorways at Norfolk, and in each case overlapping either a column or a large bead, might have been the origin of the Norman beak-head ornament, more especially as in all the cases above quoted, where it appears, nothing whatever exists of a transition character, but all is in an unaltered Norman architecture, with the exception of the doorway at Barton St. Mary's Church; in which case the style of architecture is most decidedly late Norman, and upon a quick change towards the early English style, for one of the arch mouldings is ornamented with the four-leaved flower so common in early English work, and the same arch also contains the beak-head ornament. The walls of the chancel, with the corbel tables of the same, the doorway which has just been noticed at Hanslope, and the chancel arch, are the only parts of the Norman church which now remain, the present church having been rebuilt in the fifteenth century. It is a good specimen of perpendicular architecture, and has a lofty tower, surmounted by a crocketed spire, at the west end. The Norman doorway is probably as old as the time of King Henry I."

LOUVRE AT COLOGNE.




NORMAN DOOR, HANSLOPE CHURCH, BUCKS.




## LOUVRE AT COLOGNE.

The municipal buildings at Cologne are characterized by the same love of display that was indulged in by other opulent cities in the middle ages, when wealth was derived from the successful commerce in which its principal inhabitants were engaged. The town-hall is in the style of the *renaissance*, when the classic models of Greece and Rome began to be engrafted on the Gothic. The portal is of marble, the *façade* exhibiting a double arcade of Corinthian and composite pillars, the roof and dormer windows preserving the features of the Gothic taste. Exactly opposite the town-hall stands the building whose roof forms the subject of our cut. The elevated louvre is remarkable for the elegance of its lead-work, and the beauty of its proportions. It presents the peculiar features exhibited in the details of Gothic ornament in the low countries; the finials and crockets are much outspread, and the foliation is elaborate. The scale-shaped tiles and ornamental cross on the edge of the roof, as well as the pinnacles over the windows, add considerably to the picturesque effect of the roof, and prevent the harsh irregularity of outline observable in modern buildings, and which was obviated at the period when the one we are now speaking of was constructed by ornamental tracery in iron or lead-work, which has a peculiarly rich and agreeable effect when relieved by the sky, and of which another example is afforded in the town-hall of Cologne.

## NOTES IN THE PROVINCES.

Bills for the consolidation of the various Acts relating to water-works, gas-works, public undertakings, and the construction or regulation of markets, &c., have been introduced to the House of Commons by Mr. Strutt, Sir George Grey, and Mr. Parker.——A licence, or faculty, has been decreed in the Consistory Court for taking down the ancient parish church of St. Nicholas, Loughton, and applying the money arising from the sale of materials towards the completion of the new church of St. John the Baptist, at Loughton, consecrated on 4th of November last.——Orders have been issued for the erection of a new military prison, in lieu of the one at Southsea Castle.——The Newport Water-works Company have just landed a large cast-iron tank at the town quay for a reservoir, and as an earnest of their intention to proceed with their beneficial measures as early as possible.——A bill has been brought into the Commons by Mr. Ward, Admiral Dundas, and Captain Berkeley, to empower the Commissioners of the Treasury to purchase land for the purposes of the projected barbour of refuge and breakwater at the north-eastern side of the isle of Portland. The expense will be defrayed from the 30,000*l.* already granted by Parliament for harbours of refuge.——Mr. Dredge has undertaken to erect a substantial bridge from Weston-super-Mare to the island of Birnbeck for the sum of 10,000*l.*——It is now understood, that the new county gaol at Winchester will be commenced immediately. The contract is said to be taken by a London builder. The work will be very extensive, and afford much employment during the summer. ——During the absence of the royal family from Windsor, many repairs, alterations, and improvements are to be made in and about the castle and its appurtenances. It is said, also, that the drains of the castle are to undergo another inspection and improvement in the course of the present summer, and that another corps of sappers and miners have been ordered up from Woolwich for the purpose. The new passage, in hand so long, from the basement story of the Brunswick Tower through and under the eastern terrace into the orangery, and so on into the Slopes, is now nearly completed. This passage was commenced many months ago, in order that her Majesty might pass from the interior of the castle to walk in the Home Park, without being crowded upon by the people, who almost fill the parterre, and the terrace inclosing it, on "public days." There are also many minor alterations and repairs proposed, which, it is understood, will all be completed before the end of the present spring. ——The question of erecting a new jail for the county of Bedford has been deferred for six months. The proposed building would cost, it is said, about 40,000*l.*, though estimated at a less sum. The original contract for the new model prison, which has been building in the adjoining county of Buckingham, and is fitted to hold about 200 prisoners, was 40,000*l.*; but the extras amounted to 7,000*l.* or 8,000*l.*, and the fittings-up to about 5,000*l.* more.—— A report on the sanative state of the town of Leicester, by "the medical sanatory officers" of the borough, lays bare the numerous sinks of corruption in the shape of filthy and overflowing cesspools, noxious drains, accumulations of night-soil, large uncovered privy-holes, pig-styes and their accumulated litter, slaughter-houses, &c., as the evident foci of fever pervading the borough. The prime necessity, too, of a complete system of drainage, flushing, and trapping, is pointed out, although it is admitted that the very large area which the town covers in proportion to the population—*ceteris paribus*, in itself an important advantage, —presents an expensive obstacle in the way of the accomplishment of so desirable an object. Hoping, however, that a Towns Drainage Bill may speedily compel its realization, the officers suggest the adoption of measures of "a bold and innovating character," for the thorough suppression of the other nuisances, with the noxious miasmata, from which the town and its human life are defiled and injured. ——Sir George Grey has refused to sanction the appointment of the medical officer, at Liverpool, under the sanatory bill, not in reference to the fitness of the officer (Dr. Duncan) himself, but because the Home Office is decidedly of opinion that the medical officer should devote his whole time to the duties of the situation, and refrain altogether from private practice. Of course his salary ought to correspond to these circumstances.——A correspondent of the *Doncaster Gazette* timeously suggests the propriety of considering the proper ventilation of the various rooms, courts, &c., of the new "Guildhall," now fairly begun. "I beg," he says, "to suggest an inexpensive, and, I think, an effective plan for obtaining so desirable an object. In the ceiling of each room there should be apertures—the number depending upon the size of the room—communicating with wooden trunks or spouts to be carried into air flues; such flues to be left in the thickness of the walls, or to be carried up as high or alongside the chimney shafts, and of course communicating with the outer air. The air trunks should be placed between the ceilings and the floors for the lower rooms, and for the upper rooms they should rest upon the ceiling joists. The fresh air to be admitted into the lower parts of the rooms through numerous openings in the plinths, covered with perforated metallic plates, which might be closed when required. By these simple means, the vitiated atmosphere would pass through the trunks and escape by the air flues, and a free circulation of uncontaminated air would thus be carried on, without any inconvenience to the persons assembled." Not so easily as he thinks, perhaps.—— The restoration of the chapel on Wakefield-bridge is progressing, it is said, satisfactorily, but must soon be discontinued, unless a further sum be subscribed. The tracery in the north, south, and east windows, with a cornice over them, has been put up. The estimated cost is 2,000*l.*, exclusive of contingencies, and not half of that sum has yet been subscribed.——It is proposed to form a company in Halifax, in 500 shares of 20*l.* each, for the purpose of building, in some central spot, a Town Hall, and other public buildings, in which may be concentrated the different boards and offices constituting the town's government, accommodation for public companies, &c.——We learn, says the *Glasgow Post*, that the heaviest shaft ever made in Scotland has just been completed at the works of the Monkland Iron and Steel Company. It weighs upwards of 10½ tons, and was made at the Moffat forge of the Monkland works, under the superintendence of Mr. John M'Ara.——At a full meeting of the operative joiners of Edinburgh, lately held in the Roman Eagle Hall, Lawnmarket, Mr. John Connacher in the chair, it was unanimously agreed that, in consequence of the present high price of provisions, and advance of rents, the joiner's wages should be 4½d. per hour in place of 4d., as formerly.

## ANCIENT CHURCH OF ST. MARY AT DONCASTER.

Sir,—Seeing in your valuable journal an account of the proceedings of the Doncaster corporation, with respect to the ancient church they discovered in excavating for the foundations of the new Townhall, I cannot allow the matter to pass by unnoticed. There are now, alas! but too few specimens of our early ecclesiastical architecture, without destroying those we are so fortunate as to discover. Archæology is, I am happy to say, becoming more and more valued; but it would seem that the good people of Doncaster are semi-barbarians, and that they have not the power to comprehend the value of their discovery. In their eyes, perhaps, these ruins appear as mere misshapen masses of crumbling stone; for in spite of the petitions they have received from some of the leading inhabitants of the West Riding, and from the Archæological Institute, they must needs bury their church again in oblivion, and return the consoling answer, "that working drawings shall be made" of it. That this may be the last gothicism of which our country may be guilty, is the sincere hope of your humble servant,

James Stuart Wortley.

Winchester, Feb. 28th, 1847.

*** It has been very appropriately suggested, that the interesting ruins of St. Mary's Church be transplanted into the grounds of the projected cemetery, which must ere long be provided, and where these unique old Norman ruins of a defunct church might, by restoration, be converted into the chapel requisite for the ritual of the dead.

## PROJECTED PUBLIC BUILDINGS IN SHEFFIELD.

We mentioned lately the proposal to erect a building of considerable magnitude in Sheffield, to contain a capacious hall, athenæum, &c. This, however, is but one of many projects now on foot for the improvement of this important town.

Memorials have been presented to the town council praying them, under the Act for establishing museums of art, to take early measures for the purchase of land, and the erection of a suitable building for that purpose. The memorialists justly urge, that it would have the effect of greatly extending the sphere of usefulness of the School of Design, would afford facilities for the *collective display in one building of all the chief Sheffield manufactures*, contribute to the recreation and instruction of the great mass of the population, conduce to the increase of knowledge and refinement of taste among the artisans, and prove an attraction to strangers, and a great ornament to the town.

It is to be hoped that the prayer of the memorial will be carried out forthwith.

New markets of considerable extent are also to be erected on a site bounded by the old Haymarket, the river Sheaf, Dixon-lane, and Castle Folds. The plan comprises three covered avenues, ranging from the Haymarket to the space in front of the Corn Exchange, with three entrances at each end. There will be two cross avenues and entrances in Dixon-lane and Castle Folds. The building will be in the Italian style, covered with an iron roof, and lighted by skylights. Its length will be 300 feet, and its width 120 feet.*

It is intended to erect a fountain in the centre of the open market ground, and the campanile, or clock turret, originally intended to finish the façade of the Corn Exchange, is also to be erected. Messrs. Weightman and Hadfield are the architects.

## RAILWAY JOTTINGS.

The contractors, Messrs. Thornton, who, about five or six years ago, were expelled by the engineers of the Northern and Eastern Railway Company from some works on the line (now united with the Eastern Counties) near Broxbourne, for which they were contractors, have just had an award by arbitration, in a long-pending litigation, pronounced in their favour to the extent, it is said, of about 15,000*l.*, besides costs. A very large counter-claim was negatived by the arbiter, who had been appointed at the suggestion of the railway company themselves.—— The directors of the Great Western, we understand, have declined all the tenders made for the construction of the Hereford and Gloucester line, the contracts for which were lately advertised.——The works on the Gloucester and Forest of Dean will be forthwith commenced. An immense impetus, it is expected, will be given to the trade of Gloucester by the exportation of the almost inexhaustible resources of the Forest of Dean.——The Post-office authorities and the South-Western Railway Company have arranged for the conveyance of the mail to and from Southampton, Gosport, Portsmouth, and towns adjacent to that line, three times a-day. Similar arrangements are in progress with the other railways leaving the metropolis.——The viaduct over the river Barrow, on the line of the Great Southern and Western Railway, at Monasterevan, has been opened. It is nearly 500 feet in length, and consists of a malleable iron framework resting on ten slight stone piers. The width between the parapets is 25 feet. It is the fourth bridge of the kind which has been constructed by Sir John Macneill.——On Monday week, at Heaton Norris, says a contemporary, a detached waggon was caught by the wind, and went at a rapid and accelerated speed down the incline towards Manchester. Steam, seeing this, employed his full power in competition with the wind, and commenced a chase, with his train propelled before him, to recover the waggon so surreptitiously abducted. The odds, however, were too great, and old Boreas was victorious, having reached the winning-post at Levensholme in gallant style, and fairly distanced his grunting antagonist.——In accordance with the adver-

* The dimensions of the Green Market at Newcastle are 336 feet by 75 feet.

tisements, the tenders for the new passenger terminus, at Hull, were delivered in on Monday week. The new station is to be in Paragon-street; the south front opposite Ocean-place, with a carriage road for the "outward" trains that way; while from Paragon-street the "inward" trains will land on the north side, thus making Paragon-street the great focus for the transit of passengers. On the east side a large hotel forms part of the plan, having 40 rooms on the first floor, with two entrances, north and south, so placed as to catch "all comers." The two platforms are to be each 500 feet long, and 40 feet wide, and the works are to be finished by the 1st of August next, at a cost of upwards of 50,000*l.*

——At a meeting of the Commissioners of Police, in Edinburgh, on Monday week, Mr. Douglas Campbell moved, "That the stoppage of the Sunday trains on the Edinburgh and Glasgow Railway tends to hinder and obstruct the police officers in the discharge of their duty, and give a new and dangerous advantage to criminals in their attempts to escape. That a memorial by the board in favour of resuming the Sunday trains be immediately forwarded to the directors of the railway, and that petitions be prepared to send to Parliament if found necessary." After considerable discussion the motion was lost; the numbers being, in its favour, 9; against it, 17. It has been already attested by the police that crime has been greatly diminished by the means afforded by Sunday trains, in forwarding the ends of justice, but facts like these are of no avail in the eyes of the objectors.——The railway communication between France and Bavaria is in course of establishment. The engineers on the line from Strasburg to the frontier of Rhenish Bavaria, have terminated the surveys; and the minister of public works has directed the prefect of the Bas Rhine to open the inquiry which must precede the presentation of the *projet de loi* to the chambers.

## ELECTRO-TELEGRAPHIC PROGRESS.

The Electro-telegraphic Company are progressing in a business-like way, and appear to be in downright earnest in the advancement of their vast and enterprising project. Their proceedings towards the telegraphic organization of the metropolitan centrum-commune we have already occasionally noticed; but it now appears that they are simultaneously at work in opening negotiations with all the more important provincial towns for the deposition of telegraphic central plexuses, or ganglia, in the heart of each, to communicate with the great metropolitan head, and with every other centre. Their private, or rather public, wire-nerves are already strung along the lines of several of the great leading railway arteries of the country, on the standards erected by the several companies for their special uses, whereby great facilities cannot but be afforded to the operations of the telegraph; and agents have been sent into the provinces to prepare the way for the immediate establishment of the various centres. At a meeting of the merchants, shipowners, and others of the town of Hull, called by Mr. Cox on the part of this enterprising company on Monday week, to consider the subject of opening a station there, Mr. Cox declared the objects of his constituents to be the telegraphic connection of every important town in the island with every other, and of all with the metropolis; the company proposing, themselves, to undertake and conduct a separate station in every principal town, as near to its business-centre as possible, and to open a subscribers'-room, at which subscribers will have access to all extraordinary advices despatched to it in the course of every day; the telegraph to be also open to private communications at a small charge regulated by scale. The wires of the company, he stated, are already fixed from Rugby to Hull, and from Hull to Leeds, and wires are already fixed at Manchester and Liverpool. Intimations of the state of markets are to be simultaneously and immediately diffused throughout the electro-telegraphic realm, and various other special advantages afforded to the mercantile community. At the meeting in question, it was stated that considerable saving of money as well as time had already been realized by means of electro-telegraphic communication. Thus in insurance and in other ways considerable benefit has already been derived, and in the case of the "Lancaster," 10,000*l.* were redeemed. Between Hull and the Land's-end no less than the metropolis, the means of instantaneous and uninterrupted communication by question and answer will be opened up. The proposal was of course most favourably received, as it will be elsewhere and everywhere, and a subscription was immediately opened, and a sub-committee formed, in order to aid the company in their patriotic no less than profitable exertions.——Thus, as we have just said, this first and foremost association of its novel and interesting kind, is carrying out the electro-telegraphic progress in downright earnest, *et error nullus*; and at no very distant period in the embryotic gestation of our altogether new world, the metropolis of Great Britain will be the organized and vivified head and centre, not only of its own provincial members, but of the civilized world at large, which, so far from being in an advanced stage of maturity, is evidently but in an advanced state of fœtal organization and vivification, preparatory to being launched into a field of new existence, as a world of almost magical wonders; realizing, indeed, in this respect at least, the very idea of ancient magic, entertained in the beautiful old traditionary glimmer of antediluvian light incorporated in the story of two distant friends, who mutually conversed, though separated by empires or by oceans, through the talismanic aid of two magnetical or magical indices, which pointed correspondently to all the alphabetic characters towards which either, in its turn, might be directed. And, strange to say, not only had the ancients thus a distinct and almost literally correct idea, or legendary recollection, of the organism of the electric telegraph, but it can be clearly proved that the ancient chemists of the higher class were perfectly cognizant of the existence and the nature of the electric forces themselves, and of the solar chemical ray, which is so much akin to the electro-negative, and capable of evolving so new and peculiar a world of vegetative and other wonders in itself.——Our American brethren are contributing their quota to the electro-telegraphic organization and vivification of the world with hearty good will. An American printing telegraph is now being exhibited at Liverpool. "It is very clever," says the *Daily Express*, and what Yankee *invention* is not *clever*. "It prints the message which is sent by electric telegraph. Mr. Hyde Clarke has, however, invented an electric telegraph *which sets up type simultaneously* [in different towns!] so that a document can be composed in London and Edinburgh, and any number of copies printed off in each place at one and the same interval of time!"——By the telegraphic apparatus already in use between New York and Albany, the president's message was transmitted on the 5th January last, from the Legislative Assembly at Albany to New York, at the rate of eighty-three alphabetic characters per minute. There were 50,000 words in the message. The reading of it commenced at twelve o'clock, and in exactly three hours after, the entire document was handed, written out, to the newspaper editors one hundred and sixty miles off.——In the Senate, lately, a Mr. Morehead presented a memorial from the editor of a daily Cincinnati paper, asking Congress to invest him with power to form a company to extend the magnetic telegraph *across the Atlantic Ocean!* Referred to the Post-office Committee. Better refer it "to the marines," says an infidel.—Well it is hard to say. We have been taught by repeated experience since the establishment of steam, gas, railway transit, and electro-magical correspondence, to hesitate about denying the possibility of almost anything, however *visionary* or preposterous. All new inventions and discoveries are *visions* ere they come to be *realities*, and fobd for scoffery ere they are found to be worthy of all acceptation.

Many can do much.—A subscription has been set on foot for the sister of the late John Bonuventure Smith, a young artist prematurely cut off, after many struggles, just as his works were becoming known and appreciated. She and her children were solely dependant on him, and are left without the means of subsistence. Mr. A. J. Woolmer, of 7, Cleveland-street, has undertaken to receive subscriptions.

## DUTCH CANAL-WORKS—BANKS, &c.

At a meeting of the Institution of Civil Engineers on February 23rd, 1847, the president in the chair, a supplement to the papers on the North Holland canal by Mr. Jackson, which were brought forward on the two preceding evenings, was read. It contained a description of the harbour and works at Niewediep, which might be considered as legitimately connected with the Helder canal, inasmuch as they were constructed with a view of affording shelter to vessels of war and merchantmen navigating the North Sea. The banks or shoals situated at the mouth of the Marsdiep channel act in a peculiar manner, they narrow the entrance, resist the undue influx of the tides, thus preventing injury to the coast of the Zuyder zea; they oppose difficulties to the entrance of hostile fleets, as the navigable channels run within range of the protecting forts; and they assist in maintaining the velocity of the currents, which keep the channels at their usual depth. On the coast of Holland, the ebb tides continue to pass off along the Noorder-gat a full hour and a half after the tide has commenced flowing up along the Schulpen-gat; this can only be accounted for by supposing that the tide runs up from the south-west, and enters the Schulpen-gat whilst the ebb still continues, in consequence of the draft of the tide northward along the coast. The Schulpen-gat and Landsdiep may therefore be termed the flood channels, whilst the Noordergat may be considered the ebb channel. Upon these spots, whose preservation was of such consequence to the country, the Dutch have lavished their best care, and exercised their ingenuity. The shoreworks consisted chiefly of groynes, composed of timber piles, and fascines, with stone covering. Their average length was two hundred yards, with slopes of about one in eight or ten. In consequence of the report of the commission appointed in 1780, the engineers, Brunnings and Goudrai, were instructed to proceed with the formation of a warping bank of fascines, 7,360 feet long, with double planking guard to accumulate the sand, in order to fill up the interstices of the fascines, and thus preserve them from decay. A breakwater also, 1,850 feet in length, 73 feet wide, at 3 feet below high water, with slopes of one to one.

This was also formed of fascine beds, weighted with 2,000 pounds of stone and 4,000 pounds of tiles upon every superficial area of 144 square feet. The upper surface was covered with matting and made convex, the centre being one foot, and the sides three feet below the level of high water. Hurdling was then used, and the whole was covered with blocks of stone, weighing from 1,500 pounds to 1,800 pounds each. An additional length of 2,080 feet was subsequently built, and the warping bank being completed, and by means of these works the ebb stream was increased to such an extent as at once to deepen the channel 18 inches, although the bed was of clay. In 1783, dredging was resorted to, and with the action of the stream a depth of 19 feet was arrived at. The whole length of the proposed harbour was then dredged to a depth of 17 feet under high water level. Another warping bank of 3,675 feet in length was then constructed, with numerous groyns to arrest the sand and preserve the coast. A quay wall and jetty were then added; the piles composing the latter were covered with sheet lead between high-water level and one foot below the ground, in order to preserve them from the ravages of the "teredo navalis," which, however, it is the popular opinion, may be also prevented by driving the piles through fascines. A portion, 60 feet in length, of the breakwater, was torn away by a storm; this slip was filled up with large stones, but they were ineffectual, and fascines were ultimately had recourse to for repairing the breach. The depth of the channel was thus increased to nearly 35 feet, so that frigates could pass with safety.

In 1789, 151 vessels were lying there at anchor, fourteen of which were men-of-war, and four were East-Indiamen. The basin is 1,292 feet long and 646 feet wide, with large storehouses, dock buildings, fortifications, &c., of the most solid description, and thoroughly complete for a naval arsenal.

During the discussion which ensued, a description was given of Dymchurch wall, which defends Romney marsh, an extent

INSTITUTION OF CIVIL ENGINEERS.

[FAÇADE OF THE NEW BUILDING.]




of 24,000 acres, and also of several other sea defences at the mouth of the Thames and elsewhere, in which fascines were extensively used. The new embankments were also described. Specimens were shewn of the "arundo arenarea," a coarse grass, whose roots extend sometimes to a length of upwards of 30 feet, and which is eminently useful in securing the sand of the coast from being blown or washed away.

Among several cases of the failure of protecting walls, one was particularly described, of a nearly vertical sea wall, whose foundations were sunk down full 5 feet below the shingle of the coast. The wall was built with great care and with first-rate materials: it was, however, exposed to the action of a heavy sea in North Wales.

During a severe storm the waves were thrown up in a mass full 40 feet above the wall, and falling from that height with the force due to such a distance and mass, very speedily destroyed the whole wall. In quite as exposed a situation, a slope, which enabled the waves to expend their strength, and broke them up into foam, did not suffer at all. Numerous deductions were drawn from these and many other instances, all unfavourable to the theory of vertical sea walls, which it has recently become fashionable to recommend as a theoretically more correct form, in opposition to the well-tried plan of eminent civil engineers, who have almost universally adopted slopes for resisting the action of the sea.

THE THAMES TUNNEL is to be disposed of, if possible, to some railway company.

## THE ALTERATIONS AT THE INSTITUTION OF CIVIL ENGINEERS.

WE have already noticed the alterations which were made in the house of the Institution during the late recess (p. 48 *ante*).

Above we give a view of the new façade, as executed in Caen stone, under the direction of Messrs. Wyatt and Brandon, so that non-resident members may judge for themselves of the improvement that has been effected externally.

As soon as the works were commenced, it was discovered that the foundation of the south-west, or front wall facing Great George-street, as is the case with most of the houses in Westminster, was laid upon timber, which had decayed. The wall itself was in a very insecure condition, and there were only slight bond timbers across the windows, so that the whole front was in a dangerous state. In order to remedy this, a new foundation of brick and cement, upon a mass of concrete, was put in, arches were turned over, and reversed arches under the windows; wherever it was requisite, the piers were repaired, and one was entirely rebuilt in brick and cement, nearly up to the second floor; above that level they were repaired, but on the third floor and attic, the entire floor fell down on removing the window-frames, and it was necessarily rebuilt. The front casing of Caen stone was carried up simultaneously with these repairs. A portico for the entrance, and balconies for the first and second floor, were added; and the height of the windows was increased, converting them into French casements, for the sake of improving the light and ventilation.

"The size of the new theatre is proposed to be, 45 feet long, 28 feet 9 inches wide, and 22 feet high, affording sitting accommodation to 235 persons, and a gain of space for 97 persons. The ventilation is provided for by a shaft rising from the centre of the ceiling to a large cowl on the roof, and a supply of warm or cold air can be admitted, through apertures in the skirting, from Price's warm-water apparatus, according to the temperature of the theatre."

Previously to the alterations, efforts were made, without effect, to obtain suitable land for a new building. Application was made for a plot in the new street, proposed to be constructed by the Westminster Improvement Company: the following extract from the report of the council, as recording the rent asked for land there may not be uninteresting.

"The Surveyor of the Company, although not at present in a position to quote positive terms, presumed, that for a piece of ground having a frontage of 40 feet in width, at the corner of the new square, opposite the west doors of Westminster Abbey, and 150 feet in depth, fronting the projected new street, the annual ground-rent would be 160*l.*, granting a lease of 99 years, but redeemable at 30 years purchase, or 4,800*l.*"

## MANUFACTURES AND DECORATIONS AT THE SOCIETY OF ARTS.

ON Wednesday evening the Society of Arts opened an exhibition of select specimens of British manufacture and decorative art, which was attended by a very large number of visitors. Mr. W. Tooke, F.R.S., who has been a staunch friend of the Society, took the chair, and made a judicious appeal for aid in the course they were pursuing. Mr. J. S. Russell, the secretary, then read some introductory remarks, setting forth, that it was the first of a series of annual exhibitions, by means of which the Society hoped to contribute to the progress of those objects for the encouragement of which it was originally instituted; and commenting on some of the articles exhibited. He justly remarked:

"We are quite persuaded that the manufactures of this country can only prosper in so far as they are supported by the many, because the peculiarity of the manufactures of this country, more than abroad, is their wonderful power of multiplying. Foreigners produce an exquisite object of artistic usefulness in china or glass, but it is only one; another would cost the same sum, and that sum is such as to make it attainable only by the emperor or the favoured few. English manufacturers, on the other hand, produce a thousand from one. What a consummate artist has designed, they can multiply by the thousand. It is only, therefore, by the appreciation of the thousands and the millions, that taste, design and high art, applied to our manufactures, can be supported.

We want, therefore, by this exhibition, to place before the public a few selected specimens in some of the decorative arts, of what our artists, manufacturers, and machinery, have done and are doing for the advancement of their various arts to perfection. We wish to make their achievements more widely known and appreciated. We wish to show what they have done that is really good, and what might be still further improved. We are persuaded that if artistic manufactures are not appreciated, it is because they are not widely enough known. We believe that when works of high merit, of British origin, are brought forward, they will be fully appreciated and thoroughly enjoyed. We believe that this exhibition, when thrown open gratuitously to all, will tend to improve the public taste."

And again:—"If it should be objected to some of the articles here, that they are not so good as some that might have been obtained—we would answer, that is possibly true. If our visitors find fault correctly with any thing they see, we shall be as much gratified as if they praise. The one thing we wish them to do is, to praise and appreciate that which is good, and to blame where faults really exist. Let the visiter praise in the right place,—let him blame in the right place,—and the object of our exhibition has been attained."

We must look to the specimens themselves on another occasion.

## Correspondence.

UNION OF MASTERS AND MEN.

SIR,—It has frequently occurred to me, that an association of masters and workmen in all the branches of the building trade (jointly or separately) would be very beneficial to the interests of that community. Under the present system of trades-unions, the master is frequently a severe sufferer, without any actual benefit to the really deserving workman, for his interest is sacrificed to support men inferior both in character and skill. My plan to remedy this evil would be, to form associations in every county, who should from time to time fix the rate of wages to be given to the operative, *classifying each man according to his abilities*, and admitting none of bad character to the benefit of the institution; and to discountenance all attempts to "strike" for advance of wages during the progress of the works for which he has been engaged. The committee to consist of an equal number of masters and workmen, to receive and decide upon all complaints from workman or employer; a register to be kept of the character and qualifications of every workman to be open to the inspection of all other associations throughout the kingdom, and a fund to be formed by subscription for relief during illness. Workmen would by these means have much less delay in obtaining employment, and receive wages in proportion to their merits, instead of the uniform rate demanded by the trades-unions, by which an experienced man is brought down to the level of the most inferior workman.

I am, Sir, &c., JACK-PLANE.

THE DECORATIONS AT THE SOCIETY OF ARTS.

SIR,—In your journal of December 19th, you have given your readers some remarks upon the decoration of the Society of Arts' hall. May I therefore take the liberty of requesting, as a particular favour, that you will now lay before them the opinion of the council of the society itself, contained in the accompanying official letter from its secretary.

Edinburgh, I am, Sir, &c.,
27th Feb. 1847. D. R. HAY.

Society of Arts, Adelphi, London,
12th February, 1847.

SIR,—I have the honour to communicate to you the thanks of the Council of the Society of Arts for your valuable services in the painting and decoration of their great room. They are satisfied that your labours have greatly improved the general appearance of the apartment; more especially, they are satisfied that you have done what they chiefly desired,—that you have not detracted, by your style of decoration, from the effect of the large historical paintings by Barry, which hang on the walls; but the decoration has enhanced the effect of the paintings, and united them in one harmony.

They have also satisfied themselves, and fortified their opinion by the evidence of eminent authorities, that you have judiciously and successfully removed from the pictures the dust and soot which formerly obscured them, without injury to the pictures themselves.

I am therefore now desired to communicate to you their thanks for the manner in which you have fulfilled what you undertook; and as some slight acknowledgment of the esteem in which they hold your services (which so much exceed in value the amount for which you undertook the work), to request, on behalf of the society, that you will accept the accompanying copy of Mr. Barry's etchings of his pictures.—I have the honour to be, Sir, your obedient servant,

J. SCOTT RUSSELL, Secretary.

*** We willingly assist to make public this well-deserved acknowledgment of Mr. Hay's liberality. We need scarcely say it affords no contradiction to the objections to the work, as a work of art, that we felt compelled to make.

THE THEATRE OF THE ROYAL INSTITUTION.

MR. EDITOR,—In your number for Feb. 20, 1847, page 82, I see a note appended to an account of a paper read by Mr. Scott Russell at a meeting of the Institute of Architects, in which Mr. Godwin endeavours to correct the reader, who had stated, that the form of the theatre of the Royal Institution was arranged by "Count Rumford and Sir Humphrey Davy." Mr. Godwin stated, "that the arrangement of the theatre was usually attributed to the late Mr. Webster, the geologist, who built it, he being then an architect." I beg to state the facts. Mr. Webster was a *protegé* of Count Rumford, and, under him, drew out the first ideas of the proposed building, in which I assisted him, and also another young man, of the name of (I believe) Rand, who was afterwards a master carpenter in Poland-street. To Mr. Geo. Sanders, the architect, of Oxford-street, these ideas were submitted; and under his directions, the drawings were altered and perfected, and the theatre built. It was he also, in conjunction with some scientific gentlemen, who made many experiments in sound. The late Mr. Whitehead was the bricklayer, Hamilton, the mason, and Hancock, the carpenter. From the working drawings I made a perspective view of the interior, now hanging in my parlour. No doubt the annals of the Institution will state the facts, and, I think, shew that Sir H. Davy was not known in the matter at all. Mr. Webster assisted the first lecturer in his public duties, in which I have seen him often occupied.

M. C.

P.S. The construction of the roof of this building will richly repay the labour of inspection.

TENDERS FOR HACKNEY UNION.—With reference to the list of tenders for additions to this building, which appeared in THE BUILDER, we are requested by the architect, Mr. Ashpitel, to state that the quantities were not supplied by him, but were taken out by two surveyors, one on the part of the guardians, the other on the part of the builders. Messrs. Mansfield's tender was 5,200*l.*, not 5,500*l.* The circumstance of numerous items in the bills of quantities being for alterations to old works, for which only an approximate estimate could be made, is mentioned as one reason for the great difference between the highest and lowest amounts.

### TO CORRESPONDENTS.

"*Fell.*"—Many thousands have been spent uselessly on the construction of locomotives for common roads.

"*H. C. L.*"—We have not yet found time to answer his question, but will do so.

"*C. B.*"—Notice must be given before beginning to make bricks. The duty, if we remember rightly, is 5*s.* 9*d.* per 1,000.

"*Justitia.*"—The statement is too complex to permit us to offer an opinion. We have no sympathy for those who forward designs in competition not in accordance with the instructions given.

"*New Buildings.*"—We are thankful for any intimation of buildings in progress.

"*G. P.*"—Next week.

*Received.*—"W. S." "J. C." (Albany-road). "T. P." &c. Cresy's "Encyclopædia of Civil Engineering" (Longman and Co.). "The Pictorial Gallery of Arts," Part XXVI., completing the work (C. Knight). "The History of Painting in Italy," translated from Lanzi, by Thomas Roscoe. New Edition, Vol. I. (H. G. Bohn).


### ADVERTISEMENTS.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c

TO BUILDERS.

ELIGIBLE GROUND, near Kentish Town, TO BE LET on Building Leases.—For the terms and particulars apply to Mr. H. A. HUNT, No. 4, Parliament-street, Westminster.

GRAYS INN ROAD.

FREEHOLD BUILDING GROUND, in this vicinity, TO LET, for Third and Fourth-rate Houses.—Terms and Particulars may be had of Mr WATSON, 190, Wood-street Cheapside

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MOST eligible Freehold Building Land TO BE LET, in the immediate neighbourhood of the proposed New Park.—Apply to Mr. F. P. THOMPSON, Surveyor, &c., Water Works, Chambers, Orange-street, Trafalgar-square, where Plans may be seen, and particulars obtained.

TO ARCHITECTS AND BUILDERS.

HANDSOME STONE FRONT FOR SALE, suitable either for a private residence, tavern, or shops, very recently fixed in one of the principal leading thoroughfares in London, comprising four fluted Doric columns, with semi-arches and carved entablature, TO BE SOLD, a great bargain. For particulars apply to Mr. W. NORRIS, Builder, Hackney.

TIMBER SAWING FRAME FORSALE, Well Manufactured, and in complete working order, and only sold in consequence of the room being required for other purposes. Apply to W. G WARDLE, Stangate Saw Mills, Palace-road, Lambeth.

STEAM SAW MILLS, TO BE LET, with Canal Frontage and the use of a Crane, capable of doing extensive business. The Mill is of great power, and has been erected at considerable expense; it is replete with every description of machinery for cutting timber and deals. The Sawing belonging to the Timber wharf on which the Mill stands will average more than will pay the Rent. Apply at 20 Wharf, Paddington.

DEANE'S TWO-HOLE BLACK PENS, which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, besides several of her Majesty's judges, the most eminent counsel and the reverend the clergy. Their cheapness and singularity have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser, and disgraceful to the vendor. The public are therefore cautioned, and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped "*G. and J. Deane, London-bridge*," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

DECORATIVE ART SOCIETY, 49, Great Marlborough-street. General Meetings in March, Wednesday, 10th inst. a Paper "On the chemical properties of Timber," by Mr. Vicary. Wednesday, 31st inst., Conversazione, "On the influences of Light and Colours." "Attention is solicited to the fact, that the Meetings afford a suitable medium through which, by a free interchange of opinion, and the consequent mutual correction of erroneous ideas, a true appreciation may be formed of those principles which regulate the correct application of Art to its various purposes." Visitors' Tickets may be obtained from E. C. LAUGHER, Hon. Sec., 17, Sussex-place, Kensington.

LECTURES on DESCRIPTIVE ASTRONOMY, during Lent, at the ROYAL POLYTECHNIC INSTITUTION, by Dr Bachhoffner, on the Mornings and Evenings of Mondays, Wednesdays, and Fridays, with ILLUSTRATIONS, in which the Latest Discoveries are included, accompanied with new and appropriate MUSIC, by Dr. Wallis. LECTURES on the ELECTRO-MAGNETIC TELEGRAPH, on the alternate Mornings and Evenings, illustrated by a variety of Models, including those of the recent Patent of Messrs. Nott and Gamble. CHEMICAL LECTURES. The OPTICAL EFFECTS include the last beautiful DISSOLVING VIEWS. EXPERIMENTS with the DIVER and DIVING-BELL, &c., &c.—Admission, 1*s.*; Schools, Half-price.

LONDON MECHANICS' INSTITUTION, Southampton Buildings, Chancery Lane. PERCY B. ST. JOHN, Esq., will Lecture on TEXAS and MEXICO, on Wednesday, 10th and 17th inst.

J. W. ROE, Esq., will give a MUSICAL ENTERTAINMENT, entitled, MUSIC, MIRTH, and MELANCHOLY, in which he will be aided by persons of professional talent on Friday, 12th instant. The Lectures commence at half-past Eight o'clock. Non-subscribers admitted by Tickets, 1*s.* each.

Subscription 6*s.* per quarter, with 2*s.* 6*d.* entrance. Tickets for the quarter just commencing are now issuing.

Prospectuses, containing particulars, may be obtained at the Library. A. McFARLANE, Sec.

SOVEREIGN LIFE ASSURANCE COMPANY, No. 3, St. James-street, London.

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INVESTMENT for LARGE or SMALL SUMS

The attention of the public is invited to the following notice:—

The Deeds for carrying out the resolutions of the Shareholders in the Guarantee Fund of the BRITISH MUTUAL LIFE ASSURANCE SOCIETY are now ready, and the respective Shareholders are hereby requested to attend at the offices, between the hours of Eleven and Three, to sign and execute the same, when the old shares may be exchanged

Applications may be addressed to the Secretary for the remaining unappropriated shares entitled to the advantages set forth in the following

RESOLUTIONS

That for the purpose of extending the usefulness of the British Mutual Life Assurance Society, it is desirable to grant loans in connexion with life assurance, and that a guarantee and loan capital of 10*s.* each, in shares of 1*l.* each, with a deposit of 1*l.* per share, and future calls not to exceed 5*s.* per share at 30 days' notice, be established for the present Guarantee Fund. The Shareholders' liability to be limited to the number of shares they hold

That the profits arising from the loans shall be ascertained at the expiration of three years, and afterwards at the end of each year, and subject to the payment of interest at 4*l.* per cent., such profits shall be divided and paid as follows, viz., 2-5ths thereof as a bonus to the Shareholders, 2-5ths to be added by way of accumulation to the capital, and the remaining 1-5th to be added to the Assurance Fund of the British Mutual.

That upon such subsequent division of profits, the interest to be paid to the Shareholders shall be at the same rate, not only on the amount paid up on the shares, but also on the capital increased by such accumulations.

And that when the capital, by means of such accumulations, shall have increased to double the amount actually subscribed, it shall be divided and paid to the Shareholders, in discharge of their respective shares.

That in consideration of the anticipated advantages to accrue to the British Mutual by the assurances which will be thus gained, that the British Mutual Society shall have at all times the guarantee of the capital to meet unexpected claims by death, and in consideration also of the 1-5th of the profits from the loans being paid to the Assurance Fund as before mentioned, the British Mutual shall guarantee, from the Society's funds, to the Shareholders the payment of the interest, at the rate of 3*l.* per cent. per annum, payable half-yearly.

By order,
CHARLES JAMES THICKE, Secretary.
17, New Bridge-street, Blackfriars.

FORM OF APPLICATION

To the Directors of the British Mutual Life Assurance Society.
Gentlemen,—I request you will allot me ..... Shares of 10*l.* each, in the Guarantee and Loan Capital of the British Mutual Life Assurance Society, and I hereby undertake to accept the same, or any smaller number that may be allotted to me, to pay the deposit of 1*l.* per Share thereon, and to sign the necessary deed when required.

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Residence .....
Occupation .....
Reference .....
Residence .....

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The above to be sold cheap. Enquire at the
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For a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

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It is peculiarly adapted as an internal stuce for walls, ceilings, architraves, mouldings, and entablatures of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

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It will effectually resist Frost. It will never require repairing, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It will resemble Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

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N.B. Sashes primed and glazed at 4½ and 5d. per foot.

SASHES PRIMED, GLAZED, and sent to any part of London at 5d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET
BRITISH CROWN. PROPAGATING GLASSES.
Coloured and Ornamental Glass, Fluted Crown, and Sheet Plate, for shop fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.

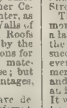
Dry and good Colours of the best quality: Brushes, Dryers, and every article used in the trade, warrante

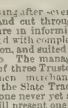
VARNISHES and GENUINE WHITE LEAD: MILLED LEAD IN SHEETS, per cwt. Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

For Cash Price Lists, priced Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

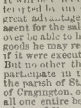
**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sunblind; all simple, cheap, and effective. Apply for licenses and to inspect its real merits, to HERRINGS Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

**CHAS. WM. WATERLOW,**
MANUFACTURER
of Sashes and Frames, and Joiner's Work generally, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices. Upwards of 1,000 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is with the notice of all engaged in building

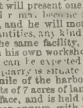




SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



**JOHNSON and PASK,**
1, ANWELL STREET,
Clerkenwell,
Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiner's work on the lowest possible scale of prices. All kinds of Wainscot and Mahogany Doors made in the very best manner; French polished, and carefully packed for the country. A full list of prices forwarded by return of post, to any part of the country



**COMBE VALLEY SLATE COMPANY.**
—Capital 5 000l. in 1,000 Shares of 5l. each; deposit 1l. per Share—Conducted on the Cost Book system. Offices, 5, Whitefriars Street, City.

The proprietors of this valuable undertaking, having after several months of persevering industry, now opened on, and cut through a large piece of rich blue rock, have great pleasure in informing the public that their extensive quarries have been crowned with complete success. The Slate is of a most superior description, and suited to every purpose that the material can be applied to. The management of the Company will be vested in the hands of three Trustees and a Committee of thirteen persons, all practical men—merchants, and traders, and as many respectable shareholders in the Slate Trade, as it will be needful to call on, on the new principle; one never yet attempted by any other Company. To Builders it will present one of great advantage, inasmuch as every shareholder is informing the agent for the sale of the produce of the quarry, and he will moreover be able to have manufactured in small quantities, any kind of goods he may require, and to any pattern, with the same facility, as if it were executed under his own inspection in his own workshop. But no other than shareholders at the price can be expected to participate in the valuable results. The quarry is situate in the parish of St. Ginney's, Cornwall, within 1 mile of the harbour of Crogington, on the Bristol Channel, it consists of 7 acres of land, all one entire bed of Slate 8 feet below the surface, and is held on a lease of 21 years, at the nominal rent of 10l. per annum, with no royalty. Estimates carefully prepared, plans of the estate, sections of the workings and specimens of the slate may be seen at the Office where also prospectuses may be obtained.—Application for shares can be made to Mr. JAMES LANE, 73, Old Broad Street, City; Mr. THOS. SANFORD, Exeter; Messrs. TEPTH & LUSCOMBE, Plymouth; Mr. H. MANSELL, Guildford, Surrey; at the Office of the Builder; and at the Company's Office, of the secretary, CHAS. SAML. RICHARDSON.

**GAS.—The Introduction of Gas into pri-**vate dwellings is rapidly increasing; it is therefore of the greatest importance not only to the consumer but to the gas company and gas fitter, that the most secure and simple means of regulating it be applied. The patentees of CARTERS SAFETY GAS VALVE, can from many years experience and the high testimonials they are daily receiving, confidently recommend it to all persons interested in gas lighting, as being more secure, more durable, and not so liable to get out of order, and in every respect superior to the old plug cock, so frequently leaky or set fast by corrosion. It has the advantage of being inexpensive, and easily adapted to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, 30, New-cut, near the Blackfriars-road.

**BUILDERS AND IRONMONGERS** are requested, when writing for JENNINGS'S SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters (RIGHT OR LEFT), as they face the front.

**JENNINGS'S SHUTTER FASTENER.**
Shop Fronts are more damaged and disfigured by the Shutter liar than from any other cause. How are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive liar, and answers the purpose also of the shoe. The shoes and fastener being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deps at on the stall board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 30s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable Ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS
Manufactory, 98, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength from their pieces, though without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**REVOLVING SAFETY SHUTTERS,**
WITH PATENT CONVEX IRON LATHS.
PATENT CORRUGATED IRON WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great importance of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, in affording increased security is obvious, and it is only necessary to point out the fact, that the patent convex laths are stronger than the ordinary flat laths, to insure their general adoption.

The patentee invites attention to his greatly improved gearing, for fixing and lowering the patent shutters, which, possessing all the advantages of the endless screw and wheel cannot, even by wear, be liable to run down, and entirely avoids the necessity of the key being used when and is so once simple and thoroughly effective, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering this Patent the most complete of the SAFEST and MOST EFFECTIVE in use. These shutters are fixed horizontally either above or below the window or door; or vertically, for which position the greatly improved gearing for lowering and securing them positively available. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Instructions are forwarded on application. IMPROVED DRAWN METALLIC SASH BARS, ASTRAGALS, MOULDINGS, PILLBOARD PLATES, &c.—Patentee and Manufacturer, JOHN HARCOURT QUINEY, 215, Old-street, London.

INJUNCTION.

**BUNNETT and CORPE'S Patent RE-**VOLVING IRON SHUTTERS. Since the verdict found in favour of the Patentees, Messrs. Bunnett and Corpe, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement, enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with flat convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers. All Shutters are supplied fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are Iron Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Gilt and Plated, Fret Plate Glass, and Ornamental Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Depôt and Stamping for the Trade
Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

By Her Majesty's Royal Letters Patent

**WILKINS'S "SILENT" WATER-**CLOSET.—To Architects, Surveyors, and Builders
Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause the inconvenience of the noise, and are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and of which the "Silent" is derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in this respect.

This Closet is simple in its construction, the whole of the apparatus (including the trap), being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

# THE BUILDER.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.
Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

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ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.
A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

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T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

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MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

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TIMBER AND DEAL SAWING AND PLANING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge.

THE GENERAL WOOD CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or groving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

---

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

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CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.

P. FOUCARD and W. TUCKWELL, Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf (imported July last), exclusively from their quarries, at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.
Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

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CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 13, Southwark-square, Borough, London.
Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.
BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.
Ex'ch'himney-pieces from £8 upwards.
THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.
Estimates given for building generally.

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IMPORTANT TO BUILDERS.

THE ARCHITECTURAL CARVING COMPANY (Irvine's Patent), beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston place, Pimlico, leading out of Ebury-street. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

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CARVINGS IN WOOD.—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carving in Wood for external and internal enrichments—thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.
Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.
Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 443, West Strand, or at the Works, Ranelagh-road, Thames-bank.

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PATENT VULCANIZED INDIA-RUBBER. CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are—its uniform elasticity in various temperatures; it does not become hard by exposure to cold. It is of greater strength and less liable to injury from heat than native Caoutchouc. It is insoluble in essential oils. It resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully used for Washers for Joints in Water, Gas, and Steam Pipes, and for the Flap and Foot Valves, &c., of Steam Engines; and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of flooring boards.
The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

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SOCIETY OF ARTS.

PRESIDENT.
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 5th of May, 1847.—A List of the subjects for which Premiums amounting to 300 Guineas, with 40 Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, John-street, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.

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CHEAP AND DURABLE ROOFING.

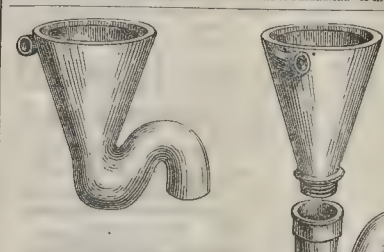
By Her Majesty's  Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.
Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 28 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and Co's Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.
Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament. A Liberal Discount allowed to the Trade.

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N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

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THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.
57, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
|---|---|
| Foreign Sheet, in 100 feet Boxes | 2½d. |
| Do. do. Super 200 „ „ | 3d. |
| Crown Squares, 100 feet Boxes: | |
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. | 1½d. |
| 6 in. by 3 in. and under | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES,
6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH.

| | per Imp. Gal. |
|---|---|
| Super Body Copal, for the bodies of Carriages | £ 20 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish | 16 |
| A fine pale Varnish for the lighter imitation woods.—Dries in about eight hours. | |
| Super Carriage Varnish | 12 |
| Very durable, and well adapted for Coachmakers, except for light bodies.— | |
| Elastic Oak, Wainscot, or Mahogany Varnish | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods. | |
| Paper or Crystal, quite transparent | 10 |
| Gold Size for Gilders | 5 |
| Also as a dryer in ground Colours, which much improves their appearance | 10 |
| Black Japan | 12 |
| A splendid Jet Black, for Coach-builders' use. | |
| Brunswick Black | 6 |
| A Black Varnish for Iron-work, | |
| Stoves, &c.—It dries immediately | 6 |
| Furniture Varnish for Japanners | 14 |
| Dries in two hours. | |
| White Hard Spirit Varnish, for Cabinet Work | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods | 20 |
| Rather longer drying than the above. | |
| Mastic Varnish, pale, for Pictures | 24 |
| Turpentine Varnish | 6 |
| French Polish | 16 |
| Naphtha | 10 |
| Patent Liquid Wood Knotting | 16 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £ s. d. |
|---|---|
| 2½ inch Lift Pump on Plank | 4 0 0 |
| 3 „ do. do. | 4 16 0 |
| 3½ „ do. do. | 5 0 0 |
| 4 do. do. | 6 10 0 |
| Well Pumps on Square Tails, with Iron Bow, equally low. | |
| ¼ inch Bib, Ball, or Stop Cocks. | 0 1 8 |
| 6-8th „ do. do. | 0 2 1 |
| ½ „ do. do. | 0 2 6 |
| Pan Water-Closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire | 1 10 0 |
| Blue Basin, extra | 0 4 0 |
| Ditto, with Sunk Handle, extra | 0 4 6 |
| Spring Valve Closet, on Brahma's principle, complete | 3 10 0 |

Beer Machines, from one to six motions, in handsome cases.

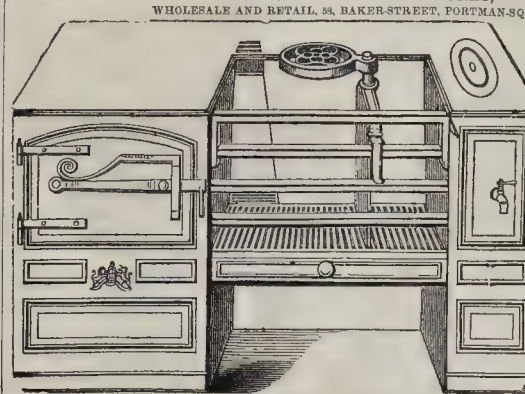
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# THE BUILDER.

## CONTRACTS.

CITY OF WESTMINSTER LITERARY, SCIENTIFIC, AND MECHANICS INSTITUTION.

TENDERS for Painters', Plasterers', Carpenters', and other works, will be received by the Committee of the above Institution, on or before Monday, March 22nd, at Six o'clock, P.M. Specifications and Plans may be seen on application to Mr. TRAICE, at the Institution, Great Smith street, on and after the 8th inst., between the hours of Ten A.M. and 6 P.M. The Committee do not bind themselves to accept the Lowest Tender. The Tenders to be sent in on or before the 22nd March instant, post-paid, addressed to W. H. MANN, Secretary, to the Church Building Committee, Warnham Sussex

TO BUILDERS.

THE Committee appointed for erecting a New Church in the district of St. Luke Leek, Staffordshire, are ready to receive TENDERS from Builders desirous of undertaking for the same. The Plans, Specifications, and Conditions of Contract have been prepared by Mr. F. J. FRANCIS, Architect, 8, Cork-street, Burlington-gardens, London, (of whom Quantities may be had), in the neighbourhood of the Rev. B. PIDCOCK, Leek, from Monday, March the 8th, to Saturday, March the 20th. The Tenders are to be forwarded to the Rev. B. PIDCOCK, on or before Friday, the 26th of March at Twelve o'clock. The Committee do not bind themselves to accept the Lowest Tender, and proper sureties will be required for the due performance of the works.

Leek, March 2nd, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS—COURT OF SEWERS, TOWER HAMLETS.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets' (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on WEDNESDAY, the 10th day of March, at Three o'clock in the afternoon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive Tenders sealed up from any person or person willing to enter into a contract for the works necessary in extending the Sewer from Glass House street along New Martin street and Blue Anchor yard, being a length of 100 feet, or thereabouts, and also in Lambeth street, across Hooper square to Leman street, being a length of 1200 feet or thereabouts, in the parish of Saint Mary Whitechapel. Plans and specifications of the said several works, with the forms of Tender, may be inspected at the office of Sewers daily, between the hours of Eleven and Three o'clock. Separate contracts will be required for each of the said works respectively. The contractor will be required to sign provisional agreements to secure the due execution of the said contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners. No Tender will be received after the time of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer what shall be asked upon. Dated this 26th day of February, 1847.

JOHN WILLIAM UNWIN, Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the Lowest Tender.

GAS TAR.—The Phœnix Gas Light and Coke Company are ready to receive TENDERS for the Tar to be made in the next year at their Bankside and Greenwich stations. The tar to be delivered into the purchaser's tank barges laying alongside the Company's wharfs in the Thames, and to be paid for monthly, and the quantity or quality of the tar to be objected to, in case of fraud, to the policeman before quitting the wharf. The purchasers to enter into an agreement, under a penalty, not to allow the tar that may be left to remain in stock at any one time; and the Company reserve to themselves the right of selling 20,000 gallons more than the Tender for the year. The Tender to state the price per tun of 252 gallons, and to be marked with the words "Tar Tender," in the corner, and to be delivered at their office, at Bankside, on or before 12 o'clock on Monday, the 15th March, 1847.

64, Bankside, 3rd March, 1847. CHARLES PRIDDEN, Secy.

BUILDING GROUND, BROOK GREEN, HAMMERSMITH, TO BE LET by TENDER, by the Worshipful Company of Girdlers, an eligible site for building consisting of about Three Acres of Ground at the above place. A plan for laying out the ground, and an elevation and plan of the houses to be erected may be inspected, and further particulars obtained at E. WOODTHORPE'S, Esq., to Jewin-street, and at the office of the clerk of the Company, Girdlers' Hall, 26, Basinghall-street. Sealed Tenders for letting the ground to be sent to the Company's Hall previously to the 15th of March

ST. JOHN'S WOOD PARK.—IMMEDIATE CONNEXION WITH REGENT'S PARK.

BUILDING PLOTS TO BE LET in this most desirable and salubrious situation, commanding picturesque views of the SURROUNDING BEAUTIFUL HIGHWOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities for speedy communication to the general business parts of the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

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TO BE SOLD, from 3 to 400 feet of CAST IRON PIPING, four inches in diameter, with BOILER, FURNACE, and the complete fittings of an Apparatus for heating a large building, by means of hot water. The whole are in excellent repair, having been erected at a large outlay but a few years since. May be viewed on the premises of the Workhouse at Caxton, any day from 10 to 4. Parties who may be desirous of purchasing are requested to send their Tenders, sealed, addressed to the Clerk to the Guardians, B. order of the Board, HENRY MORTLOCK, Clerk of the Union.

Caxton, 23rd February, 1847.

ELIGIBLE INVESTMENT NEAR THE INTENDED NEW PARK, BATTERSEA.

TO BE SOLD by Private Contract, a capitally built, well-arranged House, with building ground attached. It is at present occupied as a Boarding School, but is well calculated for many other purposes requiring prominency of situation, or for a private dwelling. The great improvements that are taking place in the vicinity will add much to the value of the property, which, for this property, held on a long lease, at a low ground-rent. For particulars and to view apply to Messrs. LIVERMORE and BURR, Estate Agents, Lincoln's Inn Square, Knightsbridge, and Beaufort-st., Chelsea.

TO TIMBER MERCHANTS, &c.—HAMPTON, MIDDLESEX.

TO BE SOLD, by TENDER, Fifty Oak Trees and Five Elms, with their Tops, Top, and Bark, now standing in the Boundary Hedges of Two Fields adjoining Hampton Lanes, to the North of those fields, cropped by the Lessee about 5 years. Eighteen Loads now felled, and will supply Posts, Rails, and Fencing. For view, &c., apply to Messrs. LAWRENCE, Lodge Inn Hampton.

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BUSINESS TO BE DISPOSED OF.—An opportunity rarely to be met with in the above line is now offered in a Country Town, about 160 miles from London. Situation good, neighborhood large, respectable and increasing. The concern may be greatly extended, and a persevering man of business cannot fail of success. Stock and fixtures about 500l.—Address A. B. 11, Church-street, Hackney.

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TO BE DISPOSED OF immediately, a First-rate Old Established Business in the above line, situated in those of the First-rate Watering Towns in England, offering a first-rate opportunity to any speculative man. Stock and fixtures about 500l. Apply to R. MATHEWS and SON, 3, Norfolk-street, New Road, Commercial Road, East

BUILDERS' BUSINESS OF FIRST CHARACTER.

MR. H. BIERS has been instructed to dispose of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST-RATE PRACTICE; declining health of the proprietor is the sole reason for parting with the same. No consideration required for goodwill, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into the above description will find this an opportunity of rare occurrence. Immediate application should be made to Mr. H. BIERS, 13, Broad street, Golden-square, between the hours of One and Three. Written application must be addressed to

## SALES BY AUCTION.

STONE MERCHANT'S STOCK.

MR. H. BIERS has received the directions of Messrs. MOWLEM, FREEMAN, and BURT to SELL by AUCTION, on MONDAY the 8th, and TUESDAY, the 9th of March, the Valuable STOCK of TREMISES, they being about to REMOVE to No. 13, South Wharf Road. This very VALUABLE STOCK COMPRISES NEARLY ONE THOUSAND FEET OF BUILDING STONE, STEPS, KERB, and COPING; Portland, Mansfield, and Bramley Fall, in Block, Slab, Steps, and Landings, Purbeck, Portland, and Sinks of superior quality; Granite Kerb and Paving Sets; a Portland Stone Staircase in good condition, a small quantity of Statuary and Veined Marble; a Powerful stone Truck with Patent Boxes, capable of Carrying Ten Tons, and many useful articles. Catalogues when ready, will be sent post free, to any part of the kingdom; and an unusual facility presents for Water-carriage, the stock lying close to the Grand Junction Canal. APPROVED BILLS at Three and Four Months. 13, Broad street, Golden-square.

TO PAPERHANGERS, BUILDERS, HOUSE DECORATORS, AND OTHERS.

MR. BRAY, Jun., has received instructions to remove for peremptory Sale, to his Rooms, 259, High Holborn, on Thursday, March 11, at 12, an entire new STOCK, comprising upwards of 3,700 pieces of paperhangings of excellent workmanship and modern design, including Drawing, dining, and bedroom, staircase, and other papers, in rich crimson flock, embossed satins, Morpeth, Elizabethan, scarlio and other marbles. The stock is well suited to the trade and private buyers. May be viewed one day prior and morning of sale, and catalogues had at the Rooms.

TO COACHMAKERS AND MANUFACTURERS.

MESSRS. LESLIE and SON beg to announce that they have received instructions to dispose of the Valuable Lease of No. 56, South Audley Street, on Wednesday, 10th March, at 1, by order of the proprietor, who is retiring from business. The premises comprise an extensive Coach Manufactory, having long frontages in South Audley Street and Mount Street, with large workshops, &c., and upon Lease, at a rent of £70 a year. Messrs. also offer an excellent Dwelling-house, in South Audley Street. The rare held under a Lease, of which 12 years are unexpired, at the low rent of £50 per annum. Immediate possession can be had. Plans and particulars had upon the premises of Messrs. HARRISON, Solicitors, 19, Bedford Row; and of Messrs. LESLIE and SON, Auctioneers, 48, Margaret Place, Cavendish Square.

KENNINGTON-ROAD, opposite Walk's place, LAMBETH. Valuable Leasehold Estate, desirable for Occupation or Investment. By

MESSRS. BLAKE, at Garraway's Coffee-house, on FRIDAY, March 12th, at Twelve o'clock, a very neat, genteel RESIDENCE, of Five Stories, and containing Eight rooms and Kitchen, with Cellarage, Gas laid on, and in a most respectable condition, and 3 comfortable cottages, each with an outlet in the rear in hand, being No. 13, Last place, a most pleasant situation, where the rent is moderate, and the Lease of unexpired term of 56 years, at the low ground-rent of £6. 6s. per annum. The premises are in thorough repair, and are held from an ancient Estate. The premises may be viewed any day before the sale by application at the premises, where particulars may be had; also of CHARLES PRIDDEN, Esq., Solicitor, No. 64, Bloomsbury-square, at Garraway's Coffee-house, Change alley; at the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

TOOTING, SURREY. Timber Merchants and Builders' Stock in Trade, the property of Messrs. HICKS, relinquishing business at that place.—By

MESSRS. BLAKE, on the Premises, on WEDNESDAY, March 10th, and following day, at Eleven for Twelve o'clock, the Stock in Trade, fixtures, &c., of the above old-established Firm, consisting of oak, elm, and other round timber, oak plank, scantling, and fence stuff, fir timber and quartering, whole deals, sawn deals various, loose boards, stocks of coffin boards, and the usual variety of carpenter's converted stuff; a good assortment of nails, and carpenter's ironmongery. The implements embrace Lancashire carriage, circular, cabinet, and hand-saw benches, capital seat, folding, ladders, gin poles, jacks, and timber gear; work-benches, trestles, planks, and building materials. Also, a powerful horse, large stone building, some marble chimney-pieces, a pair of handsome wrought-iron gates and piers, suitable for a church or lodge entrance; a large well-constructed Barn Building, a convenient Granary on piers, and several tiled Sheds; iron hurdles, rick and stump of meadow hay, &c., &c. May be viewed three days prior to the sale, and Catalogues had on the premises at the Castle Inn, Tooting; Plough, Upper Tooting; Crown Eagle, Wandsworth; Bells, Putney; Griffin, Kingston, Crown Eagle, Epsom; Greyhound, Sutton; Red Lion, Barking; White Hart, Reigate; Greyhound, Streatham; Messrs. HICKS, 30, Nicholas-lane, Lombard street and Stangate; at Garraway's; the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

TO CONTRACTORS AND OTHERS. Near Rochford, Essex —Elm Trees, 130 ditto pollards, 40 Ash Trees, lot of Elm and Ash Spars, &c., by Mr. Auctioneer, by

W. H. JACKSON, on Tuesday and Wednesday next, March 9th and 10th. At Prittlewell (by order of D. R. Scratton, Esq., the proprietor), 373 elm trees, 75 ditto pollards, 34 ash trees, lot of spars, now lying in the Drivers and Coleman's farm, within ½ mile of Southend, where they can easily be shipped. At Great Stanbridge: 150 elm trees, 100 pollards now lying at Hampton Barns Farm. Also, by order of M. Davenport, Esq., the proprietor), 100 elm trees, 50 spars, 100 loads rick wood, &c., lately felled on Finch's Farm, and lying in a meadow on the Eastern farm, called Red Barn Hall. There is a wharf on the premises, at the sale of which may be had, 40 elms and 1 pollard, near the Oak Inn, and 12 trees at Batten's Farm, in the parish of Rochford. The different parcels will be sold, and will be sold without regard to alphabetical order. The pollards are requested to meet on the first day at the Oak Inn, Great Stanbridge; and on the second day at the Spread Eagle, Prittlewell, at 11 for 12 o'clock. Catalogues may be had, five days prior, at the usual Inns of H. FLOWER, Esq., Architect, 39, Regent-square, London; and of the Auctioneer, Rochford, Essex.

SIR CHRISTOPHER WREN.—FOR SALE, a FINE PORTRAIT of this eminent architect.—For terms and to view apply to MR. SHEPPARD, East Sheen, near the Cross Inn.

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"The Builder," Nov. 7, 1846.

THE BUILDER'S FRIEND.—Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices of plank, deals, battens, and timber, best to fourth rate, from 2d. to 1s. the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. The information is given in a concise form, so as to fit the pocket-book.

"Herapath's Journal," Nov. 28th, 1846.

THE BUILDER'S FRIEND.—We have received a copy of a useful little Manual under this title, that ought to be in the hands of every one in the building business. It shews at one view the relative prices plank, deals, battens, and timber bear to each other, and will save an immensity of calculation.

"Sunday Times," Dec. 6th, 1846.

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Persons desirous of having the work forwarded as published, will be pleased to forward their names to the Editor and Publisher, JOHN WEALE, 59, High Holborn. Canvassers and the Trade in the Country will find it to their interest to correspond with Mr. Weale. The Prospectuses read, with the First Part, May 1st, and the publication continued every month till completed.

LONDON: Printed by CHARLES WYMAN, 67, Cumming-street, Pentonville, in the County of Middlesex, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen street, Lincoln's Inn Fields, in the Parish of St. Giles in the Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent-Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, March 6, 1847.

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T. J. BUCKTON, Secretary.

London Terminus, 8th March, 1847.

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March 11, 1847.


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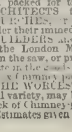
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The Builder.

No. CCXIV.

*SATURDAY, MARCH* 13, 1847.

AFTER several years of continuous labour, Mr. Edward Cresy has produced his *Encyclopædia of Civil Engineering*, — an enormous book, containing 1,655 closely printed pages and 3,000 illustrations: and though, as might be expected, we have not yet been able fully to master its multifarious contents, we feel it to be our duty to bring it immediately before the public, and to bespeak for it that favourable consideration to which it is eminently entitled.* The labour bestowed upon it must have been immense; such a mass of information upon the subject has never before been put together in this country; and the variety and extent of knowledge shewn in it are very great.

Reviewers, we respectfully suggest, should approach a work of this description with something like solicitude; and knowing what time, energy, thought, and capital, it represents, should pause before expressing a depreciatory opinion, at all events to ask themselves if they have really seen the whole scope of the book; and if its defects or shortcomings are greater than the difficulties of the undertaking would excuse? It is not long since a similarly laborious work was "phooh, phooh'd," and abused, by writers who had evidently given to its consideration fewer hours than it had cost its author years, for two or three obvious weaknesses, without the slightest commendation for its general value and the much greater number of excellencies it exhibited. Such injustice must be painful to every conscientious mind, and injurious to the best interests of science and literature. We sincerely hope, without any personal motive to influence us in the wish, that the work now before us will receive different treatment.

Before setting forth the contents and arrangement of the book, we feel bound to remark as to the title, that it ought to have been "An Encyclopædia for Civil Engineers and *Architects*," for unquestionably the greater part of that which it treats of comes specially within the province of the latter: and there is nothing in it which they are not bound to study.

Our readers know that we do not regard with favour the separation of the science and art of architecture: it is neglect of the former which has placed architects where they now are. "Science and art," says Mr. Cresy, "are too often considered to have no reference to each other, and hence the principles of construction have been fostered by the Institute of Civil Engineers, whilst what relates to taste and fancy has been considered the province of the Royal Academy.

"The future historian of Britain will not refer to her architectural remains, but to the vast works of the engineer, by which to judge of the habits and civilization of the age. The architect is too generally confined to the pencil, in other words to the production of a beautiful drawing, a point by no means to be under-valued: but of what use is the creation of designs when unaccompanied by a knowledge of construction, by which they can be carried into effect? A picture will not shew whether the material has been well selected or judiciously employed, or if the voids and supports are properly proportioned: on the other hand, the study of the engineer is often exclusively directed to the display of mere mechanical skill, without the attempt to produce a good effect: still the demand for the ability in question is now so great, that without an increased energy on the part of the architect he will be superseded by the engineer; there is no reason why the labour of necessity or usefulness should not be embellished by taste, and a great nation has a right to expect the union of science and art, based on the severest integrity, in those to whom millions are entrusted for her improvement."

But we will not admit that the title of architect belongs to him who is confined to the exercise of the pencil, has no knowledge of construction, and cannot tell "if the voids and supports are properly proportioned." The architect is the constructor, the chief workman—director. Those who cannot direct will gradually be displaced (*are being displaced*) by those who can. Our author himself feels this. "One of the great features of the age," says he, "is the division of labour, and as the population increases, and the influence of knowledge spreads, it seems likely to be still further carried out. The province of the civil engineer at present extends over the works performed by the artificer, miner, and mechanic; he is entrusted with the direction of all that is difficult and scientific in construction, whether upon land or water, as well as designing the machinery necessary for these important purposes. This knowledge was formerly demanded of the *architect*, who in addition was required to be acquainted with the fine arts. His qualifications, according to Vitruvius, were to embrace all that could be known; and many illustrious names could be adduced to prove the requirements of the great Roman architect were fulfilled to the letter.

"To design an edifice that shall have 'Commodity, Firmness, and Delight,' or to render it both serviceable and expressive of its purpose, requires a variety of talent: and it is to be feared that the architect who confines his attention solely to that portion embraced by the fine arts, will eventually lose his power: for without studying the principles of construction, he cannot give character to his design, and is not qualified to be entrusted with the execution of a work. On the other hand, should the civil engineer be required to act as an architect, he must pursue the course adopted by Sir Christopher Wren,—set out upon his travels, and examine and study those buildings which have received the approbation of the most competent judges: and he will find that Egyptian, Grecian, Roman, and Mediæval architecture, have each its peculiar principles and character of expression."

Most truly it *is* to be feared that the architect who confines himself to that portion embraced by the fine arts, without studying the principles of construction, *will* lose his power; that is, if a man *can* lose what he has never had.

The fact is, the profession will be divided into two parts,—those who understand construction, and those who do not. Indeed, if all the subjects set forth in the "Encyclopædia of Civil Engineering," markets, walls, gates, theatres, baths, prisons, &c., &c., &c., belong to the Civil Engineers, this has already taken place, and *Civil Engineer* is the name the members of the first division of the profession have adopted. To them we shall have to look for the regeneration of architecture.

Our author in some places falls into the error which he elsewhere reproves, as for example at the commencement of the chapter on the "Principles of Proportion," where, for a comprehensive view of architecture, he refers the reader to the "Encyclopædia of Architecture," and says "we must confine our attention to the principles and science of building, *the more immediate province of the Civil Engineer*," an opinion from which we entirely dissent.

A writer in the *Penny Cyclopædia** defines more satisfactorily to us the province of the two professions. He says, "The profession of an architect and of an engineer, as they are practised at present, may be said to coincide with one another to a certain extent. The members of both must be able to form a judgment of the quality of the ground in which the foundations of their buildings are to be laid; they must be acquainted with the capacities of different materials, wood, stone, and iron, for resisting the strains to which such materials may be exposed, so that sufficient strength may be obtained with a due attention to economy; and they must equally attend to the principles of equilibrium in their roofs, arches, and domes, arranging the beams, bars, or voussoirs so that they may remain at rest with as little strain as possible upon the connecting ties by which the joints are strengthened. But here the two professions diverge from one another: while the engineer has to determine, by a process of levelling, the profile of the ground on perhaps an extensive line of country, for a road or a canal; or has to determine the forms and dimensions of his retaining walls, so that they may resist the pressure of earth or water against them; or, finally, to devise methods of rendering the action of his moving powers uniform, and of transmitting them through a train of machinery to the place where the effect is to be produced,—the architect is engaged in designing the external forms and internal arrangements of edifices, in which, whether intended as palaces or private dwellings, or as buildings consecrated to the service of religion or of the state, architectonic beauty must be combined with fitness for the purposes for which they are intended." Enough, however, at present, on this point.

Mr. Cresy has divided his Encyclopædia into two books, the first treating of the History of Civil Engineering (and Architecture), the second, of its Theory and Practice. The history, in eight chapters, includes Phœnician, Egyptian, Grecian, Roman, Dutch, French, American, and British works. The second book is in twenty-nine chapters, under the following heads: geology, rivers: composition and use of minerals: stone: bricks and tiles: mortar and cements: pisé: tar, glass: geometry: valuation of property: value of artificers' work in engineering: mechanics: machines: carriages for transport: piles: mechanical agents: hydrostatics: motion of fluids: supply of towns with water: warming and lighting: steam as a moving power: timber and its properties, carpentry, roofs: bridges, scaffolds: masonry: stone-bridges: fascines, sea-walls: canals, locks: draining: and construction of machinery.

In the historical portion the pyramids of Egypt and the baths of the Romans are very fully investigated. Ports in all countries are treated of at considerable length, and many examples are given. The chapter devoted to

* "An Encyclopædia of Civil Engineering, Historical, Theoretical, and Practical." By Edward Cresy, architect and civil engineer. Longman, Brown, and Co., Paternoster-row. 1847.

* Article, ENGINEERING.

France (80 pages in length) is particularly interesting. And the chapter relating to Britain gives a general view of all the principal works which have been executed here, docks, piers, lighthouses, gates, bridges, (including some valuable specifications), and the model prison, with details of fittings. 160 pages are devoted to the treatise on geometry, and 80 to mechanics. The division appropriated to roofs embraces a large number of examples, and the chapter on stone bridges may be studied with great advantage.

The concluding chapter, 60 pages in length, treats of the principles of proportion, and will come under our especial notice hereafter, with other divisions of the work already alluded to.

In the meantime we give some specimens of the engravings, by which this work is profusely illustrated.* Our selections all relate to the city of York. Bootham Bar is on the north-west side of the city; Monk Bar forms the entrance from the Scarborough road; and Micklegate Bar the entrance from London. The lower part of Monk Bar is of early date; the upper part belongs to the time of Edward III.

The Ouse bridge was erected in the reign of Queen Elizabeth, and was taken down a few years ago.

## THE LAWS OF SOUND WITH REFERENCE TO BUILDINGS.

ROYAL INSTITUTE OF ARCHITECTS.

A MEETING of the Institute was held on the 8th instant. Mr. S. Angell, V.P., in the chair. Mr. Carter exhibited a nice drawing of the interior of the church of St. Jacques, at Liege, as recently restored. Amongst the donations was a curious work on the Five orders, by Hans Bloem, published in Amsterdam in 1598, and which was presented by an anonymous author, with a request that it might be acknowledged in THE BUILDER. It was found amongst some unnoted lumber in a house formerly occupied by Evelyn, and, as the donor thought, probably belonged to him.

Mr. Scott Russell then resumed his paper on the interior forms of buildings, with reference to the laws of sound, and after briefly recapitulating his former discourse,† said, he thought it necessary to allude to the two letters which appeared in THE BUILDER of Saturday last. The first he would speak of, signed M. C. (p. 115, *ante*), evidently by one who was well acquainted with the circumstances, shewed that he was wrong in stating that Sir Humphrey Davy was concerned in the erection of the theatre of the Royal Institution, and that the late Mr. George Saunders deserved part of the credit of its success.‡ The other letter (p. 109) referred to the *isacoustic* curve, described by him at a previous meeting, and maintained that others had previously discovered it. All he could say was, that he had discovered it for himself, and that it was an instance of a well-known fact, that different minds often light on the same truth. He had no wish to arrogate any credit to himself, and he was glad to find his own views confirmed by others. Relative to spontaneous oscillation, of which he had spoken before, and the necessity of attending to proportion in the shape of buildings, he would mention, that since meeting them, he had visited a church which had the reputation of being one of the worst buildings for sound ever erected, and that he had found it bear out his views completely. We must confess, however, without wishing to throw any discredit on the statement of Mr. Russell, that the reasons given did not account to us with certainty for the result.

The third principle he had to treat of was this,—that the angle of reflection was the same as the angle of incidence. This, although generally admitted, he considered only partly true. He had discovered, in his investigation of water waves, that this did not hold good when the *angle was less than forty-five degrees*, and he had every reason to believe, both from analogy and experiments, that it was the same with sound-waves. Reflected sound was the cause of much annoyance; reflection from the roof was the worst sort of reflection, and the most difficult to be overcome. Reflection had the effect of conveying a repetition of a sound to the ears of the auditors after the original sound had reached them, and so of producing confusion. The great point was to get rid of all reflected rays; the sound should be heard but once. In some rooms too, the thousand small sounds produced by a large crowd, such even as moving the feet, were taken up by the walls and ceiling and bandied about, in addition to the voice of the speaker. A flat ceiling increased this disadvantage. In one of the worst rooms of this description he had ever met with (a parallelogram with the platform for speakers in the middle of the longest side), great improvement had been effected by moving the speaker into the corner.

The modification of the previously mentioned maxim, that the angle of incidence is equal to the angle of reflection, he would consider as a fourth principle. The maxim was true only so long as the angle of incidence was more than forty-five degrees; if less, there was no reflection, but the sound was gathered up, and travelled along the surface. He considered this an extraordinary fact, deserving attentive examination: it would explain the phenonmenon of the whispering gallery in St. Paul's, which, on the reflective theory, was quite incomprehensible. It explained why the Arab hears very distant sounds by placing his ear near the ground. It was a vulgar notion to consider that the ground was the medium of communication,—it was the air immediately on the surface of the ground, not the ground itself.

The fact he had pointed out shewed the means of preventing reflection: it was only necessary to arrange the flat surfaces, so that sound waves would not impinge at an angle so large as 45°, and there would be no reflected sound. The old architects in our Gothic cathedrals had got rid of reflection. Our Italian Opera House, in the Haymarket, was admitted to be an admirable house for sound: the arrangement of the boxes was precisely the best sort of arrangement for preventing reflection. In Dr. Hook's church at Leeds, the speaker was singularly well heard; and in this church, he said, were combined all that he had spoken of as being likely to produce a good result: the roof was especially well-calculated to prevent reflection. He did not pretend to dogmatise, the subject was too obscure for that; he wished all he said to be regarded as merely suggestive, and he would conclude by deducing the following maxims:—

In a large room, nearly square, the best place to speak from is near one corner, with the voice directed diagonally to the opposite corner.

In all rooms of common forms, the lowest pitch of voice that will reach across the room will be most audible.

In all rooms of common forms, it is better to speak along the length of the room than across it; and a low roof will, ceteris paribus, convey the sound better than a high one. It is better generally to speak from pretty near a wall or pillar, than far away from it. It is desirable that the speaker should speak in the key-note of the room, and evenly, but not loud.

It is desirable that a rectangular room, or suite of rooms, should have their proportions multiples of the simple numbers 1, 2, 3, and 5, otherwise it will be difficult to give the noise equally. It is desirable, also, that the speaker be either at a corner, or at some simple proportion of the length, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{5}$, from the side, or corner, of the room.

In a room about to be built, equal seeing and hearing may be obtained by ranging the seats in the acoustic curve.

All surfaces at right angles to the direction of the sound should be avoided as far as possible; and angles of less than 45° with it substituted. If surfaces must be at right angles to the sound, they should be as distant as possible.

In a very large building, escape of the sound, even from the building, should be, if possible, provided by transversal wings.

In every case the separation of the wall-surface into small receptacles, like the private boxes of a theatre, the recesses of a library, or the side chapels of a Gothic cathedral, is favourable to distinct hearing.

It is the belief of the writer, that a room formed on these principles might contain twelve to twenty thousand persons, all hearing perfectly a single human voice.

The chairman having invited discussion, Mr. Donaldson said,—"buildings in respect of sound were of two sorts, those wherein the speaker occupied one fixed position, as a church, and those wherein the speakers occupied a variety of different positions, as in the Houses of Parliament. For his own part he did not see any great merit in the construction of a theatre like that of the Royal Institution, which was small, and where the voice always proceeded from one place. He should have been glad if Mr. Russell had investigated such a room as Exeter Hall, which was admitted to be one of the worst rooms in London for sound. The practical application of the science of acoustics was unquestionably very difficult, and what answered in one place did not in another. As to the partitions in the boxes of our Opera House rendering it good for hearing, there were many theatres similarly divided and cut up, wherein nothing could be heard; the San Carlos, at Naples, was an instance: and as related to preventing reflection from a roof by projections, the ceiling of our Opera House was perfectly smooth. The church Mr. Russell had described as bad for hearing in, agreed precisely with others he knew of, where the preacher could be heard well; and only the day before he had been in a church (West Ham) containing all the irregularities pointed out, as likely to produce a bad church for sound, and yet there, with piers interposing between himself and the speaker, he had heard very well. He mentioned these points simply to shew the difficulties of the subject.

Mr. Russell said, as to Exeter Hall, he had before pointed out that it was necessary, in order to ensure hearing in so large a room, that the length, breadth, and height, should be in harmonious proportion, which was apparently not the case there; moreover, there was a chamber branching out from it at right angles, which was always detrimental to sound, and the flatness of the ceiling and walls further conduced to make it a bad hearing room. He was ready to admit, however, that he was far from considering himself a sound *doctor*; still he had never found a room which controverted his views.

Dr. Bromet instanced Horsham church in Sussex, as being remarkably good for hearing in.

Mr. G. Foggo thought it desirable to mention that the Hall of Commerce, in Threadneedle-street, was very good for music, but very bad for speaking in. Mr. Harper once trying it with a musical cane he had with him, found the reflection gave the octave of his original note.

Mr. Russell thought that room might be good for music, because it was well proportioned, and bad for speaking because it had a voice of its own, and speakers had not found out the key-note. If a man had to speak there constantly, he would soon find this out, and might then voice it with considerably less effort.

The conversation turning on the transmission of sound, Mr. Alexander referred to the occurrence of sounds in his and other houses in Bedford-square, the origin of which had baffled inquiry. Mr. Papworth corroborated the statement, and attributed the sounds to the bad construction of the houses, which led to unequal settlements, and consequent strains on the timber.

Mr. Poynter said, that at a parsonage-house in the country known to him, a knocking, which was heard at certain times, and could not be explained, and had obtained for the house the reputation of being haunted, was found to to be caused by the baker at the opposite end of the village chopping his wood. The sound, it was thought, was reproduced in an old well opposite the parsonage. Mr. J. A. Picton, of Liverpool, instanced a case where similar sounds, heard in a house, were found to proceed from a steam-engine at a very considerable distance, and not audible elsewhere.

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* See page 123.

† See p. 82, *ante*.

‡ Doubt was expressed on this point by some of the members. All Mr. Webster's papers are in the possession of the Institute, including the minutes of council, during the erection of the theatre, and will probably enable us to set this question at rest when we have time to look through them. It affords an instance of the rapidity with which Time obscures facts.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.*

BY PROFESSOR GRIFFITHS.

Carbonic acid, as it exists in natural quantity in the atmosphere, is absolutely essential to the welfare of the animal and vegetable creation, but as produced in undue quantity by the combustion of ordinary sources of heat and light, if it have not ready egress, acts as a narcotic poison upon man and animals, and as a poison to most tribes of the vegetable kingdom.

The chemist can prove that six parts by weight of carbon, when perfectly burned, produce twenty-two parts by weight of carbonic acid; hence the extreme danger of burning common charcoal in a brazier to warm or dry an apartment, unless there be a good ventilation, for the whole of its atmosphere will soon become impregnated with the mephitic vapour, and a person entering would be rendered insensible.

It is commonly supposed that the carbonic acid resulting from burning charcoal in a brazier remains as a heavy stratum of vapour upon the floor of an apartment as it does upon the floor of the "grotto del cane," and that no danger is to be apprehended in entering the apartment if a person stand upright, but this notion is seriously erroneous, as the chemist can immediately prove.

It is perfectly true that carbonic acid, however it may be produced or evolved, is heavier than air, and will fall or subside through air when it is of the same temperature as the air, or when it is of a lower temperature than the air, and such is the case in the "grotto del cane;" but as carbonic acid is formed during the combustion of charcoal, it is materially *lighter* than air, because it is of an exceedingly high temperature, or, in other words, rarefied by the heat; and, accordingly, it ascends in virtue of this thermal levity, and blends uniformly with the air of the apartment, whilst another curious action is simultaneously ensuing, viz., the charcoal, in order to burn and to continue burning, must have *oxygen*, it takes this from the air to form *carbonic acid*, but leaves the *nitrogen*, which is equally mephitic, so that, in the course of a very short time, if no egress be permitted for these substances so inimical to life, the entire volume of the air becomes thoroughly vitiated, and a person entering the apartment would be suffocated.

Another fact in connection with the point in question demands attention. Suppose (as is frequently the case when work is to be hurried) that a brazier containing a bushel of burning charcoal be placed in the middle of a room, and then all the doors and windows be closed "that the heat may dry the plaster walls," why, in the course of an hour or two, when the workman thinks "the charcoal has burnt out," or the "brazier wants filling," he opens the doors "to let the foul air escape," and after a few minutes he enters, and finds to his surprise that "the fire is quite out, though there is plenty of charcoal left in the brazier." He is at a loss to account for this, but the reason is extremely simple; the combustion or burning of the charcoal ceases when it has withdrawn the greater portion of oxygen from the air to form carbonic acid, and has liberated nitrogen, for charcoal can neither burn in the compound result of its own combustion, nor in the elementary nitrogen, for these two extraordinary substances are as fatal to flame as they are to life.

In order to effect the entire combustion of the charcoal used in drying the walls of an apartment, the top sash of a window should be opened a few inches, and the door left "ajar" to a similar extent; or if there be two windows, the top sash of one, and the bottom sash of the other, should be thus opened, and the door closed; and then, in the first case, the heated carbonic acid and nitrogen would escape by the window, whilst fresh air would enter by the door, to supply the fuel; and in the second case, the escape would still be by the top of the one window, whilst the entrance of the fresh air would be at the bottom of the other. A ventilation thus established would have the additional advantage of carrying off the steam produced from the damp walls, instead of its "sweltering" them, as when the apartment is confined. And if several shallow pans, filled with "cream of lime," be placed upon the floor, and at different heights above it, much of the carbonic acid would be withdrawn to form carbonate of lime; thus an additional call would be made for the entrance of fresh air from without.

Let us now examine the sources from whence the great supplies of quicklime are derived. Carbonate of lime is presented by nature in vast abundance, and is familiarly known as marble, limestone, and chalk; in these substances the carbonic acid and the lime are held together with a certain degree of chemical affinity, and under all ordinary circumstances they manifest no tendency to separate from each other, but this affinity can be readily overcome by several chemical agents.

Thus, if a fragment of marble, limestone, or chalk, be placed in a clear glowing fire, and there allowed to remain thoroughly red hot for about an hour, upon removal and cooling, it will be found to possess all the characters of "quicklime," because the heat of the fire has caused repulsion to ensue between the carbonic acid and the lime, the former being volatile, escaping with the products of the combustion of the fuel, whilst the latter being fixed remains behind. Upon this fact is founded the ancient and well-known practice of "lime-burning," but all varieties of native carbonate of lime are not equally adapted for "burning into lime" for the purposes of the architect and the builder; thus if pure white marble be heated, its decomposition will be effected, but the resulting lime will appear in a sandy or pulverulent form, due to the crystalline particles of the marble being violently thrust apart, as the carbonic acid escapes, and this sandy or arenaceous form of lime does not admit of ready separation from the ashes of the fuel employed in the furnace or kiln, in which the "lime burning" or *calcination* is conducted.

Pure white marble, or *primitive marble*, as it is called by geologists, from the fact of its never containing *organic remains*, is rarely used as a source of quicklime, but the common *limestones*, called *secondary marbles*, from their containing such remains in abundance, are mostly selected; but even then, an examination upon a small scale should be conducted to ascertain that such varieties neither crumble into dust nor fuse by the heat of calcination, for some limestones containing *silica* or the pure matter of *flint*, will readily fuse into a kind of "slag," on account of chemical affinity exerted between the silica and the lime, as noticed at an early period of this inquiry regarding calcareous compounds.

A good and suitable limestone having been employed, the resulting "quick-lime," although very porous and very light, still retains much of the shape of the original limestone; that is to say, it is in lumps admitting of ready removal or carriage, such as the well known Staffordshire and Dorking lime.

Lime, from limestone, or "stone lime," should slake perfectly with water, and wholly crumble into hydrate of lime. This is a good and simple test of its "quickness." If, on the other hand, a hard "core," of a different colour to the surrounding lime, remain after "slaking," this proves the "lime-burning" insufficient, as the "core" is still undecomposed limestone; and if a fragment of the "core" be thrown into muriatic acid, diluted with an equal bulk of water, a plentiful effervescence will arise, due to the expulsion of carbonic acid.

Generally speaking, the "cores" being very hard, or stony, and different in colour to the lime, they are easily discovered, and separated during the slaking; but with "chalk lime" the "cores" are nearly as white as the original chalk, and actually consisting of it and being soft, are easily and frequently broken by the spades, shovels, or other tools employed by the workmen during the slaking, and thus become mixed with the real hydrate of lime.

If a lump of chalk lime be suspected as imperfectly burned, it will not perfectly crumble away when mixed with water, and its "core" will effervesce with the acid just named.

The only lime employed in some counties is obtained from shells, of which beautiful natural productions there are two classes, known as porcellaneous and mother of pearl shells. The hardening, *inorganic*, or calcareous portion of these classes is similar to the matter of limestone, viz., carbonate of lime, but the portion which confers strength and toughness upon porcellaneous shells, is an *organic* compound termed *gelatin*, on account of its identity with ordinary *jelly*, and that of mother of pearl shells is an *organic* compound termed *albumen*, on account of its identity with the *white* of egg.

Carbon, oxygen, hydrogen, and nitrogen, are the *ultimate* elements of these *proximate* principles *gelatin* and *albumen*, and when heated or burned, these principles are decomposed, and resolved into several curious and complicated compounds, the chief of which are easily volatilized. Accordingly, if shells be heated to redness or calcined, their organic principles are decomposed, their inorganic principle or carbonate of lime is also decomposed to a certain extent, that is, the carbonic acid escapes, and quick-lime remains.

Probably the use of "shell lime" cannot be strongly recommended, unless the shells have been well washed in fresh water, to free them from the saline matters of sea-water, and then wood should not be used as the fuel for their direct calcination, as its ashes yield alkaline matter, which, mingling with the lime, would render mortar made of it liable to remain damp; it has been proposed to calcine the washed shells in iron cylinders, properly set in a furnace, so that a current or draught of air may be created through them, and this leads to the mention of a very curious fact connected with the philosophy of "lime burning."

Although heat has been frequently cited as an agent for the decomposition of carbonate of lime, it is found that no thorough decomposition will ensue, if the aperture of the vessel employed for the calcination be closed against the access of air, the smoke and flame of the fuel, or the vapour of water.

If, for example, dry chalk be heated in a vessel so constructed as to prevent the access of these agents, very little carbonic acid will escape, the chalk will become hard and semi-transparent, like marble.

Palladio mentions that limestones, taken from a dry pit, are not so good for burning into lime as those from a moist and shady one. This fact is well known to our "lime-burners," and it appears, that the access of air, the smoke of the kiln, the watery vapour, all promote the escape, or wafting away, of the carbonic acid; or, in other words, when a limestone is dry, and heated in a covered vessel, that the small portion of carbonic acid evolved upon the *first* application of heat remains as a film, or stratum, preventing the evolution of any further portion.

As quick-lime forms the basis of mortar and many cements used in building, a general statement concerning the chemistry of these useful materials may now be entered upon.

Perfectly burned lime should be selected, and slaked with water, the purer the better: dirty river water should not be used, as it would contaminate the lime with extraneous matters; and above all, sea-water should be avoided, as containing saline matters, which would interfere with the proper setting and drying of the mortar.

The French builders have three methods of slaking lime, which they denote by the terms, *extinction ordinaire*, *extinction par immersion*, and *extinction spontanée*. The first is the common plan of heaping up the lime, and adding water to this until it is all converted into hydrate. The second consists in placing the lime in baskets, plunging these into water, then quickly removing them, and emptying their contents into a pit, which, when filled, is closed by a trap-door; thus the water, vapourized by the heat of the chemical action, or more familiarly, the steam, is prevented from escaping, and compelled to abide in contact with the lime, thus insuring its perfect conversion into hydrate. The third method is to spread the lime in thin shallow layers upon the ground, that it may absorb water from the air, and thus slowly become hydrate without the evolution of heat. Of these methods, the first is the easiest, the second the best, and the third the worst, excepting for some kinds of hydraulic lime, for the lime, in addition to becoming hydrate, passes into the state of carbonate.

From the best experiments upon the subject, it appears that the proper sand for mixing with the lime to constitute mortar is "river sand," wholly *silicious*, and of a sharp clear grain. This sand may be immediately distinguished from *calcareous* sand by its not effervescing in dilute muriatic acid. Sea sand, unless most perfectly washed in fresh water,

* See p. 96, *ante*.

is wholly unfit for the purpose, on account of its saline matters.

The proportion of clean sand should always exceed that of the lime, thus an excellent common mortar can be made of three parts of fine sand, four parts of coarse sand, and one part of the best slaked lime beaten up with as small a quantity of water as practicable.

Such mortar may be used immediately, or if placed from the air in pits, it may be preserved for a great length of time without suffering any deterioration; on the contrary, probably the older it is the better, because the lime becomes most perfectly hydrated, and intimately mixed with the sand, every grain of which becomes fully encrusted.

Then, a short time previous to the employment of such mortar, it must be mixed with a little water and perfectly well "gaged." It will soon "dry or set," because the lime and sand are in a favourable state for acting upon each other as also upon the air. *Silicate of lime* and *carbonate of lime* are simultaneously produced, and the mortar assumes the firmness of stone.

The superiority of Roman mortar over that now commonly used was referable, in the first case, to the care taken in the selection of proper materials, and in the next, to the age and maturity of the mortar before it was employed in construction. There are many persons who, in their enthusiasm for every thing bearing the stamp of antiquity, will state that "nothing like ancient mortar can be now produced, even with all the means and appliances of science, in fact that the secret is lost, and that science cannot direct the way in which it is to be discovered."

But this is not the case; real practical men *can* produce mortar that in the course of a few years will rival in hardness any Roman specimen, providing they choose a good limestone, have it thoroughly calcined, its lime perfectly slaked, mixing this with a clean, sharp grained, silicious sand, and pure water, and permitting the mortar to become matured by burying it out of the contact of air.

There is no secret to be mourned after or hunted out, for Pliny and Vitruvius expressly mention that the firmness of the mortar of the buildings of Rome was due to its careful preparation, and its three years' maturity before employment.

The Greeks were very scrupulous in their attention concerning the mixing and blending of mortar; ten men were constantly employed to each "bason" of materials, stirring, mixing, and incorporating them together; and Vitruvius states, that such mortar, or plaster, when set after the lapse of years, was so excessively hard as to serve for the formation of tables.

It was a maxim with old masons to their workmen, that "they should dilute with the sweat of their brow," that is, "labour the mortar for a long time, instead of drowning it with water, in order to have done the sooner."

These ancient worthies would be petrified with horror could they behold the process so commonly followed at present for making the trash called mortar, that is destined for "running up" the cheap and bad buildings which disgrace the environs of the metropolis.

In the first place, the lime is often ill perfectly burned; in the next, it is brought in wagons or carts regardless of the weather, "fair, changeable, or rain," and "shot" near the site of the proposed erection, where it probably remains for some days, whilst a shew of protection from the weather is made by covering it with ragged sacks, tattered tarpaulin, or shattered wainscotting.

During the interval, several carts arrive heavily laden with the sweepings and scrapings of the roads ("road stuff") abounding in vegetable and animal offal, and filth of every description. A board conspicuously placed announces "Rubbish may be shot here;" a passer-by would naturally imagine that the "road stuff" came under the denomination of "rubbish," and that the scavengers were eagerly availing themselves of the permission for its deposition;—no such thing,—this foul "road stuff" is destined to enact the part of the "clean river sand" that was formerly used, and should still be used in the formation of mortar.

Two or three loads of "road stuff" are stratified with a load of the lime, then water, not always of the cleanest description is thrown on the heap, and the slaking proceeds most imperfectly; this mixture is subsequently "screened" to separate the unburnt limestones or other stones, then drenched with water and made into a paste with the least possible expenditure of human labour and attention.

Such is the "mortar" as it is carried to the bricklayers, who apply it to cheap, porous, bricks; these are sometimes warm, nay even hot from the kiln; the water is therefore rapidly absorbed as by sponges, scarcely any silicate of lime can form, and very little carbonate of lime, since the lime was probably bad in the first place, rendered worse by exposure, and encumbered, like the silica or sand of the "road stuff," with extraneous matters.

These things are unheeded, the work proceeds, the walls rise above ground like mushrooms; the carpenters, and then the joiners, make their appearance, and in fixing scanty beams, slender rafters, thin flooring boards, attenuated sash-frames, flimsy staircases, contorted handrails, "shakey" skirtings, and "sappy" panelled doors, they keep the "carcass" in a violent tremor, instead of permitting the calm repose which is so essential to its frail constitution.

Suppose the "carcass" sustain these shocks, and the weight of the slating, tiling, iron, and other metal work; the plasterers are introduced to commence their decorative operations; they cover the bare and trembling walls first of all with a coating of the aforesaid "mortar," and afterwards with a coating of "fine stuff," then leave work, highly gratified at the smooth change which their labour has wrought upon the rugged state of affairs. All looks well, but soon the respective apartments become saturated with the vapour of water, produced by the drying of the plastering, and then the woodwork begins to swell, "cast," and crack into various deviations from its intended rectitude of shape, in consequence of absorbing water. This is unheeded; the painters begin, and disguise such deformities by the joint agency of "stopping, knotting, putty, and priming." In the course of a few days the plastered walls that should be smooth and fair, are covered with excrescences and unsightly eruptions. Surely this defacement is not an act of wanton mischief!—No!—Then what is its cause? Why the lime of the "fine stuff" was as badly slaked as that of the mortar, and, therefore, numberless portions of it remained "quick," caustic, or anhydrous, up to the time of its application by the plasterer's trowel; and then, slowly absorbing water from the coarse coating beneath, or from its own coating, such portions slake and swell, and rise in lumps or blisters. These are all patched up and repaired as quickly as possible, because the paper-hangers must come in; but perchance the walls are yet too "green" for their admission, or the weather is damp, the walls must be dried.

Accordingly, a large brazier, filled with burning charcoal, is introduced, and set on the floor in the centre of the room, exactly under a flimsy showy "patera," in the centre of the newly-plastered ceiling; the charcoal burns, the room becomes very hot,—the heated products of combustion chiefly accumulating in the vicinity of the patera and mouldings. These, probably, cannot stand such treatment, for the rapid drying causes them to crack, perchance to fall, whilst cracks and fissures, infinite in the variety of their magnitude and shape, appear upon the ceiling and the walls, all announcing the result of the forcible abstraction of water by the hurried heat of drying.

"Repairs executed on the shortest notice, and the most reasonable terms," the ceiling is restored to a decent appearance, the cracks in the walls are filled without regard to any appearance, and at last all this cobbling is hidden from the sight by "a gaudy penny paper," the colours of which are soon acted upon by the lime of the plaster, and are ever varying as the hues of the chameleon.

But what has become of the painters' work and the iron stoves all this time? Why, exposed as they have been to an atmosphere saturated with water, every patch and spot of the "knotting" can be seen through the thin and finishing coat of paint; whilst the stoves have rusted, and the rust has stained the stone or marble mantel-piece.

Then upon "lighting a fire," the chances are that the chimney will not draw, but clouds of smoke, instead of ascending through their destined channel, rebel, and roll down and fill the room. In general, vain is the hope "that things will be better when the chimney is dry," the smoke nuisance continues, discolouring ceiling, paper, and paint.

"A chimney doctor" is consulted. He suggests that "coring is wanted, or may be a brick is sticking out somewhere," but engages to make the "chimney draw" by putting a metal funnel on the chimney-pot, forgetting that the chimney is a long crooked passage, chilling the smoke, and thus depriving it of ascensional force, so that the attempt to cure the evil by such means, is like having a short, straight lane at the end of a long winding road, to give strength to a jaded horse, and make him "draw."

Such are a few, and a few only, of the unscientific proceedings that are adopted in the construction of cheap modern dwellings; and if space would allow, many other examples of the same kind might be brought forward (as probably they will be, at a future opportunity), but mention must now be made of some mixtures in which lime enacts a part as important as it does in ordinary good mortar.

"Grout," or liquid mortar, has the advantage of penetrating the pores of the bricks by capillary attraction, perfectly filling them, and ultimately setting into a hard mass of silicate and carbonate of lime, thus conferring great firmness and strength.

The researches of the chemist teach that the varieties of limestone, containing a portion of *alumina* (clay) and oxide of iron, yield, when calcined, a lime having considerable superiority over pure lime. The lime now alluded to is technically called *meagre lime*, of which the "Dorking lime" presents a specimen. The lime obtained from a pure simple limestone is white, or nearly so, whilst that from an alumino-ferruginous limestone has a buff, brown, or ochrey tinge; this announces the presence of oxide of iron, and such lime is the best for "cements."

Common mortar soon softens and disintegrates, if exposed to the action of water before it has had time to harden; and, therefore, in order to form "water," or "hydraulic mortar," a different mixture of materials is required.

Certain portions of alumina and oxide of iron are added to the lime and sand; this mixture being well tempered with water, will "set or harden" under water, but a native ferruginous clay may be used (as it contains alumina, silica, and oxide of iron), although not in its crude or raw state, to mix with lime, because it will effectually prevent the induration of the mortar: let it be calcined and rendered anhydrous, then mix it with lime and water, and it will harden under water.

Some natural productions contain the above requisite ingredients already calcined, and fit for immediate use; *puzzolano* for example as ejected from Vesuvius, when finely powdered, sifted, and properly mixed with lime, forms the ancient "Roman cement."

"Trass or terras," a variety of basalt supposed to be of volcanic origin, acts similarly to *puzzolano*, and is used in making the water cement that is so much employed in Holland, and where the foregoing materials cannot be had, the nodular masses called *septariæ* may be advantageously calcined, to yield the hydraulic mortar known as "Parker's cement."

All hydraulic mortars and cements should be slowly dried, and from many experiments that have been made upon this truly important subject, it appears that their strength increases as they are suffered to dry out of the contact of air. The theory of the hardening of these cements consists in the strong chemical affinity that exists between silica, alumina, lime, and oxide of iron, and thus not only is a single silicate of lime formed as in ordinary mortar, but also silicates of alumina and of oxide of iron; these have the power of combining, and of remaining combined against the solvent power of water.

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THE NAPOLEON MONUMENT.—The Emperor of Russia has ordered blocks of the splendid porphyry of the Crown Quarries to be sent to Paris, in order to meet the wishes of the French Government to obtain the finest porphyry in the world, wherever their agents could procure it, for the monument at the Invalides.

## PROFESSOR WILLIS ON THE CONVENTUAL BUILDINGS AT CANTERBURY.

On Friday, the 5th instant, at the meeting of the Archæological Institute, Professor Willis gave an account of an examination which he has lately made into the arrangement of the conventual buildings at Canterbury. In his former essay he had deferred this part of the subject, but we believe that an account of his late researches will also be published. The professor said, that, as regards the present subject, we had not the advantage of a careful chronicle, like that of Gervase, but we had what was more valuable, viz., an actual plan of the whole arrangement. This was preserved in a MS. psalter, now in the library of Trinity College, Cambridge. It had been engraved in the second volume of the Vetusta Monumenta, but not so as to be of much value, and without any consideration of what it was intended to explain, for, in the original, the different parts had been expressed by different colours. It was true that on the drawing there was no title, but it was quite clear, as the professor showed, that it could belong only to Canterbury. He had made an exact survey of the ruins, which were scattered about through several houses and gardens. The result was the plan before them, which he proceeded to compare with a transcript of the old drawing, both being on the same scale.

The first thing which should be mentioned was, that the drawing in the MS. had been made during the period between the death of Anselm and the fire of 1174. It therefore necessarily gave a very different view to that of the building in its present state, or even in a period little later. For instance, on the north, the original plan shewed two walls, with a road between, one being the boundary of the precinct, and the outer, the wall of the city; but it was known that the monks had obtained permission to include the space within their precinct, on the condition of keeping the city wall in repair.

The professor then explained other points of difference, and proceeded to compare the component parts of the plan he had laid down, with that of the monk, noticing the north-west gate, and the gate of the cemetery at the south-west; the cloister,—which was at present perpendicular, but had, on its east side, clear evidence of its original condition, in some Norman doorways—and the chapter-house. The dormitory was an immense building, 145 feet by 80 feet, and was supported upon a substruction of piers, which remain, as well as some of the original windows of the dormitory. It had been supposed that this building was roofed in two spans, and this he had been able to confirm, from the existence of a pier in the end wall. In this part of the plan, and throughout, we found evidence of the greatest attention to convenience and comfort, as well as to health, and the examination of such buildings would afford many valuable hints for the arrangement of domestic edifices. There was ready communication, by enclosed passages, with the cloisters and other parts of the plan, so that, though to be considered mainly as an assemblage of detached buildings, access could be had from one to another, without exposure to the cold. The passage to the church still exists, supported by a cloister, of pure early Norman architecture, and which might almost be mistaken for the style of Wren, or Inigo Jones, and served to show how slight was, in reality, the separation between the Roman and the Romanesque styles. The passage was raised because the choir was raised upon its crypt.—The professor then noticed the kitchen and refectory, which were united by a passage, and the *cellarium*, and other offices. Perhaps the most curious building of all was the *necessarium*, which was of great size, and from its arrangement, and character of decoration, was clearly considered to be not less important than any other department, and occupied an equally conspicuous position. It had a centre division and side aisles: in the latter were stone seats, the whole number being half that of the monks. These conveniences were well ventilated and supplied with water.

The infirmary externally appeared, like the body of a church, with a chancel to it, and indeed here, and elsewhere, had often been considered to be for that purpose. But in reality these buildings were infirmaries, with a chapel at the end, having its own chancel. There were similar buildings at Ely and Peterborough. The infirmary department included also a kitchen, a necessarium, and a refectory for convalescents.—The house of the prior was then noticed, as confirming, in a striking manner, previous remarks on the arrangement. The prior's chapel, of which the present building was indeed later than the monk's plan, shewed great ingenuity, in many points connected with its situation. The prior had ready access to the choir, and to all parts of the convent, and, by means of hagioscopes, he was able to see the celebration of masses in the church. One of these hagioscopes had, in fact, several slits or perforations, so inclined or radiated, that it gave views of altars in several positions. Now this, he thought, explained a reference to the building which had given him some trouble, and that "domus rastri," the house of the rake, or harrow, referred to this building and hagioscope.

The account further extended to the house of the guests, the refectory for distinguished visitors, and the locutary, or place for conversation. The gateway of this latter portion was now enclosed in the house of one of the canons. The staircase, drawn in Caveler's work, was also shewn upon the original drawing. The outer and inner cemeteries stood on the south side of the church.

The professor said he had thus vindicated the accuracy of the monk's drawing, but he proceeded to give what was evidently the object with which it was made, namely, the explanation of the distribution of the water. The plan was intersected by lines in different colours, representing water-courses, and these, with the exception that iron pipes had been substituted, still supplied the houses of the canons. The water being obtained from some distance on the north, flowed by a canal through several ponds, passing the wall under a tower.—We regret that we are not able to describe all these ingenious contrivances without the assistance of the plan, but it may be sufficient to mention a few particulars.—The professor shewed that the water was deposited in a central situation, in an octagonal building, which had been called the baptistery, but which was really the *castellum aquæ*. The drawing showed a central pillar, or cluster of pillars, through which the pipes rose, and this he had confirmed by examination. The water emptied itself into a basin, whence it was distributed to all parts of the convent. In another locality, there was a similar building, probably used as a lavatory. There was a contrivance for getting rid of the water, and cocks were mentioned. The waste water was carried under the necessarium of the infirmary, and then divided to cleanse the two aisles of the great necessarium. The waste was finally ejected into the town ditch. At one place there was a spot marked "puteus" on the drawing, and this well was, no doubt, for a further supply, in times of drought. —Certain lines were marked yellow, and these indicated the rain-water pipes. One pipe, attached to the reservoir, was called "purgatorium;" this was probably (as we understood) an overflow pipe.—He also showed a transcript, from the same source, of another drawing, which had never been published, which drawing further explained the course of the water, and he also exhibited a plan of the monastery of St. Gall, which we have frequently referred to, which had been lately published, with a description, in Germany. The professor concluded by saying, that when proper allowances were made, the drawing must be considered as one of great interest and value. From old drawings, much information could be acquired, if we looked at them, considering that only which they were intended to represent. He thought that the names of many buildings in monasteries had been given somewhat hastily, and he expressed an intention of again returning to the subject.

In the discussion, which ensued, Professor Cockerell and others joined, and Dr. Bromet mentioned a fine example of a monastic building at Angers. A question was also asked as to the uses of pulpits in refectories. A letter was read from the town clerk at Doncaster, in reply to an application from the Institute respecting the preservation of the church of St. Mary Magdalene, which, our readers know, is shortly to be destroyed. The letter called forth some laughter:—the authorities were quite ready to admit everything represented to them, and, had not the site been so central, would have been ready to preserve the building; the applicants would, however, be allowed to re-erect the building wherever they pleased, and the Town Council thought it expedient that a draughtsman should be engaged to make careful drawings.—A letter was also read, denying the reports, as to the mutilation of the church of Deerhurst.—Mr. Petrie and Dr. Todd had also been applied to, respecting the reported interference with some remains in Ireland. The answer from the former stated, that within his own recollection, the destruction had been most deplorable, and of 300 inscribed tombs, which he had known, perhaps 12 did not now remain. The importance of some Government interference was shown to be very great, and the proceedings of the Ecclesiastical Commissioners were censured.—The Marquis of Northampton made a valuable suggestion respecting the opportunity which the establishment of public parks and gardens afforded, for the preservation of antiquities.—Mr. Hawkins commented severely upon the continued inattention to the state of danger of the Chapter House at Westminster, and of the valuable documents which it contains, and the Dean of Westminster, who was in the chair, after showing that this was a matter entirely in the hands of Government, confirmed the statement, saying, that far from being in an ordinary state of safety, the danger was most imminent.

## THE IPSWICH COMPETITION.

An advertisement from the committee for the erection of a new mechanics' institution, to whose proceedings we have already referred, informing competitors, that the design bearing the motto of "May they please you" has been selected, and that the other plans may be had on application, conveys to us the disagreeable intelligence, that architects were found sufficiently abased to submit designs on the insulting terms offered by the committee. Up to this time the whole proceedings have been secret and mysterious, but we hope to be able to remove the veil, in order to see how the committee have discharged the latter part of their duty. Their proceedings in the first step make us very suspicious of the second.

## PRICE OF TIMBER.

The *Mark Lane Express* of March 1st gives the following list of prices:—

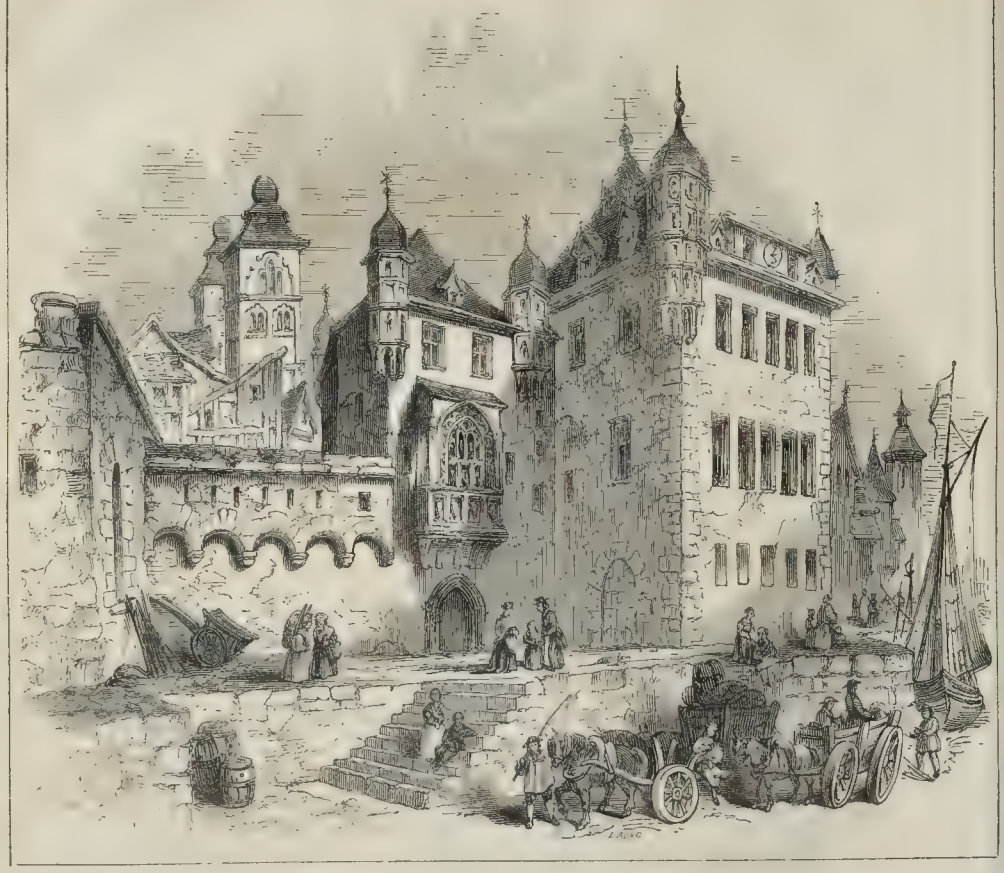
| | £. | s. | d. | | £. | s. | d. |
|---|---|---|---|---|---|---|---|
| Baltic Timber, per load of 50 cubic feet | 4 | 0 | 0 | to | 4 | 12 | 6 |
| Yw. Deals, per standard hundred | 15 | 10 | 0 | .. | 19 | 0 | 0 |
| Deck Deals, per 40 feet 3 in. | 1 | 5 | 0 | .. | 1 | 10 | 0 |
| Lathwood, per fm. of 4 feet | 5 | 10 | 0 | .. | 6 | 10 | 0 |
| Petersburgh, Riga, and Archangel. Yw. Deals, per stand. hundred | 16 | 0 | 0 | .. | 18 | 10 | 0 |
| White | 14 | 0 | 0 | .. | 14 | 10 | 0 |
| Yw. Battens | 16 | 10 | 0 | .. | 18 | 10 | 0 |
| Riga Logs. for 18 feet cube | 4 | 0 | 0 | .. | 4 | 10 | 0 |
| Swedish Timber, per load | 3 | 6 | 0 | .. | 3 | 10 | 0 |
| Gothenb. Yw. Deals, p. 100 12ft. 3in. 9in. | 25 | 0 | 0 | .. | 27 | 10 | 0 |
| White ditto | 22 | 0 | 0 | .. | 25 | 10 | 0 |
| Yw. Battens, per hd. 12ft. 3in. 7in. | 14 | 10 | 0 | .. | 17 | 0 | 0 |
| Christ. Yw. Deals, per hd. 12ft. 3in. 9in. | 29 | 0 | 0 | .. | 30 | 0 | 0 |
| White | 27 | 10 | 0 | .. | 28 | 0 | 0 |
| Quebec and St. John's Spruce Deals per 100, 12ft. 3in. 9in | 17 | 10 | 0 | .. | 20 | 0 | 0 |
| 1st qual. yw. Pine Deals, per st. hd. | 16 | 0 | 0 | .. | 17 | 10 | 0 |
| Second do. do. | 12 | 10 | 0 | .. | 13 | 10 | 0 |
| Red Pine Deals, per hd. 12ft. 3in. 9in. | 19 | 0 | 0 | .. | 26 | 0 | 0 |
| Red Pine Timber, per load | 4 | 0 | 0 | .. | 4 | 7 | 6 |
| Yw. ditto | 3 | 10 | 0 | .. | 3 | 15 | 0 |
| Birch ditto | 2 | 15 | 0 | .. | 4 | 0 | 0 |
| Elm ditto | 4 | 15 | 0 | .. | 5 | 0 | 0 |
| Oak ditto | 6 | 0 | 0 | .. | 7 | 0 | 0 |

MAHOGANY.

| | | | | |
|---|---|---|---|---|
| Mahogany, | St. Domingo | 4½d. to 1s. 9d. | per foot. | |
| | Cuba | 4 | 1 0 | |
| | Honduras | 4 | 1 2 | |
| | African | 4 | 0 5½ | |
| Cedar .... | Havana | 4 | 0 5 | |
| Rosewood. | Rio | 9l. 10s. to 15l. | per ton. | |
| | Bahia | 9 10 | 12 | |

Consuming Smoke.—In proof of the increase of heat gained by burning the smoke, we may cite the experiment of Mr. Henry Holdsworth, of Manchester, who has shewn that in the front flue of a furnace, of common construction, the thermometer seldom rose above 1,100 degrees Fahrenheit, and often fell below 900 degrees, the mean being 975 degrees, while in the same furnace, when consuming its smoke, the mean temperature was 1,160 degrees Fahrenheit, ranging between 1,400 degrees and 1,000 degrees. The quantity of water evaporated by a pound of coal was *one-half quarter* more than when the smoke was not consumed.

ELECTORAL PALACE AT COBLENTZ.



## THE ELECTORAL PALACE AT COBLENTZ.

The picturesque edifice which forms the subject of our engraving is adjacent to the Moselle bridge at Coblentz, and close to the confluence of that river and the Rhine. Its architecture is characterized by that freedom from strictness of style, and general adherence to rule, which marked the continental buildings of the latter end of the fifteenth century, and which allowed any combination of parts provided the general effect was gorgeous. Thus classic forms were tampered with and modified until they combined with the enrichments of the Gothic era, and a style bearing traces of multifarious parts borrowed from all sources, and fitly styled from its generalization of all—the *Renaissance*, was for a considerable period the favourite one adopted.

However much the artist may be pleased with the picturesque effects of such buildings, the architect but rarely applauds them, except when the style is used for buildings of a strictly decorative character, or for enriched interiors. Many of the details in the building here engraved are of much beauty. The bay window is exceedingly picturesque, and so are the turrets on the upper angles; such turrets are very common in Cologne, and some fine examples may be seen in the principal streets; they are frequently supported on arches springing from pillars standing free of the wall, their bases resting on sculptured corbels, and are very agreeable to the eye when they abut on the corners of streets, as they break that stiffness of line so common in those of our own country. They are remnants of a mode of building adopted in less secure times.

## FREEMASONS OF THE CHURCH.

On Tuesday evening we attended a meeting of this society, in their rooms in Carlisle-street, Soho. Sir Walter James, Bart., was in the chair, and many curious works of art were exhibited. A paper, on the tomb of Robert Bruce, competitor for the crown of Scotland, by Mr. W. Downing Bruce, was read. The tomb was of a tabular form, of fine blue marble, and stood with the east end against a wall, probably near the high altar, in Gisborough Priory, Yorkshire. It had no recumbent figure upon it. The upper slab is now separated from the tomb, and used as the altar-table in the parish church; it is 9½ feet and 1 inch long, and 3 feet 9 inches broad, and 9 inches thick. The tomb in the centre is 8 feet 6 inches long, and 2 feet 2 inches high; the base, still attached to the tomb, is 10 inches thick. The west end, given by Dugdale, but now destroyed, represented the competitor in royal robes, with the Scottish crown on his head, having established his right to wear it; holding in his right hand a sceptre, and in his left a shield, bearing the royal arms of Scotland, a lion rampant within an orle floy counter-floy; and above him two shields, one the arms of the elder branch, resident at Skelton, the other, those of the Annandale family. The south and north sides were removed into the parish church, and fixed in the seats near the west door, one on each side the passage. At the rebuilding of the church, about sixty years ago, these remains of antiquity were built into the porch, or lower part of the tower; that which was the south part of the monument is on the north side, still fronting the south, and that which was on the north part, on the opposite side. On each side of the tomb are five large niches, trefoiled in the head, and slightly panelled at the back, in each of which is a figure in armour, holding a shield. Between the large niches are small ones, also trefoil headed, reaching two-thirds up the side, containing figures of ecclesiastics. Above each small niche is a shield. By the heads of the large niches are formed ten spandrils, filled with various devices. The figures contained in the small niches are much mutilated.

Mr. J. Wykeham Archer then read a very interesting paper on portions of ancient London, illustrative of a series of capital sketches, made by himself for Mr. Twopenny's collection: we shall give this in full in our next number.

The Chairman informed the meeting, that in consequence of steps taken by the college, the ancient iron railing, belonging to certain tombs in Westminster Abbey, was to be put up again. The Honorary Secretary, Mr. W. P. Griffith, having announced a paper on masonry, by Mr. Mallcott, the meeting was adjourned.

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The Army and Navy Club Competition.—In reply to several correspondents, who consider a circular recently issued by the committee somewhat ambiguous, we have enabled ourselves to state, that the elevations are to be in outline only, as specified in the first conditions. The perspective view may be tinted in Indian ink or sepia. The object of the circular is to prevent the execution of perspective views in colours, as such will not be admissible.

## BUILDINGS IN YORK.*



OUSE BRIDGE AND ST. WILLIAM'S CHAPEL, YORK.



BOOTHAM BAR.



MONK BAR.



MICKLEGATE BAR.

* See p. 117, in present number.

## AWARDS OF OFFICIAL REFEREES.

### RECOVERY OF COST OF REBUILDING PARTY-WALLS. IMPORTANT.

A CERTAIN party-wall on the line of junction between Nos. 8 and 9, Cullum-street, in the district of the eastern division of the City of London, having been rebuilt, in pursuance of a former award, under the direction of Mr. Barnes, the account was rendered to Mr. Archer, the occupier of No. 9 (who holds on lease for twenty-one years, from Christmas, 1830), and he, objecting to it, appealed against it to the referees on the following grounds :—

"1. Because the said party-wall is not erected in conformity with the said Act.

2. Because the accounts delivered are contrary to the said Act.

3. Because the claim for the same is contrary to the award made by the official referees in reference to the said wall, dated 17th day of July, 1846.

4. Because the rules of the said Act were not complied with in the condemnation of the original wall, and no directions contained as to the manner of execution.

5. Because if I, the said James Archer, am liable to any of the expenses of the erection of the said wall, I submit I am not liable to the whole of the moiety thereof, but the owners or lessors to some portion of the same.

6. Because the said William Barnes, as such agent as aforesaid, or the building owner or owners, have not complied with the said Act."

The referees, on survey, ascertained that the house No. 9, Cullum-street, exceeded six squares in area, and was consequently a building of the second rate of the first class, and that the thickness of the wall in question was contrary to the rules of schedule C, part 2, and that a chimney breast next the said house was corbelled out from the faces of such wall more than nine inches, contrary to the rules of schedule F, relative to the construction of chimneys, and that certain joists and girders had been placed within 8½ inches from the chimney openings in the said party-wall, also contrary to the rules of the said schedule F; and that a small opening or hole had been made in the said wall, above the gutter at the back of the said house, No. 8, Cullum-street, contrary to the rules of schedule D, part 3.

The award was:—That as the said party-wall had not been built in the manner and of the thicknesses required by the first-mentioned Act in reference thereto; "it is not lawful for the building owner at whose expense such work has been executed to claim, and he is not entitled to be paid, or to recover from the adjoining owner, any compensation in respect thereof within the intent and meaning of the statute in that behalf."

The expenses to be paid by Mr. Barnes.

### RUINOUS PARTY-WALLS—FORMS NOT TO BE DISPENSED WITH.

A party-wall between No. 1, Lothbury, and the remains of the building situate on the south side of it, in the Old Jewry, having been condemned by the district surveyor as unsafe, Messrs. Stevens and Co., owners of No. 1, were desirous to avoid delay, and to pull down and rebuild the wall at once, but the governors of the Bank of England, owners of the premises in the Old Jewry, refused to assent.

A requisition on the part of Messrs. Stevens was therefore presented to the referees, requesting them to determine,

"1stly. Whether the said governor and company refusing all consents, the said Messrs. Stevens and Company will be justified in proceeding forthwith to pull down and rebuild the said party-wall on the present line of junction, and also whether in case they may so pull down and rebuild, they may enter upon the premises of the adjoining owners for this purpose, and in the event of their being allowed so to pull down and rebuild, and having so done, they would be entitled to claim and be repaid by the adjoining owners, a moiety or any other proportion of the expenses of pulling down and rebuilding, and the other expenses incidental thereto.

2ndly. Whether the said Messrs. Stevens and Company may forthwith pull down the said party-walls; and having so done, or in the event of the said wall having been pulled down in pursuance of the 40th section of the said Act, the said Messrs. Stevens and Company would be justified in forthwith proceeding to build a proper external wall up to the line of junction of the two premises, with the footings on the ground of the adjoining owner; and, also, whether in this case the said Messrs. Stevens and Company, in so building, would have a right to enter upon such adjoining owners' ground for the purpose of building such external wall.

The referees decided :—

"As to the first question submitted by the said requisition—

First. That inasmuch as the party-wall in that question mentioned has, by the certificate of the surveyor of the district (duly appointed and acting under the first-mentioned Act), by him duly made under and in pursuance of the 40th section of that Act, been declared to be ruinous and dangerous, and that it is necessary for the safety of passengers that the same should be pulled down; and inasmuch as the said Messrs. Stevens and Company have been required by the lord mayor and aldermen of the city of London to pull down the same under and in pursuance of the section last aforesaid, they, the said Messrs. Stevens and Company, would, if the said governor and company of the Bank of England, or other the owner or owners, for the time being, of the said premises, situate and being in the Old Jewry aforesaid, refuse to join in such reparation of the said party-wall as may be necessary for the securing the safety of passengers, or in pulling down the same, after the giving of such reasonable notice, by the said Messrs. Stevens and Company to the said governor and company, or other the owner and owners for the time being, as last aforesaid, as the urgency of the case may admit, be authorised in proceeding to pull down the said party-wall without the consent of the said governor and company, or other the owner or owners, as last aforesaid, *but not further or otherwise than may be necessary to remove all danger to passengers;* and that, subject to such conditions, the said Messrs. Stevens and Company may enter the said premises last aforesaid for the purpose of pulling down the said wall.

Secondly. But inasmuch as the proceedings, authorized by the 40th section of the first-mentioned Act, are such only as may be necessary for the safety of passengers, the said Messrs. Stevens and Company would not, in case the said party-wall should be pulled down, be justified in proceeding to build the same on the present line of junction referred to in the said requisition, until the said governor and company, or other the owner or owners for the time being, of the last-mentioned premises, shall have consented thereto, or until such proceedings shall have been taken as are prescribed by the first-mentioned Act for supplying the want of such consent.

And, further, as to the said first question, that in case the said party-wall be pulled down by the said Messrs. Stevens and Company, they would, after such refusal and the giving and expiration of such notice, as is first above-mentioned, be entitled to claim from, and be repaid by, the said governor and company, or other the owner or owners for the time being, of the said last-mentioned premises, a proportion (which may depend upon circumstances) of the expense of pulling down the said party-wall; but that the said Messrs. Stevens and Company would not be entitled to claim from, or to be repaid by, the said governor and company, or other the owner and owners for the time being, of the last-mentioned premises, any of the expenses of rebuilding the said party-wall, unless, previously to such rebuilding, the said governor and company, or other the owner or owners last aforesaid, shall have consented thereto, or unless such proceedings shall have been taken as are prescribed by the said first-mentioned Act for supplying the want of such consent.

And as to the second question submitted by the said requisition, we, the undersigned, as such official referees as aforesaid, do hereby determine and award, that neither of the said Acts of Parliament contains any provision relative to the building of external walls under the circumstances stated in the last-mentioned question; and that the said Messrs. Stevens and Company would not be justified in placing the footings, or other parts of any external wall, upon the ground belonging to any other owner, nor in entering upon such ground without the consent of such owner first had and obtained in that behalf."

## PROCEEDINGS OF THE INSTITUTE OF FINE ARTS.

SIR,—The Institute of the Fine Arts, founded in 1843, in order to repair the long continued neglect of sound principles, business habits, mutual information and improvement, and concentration of power, without which artists, as a body, never can enjoy the respect and influence that seem naturally to belong to the profession,—appeared in many respects well calculated to effect its purpose; but the commotions that during the last twelve months have shaken it to the foundation, not only stop its progress and impair its efficiency, but the abandonment of original principles, confusion, loss of time and of money, are seriously aggravated by the disunion and animosity amongst individuals who formerly entertained esteem for each other. The following account of the circumstances by one who, as an efficient member of council, of the Finance Committee, of that on laws, &c., &c., an untiring advocate of the high principles of the society and the rights and interests of all its members, may perhaps open the eyes of sensible men to the folly of exasperation, and serve as an example to others, particularly to young institutions.

Two great mistakes were made in the formation of the society. First, while they invited amateurs to join as "Honorary paying members," they denied them all share in the management of funds to which they contributed, all participation in the election of friends or others, or the business of the society; and so jealously have they maintained this exclusion, that a proposal to modify it, still keeping them from the council, was rejected, and a motion at a general meeting to refer the differences of the late contending parties to umpires, more impartial and cool than ourselves, was vehemently resisted, and declared by the chairman to be irregular and unconstitutional. The other mistake was, in having so large a number as twenty-four members of council in a society where a hundred never meet on any business; under such circumstances, a compact body of more than a fourth, prepared and used to each other, can overpower all uncombined opposition or difference of opinion.

The consequences of excluding gentlemen better acquainted than they are with forms and business are frequent and serious, and preclude their finding out mistakes until too late for remedy. A few cases will suffice.

According to the printed laws, a banker should be appointed by the general meeting to receive all moneys, to be drawn by checks, signed by the treasurer and the secretary. Audits should be made every six months: and yet in four years no banker has been appointed, and only two audits have been made and signed. Hence an accumulated confusion, which makes it hardly safe to rely on those statements to any nicety. For instance, when in 1845 the auditors undertook to examine papers, no balance-sheet being prepared, and no dates, even to distinguish one year from the other, it was next to impossible to clear them. This was commented on in the report. According to the constitutional law IX., the report on that audit was ordered to be printed for members, but it never has been sent to press.

From February, 1845, to February, 1847, there was not one audit, although one of the auditors repeatedly claimed to be summoned, but a finance committee was appointed by the council in 1845, and a committee of inquiry by a general meeting in 1846. The former spent several months in making up and checking a register of members and payments of subscriptions, discovered endless confusion in the accounts, but could not establish a satisfactory mode of keeping them; but they and their friends on the council were indignant at the general body appointing a committee of inquiry, and actually questioned its right to do so, maintaining that they alone (the council) had that power; they prevented the report of the committee from being read at a subsequent meeting. The committee of inquiry then took away the papers in their hands, and printed a statement, in which they advised members to insist on an audit before they paid their subscriptions. For this the council members

caused the chairman and secretary of that committee to be expelled, and refused, as above stated, to submit the difference to unbiassed arbitrators. They also passed the law for doubling the subscription. These extreme measures put an end to all hopes; but too late, the council paid for legal advice as to their power of calling for the double subscription for that year, and were obliged to abandon it. They had already agreed to absorb the club (an anomalous adjunct to the institute) assets, liabilities, and stock, into the society, and they were soon obliged to borrow 100*l.* to carry on the establishment. These measures were resorted to without communicating with the members at large, or mentioning them until the close of the year. Notwithstanding the lengthened attempts of the finance committee to clear up the accounts, they were obliged to place them in the hands of an accountant, who, for six pounds, made out a balance-sheet. This was received, and ordered to be printed at a general meeting; and though unaudited, considered by the treasurer as still more authentic than an audit; and last week the auditors were directed to commence their examination, not from the beginning of the year, but from the conclusion of that accountant's statement. Then, for the first time, it was discovered that this important document was neither signed nor dated, having no date to determine the period of its close. Indeed, after all the trouble to set them right, they were nearly in the same state of confusion in 1847 as in 1845: not even a cash-book was kept. It is hoped, that doubling the subscription will set all to right; as if it was easier to collect accumulated arrears by adding another guinea. And amid all this, members of council claim an allowance of refreshments when employed in committees, a great encouragement to late hours, little business, and good appetites. When will our artists acquire noble aspirations, and learn that good sense and knowledge are the fit companions to genius, even in its most exalted flights to pure etherial regions? That good feeling towards each other, and due respect for all men of intellectual pursuits, without exclusive jealousy, is required to gain them a position as amiable and educated men. Let them shew less rancour for past differences. A little conciliatory amenity would do the institute more service than unwarrantably placing an odious stigma on opponents. Revenge usually belongs to savages and brutes,—good-will towards a powerful rival always ensures esteem. Even now they should submit their differences to impartial arbitrators, afford every advantage and respect to gentlemen of different acquirements, from whom they have fully as much to learn as they can impart; and if the alterations in the society cause some of us to separate, let us rather regret than rejoice at the parting. The social character has so nearly superseded the intellectual, that one, more like various societies for the promotion of science, might be established with perfect good will. Emulation might then replace jealous animosity, and, instead of violent expulsions, give rise to cordial invitations. Surely, in an age so remarkable for improvements, artists cannot long resist the many calls on their better sense, their real interests, and generous feelings.

I remain, Sir, &c., GEORGE FOGGO.
March 2nd, 1847.

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ENCAUSTIC TILES.—Encaustic tiles, as many are, doubtless, aware, consist of a fictile material, made into forms of about 6 inches square, into the surface of which, while still in a soft state, were pressed metal dies, upon which a pattern was worked in relief: the ornament being thus indented, the intaglio, or indentation, was filled up with clay of a different colour. The tile was then baked, and covered with a vitreous glaze. This art obtained universally in England from about 1300 to 1500; and was again revived in 1830, when a patent was taken out for the manufacture of similar tiles: since which period, the revival has been carried out on a large scale by many manufacturers. They are sometimes improperly designated Norman tiles: the manufacture was carried on more extensively in England than in any other country.

INTRA-MURAL BURIALS.—Government have prepared a bill to prohibit the further interment of corpses in the churchyards of large towns and populous districts.

## SEA WALLS.

AT a meeting of the Institution of Civil Engineers, on the 2nd instant, the comparative advantages and disadvantages of vertical and sloping sea walls were discussed, and instances were given of the effect of seas upon the former, when walls of a certain batter, or curved face, were surmounted by an overhanging coping, of such extent as to deflect the curling wave outwards, and throw it back upon itself, rather than allow it to fall bodily inwards, as in the case of the Penmaenmawr wall. The manner in which the waves were driven up long slopes, acquiring force as they travelled along, was contrasted with this. On the other hand, the action of the various kinds of waves was shewn upon sections of the beach at Madras, where the surf was so notoriously bad, and where it appeared, that by the clawing off of the waves, the beach was washed away into natural steps, of a level, and then a small slope of 45°. A breakwater had been formed off that beach, by throwing in loose masses of rock, forming their own slope; this, when carried up to within 10 feet of the water level, stood well.

In Knootker Sound the same effect of the drawback of the waves was noticed. Sections of the mole of Venice were shewn. That mole, which is nearly sixteen miles in extent, had a section of a sloped foreshore, with a nearly vertical wall, then a slope at another angle, and above high-water mark another nearly vertical wall. When the seas rolled in upon the mole, they partially curled over against the first wall, and were projected with augmented force against the upper one. The consequence was, that the mole was partially destroyed; and in the repairs, which had been executing for some time past, it had been reduced to one uniform sloped face, at an angle of about 15°. The destruction of the nearly vertical walls of Portpatrick was also noticed. Those walls, although constructed of the finest Anglesea lime-stone, well dressed, dovetailed, and tied down vertically and horizontally by iron chain-bonds, were completely overthrown, and, until the thickness of the wall was increased to 80 feet of solid material, it could not be made to stand. The situation was extremely exposed, and the sea frequently sprung 50 feet above the top of the lighthouse, which was itself 60 feet above the level of high water of spring tides.

The causes of the peculiar action of the drawback of the waves, as exemplified by the removed shingle from the beach when the wind was on shore, and its accumulation when the wind blew off shore, were also discussed, and it appeared to be the received opinion that in these cases, the upper part of the waves being acted upon by the wind, a peculiar rolling motion in a counter direction was imparted to the lower wave, which acted upon the shingle in the manner alluded to. This action appeared, however, only to extend to a depth of about 9 feet, which it seemed to be agreed was the ultimate depth of detrimental action of all waves. The effect of advanced groynes in protecting sea walls was exemplified by the concrete walls at Brighton and Dover, which were intended merely for retaining walls, and such was the effect of the groynes, that since they had been put down, the shingle had accumulated to such an extent, that the sea did not approach injuriously to within 100 feet of the base.

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ELECTRO-TELEGRAPHIC PROGRESS.—The American editor who memoralised Congress for an appropriation, for the construction of a line of telegraphic wires across the Atlantic, "proposes to carry the necessary wire on board a number of steam-ships, and to run it off from a spool in the wake of one of the steamers. He thinks the wire, of its own weight, will sink down to a point where, from the solidity of the water, it will remain in suspension, being, at the same time, below the line of travel of the monsters of the deep and the action of the currents of the sea." The idea, however startling and preposterous, has not now the merit of entire novelty, as it was started at least a twelvemonth since.

STATUE OF REMBRANDT.—We learn from Amsterdam that a colossal statue of Rembrandt has been modelled by Roojer, a young Dutch sculptor, and is about to be cast in bronze and set up in that city. Our informant speaks well of it.

## THE STONE AND TIMBER OF NEW SOUTH WALES.

THE deserving efforts lately made by the New Zealand Company, to introduce into this country the ornamental woods of the colony, and to which we have already drawn attention, reminds us, that the vast extent of New South Wales conceals equal, if not superior resources for our national industry and art. We have come to know, that there grow in the latter country more than 150 species of *Eucalyptus*, many not branching off but at a height of 60 feet; some of those called in the colony *blue bark* will doubtless be of superior use in many respects. The genera *Callytris*, Callycoma, &c., conceal wood of a superior description for either building or ornamental purposes, while *iron wood* (Casuarina), forests of which are scattered over the whole extent of New Holland, yields a timber of an indestructible character. Transgressing from these vegetable riches to the mineral, we shall find them still more promising. Not to mention the gold, lead, and copper of South Australia —*structural* and ornamental minerals abound in New South Wales; as for instance the *marbles* of the county of Argyle, which are of five or six various colours and designs. But, *if* this country should ever require huge monolith columns and pilasters of sienite, porphyry, or granite—there they are, at a short distance from Two-fold Bay: whole mountains and tracts of mountains, out of which slabs and blocks of tremendous size could be easily cut. A collection of specimens of the kind, made by us, has been acquired by the trustees of the British Museum, and is to be found in their collections. An attempt was made some years since, to ship *sand* from Sydney for making glass! We hope, however, that at the industrial exhibition of the British Empire (when we have it), our colonists in Australia and elsewhere will send us *also* samples of their structural products.

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## NOTES IN THE PROVINCES.

THE question of the rebuilding or altering of the Worcester City Prison has been referred to a committee. The cost of a new prison has been estimated at 7,000*l.*; but the present jail cost nearly 20,000*l.* The question of the proposed new corn-market has also been referred to a committee.——The new church lately erected in the parish of Quarry Bank, Staffordshire, was consecrated on Tuesday week. It is said to be a spacious structure, with seats mostly free.——The propriety of lighting Stratford and Westham with gas is to be forthwith submitted to a vestry meeting. Most of the thoroughfares of the extensive parish of Westham, it seems, is even without the ordinary street oil-lamps, while a rate of one penny a pound would be sufficient to light the whole with gas.——The contract for building the cheese market-house, &c., at Melksham, was taken yesterday by Mr. Jones, of Bradford, for 2,448*l.* The works are to be completed in six months.——The inhabitants of Scarborough have determined to have the price of their gas reduced.——We some time since slightly animadverted on the impropriety of the Hull Water-works Company usurping the functions of the medical faculty, by a wholesale administration of those aperient and other sulphates and chlorides, which form the saline solution of the ocean. An occasional dose of these would have probably done little harm, but a determined *course* of such ultra-alteratives, persevered in down to the present moment, is more than we were prepared to anticipate, and comes to be a serious matter. It appears indeed,—in fact it was chemically demonstrated on Monday week, in course of an instructive and appropriate lecture, on "Common salt and the salt mines of Cheshire," by Mr. William Sharp, F.R.S., delivered to the Hull Literary and Philosophical Society, —that the inhabitants of Hull have no less than two tons of sea salt administered to them through the water-works every day—at least that this tolerable quantity had been incidentally prescribed to the community on the day before the lecture. A 'warm discussion' ensued on this 'interesting' announcement. ——The New Water Company at Sunderland have taken possession of the works of the old company. The post-office there is to be altered and made more commodious. A strike

of masons and bricklayers to obtain 4s. 6d. a day, and to leave work at 4 o'clock on Saturdays, took place at Sunderland on the 1st of March, and was shortly afterwards announced by advertisement on behalf of the workmen. ——The demands of the operative masons on the Kendal and Windermere Railway have been conceded, the state of the works urgently requiring a cessation of the strike. The navigators on the same line, too, struck work for 3d. a day additional wages, but failed, and many of them were dispensed with altogether. —— It was stated by Mr. Labouchere, the other day, in the Commons, that the number of able-bodied men employed on the Irish relief works, chiefly unproductive, and at least not reproductive, has increased to 668,000. ——Government is said to have given orders to build a new model prison, near Dublin, for the reception of Irish convicts. It is to be constructed on the plan of the new Pentonville prison, and is to have 500 cells for the reception of prisoners.

## SUPPLY OF WATER TO EXTINGUISH FIRES.

Hose and jet-pipes fixed upon the pipes laid for the supply of water, being under experiment at Liverpool for extinguishing fire, communication of the fact that a similar system has been in successful use, in her Majesty's dock-yard at Portsmouth, for between forty and fifty years, may serve to confirm the ideas entertained of advantages derivable from the supposed innovation.

Very early after Brigadier-General Sir Samuel Bentham had been appointed Inspector-General of Naval Works, he contemplated the introduction into the Royal dock-yards of efficient apparatus for better securing them against the ravages of fire, and, December, 1797, proposed to the Admiralty the erection of a steam-engine in Portsmouth dock-yard, and in connection with it, a system of pipes and other works for the distribution of water and the extinction of fire, which works were accordingly executed. The following abstracted account of them was furnished to their lordships.

*Water-Works and Fire-Extinguishing-Apparatus.*—"This apparatus, as exemplified at Portsmouth, consists of an elevated reservoir, into which the water from the above-mentioned well is raised during meal hours and in the evening, by either of two steam-engines in daily use in the wood mills. From this reservoir the water is distributed throughout the dock-yard, by a system of pipes passing by all the principal buildings, and by the sides of the docks and the jetties; upon these pipes, at intervals of from about 50 to 200 feet, means are provided for speedily affixing fire-hose, and branch pipes; and the system of pipes is so arranged, as that water flows through them to any given point by two different courses, so that though there should happen any temporary interruption, by sudden bursting of a pipe, or other derangement, in one course, the supply of water at any point would be effected by the other course. In addition to this supply, always ready to be instantaneously applied to the extinguishing fire in any part of the dock yard, and with a force sufficient to throw water into the first floors of buildings, means are provided of raising by either one of the above-mentioned steam engines, either fresh water from the well, or an immense supply of sea water, and of *forcing* this water, fresh or salt, in cases of fire, *into* and *over* all the principal store-houses and buildings, as well as over the ships themselves lying within, or contiguous to the limits of the dock yard."

"Apparatus to the same effect are introducing into most of the other dockyards."

To this account should be added, that in the wood mills, where the materials used, and the refuse from the works are so inflammable, Sir Samuel caused pipes, with suitable hose and jets, to be introduced into every floor, so as to have means on the spot of throwing water to any part of the room where fire might appear, a provision applicable not only to workshops, but, with suitable modifications, equally so to museums, libraries, picture galleries, indeed, it may be said even to private habitations.

Examples have not been wanting of the efficacy of those arrangements in the royal dock-yards, as in the instance of a threatening fire, but soon extinguished, in the metal mills at Portsmouth, and in the year 1811 in the ropery at Plymouth, where the conflagration was arrested by them, although the works were yet only very partially executed.

Sir Samuel Bentham, after the abolition of his office, was for some years absent from this country. On his return, several appalling conflagrations in the metropolis drew his attention to the means the water already laid on afforded for extinguishing fire; and he drew up, February, 1830, a paper, in which were detailed some modifications of his above-mentioned arrangements, so as to suit them to the existing water-works in London and Westminster. This paper was intended for Sir Robert Peel; but it appearing that the public mind was not at that time ripe for the adoption of any such general measure, the project was communicated only to friends; however, early in the year 1844 it was submitted to the consideration of the Earl of Lincoln.

Neither the notoriety of the works for extinguishing fire in the royal dockyards, nor the particulars afforded in that paper, have as yet induced either ministers, the insurance companies, or any private engineer to apply the same principles to the metropolis. It may be hoped the example afforded at Liverpool will have better success. M. S. B.

## ARCHITECTURAL SCHOOL OF DESIGN.

A general meeting of the Association of Architectural Draughtsmen was held on the 3rd inst., at their rooms, 33, Southampton-street, for the purpose of embodying the "School of Design" in connection with their association. The secretary read the minutes of the previous meeting, to explain to the visitors the part the society intended to take in assisting to carry out such a scheme. First, by the immediate reduction of their annual subscription and entrance-fee to one-half. Secondly, the abolition of all fines. Thirdly, to make all drawings to the portfolio optional. And, lastly, to form classes among the members for the more perfect study of design.

A long discussion ensued relative to the best mode of carrying out the "School of Design," some gentlemen present refusing to co-operate with the association until the working of the schools should be more definitely fixed. It was explained that the object was (in accordance with a paper by Mr. Kerr), to form a society upon an enlarged scale, with a comparatively trifling subscription, that might induce every student of the art to avail himself of its privileges; this purpose, it was thought, had been fully carried out by the amended rules, as read before them that evening, and that it now only remained for the profession generally to carry the scheme fully into operation, by becoming members of the association, and placing the working of the schools in some definite form. Several gentlemen then offered themselves for election, and a sub-committee of the association was appointed, consisting of five members, to meet a deputation of the newly-proposed members, to arrange at once upon the actual working of the new schools.

## ART IN ROME.

Amongst the greater works now ready, is a splendid classic marble group by the sculptor Mr. Emil Wolff, for the Armoury-bridge (*Zeüghausbrücke*) of Berlin. Victory pointing out to an adolescent the deeds of brave country-defenders, and spurring him to similar acts. The artist has embodied the whole of the thought, by inscribing the names of worthy warriors on a shield, which the goddess shews to her favourite. The execution has been well calculated for the broad daylight, in which the work is to be placed in the Prussian capital—the artist well *knowing* that, in that case, the contour will dwindle and shrink, if not boldly and grandly laid out.—Another huge work is Perseus, by Mr. Froschel, ordered by Princess Charlotte of Prussia for her Villa Sommarina, at Rome.

The senior of German—nay, European painters, Mr. Reinhard, 85 years old, has surprised the world by the exhibition of a painting, just completed, being an allegory of the discovery of the Corinthian capital. It is by such episodes and allegories, that Mr. R. contrives to impart great interest to his landscapes. By the aid of the present episode we know at once that we are at Corinth, that scene of so much human greatness and illustration; a scenery viewed quite differently from those common-place localities, beauteous, howbeit, in other respects, passed over indifferently by human steps. Mr. Reinhard, well knowing what lesson he thereby gives to his younger followers (*festina lentè*), has inscribed his age in a corner of this picture.

## EXCHANGE OF OPINIONS AND INFORMATION BENEFICIAL TO ART.*

Men, in whatever station, who shrink from intellectual communication, have seldom much to contribute. Jealousy originates in ignorance, and in the pre-supposition of complete wisdom being already possessed; not considering that knowledge has the power of boundless self-extension—each accession discovering but a new series of unattained and beautiful developments. The inducing free expression of individual opinion, whether upon the history and progress of manufactures, mechanical ingenuity, or the ornamental taste displayed, must materially tend to promote useful and intelligent inquiry, and bring out knowledge that has long been without opportunity of encouragement, and lying dormant. There cannot be a doubt but that the deficiency of opportunities for exchanging information and observation, has retarded the individual and public advancement of a true feeling for the beautiful. When rightly pursued, the resources of art are inexhaustible; becoming more prolific as they are better understood: render art popular, and the demand for embellishment increases—simply because it then arises from a whole people, and not a limited few.

The mighty difference between the state of industrial art in this country and upon the continent, proceeds from our viewing it apart from education, and as a mere matter of mercantile traffic, whereby to make money; whereas one great purpose of art is to improve and delight the understanding—through the eye to exalt the mind, and extend the joys of refined acquirements to every rank of life. Thus we find continental nations cultivating an acquaintance with art for the enjoyment it is known to diffuse; each town possessing its humble museum and gallery of sculpture, whose visitors are its artisans. All are sensible that the more intelligent of our own workmen are acquiring an improved taste; and, at an early day, may hope they will discover, that, instead of a line of demarcation existing between the practice of the industrial arts and those recognised as high art, an indissoluble bond connects them conjointly to prosperity. The superb remains of Grecian art, and in later days, of Italian, testify to the full appreciation of this truth. Their people grew up surrounded by creations of the most sublime nature; they became imbued—self-educated, in the contemplation of the beautiful; and being familiar with productions of the most refined taste, they unconsciously extended the feeling over all the ordinary requirements of life.

Rules and instructions may be laid down for the production of agreeable form and systematic colouring: but as a matter of ordinary occurrence, the greater or lesser success must depend upon the individual experience, capability, or genius, in applying the unerring principles of fine art to the ever-varying circumstances of industrial art. Extended research and observation will enable the mind so to adapt embellishment to the circumstances of varied locality or material, that plagiarism and mannerism will yield place to elegant diversity.

The grand treatment of line, and the masterly combination of style and effect exhibited upon much cabinet work of the olden time, prove, in conjunction with the products of the

* From an address to the Decorative Art Society by Mr. Crabb, accompanying abstracts of the transactions from January 1844 to January 1846. This society was formed in the autumn of 1843, by a few persons connected with cabinet and decorative work, for the purpose of promoting beneficial inquiries, classifying information, obtaining catalogued lists of the dates, styles, and best engraved examples of the most distinguished authorities upon applied decorations—either architectural, or as useful to manufacturing art. They have pursued their object very ably (especially when the limited time at the disposal of the members is remembered), and will, we trust, continue to do so. An accession of active members is sought for.

loom, the impress both are capable of receiving; while the magnificent arabesques of Italy, disposed in every combination that can delight the eye and interest the understanding, place decorative art far above the position usually assigned to it. Design, in form or colour, is the foundation of all this, and greater excellence; while the latter is fully capable of bestowing a finishing charm on the skilful arrangements of the architect, or through the instrumentality of ignorant or indifferent tradesmen, become the means of destroying the ultimate effect of his best efforts.

## New Books.

*The Works of Josephus.* A New Translation by Dr. Traill. London: Houlston and Stoneman.

A new translation of Josephus was much needed and will be appreciated, we doubt not, by the reading public. What especially recommends this edition to our notice is the circumstance that the twelve parts, in which will appear his Life, the Jewish War, and the two books against Apion, will be illustrated by one hundred engravings from drawings by Mr. Tipping of scenes, buildings, sculpture, &c., illustrative of the history, with descriptive notes. "In no ancient city perhaps—not even in Rome, and not in Athens—are the architectural remains of remote ages so confusedly blended as we find them in Jerusalem; for in very many cases what is unquestionably the work of a later age, Saracenic, Norman, Turkish, takes up and *embeds* the materials of an earlier time; nor are the instances rare in which large masses of materials, exhibiting traces of the arts, the resources, and the wealth of a primeval prosperity, have, as often as three or four times, and at the interval of centuries, been dislodged—have lain long in chaotic ruins; and then, and by rude hands, or in the hurry of distracted times, have been lifted anew into form, and lodged upon their first foundations." It may be expected that the illustrations to be given in this work will tend to the solution of some of these chronological problems.

## Correspondence.

PRESSURE OF WATER IN MAINS—FILTER.

Sir,—Would it not be an assistance to those persons who may wish to adopt the plan of extinguishing fire by means of jets from hose attached to their water mains, if more particulars could be obtained as to the various heights of pressure, and their results in the late experiment made at Liverpool? and also what is the best method of attaching the hose for that purpose?

Can any of your correspondents inform me what is the description of filterer recommended by the Health of Towns Commission, or what is the best mode of making filter beds for large quantities of water?—I am, Sir, &c.,

One interested in the same.

The Theatre at Carlsruhe Burnt.—The grand Ducal Theatre at Carlsruhe has just shared what appears to be the inevitable fate of all theatres. How is this frequent evil to be remedied. If theatres must be full of combustible frippery, might not these be dipped in alum or other proper solution, to render them incombustible? Some hangings in the present instance were caught in the flame of the gas, and of course, rapidly communicated the fire to other equally combustible materials, so that had the hangings and canvasses in this case been saturated in the cheap and simple way so often pointed out, this theatre might have been still entire, and the loss it appears of many lives avoided.

The Protestant Church on Mount Zion.—In our notice of Brunetti's model, we spoke of Mr. Johns as the architect of the new church in Jerusalem. We have since been reminded that Mr. Habershon is the architect now employed there, and that "the roof may be seen slated, with part of the ceiling and ornaments (as it will be when finished), on the premises of Mr. Howard, builder, Newington Causeway. The whole of the fittings will be ready to sail in a month or six weeks."

## Miscellanea.

Manufacture of Roman Mosaics.—Mr. D. Wyatt, in his paper "On the Art of Mosaic," recently alluded to, thus describes the manufacture of Roman Mosaics:—A plate, generally of metal, of the size of the picture to be copied, is first surrounded by a margin, about ¾ of an inch from its surface. This is then covered over with a coating of perhaps ¼ of an inch in thickness of mastic cement, composed of powdered Travertine stone, lime, and linseed oil. This is, when set, entirely covered with plaster of Paris, rising to a level with the surrounding margin, which is intended to be exactly that of the finished mosaic. On this is traced a very careful outline of the picture to be copied; and, with a fine chisel, just as much is removed, from time to time, as will admit of the insertion of the little pieces of glass mosaic—or, as the Italians call it, "smalto." This smalto is composed of glass, and is made in rounds, about 6 or 8 inches in diameter, and ½ an inch thick. The workman then proceeds to select from the great depository, wherein are preserved, in trays, nearly 10,000 varieties of colour, those he may require,—which he then works to the necessary shape. This is done by striking the smalto with a sharp-edged hammer, directly over a similar edge, placed vertically beneath. The concussion breaks the smalto to very nearly the shape required; and it is then more perfectly ground, by application to a lead wheel covered with emery powder. The piece thus shaped is then moistened with a little cement, and bedded in its proper situation; and so on, until the picture is finished; when the whole is ground down to an even face, and polished. Six regularly instructed artists are now constantly employed in the Fabrica, at the Vatican.

Alleged Mis-management of Public Works.—The *Sligo Champion* declares that "the Board of Works is humbugged, the Government cheated, the poor defrauded," while the off-shoots of a mean and broken down gentry are enjoying the fat of the spoil, —the lion's share. These startling and whole sale allegations, however, are somewhat inconsistent with the statistical response of Mr. Labouchere, in the Commons, last week, that, "during the last month, from 19,000 to 22,000 labourers had been employed at an expense, for work, of 27,877*l.*, while the expenses of the staff amounted to only 2,110*l.*" The state of matters in the county of Sligo, however, may not be fairly represented on either side in these statements; but there is in all probability more truth in the declaration of the *Sligo Champion* of the poor, that "ten years of continued prosperity will not revive the manly spirit of independence which formerly existed," and that, in truth, the spirit of paupery is becoming wide spread and national. In many instances, too, wages of 8d. a day are said to be so long withheld, that the labourers sink exhausted by the way-side, and die Government creditors, a state of things certainly very disgraceful, and inconsistent with the beneficent intentions at least of the Government.

Buddhist Architecture.—At a recent meeting of the Asiatic Society, part of a letter was read from Captain Kittoe, who had been making some recent antiquarian researches about Gyah, anciently one of the seats of Buddhism. Captain Kittoe states that he was unsuccessful in his search after remains of Buddhist architecture—having met with but few fragments; but he found a number of small sculptured stones, which he thought were miniature *Chaityas*, or shrines. The base is a cube, the upper plane surmounted by a hemisphere, from the apex of which rises an obelisk. In each of the four vertical faces is a compartment containing a figure of Buddha. Captain Kittoe states that they resemble closely the pagoda at Rangoon, where five hairs of Buddha are kept as relics. Many of them are of elaborate workmanship. Captain Kittoe believes the present temple at Gyah to be less than 600 years old, and to have been built for the joint worship of Siva and Buddha. He thinks he shall be able to trace the amalgamation of the sects by their sculpture; and he is preparing to make drawings of the most interesting of these relics. He states that he has discovered another of Asoka's pillars at Bukrowe, the site of an ancient city of the Buddhists on the banks of the Lilajun.

Vested Rights *v.* Public Health.—A short time since a lecture was delivered in Bedford by Mr. J. Wyatt, on the injurious effects of intra-mural burials. On the subject of interference with vested rights and interests, he said:—"If I understand this part of the question correctly, it is, that there must be no interference with those rights, without an equivalent being provided. It appears to me that there need be no great disturbance of the present vested interests of the clergy, nothing more than a transfer of the means from which those interests are derived, from one spot to another. The same officials, the same fees might be continued, and I cannot suppose that any objection can really be made to the immediate removal and alteration of a system which cannot be continued much longer. If the system is to be entirely dealt with as a matter of vested interests, then I think as much can be said in favour of its abolition as for its continuance in its present state, for I think the owners of property surrounding the grave yards could bring in a heavy account of depreciation of its value, owing to the nuisance created by the miasmata. We find that vested interests have but a feeble claim, and a feebler compensation, when a nuisance created by a factory or unwholesome business is put down in a town. But there is even a heavier account than that to be brought into consideration—the vested rights of the people, who demand that their health shall not be interfered with. In my opinion, this is the paramount claim of all, and ought first to be satisfied, and legislated for; all others are secondary in importance. I, for one, dare not undertake the responsibility of saying, that there are any considerations in the world that should be placed in the scale with it."

Ipswich Antiquities.—We stated, some time since, that although a number of the Ipswich municipal authorities are themselves archæologists, they nevertheless intended to remove another relic of the olden time from Ipswich, namely, the refectory of a monastry of the Black Friars of the Dominican order, (according to Sir Francis Palgrave, the only one in this country), used latterly, though not now, as a grammar school-room. The materials have been sold to Mr. J. A. Pettitt, builder, for removal, not from any urgent necessity, but merely that the ground may be let for building purposes. Mr. Pettitt himself, however, has the good taste and feeling, which his archæological fellow-townsmen of the corporation have not, to be anxious to restore the building, if a lease of the ground can be effected. Mr. J. M. Clark, architect, has prepared a plan of restoration, at small cost, which the mayor and others of the corporation have themselves approved of.

The Yankee Vote Recorder.—An ingenious machine is said to have been lately invented by a convict in one of the state prisons,—as a peace offering to the Government, no doubt,—for the purpose of recording the votes, or yeas and nays, in the legislative assemblies. It consists of a register to stand before the clerk, with wires and knobs to radiate forth to the seats of the members, and by pulling which the vote is registered, while the aggregate vote displays itself at once before the eyes of the clerk in large figures, a record being also at the same time marked to shew how each member votes. If there be any truth in this detail, the invention must certainly be a very ingenious one, although we confess it savours a good deal more of Punch's ingenuity, or that of Yankee *invention* itself, than of matter of fact and practical reality.

The Speedy Lewis.—Sir: In looking over your interesting journal of last week, I find an account of a lewis described by Mr. Russell. I beg to say I made lewises of the same kind in the latter part of the year 1845, and tried them with some of the blocks of stone used at the British Museum, weighing about ten tons, but as the experiment was not to my satisfaction, I abandoned the plan, as I considered there was a risk. After lifting the stone fifteen feet, we surged it three times; upon the last occasion the block slipped from the lewis, which I considered a failure.—J. James. Lambeth.

Art-Union of London.—The lists will close on the last day of the present month. We are glad to learn that Mr. Doo has, at length, completed his plate of "The Convalescent."

Projected Works.—Advertisements, to which we have an index, were issued through the newspapers lately current, announcing that contract-tenders were wanted for the erection of a Church at Balby; almshouses and a school and master's house at Ely; schools at South Shields; barracks at Portsea; workhouse alterations and additions at Hoxne Union; toll-house near Eyemouth; iron roof for gas-work retort-house at Hastings; goods-shed at Keighley; 6 stations on London and Brighton railway; workmen's houses at Ashford; earth, brick, and masonry work of 9 miles, and 6 and a half miles of Northern Counties Union railway; the whole works on 7 and a half miles of Leeds and Thirsk; 9 miles of Newport and Hereford (extension of time); and 11 miles of Leicester and Swannington railway; also for repair of 2,000 yards of road at Worcester; and 37 miles of road in Hampshire, &c.; and for formation of 3 miles of road, and the building of bridges in Perthshire, &c.; also for execution of various works, and removal of roof-lead at Kimbolton Castle; and for supply of gas at Sheffield; and of 2,500 tons malleable iron rails, 800 tons cast iron chain, and 36,000 sleepers for Glasgow and Airdrie railway.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, March 15th.—Statistical Society, 12, St. James's Square, 8 p.m. Anniversary.

Tuesday, 16th.—Institution of Civil Engineers, 25, Great George-street, 8 p.m.

Wednesday, 17th.—Society of Arts, Adelphi, 8 p.m.; Association of Architectural Draughtsmen, 33, Southampton-street.

Thursday, 18th.—Royal Society, Somerset House, 8½ p.m.; Society of Antiquaries, Somerset House, 8 p.m.

## TO CORRESPONDENTS.

"*A. T.*"—(Hope Coffee House) *B.* cannot block up lights enjoyed for 30 years.

"*Wimundhamensis.*"—Architectural education will be treated of by us before long.

"*Reluctant Spectator.*"—We shall be glad to hear from him.

"*C. F.*"—An account of raising the Luxor Obelisk in Paris was published in Loudon's Architectural Magazine soon after the occurrence. The drawing shall be returned.

"*H. W. J.*"—Write to the Secretary of Society of Arts, Adelphi.

"*F. H.*"—(Berkeley) We will endeavour to see the invention in question. If, however, we visited every invention on which correspondents ask our opinion, we should have little time for any thing else.

"*A. North.*"—We know of no architectural lending-library. It is much wanted.

"*J. C.*"—(Islington). The Act does not require that *streets* should have two entrances. Houses would not be permitted to be built as sketched.

"*G. B. W. J.*"—Thanks for the lithograph. It ought to have been acknowledged before.

"*Consuming Smoke.*"—A correspondent asks for "A plan to consume the smoke of a brick kiln: the same is doomed in, and it is necessary that the blaze from the furnaces should ascend through the body of the kiln, to make the bricks of a clear colour."

"*A Londoner.*"—The old map of London was published some years ago, but we cannot tell where it can be obtained. A new map of London on a large scale is much needed. Sir Robert Peel, when premier, promised it should be done.

"*H. H.*"—We regret that we have not time to supply information as to the erection of a lecture room. The course adopted seems a wise one.

*Received.*—"Dr. B." "A Subscriber." "C. W." "G. Clark." "Lady B." "Bond question." "J. S." (Guildford Street.) "S. J. K." "W. B." "W. H. C." "Treatise on Mechanics," by J. F. Heather, B.A., of the Royal Military Academy, Woolwich, No. I. (Weale, Holborn). *Promises well.* "Popular Atlas of the World, consisting of detailed Maps of the different parts of the Globe, with statistical descriptions." No. I. (Jas. Wyld, Charing Cross). *Wonderfully cheap.* Haydn's "Creation," Nos. 4 & 5. (Novello, Dean St.) Handel's "Messiah," Nos. 7 & 8. (Novello). "On the Resistance to Railway Trains," by W. Harding, C.E. "The Abuses of The National Gallery, with observations on the minutes of the Trustees," by Verax. (Pickering, Piccadilly).

## ADVERTISEMENTS.

TO BUILDERS AND CARPENTERS.

**JONES'S PATENT MORTICE-MACHINES** are now offered For Sale, that will cut a mortice any depth or width in less than one minute, through hard or soft wood, without the trouble of gauging. Warranted to cut a true mortice, and requires only one man to work it. Price moderate. To be seen in operation daily at JONES'S, 127, Goswell-street, between the hours of 10 a.m. and 4 p.m.

**PATENT VULCANIZED INDIA-RUBBER.** CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are its uniform elasticity in various temperatures; it does not become hard by exposure to cold. It is of greater strength and less liable to injury from heat than native Caoutchouc. It is insoluble in essential oils. It resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully used for Washers for Joints in Water, Gas, and Steam Pipes, and for the Flap and Foot Valves, &c., of Steam Engines; and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of flooring boards.

The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

**ROYAL ACADEMY EXHIBITION.**—TO ARCHITECTS.—Mr. WILLIAM CANSDELL, Architectural Artist, will be glad to receive instructions from the Profession, for Drawings for the approaching exhibition. Address, W. C., office of "The Builder," 2, York-street, Covent Garden.

**LECTURES on DESCRIPTIVE ASTRONOMY**, during Lent, at the ROYAL POLYTECHNIC INSTITUTION, by Dr. Bachhoffner, on the Mornings and Evenings of Mondays, Wednesdays, and Fridays, with ILLUSTRATIONS, in which the Latest Discoveries are [illegible], accompanied with new and appropriate MUSIC. Dr. Wallis, LECTURES on ARMSTRONG'S HYDROELECTRIC MACHINE on the alternate Mornings and Evenings. CHEMICAL LECTURES. The OPTICAL EFFECTS include the best beautiful DISSOLVING VIEWS. EXPERIMENTS with the DIVER and DIVING-BELL, &c., &c.—Admission, 1s.; Schools, Half-price.

**THE EXHIBITION OF SELECT SPECIMENS OF ENGLISH MANUFACTURES**, on and after the 11th of March, will be OPENED GRATUITOUSLY every day, except Saturday and Sunday, between 11 and 4, at the SOCIETY OF ARTS, Great Room, John-street, Adelphi. TICKETS of ADMISSION and Catalogues may be had of the Members of the Society, of the Exhibitors, and of the undermentioned:—

OXFORD-STREET: Mr. John Mortlock, No. 250; Mr. J. Philipps, No. 359.—REGENT-STREET: Mr. White, No. 210.—PALL MALL: Messrs. Graves, No. 6; and Messrs. Colnaghi, No. 13.—NEW BOND-STREET: Mr. Pratt, No. 118.—OLD BOND-STREET: Mr. J. Cundall, No. 12.—PICCADILLY: Mr. W. Pickering, Bookseller, No. 177.—STRAND: Mr. Milledge, No. 65; Messrs. Greensall, No. 148; Mr. J. Tennant, No. 149.—FLEET-STREET: Mr. George Bell, No. 186; Messrs. Grant and Griffith, corner of St. Paul's Churchyard, Ludgate-street.

N.B. No Tickets can be had, except by members, direct from the Society's House.

**PAPER-HANGINGS to the TRADE.**—French Papers superseded.—Messrs. HENNELL and CROSBY, Paper Stainers, Queen-street, Southwark-bridge-road, beg to inform the Trade that they can enable them to sell Satin Papers, Elegant Designs, at 2s. 6d. per French piece. Retail.—Cheapest house for Panel Decorations and Coloured Papers.

**FRENCH PAPER HANGINGS.**—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 59, Princes Street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

CHEAP PAPERHANGINGS.

**C. LEE begs to inform Builders and the** Trade in general that he has an immense stock of genuine French and English PAPERHANGINGS, of every description, at the lowest possible prices, for Cash. To avoid all doubt of a spurious imitation, C. LEE can assure the Trade he is sole agent for P. MABRUN, of Paris. Warehouse, 30, Cranbourn-street, and 13, St. Martin's-court, Leicester-square.

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TO TUCK POINTERS.

**THE Red Brick Mansion at West Wratting** Park, Cambridgeshire, is required to be Tuck Pointed in the best style, and most permanent manner. Apply by letter to Mr. THOMAS FANOW, Builder, Diss, Norfolk, stating price for labour, quantity able to execute in a week, and reference to similar work in the country, done at least three years since.

A Scaffold is erected.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS**, Southwark-bridge and the Grove, Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron, as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fences and Hurdles as usual.—The Trade supplied.

**PHOTOGRAPHIC PORTRAITS**, at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 15, Strand (between Norfolk-street and St. Clement's Church). Portraits, including case, from 1s. Satisfactory ones guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvass, combining the truth of the daguerreotype with art [illegible]. Hours from Ten to Four.

**ADJUSTABLE SCAFFOLD LADDER** and BARROW MANUFACTORIES, 3 and 6, Tottenham-court New-road, St. Pancras, and near St. George's-circus, Waterloo-bridge-road.

G. ELL respectfully invites the attention of Railway Contractors, Builders, Decorators, and the Trade Generally, to the extensive assortment of Ladders, Barrows, Machines, Trestles, steps, &c. He has always on sale, and assures them he can supply them on terms as advantageous as any.

ELL'S ADJUSTABLE SCAFFOLD for the purposes of Land Surveying, decorating the interiors of lofty buildings, well staircases, hanging chandeliers, &c. May be adjusted to any height within its range, and supports itself with safety, independently of any attachment to the walls or ceilings; also for [illegible] purposes. ELL'S Adjustable Ladder when supports itself. For further particulars see Prospectus.—3, Tottenham-court New Road.

## PUBLICATIONS.

Just published, a new edition, for 1847, price 4s.,

**LAXTON'S BUILDERS' PRICES**, containing nearly 11,000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Buildings Act, and the modification of the Act.—To be had at the office of the "Civil Engineer and Architects' Journal," 10, Fludyer-street, Whitehall; Weale, High Holborn; Simpkin, Marshall, and Co., Paternoster-row; and at the office of "The Builder," 2, York-street, Covent-garden.

**CARPENTRY.**—It is intended to Publish in Monthly Parts, a most Comprehensive, Elementary, and Practical Work on Carpentry and Joinery, in all its appliances; Ancient and Modern, French and English, Domestic and Ecclesiastical; to contain 160 Engravings, with a Practically described Text, and to comprise—

1. The well-known work of PETER NICHOLSON'S CARPENTERS' NEW GUIDE, being a complete Book of Lines for Carpentry and Joinery; 84 Plates with Additions and Improvements to the present time.
2. SUPPLEMENT A.—New Subjects of Roofs, Domes, Doors, Windows, &c., of recent construction in Public and Private Buildings. By an Architect.
3. SUPPLEMENT B.—Ancient Carpentry of England, Specimens of Open Roofs and Timber Work, Standards, Staircases, Panels, &c. &c. By an Architect.
4. SUPPLEMENT C.—Modern Carpentry of England, France, and Italy. By an Architect.
5. SUPPLEMENT D.—Various Designs of Modern Verandahs. By an Architect.
6. SUPPLEMENT E.—Modern Fronts with Plans of the London Club-houses, Institutions, Shops of Various Trades, Professional Places of Business in London, Paris.

All will be amplified with Measured Details and Dimensions to them. The whole of these numerous and valuable additions will be of a nature to Instruct and Elevate the Genius of the London and Country Carpenter, by placing before him Examples which hitherto have been inaccessible, and at a convenient cost of 2s. 6d. each Part with Eight well executed Engravings and Text and Published Monthly. To be completed in Twenty Parts.

Persons desirous of having the work direct as published, will be pleased to forward their names to the Editor and Publisher, JOHN WEALE, 59, High Holborn. Canvassers and the Trade in the Country who will Canvass their Counties, will be liberally treated with.—Prospectuses ready with the First Part, May 1st, and the publication continued every month till completed.

**WORCESTER ENCAUSTIC TILES.** Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. GRIEVE and GRELLIER, Marble wharf, Belvidere-road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

TO ARCHITECTS, BUILDERS, AND OTHERS.

**ENCAUSTIC, VENETIAN, BATH, and** other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained at MINTON and Co.'s Warehouse, 9, Albion-place, Surrey side of Blackfriars' Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire-places, &c.

**WILLIAMS'S PATENT SLATE RIDGES and HIPS.** The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 30 per cent cheaper. Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvidere-road, Lambeth, London. May be had also of all Country Slate-dealers.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK and TILE MACHINE COMPANY.** JAMES SMITH, Esq., of Deanston, Chairman, invite attention to the improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's Office, 193A, Piccadilly, from Ten A.M., to Five P.M. Mr. ROBERT SCRIVENER, who has been appointed manager in the room of Mr. JOHN AINSLIE, will show the machines at the works at Alperton, which is within a mile of Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company.

London, 193A, Piccadilly, Feb. 27, 1847.

**CARVINGS IN WOOD.**—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal enrichments; thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 441, West Strand, or at the Works, Ranelagh-road, Thames-bank.

**ARCHITECTURAL CARVING WORKS**, IRVING'S PATENT, late Sir Francis Chantry's Foundry, Eccleston-place, Pimlico, [illegible] Chester-square.

Architects and Builders are respectfully informed, that Carving in Wood, Stone and Marble, by Patent Machinery, is carried on at the above premises. Tracery for Churches, in wood and stone, beautifully executed, at prices which will enable architects to carry out their plans, in having decorated churches, and other buildings, at comparatively small expense. Machines are sent into the country, to work on the spot, at a great saving in price. Fonts, chimney-pieces, Gothic windows, fluted columns, monuments, and headstones, are likewise beautifully executed, and ready for fixing, or fixed. Mouldings, wood and stone, made to any pattern; scagliola and inlaid work executed in all their branches. For the beauty of their workmanship, the public are respectfully informed that a show-room has lately been fitted up on the premises, not having any other establishment in London, for the inspection of their merits.

**DEANE'S TWO-HOLE BLACK PENS**, which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, and [illegible] Her Majesty's [illegible] the most eminent [illegible] and the reverend the clergy. Their cheapness and popularity [illegible] to put forth imitations of the genuine article, which are equally useless to the purchaser, and discreditable to the vendor. The public are therefore cautioned, and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

TO ENGINEERS AND ARCHITECTS,

And as an Elegant Present to a Lady, as well as a most Convenient Pocket Appendage.

**TO all those who find a Difficulty in the Use** of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS'S PERPETUAL PEN, made of Gold, with Points which never wear or alter, offers a most convenient substitute, as Ink, which oxydises and lingers in the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 15s. It may be used with a common holder. With an ever-pointed Silver Pencil Case, with Leads, 27s.

Sold by the proprietor, HENRY STEPHENS, 54 Stamford-street, Blackfriars-road, London. On application, by letter, this Pen will be sent, post paid, to any part of the kingdom.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office. By the Court.

STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

**TO BUILDERS and Others interested in** buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by water courses falling into the river Thames, situate [illegible] the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from improper and imperfect drainage [illegible], the Commissioners have directed that, upon application being made at this office previously to the excavation of sewers, [illegible] information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice, that, whenever the lower floors of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses or other premises, to ascertain whether such premises have separate and efficient means of drainage.

All petitions must be delivered at this office at least three clear days before they are presented to the commissioners; and all such petitions will be called on in the order of their application, and the [illegible] present at the court to support the application, [illegible] the proceedings must in consequence be commenced de novo.

Any [illegible] made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations are to be observed for the purposes of the Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,

LEWIS C. HERTSLET, Clerk.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 5d. | 8d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 9d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 53s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3. 3s. 3 ft. 6 in., £3. 13s. 6d. 4 ft., £4.
Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.
Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 8d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Pot and Pail Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash-pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

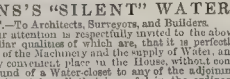
STOVES, FENDERS, FIRE-IRONS, and KITCHEN RANGES, combining every improvement. A superb choice of Drawing-room and Dining-room Register Stoves. Steel and Bronzed Fenders. Steel Fire-Irons of the most chaste and elegant Patterns, adapted for every taste and station. The improved Cooking Apparatus, so admired for its simplicity and capabilities, viz.—Roasting, Baking, Boiling, Stewing, Steaming, Hashing, and Frying. This Range will generate sufficient steam, with the aid of pipes, to warm a large dwelling and conservatory; is well deserving the notice of architects and surveyors. To be seen in full operation daily, at DEANE, DRAY, and DEANE'S, the Finsbury Iron Works, 36, Chiswell-street.

WARMING.—STEPHENSON & PEILL, 61, Gracechurch-street, City, solicit the attention of Bankers, Merchants, and others, to their improved method of Warming any number of Offices, Strong Rooms, and other apartments, at any elevation, by Hot Water from one fire-place, combining Free Ventilation and a Pure and Genial Atmosphere, with Economy, Cleanliness, and perfect Security from Fire. References to eminent firms where their works may be seen in operation. Strong-rooms constructed of any dimensions. Iron Safes, Bookcases, &c.—Manufactory, 17, New Park-street, Southwark. SAMUEL HALL'S Patent Ventilating Stoves from 35s. upwards.

HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, ovens for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last two years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

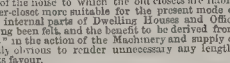
IRONFOUNDRY.
168, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER),

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Ram-water Pipes, Heads, Shoes, &c.



TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.

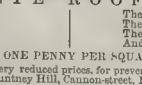
THE BIRMINGHAM PATENT IRON TUBE COMPANY, 43, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 43, Cambridge-street, Crescent, Birmingham; London Warehouse, 65, Upper Thames street.

By Her Majesty's  Royal Letters Patent

WILKINS'S "SILENT" WATER-CLOSET.—To Architects, Surveyors, and Builders.
Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.
This Closet is simple in its construction, the whole of the apparatus (including the trap), being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.
May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

By Her Majesty's  Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by
Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinburgh.
PRICE ONE PENNY PER SQUARE FOOT.
Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London, and Bull's Head Yard, Manchester.

SEYSSEL ASPHALTE COMPANY.
CLARIDGE'S  PATENT.
Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.
Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London
THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | which also renders it very |
| Kitchen Floors (particularly where it is essential to keep damps from rising). | Dog-kennels. | Covering of Railroad and other Arches | appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Barn Floors. | The only effectual mode to prevent the percolation of water. | |
| Carriage Drives. | Granaries. | | |
| | Malt-house Floors. | | |
| | Tun room Floors. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.
The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.
In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.
Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.
I. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,
Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their
CLEANLINESS AND CHEAPNESS.

THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.
87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
|---|---|
| Foreign Sheet, in 100 feet Boxes .. | 2½d. |
| Do. do. Super 200 „ „ .. | 3d. |

Crown Squares, 100 feet Boxes:—

| | |
|---|---|
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. .. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. .. | 1½d. |
| 6 in. by 3 in. and under ..... | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES,
6d. per inch;
A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH

| | per Imp. Gal. |
|---|---|
| Super Body Copal, for the bodies of Carriages ..... | s. 20 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish ..... | 16 |
| A fine pale Varnish for the lighter imitation woods.—Dries in about eight hours. | |
| Super Carriage Varnish..... | 12 |
| Very durable, and well adapted for Coachmakers, except for light bodies.— | |
| Elastic Oak, Wainscot, or Mahogany Varnish ..... | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods | |
| Paper or Crystal, quite transparent Gold Size for Gilders ..... | 10 |
| Also as a dryer in ground Colours, which much improves their appearance | 10 |
| Black Japan ..... | 12 |
| A splendid Jet Black, for Coach-builders' use. | |
| Brunswick Black ..... | 6 |
| A Black Varnish for Iron-work, Stoves, &c.—It dries immediately ..... | 6 |
| Furniture Varnish for Japanners.... | 14 |
| Dries in two hours. | |
| White Hard Spirit Varnish, for Cabinet Work ..... | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods .. | 20 |
| Rather longer drying than the above. | |
| Master Varnish, pale, for Pictures.... | 21 |
| Turpentine Varnish..... | 5 |
| French Polish ..... | 16 |
| Naphtha ..... | 20 |
| Patent Liquid Wood Knotting ..... | 16 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £. | s. | d. |
|---|---|---|---|
| 2½ inch Lift Pump on Plank ..... | 4 | 0 | 0 |
| 3 „ do. do. ..... | 4 | 16 | 0 |
| 3½ „ do. do. ..... | 5 | 0 | 0 |
| 4 „ do. do. ..... | 6 | 10 | 0 |

Well Pumps on Square Tails, with Iron Bow, equally low.

| | | | |
|---|---|---|---|
| ½ inch Bib, Ball, or Stop Cocks. | 0 | 1 | 8 |
| ⅝-8th „ do. do. | 0 | 2 | 1 |
| ¾ „ do. do. | 0 | 2 | 8 |

Pan Water-Closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire .. 1 10 0
Blue Basin, extra..... 0 4 0
Ditto, with Sunk Handle, extra .. 0 4 6
Spring Valve Closet, on Brahma's principle, complete..... 3 10 0
Beer Machines, from one to six motions, in handsome cases.
Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

PAINTS AND COLOURS.

Best White Lead, 27s.; Seconds, 25s Thirds, 23s.
Milled Sheet Lead and Lead Pipe, 20s.
Linseed Oil, 3s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 3s. 10d. per gallon.
Brunswick and Navy Greens, Cromes, Blacks, Blues, Reds, Patent Dryers.
Best Town Glue, 40s. per cwt
Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

THE PANKLIBANON IRON WORKS,
WHOLESALE AND RETAIL, 28, BAKER-STREET, PORTMAN-SQUARE.



ARCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of Stove-Grates, Fenders, and Fire Irons, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epergnes, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.
The Patent Thermo Stove is in daily operation. Also, CUNDY'S IMPROVED HOT-AIR STOVES, for heating and ventilating rooms.

THOMAS PARSONS (LATE PAGE), 28, BAKER-STREET, PORTMAN-SQUARE, LONDON.

GRAY'S INN ROAD.

**FREEHOLD BUILDING GROUND**, in this vicinity, TO LET, for Third and Fourth-rate Houses.—Terms and Particulars may be had of Mr. WATSON, 136, Wood-street, Cheapside.

---

TO BUILDERS.

**ELIGIBLE GROUND**, near Kentish Town, TO BE LET on Building Leases.—For the terms and particulars apply to Mr. H. A. HUNT, No. 4, Parliament-street, Westminster.

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BATTERSEA PARK.

**MOST eligible Freehold Building Land** TO BE LET, in the immediate neighbourhood of the proposed New Park. Apply to Mr. F. P. THOMPSON, Surveyor, &c., Water Works, Chambers, Orange-street, Trafalgar-square, where Plans may be seen, and particulars obtained.

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TO CARPENTERS, PACKING-CASE MAKERS, AND OTHERS.

**AN Old-Established Business TO LET** in the above line, no good will.—Apply by letter only, post-paid, to Mr. HENRY SOUTHAM, Sawing and Planing Mills, Gillingham-street, Pimlico.

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TO BUILDING SOCIETIES, AND BUILDERS.

**VALUABLE GROUND TO LET.**—The road is made and lighted with gas, and the water-pipes laid down. Term Ninety-seven Years. Apply to NEWTON and EVANS, 1, Wardrobe place, Doctors' Commons, or at the office on the ground, Cambridge-road, King street, Hammersmith.

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**FREEHOLD LAND TO BE LET** or SOLD, situate in Fitzoy-park, Highgate, commanding extensive and beautiful scenery. The dimensions are 140 feet front by 150 feet depth, eligible for building, fronting the high road between Hampstead and Highgate. Apply to Mr. T. ATTKINS, Gate House Tavern, Highgate.

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ST. JOHN'S WOOD PARK!!! IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation!! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City!—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's villas, Avenue-road, Regent's-park.

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TO BUILDERS.

**TO BE LET, with Immediate Possession,** a Compact Country Business with Convenient Workshops, Large Yard, small Steam-power Saw Mill, &c. Apply to Y.Z., Post-office, Warminster.

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**TO BE LET, on a repairing Lease, a large** WAREHOUSE, with good Dwelling attached, in the neighbourhood of Chiswell-street, suitable for a manufactory or workshops.—For particulars, apply to Mr GREEN, Estate Agent, 11, Goswell-road, opposite President-street.

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TO BUILDERS AND OTHERS.

**TO BE LET, on a repairing Lease for 21** years, Six Houses in the neighbourhood of Gray's-inn-lane, producing a rental of upwards of 100*l.* per year. Five of the houses are at present Let to respectable tenants. The above will be found well worthy the notice of builders or speculators. For particulars apply to S. W. JOHNSON, Esq., Solicitor, 5, Gray's-inn-square.

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TO TIMBER MERCHANTS, DEALERS, or Commission-Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

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TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS.

**TO LET, a Compact and Convenient** Wharf, between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of the above Trades, having excellent water and land carriage ways. For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace road, Lambeth.

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TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's-road, Dalston, to Lansdown-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

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---

TO CARPENTERS AND BUILDERS.

**TO BE LET, on Lease, or the Lease to be** SOLD, very excellent PREMISES, pleasantly situated on the banks of the Regent Canal, at Hackney, comprising good Dwelling-house, Workshops, Sawpits, Stabling, and large Yard; also, Four small Houses, which pay a very considerable portion of the rent of the whole. A part of the purchase-money might remain a charge on the property, to be paid off by yearly instalments. Inquire at A. ROSLING'S, Southwark Bridge Wharf, Bankside.—A City Builder requiring more room, would find this a very favourable opportunity of adding to his capabilities for business, at the same time furnish him with a country house at a very trifling cost.

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**A FIRST-RATE SPECULATION** is now offered in the building line, the Advertiser having to dispose of about Eleven Acres of Land at 99 years' lease, within one hour's railway ride of London, in Surrey, and within a quarter of a mile of the railway station. The land is very pleasantly situated, and a good supply of beautiful water at twenty feet. Good stone for building purposes can be supplied by the Advertiser at a trifling cost. The great demand for villa residences will make this a safe investment, well worthy the attention of any business man.—For particulars, apply to Mr. J. PERREN, 1, Victoria-place, Surrey-square, Walworth.

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**FOR SALE, at Oxford, a very excellent** and handsome Shop Front, nearly New, with Brass Sashes, having a Loby and Entrance in the centre, complete; with Dado, Cornice, Moveable Dado across Lobby, and Shutters to enclose the whole, flush. It is glazed with Plate Glass in squares about 22 inches by 18½ inches, and may be purchased with or without the glass. The extreme size, exclusive of the cornice, is 20 feet by 9 feet 6 inches. Further particulars may be obtained, and a lithographic view had on application to Messrs. PLOWMAN and LUCK, Builders, Oxford.

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## SALES BY AUCTION.

The HATCHAM HOUSE ESTATE.—First-rate Building Ground, close to the New Cross Station on the Croydon Railway.

**MESSRS. BEADEL and FOULKES** beg to announce that they have been favoured with instructions to submit to AUCTION, early in the Spring, the Hatcham House Estate (belonging to J. A. Hardcastle, Esq.), which will be divided into suitable and convenient lots for building purposes.—Further particulars will shortly be advertised.

25, Gresham-street, 5th March, 1847.

---

VALUABLE FREEHOLD BUILDING LAND.

**MR. ROBERT KING has received in**structions to SELL by AUCTION, at the Broad Face Inn, Reading, on WEDNESDAY, the 31st day of March next, at Two o'clock, valuable Freehold Estate, land tax redeemed, situate in Wellington street, Oxford road, Reading, Berks, commanding a beautiful landscape, admirably adapted for building purposes, and being in the first locality of the town, it presents a good opportunity for persons desirous of possessing freehold building plots.—May be viewed, and particulars, with plans annexed, had at the Broad Face Inn, Reading, and at the principal Inns in the neighbourhood; of JOHN SCARBOROUGH, Esq., 19, Tokenhouse-yard, London; of WM. LAMBERT, Esq., Surveyor, 40, Coleman-street, City; and of the Auctioneer, 22, Great Winchester-street, Old Broad-street, London.

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SHARP'S BANKRUPTCY.—TO STONEMASONS, PAVIORS, BUILDERS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** have received instructions from the Assignees of Messrs. S. and G. Sharp, bankrupts, to SELL by AUCTION, on the Premises, 30, Commercial-road, Lambeth, early in April, the whole of their valuable and extensive STOCK in TRADE, consisting of Portland blocks, scantling and slab, York and Purbeck paving, landings, coping, sinks and steps, stone and marble chimney-pieces and tablets; 80,000 feet of Rockhill paving, and a large quantity of other useful stone. Also two stone-trucks, three carts, crab engines, blocks, and falls, and numerous other effects. Catalogues, when ready, will be sent post free, on application to the Auctioneers, 1, Little Smith-street, Westminster.

---

BUILDER'S STOCK, AVERY ROW, BOND STREET.

**MR. H. BIERS has received the instruc**tions of the proprietor, who is relinquishing business, to SELL by AUCTION, on the premises, on Friday, the 19th March and following days, at 12 o'clock, the very valuable dry and well-seasoned Stock of Deals, Battens and Planks; prepared Flooring in White and Yellow Boards and Battens; Doors and Sashes; Frames and Framing; a large stock of the best description of Ironmongery; Portland and other Stone; a large quantity of very superior Scaffolding; Standard and other Ladders, Tressels, Work-benches, Builders' Carts, powerful Crab and other Engines, Planks, Barrows, &c. May be viewed the day previous to Sale, when Catalogues may be had on the premises, and of Mr. H. BIERS, No. 1, Broad street, Golden-square.

---

TO BUILDERS, COACH-MAKERS, TIMBER-MERCHANTS, MANUFACTURERS, and others requiring spacious premises in a wealthy neighbourhood and capital situation for business.

**MR. H. BIERS will SELL by AUC**TION on the Premises, Nos. 13, Avery Row, Brook Street, Grosvenor Square, on — March, unless an acceptable offer is made, the valuable Lease of these convenient Premises, which comprise—extensive and lofty Workshops, Painters and Store-rooms, a spacious Yard, Sheds, Sawpit, Coach-house, Stable, and well-arranged Counting-houses; attached is a commodious Dwelling house, with a separate entrance; the whole arranged in a most desirable manner for the business of a builder, and which business has been carried on upon these premises for nearly a century. This valuable property presents an excellent opportunity for any Trade or Profession requiring Space, Light, and first-rate Situation, as also for a Building Speculation. The Premises are held upon a Lease, 14 years of which was unexpired at Midsummer-day, 1846, at the very low rent of £120 per annum.

Particulars are preparing, and when ready, may be had of JAMES HOPWOOD, Esq., Solicitor, King William Street, Charing Cross; on the Premises; and at 13, Broad Street, Golden Square.

---

TO TIMBER MERCHANTS, SHIP AND BARGE BUILDERS, SHIP CHANDLERS, AND OTHERS.

**MESSRS. DAVIS and VIGERS** will SELL by AUCTION, on the premises, "Acorn Wharf," Rotherhithe, adjoining the Commercial Dock Pier, by order of the proprietor, on TUESDAY, 30th of March, and following day, at 11 for 12 each day, an extensive and valuable stock of timber, 500 oak trees, chiefly Sussex growth, and lying on the wharf conveniently for water carriage, oak boards, planks, scantling, old ship timber, moulds, blocks, masts, sprits, spars, yards, oars, quantity of shipwrights' tools and plant, 5 strong trucks, 10 screwjacks, grindstone, vices, crow and draw bars, useful ship stores and fittings, chains, cables, rope, yarn, pitch, tar, resin, paint, 10 tons of rod and bar iron, bar and sheet copper; copper nails, bolts, and fastenings; lead, 3 skiffs, punt, longboat, and lug; together with all the well-seasoned stock and useful stores, plant, and fittings of the above very extensive ship-building premises, 3 capital wainscot office-desks, stools, &c. To be viewed two days prior to the sale. Catalogues to be had on the premises, and at the auctioneer's offices, 3, Frederick's place, Old Jewry, City.

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BENEFICIAL FREEHOLD AND COPYHOLD INVESTMENTS, Upminster and Ardley Green, conferring votes for the County of Essex.

**MR. WALKER is directed to SELL by** AUCTION at the Bell Inn, Upminster, on THURSDAY, March 25th, at five for Three o'clock in the afternoon punctually, in suitable Lots—Five Plots of Freehold Building Ground, Land-tax redeemed, fronting the High Road, Upminster Hall, eligible for the Erection of Five Double Cottages; also several detached Houses abutting upon the Chapel near thereto, one of which is a Beer House with a frontage next the High Road of upwards of 300 feet Copyhold of the Manor of Gaines, at a nominal quit-rent and fine certain, producing about 60*l.* per annum; also a Freehold Cottage with large Garden at Ardley Green, in the parish of Hornchurch, producing 18*l.* per annum. The respective premises may be viewed by leave of the Tenants, and particulars obtained; also at the Principal Inns at Romford and Brentwood, at the place of Sale, of Mr. WOODARDS, Solicitor, Ballericay, and of the Auctioneer, 16, Wardour-street, Soho, London.

---

EGYPTIAN-HALL, PICCADILLY.—Extensive and valuable Stock of Stove Grates, and general Furnishing Ironmongery, removed for the convenience of sale.

**MESSRS. BURBIDGE and SNOW are** directed to SELL by AUCTION, at the late Exhibition Room of the Egyptian-hall, Piccadilly, on Monday, Tuesday, and Wednesday, March 22, 23, and 24, in consequence of the dissolution of partnership of Messrs. Pierce and Kolle, the FIRST PORTION of their truly elegant and extensive STOCK, manufactured to suit the superior taste of the nobility, architects, and gentry, who have honoured them with their patronage: it consists of radiating stove grates, with fire lump backs, most superb and splendid assortment of fenders, marble and richly ornamented metallic chimney-pieces, of the Elizabethan and enriched style of Louis Quatorze, a large assortment of or-moulu, bronze, and black firebrands, or dog-irons, moulded from the most recherche of French and English designs, improved kitchen ranges, patent warm air, Holmes, Arnott's, and other stoves, improved hot plates, bell and other ringers, shower, vapour, and warm baths; a large assortment of papier mache tea trays of the best quality and patterns, brass plate warmers, fire screens, smoke-jacks, coppers, ranges, ovens, boilers, kitchen fittings complete, ordinary articles of all kinds. May be viewed two days prior and the morning of sale, and catalogues had at the room; of Messrs. PIERCE and KOLLE, ironmongers, 5, Jermyn street, Regent-street; and at the auctioneers' offices, 2, Moorgate-street, City, and Stratford, Essex.

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AT REDUCED PRICES.

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**INVESTMENT for LARGE or SMALL SUMS.**

The attention of the public is invited to the following notice:—

The Deeds for carrying out the resolutions of the Shareholders in the Guarantee Fund of the BRITISH MUTUAL LIFE ASSURANCE SOCIETY are now ready, and the respective Shareholders are hereby requested to attend at the offices, between the hours of Eleven and Three, to sign and execute the same, when the old shares may be exchanged.

Applications may be addressed to the Secretary for the remaining unappropriated shares entitled to the advantages set forth in the following

RESOLUTIONS.

That for the purpose of extending the usefulness of the British Mutual Life Assurance Society, it is desirable to grant loans in connexion with life assurance, and that a guarantee and loan capital of 100,000*l.*, in shares of 10*l.* each, with a deposit of 1*l.* per share, and future calls not to exceed 5s. per share, at 60 days' notice, be substituted for the present Guarantee Fund. The Shareholders' liability to be limited to the number of shares they hold.

That all profits accruing from the loans shall be ascertained at the expiration of three years, and afterwards at the end of each year, and subject to the payment of interest at 5*l.* per cent., such profits shall be divided and paid as follows, viz., 2-5ths thereof as a bonus to the Shareholders, 2-5ths to be added by way of accumulation to the capital, and the remaining 1-5th to be added to the Assurance Fund of the British Mutual.

That upon such subsequent division of profits, the interest to be paid to the Shareholders shall be at the same rate, not only on the amount paid up on the shares, but also on the capital increased by such accumulations.

And that when the capital, by means of such accumulations, shall have increased to double the amount actually subscribed, it shall be divided and paid to the Shareholders, in discharge of their respective shares.

That in consideration of the anticipated advantages to accrue to the British Mutual by the assurances which will be thus gained, that the British Mutual Society shall have at all times the guarantee of the capital to meet unexpected claims by death, and in consideration also of the 1-5th of the profits from the loans being paid to the Assurance Fund as before mentioned, the British Mutual shall guarantee, from the Society's funds, to the Shareholders the payment of the interest, at the rate of 5*l.* per cent. per annum, payable half-yearly.

By order,
CHARLES JAMES THICKE, Secretary.

17, New Bridge-street, Blackfriars.

FORM OF APPLICATION.

To the Directors of the British Mutual Life Assurance Society.

Gentlemen,—I request you will allot me ______ Shares of 10*l.* each, in the Guarantee and Loan Capital of the British Mutual Life Assurance Society, and I hereby undertake to accept the same, or any smaller number that may be allotted to me, to pay the deposit of 1*l.* per Share thereon, and to sign the necessary deed when required.

Name ........................................
Residence ...................................
Occupation ..................................
Reference ...................................
Residence ...................................

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CHARLES JAMES THICKE, Resident Secretary.

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XX.

EXERCISES on MECHANICS and NATURAL PHILOSOPHY; or an Easy Introduction to Engineering: Containing various Applications of the Principle of Work; the Theory of the Steam Engine, with simple Machines; Theorems and Problems on Roofs, Arches, &c. By THOMAS TATE, Mathematical Master of the National Society's Training College, Battersea. New Edition. Fcap 8vo. with Diagrams, 5s.

LONDON:

LONGMAN, BROWN, GREEN [and LONGMANS.


### CONTRACTS.

Office of Ordnance, Pall Mall, 16th March, 1847.

TO BUILDERS.

TENDERS will be received by the Honourable Board of Ordnance, at their Office, Pall Mall, London, on MONDAY, the 19th day of April, 1847, from such persons as may be willing to undertake the erection of a new barracks, &c., for soldiers, at Portsea.

Plans, specifications, and conditions of contract may be seen, and every information obtained, on application at the Royal Engineers' Office, Mill Dam, Portsea, between the hours of Ten and Four each day, Sundays excepted.

Tenders to be sealed up, and indorsed on the outside, "Tender for the erection of the new barracks for soldiers at Portsea."

By order of the board,

R. BYHAM, Secretary.

Office of Ordnance, Pall Mall, 16th March, 1847.

TO BUILDERS AND OTHERS.

NOTICE IS HEREBY GIVEN, that TENDERS, for a Specific Sum, for Erecting 8 LARGE MAGAZINES, with sundry Storehouses, Workshops, Landing-shed, &c. and Enclosure Walls, also for constructing a Basin and Pier (below low water mark), Wharf Walls, Tables, &c. &c. at Bull Point, on the river Tamar, about 3 miles from Plymouth, and in the neighbourhood of the existing Powder Works at St. Budeaux; will be received at the Ordnance Office, Pall Mall, London, on or before 23rd April, 1847.

Specifications and Detailed Plans of the proposed Buildings and Works may be seen and Forms of Tender obtained at the Office of the 18th inst. daily at the Commanding Royal Engineer's Office, Devonport, between the hours of 9 and 4 o'clock until the 22nd April, 1847.

The Site may be viewed on application to Captain Maclean of the Royal Artillery, the Assistant Fire-master at Kinterbury

By order of the Board

R. BYHAM, Secretary.

TO BUILDERS,

CONTRACTS are required for the erection of a range of houses in the vicinity of Shoreditch—Plans, specifications, and particulars, may be inspected at Mr. THOMAS LITTLE'S Offices, 36, Northumberland street, New-road.

TO BUILDERS

CONTRACTS are required for the erection of a Collegiate School in St. John's Wood Park. The plans may be inspected, and further particulars obtained at Mr. THOMAS LITTLE'S Offices 36, Northumberland street, New-road, by parties desirous of tendering an estimate for the works.

TO BUILDERS.

TENDERS are required for the building of a New Church in the district of St. Thomas, Coventry. The plans, specifications, and conditions of contract, lie for inspection, until April 7th, at the Rev. S. CRAGGS, the minister's, Coventry; to whom the tenders are to be sent (post paid), on or before April 12th. The committee will require proper sureties for the due execution of the entire work, and do not pledge themselves to accept the lowest tender.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

TO BUILDERS.

THE Directors of this Company are prepared to receive TENDERS for the erection and completion of the Croydon, Epsom, and Four intermediate Stations. Drawings and Specifications may be seen at the Engineer's office at Brighton, on Thursday, the 18th instant. Sealed Tenders to be sent to the Secretary, on or before Monday, the 29th instant at ten in the forenoon.

T. J. BUCKTON, Secretary.

London Terminus, 5th March, 1847.

TO CONTRACTORS AND OTHERS.

PERSONS desirous of sending in Tenders for a New School about to be erected at Hauney, near Wantage, either for the whole or part of the works, may see the plans, specification, and obtain all necessary information, by applying at the office of the architect, Mr. GILBERT MACDOUGALL, No. 8, Parliament-street, on or after TUESDAY, the 23rd instant, between the hours of Ten and Five.

All tenders must be sent in, free of expense, on or before WEDNESDAY, the 7th day of April next, under sealed cover, directed to the officiating minister, Vicarage, Hauney, Wantage, Berks.

The committee do not pledge themselves to accept the lowest tender.

Guildhall, March 12, 1847.

THE Committee for Letting the City's Lands will meet at Guildhall, on Tuesday, the 23rd day of March next, at the o'clock precisely, to receive TENDERS for LETTING on LEASE, for 50½ years from Lady-day next, a House, No. 8, on the east side of the City-road, near Finsbury-square, Two Houses, Nos. 9 and 10, on the south side of Castle-street, City-road; Two Houses Nos. 21 and 22, on the west side of Wimbledon-street, City-road; and also TENDERS for LETTING on LEASE, for 50½ years from Lady-day next, a House, No. 97, on the east side of White Horse-street, Ratcliff; and also TENDERS for a Piece of Ground, at the corner of Narrow-street, Ratcliff-cross, on a Building Lease, for 61 years from Lady-day next. Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall.

THOS. SAUNDERS, Comptroller.

TO ARCHITECTS.

THE Committee of the "Sheffield Athenæum and Mechanics' Institute," are ready to receive DESIGNS for a building suitable for the above institution, the cost of which is not to exceed 4,500*l.* Designs must be sent in on or before the 23rd of April next.—For further particulars apply to Mr. JOHN HOLL, Managing Director of the Institution, 15, Surrey-street, Sheffield.

12th March, 1847.

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Casts of best manufacture, consisting of common shafts in the Roman and Grecian styles, balusters, vases, capitals, centre flowers, foliage, bas reliefs, &c. &c., on the most reasonable terms, by JAS. BIRKBECK and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the trade.

A first rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 15 per cent. cheaper than papier mache.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp. [illegible]

Best Sheet Floor Brads [illegible] per cwt.

Best Town [illegible] per cwt.

[illegible] 12s. per gross.

Elliptic Stoves, 3d. per inch; Registers 6d., 7d., 8d., per inch.

Self-acting Kitchen Ranges, with Oven and Back Boiler.

Wrought [illegible] Bright Fittings.

3 ft., £3 [illegible] 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

---

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.

Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel [illegible].

Orders from the Country, accompanied with a remittance or reference will meet with prompt attention.

---

TO RAILWAY CONTRACTORS AND OTHERS.

**A** LARGE quantity of Cast-Iron Navvy-Barrow Wheels at [illegible] per dozen, at WALMSLEY and Co.'s iron warehouses, [illegible] Upper Thames-street, near Blackfriars, London.

---

TO BUILDERS, CARPENTERS, &c.

**THE** following are the present Prices, for Cash, of Ironmongery at W. YOUNG, and Co.'s, 194, Oxford-street:—2-inch Cast Butts, 1s. 1d. Doz.; 2½ Do., 1s. 6d. Doz.; 3-inch, 2s. 1d. Doz.; 1¾ Iron Sash Pullies, 11d. Doz.; 1¾ Do., 1s. 4d. Doz.; 1¾ Brass Do., 2s. 6d. [illegible] Sash Weights, [illegible] Cwt.; Sash Lines, [illegible] Rain Pipe, 1s. 7d. Yard; 3-inch Do., 1s. 10d.; Mortise Locks, [illegible] Doz.

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TO ARCHITECTS, BUILDERS, AND BRICK MAKERS.

**PUMPS** of Superior CONSTRUCTION, [illegible] in various plain and ornamental patterns, for Conservatories, Squares, Market Places, [illegible] BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

---

TO ARCHITECTS AND BUILDERS.

**DOOR** SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES in Brass and Iron for Doors to open one or both ways, [illegible] Doors opening on [illegible] Centres, which [illegible] of a combination of power unequalled by any made at present.—Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

---

**WARMING.**—STEPHENSON & PEILL, 61 [illegible] the attention of Bankers, Merchants and others, to their improved method of Warming any number of Offices, Strong Rooms, and other apartments [illegible] Water from one fire-place, combining Free Ventilation and a Pure and Genial Atmosphere, with Economy, Cleanliness, and perfect Security from Fire. References to eminent firms [illegible] Strong rooms [illegible] Iron Safes, Bookcases, &c. Manufactory, 17, New Park-street, Southwark. SAMUEL HALL'S Patent Ventilating Stoves [illegible] upwards.

---

**STOVES,** FENDERS, FIRE-IRONS, and KITCHEN RANGES, [illegible] every improvement [illegible] Dining-room Register Stoves, Steel and Bronzed Fenders, Steel Fire-Irons of the most chaste and elegant Patterns [illegible] Roasting, Boiling, Stewing, Steaming, Boiling, and Frying. This Range will generate sufficient steam, with the aid of pipes, to warm a large dwelling and conservatory, [illegible] To be seen in full operation [illegible] DEANE'S, the Finsbury Iron Works [illegible].

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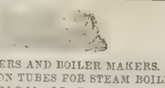
IRONFOUNDRY.

1[illegible], Drury-lane, and Charles-street, London.

JOSEPH GLOVER,

(Late HENDRY and GLOVER),

**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, [illegible] now solely his, and in consequence of which, he has been enabled to make such arrangements [illegible] The stock of patterns has been re-arranged, to give every facility to trade them. A stock of Rain-water [illegible].



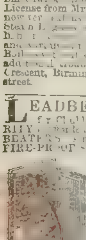
TO ENGINEERS AND BOILER MAKERS.

LAP-WELDED IRON TUBES FOR STEAM BOILERS.

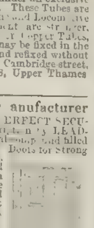
**THE** BIRMINGHAM PATENT IRON TUBE COMPANY [illegible]-street, Birmingham, and [illegible] Tubes under an exclusive License from Mr Richard Prosser, the Patentee. These Tubes are now very extensively [illegible] Boilers of Marine and Locomotive Steam Engines [illegible] are stronger [illegible] Brass or Copper Tubes, and [illegible] the Weld. They may be fixed in the Boilers [illegible] can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.

---

**LEADBEATER,** many years manufacturer for [illegible] PERFECT SECURITY [illegible] LEADBEATER'S [illegible] FIRE-PROOF SAFES, CHESTS, and BOXES. Doors for Strong Rooms [illegible]



[illegible] Improved Detector Locks throwing from 3 to 20 bolts, which defy the skill of the most experienced burglars. A large Assortment of [illegible] on Sale. Made to order at the shortest notice [illegible] London, at his Manufactory, 125, Aldersgate-street.



A large FIRE-PROOF REPOSITORY, well adapted for Solicitors, to be SOLD a BARGAIN.

Improved Detector [illegible] PERFECT SECURITY [illegible].

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IRON-WORK FOR BAKERS' OVENS.

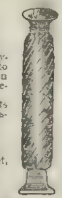
**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, [illegible] Stocks or mouth-pieces, Plates, Furnace-bars, Top and Tail Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash pit, Doors and Frames, Boilers and [illegible], Lamps, &c., &c.—all of the best description, at very moderate prices.—CAST IRON [illegible].

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ROBERT STEDALL'S

PATENT SCOLECOTHIC VENTILATOR,

AND CURE FOR SMOKY CHIMNEYS.



The most effectual and most ornamental Chimney-pot yet invented, entirely obviating the objection to which all others are open, namely, that of soon becoming clogged with soot, and, consequently, useless.

A large quantity have been made in various parts of the kingdom, which have given the greatest satisfaction.

Price, Strong Painted Iron ........ 32s.

" Strong Galvanized Iron.. .. 40s.

To be had of ROBERT STEDALL, 13, Nelson-street, Greenwich.

THE TRADE SUPPLIED,

And also Licenses granted to Manufacturers.

---

SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been tested extensively throughout the kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The Trade supplied with them at the Manufactory,

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

---

**CARVINGS** IN WOOD.—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal ornaments, thus substituting the genuine material for those [illegible] which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 44, West Strand, or at the Works, Ranelagh-road, Thames-bank.

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**ARCHITECTURAL** CARVING WORKS (IRVING'S PATENT), late Sir Francis Chantry's Foundry, Eccleston place, Pimlico, leading out of Chester square.

Architects and Builders [illegible] that Carving in Wood, Stone, and Marble, by Patent Machinery, is carried on at the above premises. Tracery [illegible] in wood and stone, beautifully executed at prices which will enable architects to carry out their plans [illegible] churches, and other buildings, at a comparatively small expense. Machines are sent into the country to work on the spot, at a great saving [illegible] Fonts, chimney-pieces, Gothic windows, fluted columns, monuments, and head-stones, are likewise beautifully executed, and ready for fixing, or fixed. Mouldings, wood and stone, made to any pattern: scagliola and inlaid work executed in all their branches. For the [illegible] workmanship, the public are respectfully informed that a show-room has lately been fitted up on the premises (not having any other establishment in London), for the inspection of their merits.

---

**CARVING** BY MACHINERY.

JORDAN'S PATENT.

TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested [illegible] Carved decorations, to the peculiarities of their Machinery and the proofs of its [illegible] the Government Workshops for the interior [illegible] of the New Palace at Westminster, and in the notices of the Public Press elicited by the Exhibition of the Society of Arts.

*The Athenæum* of March 6th, in speaking of the Specimens of Carvings produced from Jordan's Patent, says, "These were really astonishing. A bunch of Hops and brace of Partridges were worthy [illegible] the side of Grinling Gibbons's Works. A portion of the Ghiberti Florentine Gates were also very successful. The Machinery [illegible] the Sculptor's assistant. It [illegible] all the superfluities and prepares the object for the final touches of the Artist. No matter [illegible] intricate the [illegible] Machinery."

The Proprietors find it to be due to themselves and to the Public to state that [illegible] Establishment where [illegible] Machine Carving Works at Belvidere Road, Lambeth [illegible] may be seen [illegible] works of art.

---

**WALLIS'S** PATENT LIQUID WOOD KNOTTING.—This newly discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood however bad, and preventing them [illegible] disfiguring the paint above.

[illegible] time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

---

**TODD'S** PATENT PROTOXIDE PAINT manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with [illegible] the most valuable for Railways, Boilers, Steam, Gas, and Water-pipes, Hot-houses, [illegible] and for Shipping. Its hardness [illegible] that the hardest friction will scarcely [illegible]. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea water.

PROTOXIDE PAINT is [illegible] ground in oil, and, compared with white lead [illegible] property of covering is as 75 to 35, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms [illegible] unctuous and adhesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

---

**GAS.**—The Introduction of Gas into private dwellings is rapidly increasing; it is therefore of the greatest importance not only to the consumer but to the gas company and gas fitter, that the most secure and simple means of regulation be applied. The patentees of CARTER'S SAFETY GAS VALVE, can from many years' experience and the high testimonials they are daily receiving, confidently recommend it to all persons interested in gas lighting, as being more secure, more durable, and not so liable to get out of order, and in every respect superior to the old plug cock, so frequently leaky or set fast by corrosion. It has the advantage of being inexpensive, and easily adapted to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, [illegible] Newcut, near the Blackfriars road.

---

**ROYAL** ACADEMY of ARTS, Trafalgar-square.—NOTICE TO ARTISTS.

All works of Painting, Sculpture, or Architecture, intended for the ensuing EXHIBITION at the ROYAL ACADEMY, must be sent in on Monday [illegible] by 6 o'clock in the evening of Tuesday, the [illegible] of April next, after which time no work can possibly be received, nor can any works be received which have already been publicly exhibited.

The other regulations necessary to be observed may be obtained at the Royal Academy.

JOHN PRESCOTT KNIGHT, R.A., Dep. Sec.

Every possible care will be taken of works sent for exhibition, but the Royal Academy will not hold itself accountable in any case of injury or loss, nor can it undertake to pay the carriage of any package which may be forwarded by carriers.

The prices of works to be disposed of may be communicated to the Secretary.

---

**THE** EXHIBITION OF SELECT SPECIMENS OF ENGLISH MANUFACTURES, on and after the 11th of March, will be OPENED GRATUITOUSLY every day, except Saturdays and Sundays, between 11 and 4, at the SOCIETY OF ARTS, Great Room, John-street, Adelphi. TICKETS of ADMISSION and Catalogues may be had of the Members of the Society, of the Exhibitors, and at the undermentioned:—

OXFORD-STREET: Mr John Mortlock, No. 250; Mr. J. Phillipps, No. 359.—REGENT-STREET: Mr. White, No. 210.—PALL MALL: Messrs Graves, No. 6, and Messrs. Colnaghi, No. 1.—NEW BOND-STREET: Mr. Pratt, No. 118.—OLD BOND-STREET: Mr. J. Cundall, No. 12.—PICCADILLY: Mr. W. Pickering, Bookseller, No. 177.—STRAND: Mr. Milledge, No. 65; Messrs. Greensill, No. 148; Mr. J. Tennant, No. 149.—FLEET-STREET: Mr. George Bell, No. 186, Messrs. Grant and Griffith, corner of St. Paul's Churchyard, Ludgate street.

N.B. No Tickets can be had except by members, direct from the Society's House.

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**PHOTOGRAPHIC** PORTRAITS, at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 1[illegible], Strand (between Norfolk-street and St. Clement's Church). Portraits, including case, from [illegible] Satisfaction guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvass, combining the truth of the daguerreotype with artistic skill. Hours from Ten to Four.

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**BUILDERS** AND IRONMONGERS are requested, when writing for JENNING'S SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters, RIGHT OR LEFT, as they face the front.

---

**JENNINGS'S** SHUTTER FASTENER.

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

---

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE** Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that to [illegible] they [illegible] close with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, [illegible] consequently cannot rust, buckle, be strained, or get out of order, and are safer. [illegible] in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

---

**REVOLVING** SAFETY SHUTTERS, WITH PATENT CONVEX IRON LATHS. PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great importance [illegible] REVOLVING IRON SHUTTERS, in affording increased security [illegible] the patent convex laths are 12 times stronger than the ordinary flat laths, to insure [illegible].

The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw worm and wheel, cannot, even by wear, be liable to run down, and entirely avoids the necessity of using the rack [illegible] wheel, [illegible] thoroughly effective, and [illegible] SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters are fixed horizontally, either above or below the window [illegible] THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. [illegible] IMPROVED DRAWN METALLIC SASH BARS, ASTRIGALS, MOULDINGS, STALL BOARD PLATES, &c.

Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 115, Old-street, London.

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INJUNCTION.

**BUNNETT** and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees in the Court of Exchequer, in the action tried [illegible] the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned [illegible] infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are [illegible] The worm [illegible] and lowering revolving iron shutters [illegible] shutters [illegible].

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and [illegible] have adopted every real improvement) enables the Patentees to challenge comparison with any others. They [illegible] Shutters put up by them to keep [illegible], and last twice as long as any with [illegible] laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS, the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass [illegible] of all kinds, [illegible] than any other house. Contracts taken in Town or Country.

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# The Builder.

No. CCXV.

*SATURDAY, MARCH* 20, 1847.


THE recent discussions at the Institute of Architects, on the arrangement of buildings with a view to the transmission of sound, afforded striking evidence of the want of positive information on the subject, which still exists, and leads constantly to annoyances and difficulties. Considerable interest was exhibited on the occasions in question; instances of the inconvenience resulting from the indefinite state of our knowledge in respect of sound were given, and of the great importance of improving it. Since the appearance of our reports of those discussions, we have received statements of various buildings (churches and large rooms), wherein the speaker or music, as the case may be, cannot be heard, with inquiries for advice,—shewing still further the extent of the demand for some effort to lay down accurate rules.

The first step towards effecting this, would be a collection of facts, obtained by rigorous investigation of a number of buildings; and we would suggest to the Institute that they should endeavour to organize a qualified committee forthwith, to commence this investigation. If this were done, and the inquiry were properly conducted, good could not fail to result. Nothing, however, must be taken for granted. No dependence must be placed on reports that this is a good room or this a bad room for hearing; the fact must be ascertained personally; and the dimensions, shape, materials, mode of ventilating, and other circumstances, be then carefully recorded and weighed. "There is no point of natural science,"—said Mr. Wilson Croker to a committee of the House of Commons, appointed in 1831 to inquire as to the erection of new Houses of Parliament,—"that has been brought to so little practical certainty as that which is called *catacoustics*, or the doctrine of reflected sound: and *facts therefore are the more precious.*" Facts are what we need; a body of carefully collected and well-arranged facts,—the result of which would be, SCIENCE.

It is distressing to read the contradictory opinions, which were given in evidence to this committee by architects and others of high standing. The circular is the best form; turn over a page and it is the worst.* The ceiling ought to be perfectly smooth and flat; no, it should be coved, and quite smooth; no, again, the surface of it should be broken up. You must have projections and breaks, says one, to prevent echo; "the reason that so many buildings fail," says another, "is by large projections and angles internally, which break the line of conduction, and reflect the sound in various directions, not co-operating with, but thwarting each other; or large and deep recesses in the walls and ceilings sometimes swallow up the sound or embay it." There is, nevertheless, something to be learnt from the evidence in question; and an abstract of all in it that relates to sound would be useful as well as curious.

The circumstance that at this moment, there is no one able to predicate with certainty the effect of any proposed building in respect of sound seems extraordinary, but is nevertheless undeniable; no one even pretends that he can do so, but all confess that the question is most difficult, and has not yet been properly investigated. Surely it is time to attempt it.

Three important buildings are now on the eve of completion, the value of which will depend *entirely* on their excellence in respect of the transmission of sound,—we mean the new House of Lords, St. George's Hall, Liverpool, and the Opera House, Covent Garden. In two, at all events, of these buildings, great consideration has been given to the question; nevertheless the issue is quite doubtful. We wait with some anxiety the resolution of the doubt. The ceiling of the new Opera House is domical, consisting of two ellipses, and is formed wholly of thin battens nailed to fir ribs,—an admirable piece of workmanship by the way,—apparently better adapted for music than for speaking.

The best form of ceilings is a question on which there is considerable difference of opinion. We have before us the notes of a lecture on acoustics delivered by Mr. Robert Addams (who has given attention to the subject), some years ago. Our readers will probably think the following portion of them worth printing:—He said, "If we looked to our churches, chapels, and school-rooms, almost all were bad; *the curved form of the ceilings reflected the voice of the speaker to a certain point*, and while one person was overpowered with sound, the majority of the congregation could not hear a word distinctly; and he was not a little apprehensive, that from the want of proceeding on scientific principles, many new buildings would be spoiled in the same manner. The form of room that was adapted for music would be bad for public speaking, and *vice versa;* therefore, architects should never attempt to combine the two objects in the same building. They required a certain degree of echo for music; but the great effort should be to get rid of all reverberation in a room intended for public speaking. Having heard his objections to public buildings as they were at present constructed, they would naturally feel disposed to ask the form of room he was disposed to recommend. Now, he was not quite prepared to tell them the precise form that he considered best; but he would recommend the avoidance of apartments of a circular form by all means, as the audience would be overwhelmed by the reverberation of the speaker's voice; the elliptical form produced still greater evils; and, in fact, whether the apartment were intended for music or speaking, it should be divested of all curvature. Neither would he have semicircular rooms, although, if built in this shape, they might be improved, if not effectually cured, by ornamenting the walls with columns and pilasters, by furnishing the windows with drapery, by covering the floor and benches with drugget or carpeting; and if that would not do, he would dissect the ceiling with cross beams, and introduce figures and ornaments in its decoration, so that the sound of the speaker's voice would be broken into a diversity of reverberations. Should all this fail in remedying the inconvenience, he would wainscot the room with wood, from the top to the bottom, by which the number of the echoes would be multiplied *ad infinitum* (?) The Royal Institution was built in a curved form, and would be very bad were it not that it was lined with wood, and furnished in other respects so as to destroy the reverberations which he had described."

Alberti says,—"I will not omit one observation (speaking of the Senate-house), namely, that no place where we are to hear the voices of persons either speaking, singing, or disputing, should ever be vaulted, because such roofs confound the voice with echoes; whereas a flat ceiling, made of timbers, renders the sound more clear and distinct."

And yet the curved form of ceiling is found in some of the best theatres and rooms for hearing in. At her Majesty's Theatre, when rebuilt by Novosielski, great care was taken to avoid projections on the surface of the ceiling, and on every other part,—the whole was kept flat to give as little interruption as possible to the progress of sound; and this is certainly one of the best theatres in Europe for music.* Immediately in the centre of the pit, at a certain distance from the back, there is a very distinct, and, at the same time, disagreeable echo, and you may, in one place here, hear the prompter from his box in the centre of the stage as plainly as you can the singers. We know of no other part of the house, however, where the sound seems in any way confused or interfered with.

The fact is, there are many things which concur to produce a bad or good hearing apartment. Attention to two or three points is not sufficient; and in cases where the more prominent requirements have been attended to without good effect, we should perhaps find on strict investigation a reason for the failure, and so remove what might seem to be a contradiction.

Foremost amongst the less obvious circumstances affecting the conveyance of sounds in a building is the mode of ventilation employed,—the manner in which air is brought in and taken out. The state of the atmosphere in a room will alone cause great difficulty; as may be proved by striking a glass filled with water, and one filled with carbonic acid gas. In the latter case, a dead and leaden sound alone is produced; and the wet blanket, to speak literally, thrown on a singer's exertions by the breath of the audience in an ill-constructed apartment, becomes understandable.

The effect of two or more reciprocating bodies upon a sound is curious. An experiment occurs to us which shewed it forcibly. It was for the purpose of demonstrating that when the vibrating body, which sets the air in motion, is placed between two reciprocating bodies in such a manner, that the vibrations of the air from one of them shall cross the vibrations of the air from the other at *right angles*, the sound ceases; and, on the other hand, that when two such reciprocating bodies are placed so that their vibrations mingle in *right lines*, the

---

* *Soane.*—In any alteration of the old house, or in the erection of a new one, is it not probable that you will be more successful in having a good sound by having *a circular end* than by having square sides? Yes, you will find that in the Olympic Theatre at Vicenza there is a circular end; so had all the ancient theatres, both Greek and Roman.—Concluded that shape to be peculiarly favourable to hearing.

*Smirke.*—Have you considered whether a complete circular shape, a segment being cut off for the strangers' gallery, immediately behind where the speaker would be placed, as likely to be favourable for hearing? * * I think if the circular form were preserved behind the speaker, above the proposed seats, it would be a very inconvenient room for hearing; there would be in all probability such a reverberation of the voice, that it would be scarcely possible to hear with distinctness; if the circle is not preserved, but a large segment is taken off by a straight wall behind the speaker, it would still be liable to some of the objections which I have generally observed apply to semi-circular rooms; it would be extremely difficult to prevent the reverberation of sound, and especially when there were but few persons in the room.

* The theatre at Parma is, without exception, the largest in Europe. Addison, in his remarks on several parts of Italy, says, "It is so admirably contrived, that from the very depth of the stage the lowest sound may be heard distinctly in the farthest part of the audience, as in a whispering place." Dr. Moore, in his travels in Italy, observes "that a whisper is heard all over this immense house." This theatre is surrounded on the inside with columns. It is remarkable that Pietro Patilo, in his plan, shews thirteen intercolumniations; Mr. Saunders fifteen; and Pate seventeen; consequently the lengths of the theatre in these plans differ. The last of these writers states that he measured it himself, and remarks that there are seventeen intercolumniations. The theatres at Vicenza and Bordeaux are also surrounded with columns in the same manner, and are stated to be favourable to the progress of sound; how these ornaments in relief will be reconciled with the necessity of a smooth surface, remains to be explained."—*Ware.*

sound reaches its maximum. It was shewn by two ordinary drinking glasses, each of which emitted the note C when a tuning-fork was applied to them. When one was held horizontally and the other perpendicularly, with the lips of each in contact, and a tuning-fork was placed at the intersection, *the sound ceased*, and when they were held perpendicularly to the tuning-fork (mouth over mouth), the sound was doubled. This may involve the reason why some cross-churches are very bad for hearing in.*

We repeat our suggestion that a committee should be appointed forthwith to investigate a number of buildings known to be good or bad in respect of sound. "Were this made a subject of inquiry, in the construction of all public buildings," says Dr. Reid, "our orators would not be so often exhausted by the mere mechanical endeavours which they are at times compelled to make when addressing the most silent and listening assembly; nor would the audience, in their turn, be compelled to exert an exhausting attention, in their anxiety to catch the mere verbal expression of the individual who is addressing them. A few examples would soon make most people aware of the difference between mere noisy prolonged reverberation and a sustained purity of intonation. And when the latter has been successfully attained, the human voice can then portray itself in all its commanding eloquence; its full expression dwells upon the ear; no jarring discord mars its harmony. It swells and dies away like the vast tidal wave which moves upon the ocean, and not like the noisy breakers, whose returning surge produces nothing but the most tumultuous and confused agitation upon its unequal shores." Exeter Hall has been spoken of as a very bad room, and the committee could not do better than commence their examination there, as the public might then possibly derive some immediate advantage from the remedies that might be tried.

* When waves of sound are excited simultaneously in different places, each advances, according to the laws of undulatory motion, independently of the other. Where they meet, they cross each other's path, and after this intersection each pursues its course unaltered. From this circumstance we may comprehend how several sounds and notes may be heard at once. It is only at their points of intersection that they affect each other, by adding to or diminishing their force or even by neutralizing each other, when *interference* arises.

*Exp.* Hold a tuning-fork in a state of vibration, so near to the ear that its tone can be easily distinguished; if its handle be turned round with moderate quickness, it will be observed that the sound seems almost to cease, when the aperture of the ear is in a line with the diagonal drawn through one of the prongs, and that it is most plainly heard when the flat face of the prong is towards the ear. This change in the increase and decrease of the strength with which the sound falls upon the ear takes place four times in each revolution. To perform this experiment so that several persons may perceive it at the same time, turn the tuning-fork round over the mouth of a glass flask.—*Peschel's Elements of Physics.*

## MEMORANDA, THROUGH THE AID OF A "PERSPECTIVE" MEDIUM.

In inquiring into the origin and meaning of terms, we frequently discover singular instances of words becoming fixed in a sense opposed to their etymology: this is particularly striking in those adopted in architecture. The subject has several times occupied our attention, and is so far important, that it may continue to do so. Meanwhile it is interesting to consider the use of the word "perspective." Properly speaking, according to Mr. Fox Talbot, there should be two words, one derived from *perspicere*, to look through, and signifying a telescope, and the other the science, or art, of delineating objects upon a plain surface. This discrepancy is pointed out by Mr. Talbot in his late work on "English Etymologies;" and he argues, that the science should be called "*pro*spective, being the art of delineating a prospect, or view. And so it is called in Italian *la 'prospettiva,'* which shews the error we have fallen into." There may be also, some evidence of the want of precision in this term, in the constant pronunciation given by those who are not in the constant habit of using it; and these persons, called "uneducated," are, it seems, not in error in the use of "prospective," which appears to them, and is thus considered to be correct. It is clear that in speaking of objects or scenes to be observed or delineated, we should discriminate between the object itself, and the medium of conveying the impression. In the ordinary dictionaries, the word "perspective" is interpreted indifferently, as "a spying-glass," "a view," "a vista," or as "the science of delineating objects;" and the propriety of, at least, the meaning first given, is shewn by the etymology. In old topographical works, we find any illustration, say of a mansion, called "a prospect or view" of whatever place, and "la prospettiva," when similarly employed, would seem to be strictly synonymous. Now the *science* of perspective is founded upon the supposition, or fact, of a medium being interposed between the object, or prospect, and the eye, which medium performs the office of conveying the impression, just as does the telescope. Admitting therefore, that Mr. Talbot's arguments are worthy of attention, and that "prospective" *may* be a very fitting name for the delineation of a prospect, we merely say, that the ordinary use of "perspective" as the name of the *science*, is capable of defence, as the science may perhaps correctly take its appellation from the actually *perspective* medium, its groundwork as a science. However, the use of "perspective" substantively and alone, to signify a delineation, is we need hardly say erroneous; obviously it should be used as an adjective.

We may further make our memoranda the medium of noting down the explanation of another use of the word "perspective," which has puzzled many commentators upon Shakspeare. In the Shakspeare Society's papers, (1844, Vol. I. Art. XXII.) Mr. Tomlins has given some corrections of the ordinary text of Shakspeare's plays, made by Sir Wm. Blackstone, great as a commentator upon a very different subject; but, as amongst the hundred other speculations about the great poet, it has been asserted that he was a lawyer, and proved, to the extent that almost any other similar opinion may be, from the internal evidence of his works, perhaps he may furnish a precedent. The notes are headed:—

"Cursory observations on Shakspeare, with a particular view to Sr T. H.'s emendations. A.D. 1746.

"The Quotations are according to ye pages of ye London edition in Octavo of 1745 (viz., Sr Tho. Haumer's edition of Shakespeare)."

And amongst them is the following:—

"Vol. III., page 219, K. Rich. II., sc. 5,

> "Like perspectives, which rightly gaz'd upon
> Shew nothing but confusion; eyed awry
> Distinguish form.

The perspectives now used, are surely widely different from those used in ye days of Shakspear! We should rather have wrote (as perhaps he did),

> Like perspectives, which gaz'd upon awry,
> Shew nothing but confusion; rightly eyed
> Distinguish form.

Besides that this Reading agrees with ye sense, wch ye other does not."

It seems not to have been the object of the contributor to make further comment upon these Commentaries of Blackstone, or perhaps the extract in question would have afforded sufficient room for it. The passage in the play, occurs not in any fifth scene, but in act II., scene 2nd, and reads thus:—

> "For sorrow's eye, glazed with blinding tears,
> Divides one thing entire to many objects
> Like perspectives," &c.

It seems, that the word is here used in the manner to which we have objected; and possibly something like the child's toy, by which a building, delineated upon a horizontal surface, in a distorted form, is made to appear correct, when the eye is fixed at a certain point, might be what was referred to. But, in a note in "Knight's Pictorial Shakespeare," which, having been published previously, would have been worth alluding to in the article, the explanation is perhaps more correctly given thus:—

"These perspectives were produced by cutting a board, so that it should present a number of sides, or flats, when looked at obliquely. To these sides a print, or drawing, cut into parts, was affixed; so that looked at 'awry' the whole picture was seen, looked at *direct*—'*rightly* gaz'd upon,'—it shewed 'nothing but confusion.' Dr. Plot, in his 'History of Staffordshire,' describes these perspectives." This toy may indeed now be seen in many shops, and was probably that alluded to, as it agrees best with the lines preceding those quoted by Blackstone; and the other would require a more accurate knowledge of perspective than we are in the habit of ascribing to ordinary artists of Shakspeare's time. The art of delineating, though it had occupied the labours of many great men in Italy and England, was certainly inferior to the present time in one branch, that of linear perspective; and the state of this art would afford a subject for much interesting research, the more so from its connection with the early history of the drama. We know that in the treatment of perspective, the artists of the present day are honourably distinguished, though even less than their merits deserve, from the circumstance of the art finding its exercise mainly as a department of the profession of an architect, and coming, comparatively, little before the world. As scene painters, too, there are several artists of rare ability, not only as delineators, but as producers of designs, characterized by remarkable originality and great power of fancy.

## THE IPSWICH MECHANICS' INSTITUTION COMPETITION.

Sir,—I am glad to be able to put you in possession of the facts of this case. I must first tell you, however, that a circumstance has occurred which places me, feeling most strongly as I do upon the subject, in a somewhat awkward position. It is no less than the receipt of an assurance from a member of the committee, a man above all suspicion, personally known to and respected by me, that the greatest care was taken and much pains bestowed upon the consideration of the designs, seven in number, and that to the best of his belief the plans chosen were the *best*. Now having fairly stated so much, I have no hesitation in giving you a sketch of the whole proceedings, such as they have appeared to those who, like myself, have watched them with some interest. The tale is a brief one.

There is resident in Ipswich a retired tradesman, a man I believe of great respectability, whose pleasure it is to invest his capital in the erection of dwelling-houses of different classes. He is like Osric, "spacious in the possession of dirt," and among other precious things holds certain land in the very centre of the town, whereon on either side of *the new street to the new* railway station (an ordinary case) are arising, in reality or imagination, houses, shops, bazaars, arcades, a museum, *et hoc genus omne*, calculated to return from — to — per cent., but not calculated, as I could shew you if you were here, to add to the architectural glories of Ipswich. Well; the museum being secured, it was thought — a happy thought! that an opposite corner destitute of an occupant, could not be better appropriated than to the purposes of our Institute! Now this gentleman's son happened to be a member of this very institute's very building committee, and to be supported therein and thereon, as the very sequel will shew, with and by a majority. It was *tried on*. The gentleman's 'architect' (pronounced here most frequently artshitec) was employed 'to make a plan.' This person is one of those "members of the profession," who, not having been troubled with any servitude, real or feigned, other than that which belongeth unto the bench of the honest carpenter, is not often troubled with scruples of professional etiquette as you shall hear. Well nothing else would do. The sub-committee reported that they had found an eligible spot, and had a plan *in petto*. The great committee would have nothing to do with the land, and would have a competition for the building. Good! now comes the pith of the story. The competitionizers carried the day, but were "gravelled" to know what premium to offer: when lo! who should be opportunely outside the door, but this very man of lines and rules, this "artshitec." Call him in—ask him the question—'tis done, and he fixes the value of the

aggregate professional talent of Ipswich at five pound five!!! It staggers you—I vouch for its truth. The end is of course in view from that hour. The advertisements appear—are laughed at—denounced—scouted; read, listened to, and for various reasons answered. The committee meet. They consult, and after a week's grave deliberation they select (remember "my son and his majority"). Well, and who, suppose you, is the fortunate individual. You cannot guess. These things are of course so uncertain. It is the best design of course, and may be from the man in the moon. Well—wonders will *not* cease. In this instance singular coincidence! *the* man turns out to be no other than the very artshitec, the man of planes and chisels, the heaven-taught member of the profession. Yes, he made the first plan. He said, "five pound five" was the "wally" of the article, and he's *won* it.

Anon—that is, in Saturday's Journal, you shall hear what occurred at the public meeting which followed. Suffice it now to say they accepted the plan. I feel I have occupied too much of your space, and therefore hastily subscribe myself an

UNWILLING SPECTATOR OF THESE DOINGS.

Ipswich, 16th March, 1847.

## YEOVIL TOWN-HALL COMPETITION.

SIR,—Your columns of the 20th ult. contained an advertisement for designs for the above building. I applied for the particulars, the terms of which, as they are no doubt known to many of your readers, I will not trouble you with; but a circular I have to-day received is so rich a specimen of its class, that I cannot resist forwarding it to you, with my rejoinder. Your present notice of this affair will effect far more good than the insertion of a score of complaints made to you, as they generally are, *after the competition has been settled:* and the only parties in power are the committee, who have obtained the designs required.

For my own part, I cannot blame these gentlemen at Yeovil at all. How can they be supposed to know intuitively what is due to architects on such occasions? It is exceedingly natural for them to squeeze as much as possible from the competing parties, who, good souls, seem so silently patient of their yoke. Finding that such terms as these *draw* designs, porterage, postage, post-office orders, *et cetera, et cetera, et cetera*—who knows but more daring spirits ("Special commissioners" yet unborn) may advertise for designs to be submitted carriage free, with a ton of slates, or a few loads of timber *gratis*, from each delighted competitor?

Architects have no one else to thank for this state of things but themselves: its cure most assuredly rests *with them*. If they would but *themselves* dictate, and insist on terms with advertising parties, *previous* to submitting designs for public structures, they might considerably ameliorate, if not altogether reform the system, of architectural competition; a thing most excellent in itself, to which the public are mainly indebted for such beautiful modern edifices as we have, and the profession (albeit it is now most grievously taxed for it) the well-merited distinction of some of its gifted members.

I am, Sir, &c., WILLIAM YOUNG.

London, March 11, 1847.

Yeovil, March 10th, 1847.

SIR,—I beg to inform you that at a meeting of the special commissioners held this day, the time for receiving plans was extended to the 29th instant, from such architects as shall deliver their plans to me, free of postage, on that day, accompanied with a post-office order for 5s. payable to me, to meet the extra expenses.—I am, Sir, &c., J. T. VINING, Clerk.

The reply was "I am obliged to you for the promptness with which you have replied to my inquiries; but having just received your printed circular of the last resolutions of the special commissioners, must beg to decline competing, in a case where architectural competition is evidently considered a boon to the profession not to the public."

We have received copies of this circular from seven other quarters with similar expressions.

Since the above was set up, we have had intimation that Mr. Vining has written to say he will "waive the payment."

## THE BOND QUESTION.

SIR,—I was much interested by Mr. James Wylson's account, in your last number, of certain experiments instituted by Mr. T. U. Walter, of Philadelphia, regarding the expansion of iron in thick walls. But although these experiments seem to prove what, with some reservation, I ventured to doubt, viz. that stone and mortar, or brick and mortar, do somewhat impede the transmission of heat (or in other words, that these substances are slower conductors of caloric than I had supposed), I still deem it very probable that when such walls as our present fashionable walls,—and which are not quite "5 feet 5 inches thick,"—become so perfectly dry that cold is no longer produced in them by the evaporation of their aqueous matter, iron would eventually acquire the same temperature as the atmosphere surrounding them.

The ingenious experiments of Mr. Walter should be tried, therefore, on walls of such thickness as those in which iron bond is now commonly employed.—I am, Sir, &c.,

March 10th, 1847. W. BROMET.

SIR,—As a great deal has lately been said respecting the use of iron and wood bond in buildings, I am induced to follow your correspondent, "A Builder," at page 67 of your valuable journal: and, like him, I advocate the use of wood bond, but not cut to the size mentioned in the requisition to the referees, quoted in your leading article of Jan. 23rd;—as no practical man would ever be found so foolish as to use bond timber 4 inches by 4 inches, knowing it would not range with his regular course of brick in thickness, and he would be obliged to cut one inch off the course of brick immediately above the bond.* As bricks are but $2\frac{1}{2}$ inches thick, if bond timber is cut full 3 inches thick, and laid on the wall *without any mortar*, it will never move from where it is laid, let what may be fixed to it; but it is a well-known fact among practical men, that when bond is laid in mortar, as soon as you begin to fix to it, it becomes loose, and it is the same with wood bricks; not one in fifty is fit to fix to, and the workman is obliged to wedge his bond and bricks before he can fix to them. And in fresh brickwork, by driving one wedge, you disturb at least from four to six bricks, but if bond is cut full 3 inches by $4\frac{1}{2}$ of good oak, instead of the rubbish that is too often used, we shall hear no more complaints of the use of bond timber in buildings, and all the hoop iron in England will never equal it.

I am, Sir, &c., GEO. CLARK.

March 9th.

## BUILDERS AND ARCHITECTS.

SIR,—In your article of last week, with reference to "the profession of the architect," you advocate that in all cases of alterations or improvements an architect should be employed, for the benefit of the builder and his employer; "And to discriminate between the profession of architecture and the trade of building, we conceive to be alike important to the interests of both, though not usually so considered as regards the latter, The builder may otherwise so readily be under an accusation of having magnified the amount, or, to increase his profits, of having executed his work in an inferior manner, that it cannot but be his interest to relieve himself from such imputations." In these remarks I certainly agree; and if the architects would act honourably to the builders, most decidedly it would be to their interest to recommend, in all cases, the employment of architects; but I am sorry to say there is not that unanimous feeling existing. For example, a gentleman or tradesman is about to make extensive alterations in his house or premises. He has a builder, who has done business for him for years, and whom he has found, after years of experience, to be an honourable straightforward tradesman, and in whose hands he feels perfectly satisfied in placing the execution of his work, even without any contract whatever. Now, would it be to the interest of that man to recommend the employment of an architect? Most certainly not; not from any sordid or selfish motives; not from any feeling that his work would be under the supervision of that architect, and he would not be able to "magnify" his works and "increase his profits," or use materials that would best suit his purpose: I say not from any such views as these, but from the following cause:—

Suppose he recommends an architect to be employed, what is the architect's first step after the drawings have been approved? Why he puts the following question:—"Do you mean to employ Mr. —— for these works? I should recommend you to put this job up for tender; you will get it done for 400*l.* or 1,000*l.* (as the case may be) less than if you leave it to Mr. ——. Allow me to make out a specification, and I know men that will be glad to put in for it."* Well what is the result. Why sir, the man who has done the work for years, and done it too with the strictest honour and integrity (for there are still in the world men of honour, in whom every confidence may be placed), is defrauded of his job by some scamp, or one who never pays for his material, and calls his creditors together in a few years afterwards, and he probably loses the general yearly work also, because the employer now thinks him a dear man.

Why should not the architect be content with seeing *justice* done to his employer, without robbing the tradesman of his custom? but at the present time justice will not content them. Competition and tendering is their motto, and never until they give that up, and allow the fair tradesman a fair price, will there be a friendly feeling existing between the generality of builders and architects.—I am, Sir, &c.,

S. J. K.

* This scantling, in the requisition in question, referred to *plates*, not bond.—ED.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Paris City Improvements.—A Strong Pull, a Long Pull, and a Pull Altogether.*—The corporation of Paris have an annual income of from forty-six to forty-eight millions of francs—of which *ten* are always fluent and available for structural *improvements*. Some debts, however, have been previously contracted, the amortization of which had to finish in 1852. A constant struggle between quick and slow (reformatory) movements had been carried on for years, until the lord mayor proposed of late to make one final, great attempt at reform, and to borrow for this purpose twenty-five millions of francs more. The question now, however, assumes two different aspects. By contracting this loan (to begin with the *negative* of the case), the amortization of the debt of the city of Paris is prorogued until the year 1858, which will cause that inconvenience, that the great reform of the *octroi* (excise and other duties) will be also necessarily delayed. His lordship has, however, on the other hand, laid a magnificent plan of new structural reforms before the corporation, which, albeit the expense be great, viz., seventy-two millions of francs, will make a clear sweep of most of the hitherto drawbacks on the salubrity and picturesque aspect of Paris. Amongst these plans is another market-place, instead of that "*des Innocens*," at the cost of twenty millions of francs. This is considered an improvement most essential and sanatory. The city payments towards replacing the present opera-house are put down at four millions, as the corporation wishes that the new building be erected between the Palais Royal and the Place du Caroussel, which would lead necessarily to a prolongation of the Rue Rivoli, for which sake a nasty nest of lanes and houses is to be purchased and pulled down. The next items to be defrayed from the proposed loan, are the building of the *gothic* church of St. Clotilde on the Place Belle Chasse, valued at three millions,—a new *hospital* at six millions; the remaining sum going towards the enlargement and cutting of new streets.

*The Prussian Houses of Parliament.*—The expedition with which the late constitution was published, made the adoption of some temporary *locale* necessary, and H. M. the king has now approved the plans and drawings submitted to him. The two houses will meet, for the opening festival, and subsequent business of this session, in the White Hall (*Weisse Saal*) of the royal palace. The throne will be situate in the middle of the back *longitudinal* wall, at whose side will be the ministerial benches, and beside them the seats for the

* Our correspondent is dealing with exceptions, not the rule.

lords. In front of the throne extend the seats of the members of the lower house, being placed in eight divisions, according to the eight provinces of the realm—each divided by a passage. The seats are red-cushioned little benches, with a writing desk, capable of being turned down. Each seat has a number, but not relative to any division. The stenographs to occupy an especial gallery. Adjacent rooms to serve as bureaux, &c. All this, however, will absorb so much space, that the king will have to remove to Potsdam, where also all the festivals of the season will be held.

*The Vienna Academy of Sciences.*—As the limits of the plan proposed to the emperor by the Chancellor of State have appeared to be very *narrow*—the Archduke John (a sort of emulant of the Duke of Sussex), has been requested to compile another, which it is said will extend the activity of the academy over every branch of science.

*French Railroads.*—The Government have deemed proper to *increase* the surveillance over the construction and management of these public conveyances, as accidents occurred of late on *two* consecutive days on the same (the North) line. In consequence, the viaduct of Virville, on the Havre-Rouen Line, was ready for traffic, when a commission was sent who charged it with a heavy weight, by which it sustained serious and considerable injuries. By such timely superintendence the income of several lines has already *decreased*—but the security of human life, will, as a matter of course, *increase!*

*Monument Mania.*—Subscriptions are now raising in Germany for erecting a memorial to Professor List, the political economist, who died a *voluntary* death in Kuffstein.

*Improvements at the R. A. Munich.*—According to a royal decree of 14th August last, certain grand changes had to take place, which now, we are happy to say, have been carried into effect. A new chair of the technicism of painting (*Maltechnik*) had been created, to which the historical painter, Mr. Hermann Anschütz, a native of Prussia, has been nominated. The place of corrector in the Hall of Antiques, has been conferred on Mr. Hochbach, teacher of design at the schoolmasters' seminary, at Altdorf. Thus the staff of that splendid institution is now at its full complement.

*A "German" Technological Cyclopædia.*—This work, undertaken by the *late* Mr. Krünitz, deserves to be noticed as a literary *curiosity*. Its publication began *seventy-four years ago*, viz. in the year 1773, during which time *one hundred and ninety* volumes, in gr. 8vo., have been published, costing the subscriber upwards of 600 dollars. Still, this Cyclopædia is not further than the letter T.

*A Duke-Numismatist.*—We are sorry that we are precluded from more than *mentioning* the work of the Duke de Luynes on Phœnician and Satrapic coins—still interesting even for the artist. His grace has properly classified many valuable medals, hitherto confounded with Sicilian coinage — and elucidated that interesting fact, that coins of the Westerly Satrap (from Thracia to Egypt) had Phœnician inscriptions, as the language and coinage of that nation enjoyed the widest reach.

*The Great Suspension Bridge at Kowno*—will be built by English engineers. As the debordments of the Vistula are very great here, the length of the bridge will be excessive, and cost eight millions silver rubles (at 4s. each).

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Wesleyan Chapel in Uxbridge.—A new chapel is about to be built in Uxbridge. The following is a list of the tenders for its erection, sent in on the 10th inst.

| | |
|---|---|
| Kingsland, Uxbridge | £535 |
| Snowball, Slough | 589 |
| Burbridge, Richmond | 635 |
| Page, Uxbridge | 650 |
| Morton, do. | 664 |
| Clements, London | 695 |

Fire in Another Theatre.—The opera-house at Struttgard took fire lately in some of the usual vulnerable points so numerous in dangerous edifices such as these; and the presence of mind of the prince royal alone preserved hundreds from injury or death in the general rush which the auditors and spectators made towards the doors. The fire does not appear to have done much damage, and no life was lost.

## A CHAT ABOUT LOCOMOTION.

It is interesting to retrace the *rapid strides* which railway speed has made since 1824, when the first locomotive astonished the world by travelling along the rail at the rate of six miles an hour,—or rather, by travelling at all on a smooth rail, and without cogged wheels, and not, as was expected, merely wheeling round without locomotion. Yet, strange to say, in that very year, or rather in the year preceding, we recollect participating in the wonder with which perhaps a still more extraordinary invention was then contemplated—an invention which has not even yet been brought to any thing like practical utility, if indeed it ever will, but which at that time promised well for future success, even whilst the locomotive on the untoothed rail remained a very doubtful speculation in the minds of many. Strange to say, we repeat, at that very time, and previous to the test applied on the Manchester and Liverpool,—when the directors on that line were said still to contemplate the likelihood of jogging on with horses, ere the bright idea of offering a premium for locomotion was matured, we distinctly recollect running along one of the high roads near Edinburgh, on a locomotive independent of all rails, and at a rate of *more* than *six* miles an hour,—the grand accomplishment of the "first locomotive" of the rail,—and that, too, although the persevering and talented inventors of the machine to which curiosity had impelled us to trust our joints and members, bore the almost incredibly ominous names of Burstall and Hill. To be sure there was no hill in the way, otherwise our high-pressure engine might have indeed burst all; but as it was, we remember that our enterprising conductor for a moment lost command of his fore-wheel regulator, and the immediate and inevitable consequence was a dash of all and sundry through a thick-set thorn hedge into the garden of an astonished old gentleman, who, in his latter days, had, once for all, as he thought, been obliged to admit that mail coaches on turnpikes were the very *ne plus ultra* of perfection. That locomotive experiment, however, was certainly, on the whole, a promising one, and at a time, too, when no such promise brightened the future prospects of the rail which has since done such wonders; but the result has been an instructive one in its relation to the apparent merits of contemporaneous speculations or inventions of a kindred order. Even yet, however, it must be confessed, that an experiment conducted on an enterprising scale, in the establishment of splendid locomotive coaches on the common road between Glasgow and Paisley, was perfectly successful so far as regards the practicability of running such locomotives at a pretty rapid speed; only an unfortunate accident, unconnected with the merits of the invention it was alleged, at length led to an interdict, such as might have foreclosed us from the benefits of even railway transit itself, had such an accident on the rail been followed up by such an interdict at the outset.—Our purpose, however, in alluding to the rapid strides which locomotive speed has made since 1824, when six miles an hour was the maximum, and when the only wonder was the possibility of locomotion without horses at all,—has been held all this time *in retentis*. The speed of "The Rocket," in 1829, had reached the extraordinary rate of 15 miles an hour; but wonder was destined to succeed wonder, and in 1835 "The Firefly," had distanced even the whizzing "Rocket" by at least five miles more. Another stride of as many years, and the "North Star,"—a most inept cognomen that,—the most fixed and stagnant (to our sight at least) of all fixed stars, to what must have then shone out as a shooting star of the first blaze of magnitude—shot off with a maximum velocity of 37 miles an hour. Since then, as every one knows, even that, now and then, is nothing to the deeds of latter days, during which an ascertained speed of at least 72 miles an hour, as instanced in "Tuck's Railway Manual," to which we have just been referring, has been occasionally attained. Indeed, we have even heard it whispered by those whose only doubt was probably whether they should be believed, that the maximum of all minor achievements had merged at length into a "cool hundred." The quantity of fuel, on the other hand, required during these truly rapid strides, to keep the steam up, has been continually diminishing, so that now but a sixth is required of what was formerly expended. Other expenses also have diminished in a corresponding ratio, and the length of way now cleared for the accomplishment of the rapid flight of railway locomotive transit, has been estimated at about two and twenty thousand miles, along which, therefore, were the whole in one continuous line, a locomotive would require to travel, night and day, for forty days and nights, at the rate of five and twenty miles an hour, to accomplish the distance. Man may now begin to boast of having done something at least towards compassing the globe with his iron arteries of universal intercourse. Our own beloved country is, of course, at the head of this great movement—far a-head indeed, of all competitors—and more than doubling all that has been done throughout the world besides, even brother Jonathan inclusive.——Great Britain and Ireland have been traversed by 10,323 miles of railway, British colonies by 1,000 more; East-India by 500 more; America, by 3,800; France, by 2,200; Germany, 1,570; Belgium, 1,095; Cuba, 800; Holland, 200; Italy, 115; Denmark, 106; Russia, 52.——The profits returned on the immense amount of capital thus invested are declared, by the chairman of the Manchester and Leeds line (Mr. Henry Houldsworth) not to exceed, over all, 6¼ or even 6 per cent., so that the capital, in this event, would appear, on the whole, to have been so far faithfully expended for the general behoof. ——Atmospheric traction seems determined to keep its head above water, notwithstanding many a conflicting statement as to its merits. On Friday week, it is said, that a train, in which were Messrs. Brunel and Samuda, performed the distance from Exeter to Turf (six miles) in four minutes!——Experiments have been made with Crampton's new engine, which is said to have run a train of 50 tons weight, on a gradient of 1 in 330, at the rate of 44 miles an hour, and down a falling gradient of 1 in 1,000, at 56 miles an hour. The engine was not tried at the extent of speed to which it could go, in consequence of the axles beating. The driving wheel is 7 feet in diameter, and the engine only 6 feet 9 inches high, the axle of the driving wheel being placed behind the fire box to prevent raising the centre of gravity of the engine too high. ——The best of our railway engine-drivers, it is said, have been induced by large offers to go over to the French lines, and to prevent the able men from deserting to our friendly "enemy's camp," the English companies have been obliged to raise their salaries to 3*l.* or 4*l.* a week. ——The Blackwall Line is to be reduced in width of rail from 5 feet to the 4 feet 8½ inches, or national gauge, and the rope is to be discarded and locomotive power applied.——So much of the bill for the Regent's Canal Railway scheme as affects the Regent's Park and the parish of Marylebone is to be withdrawn. ——The timber works of the Lowestoft Harbour and Railway North Pier, 1,300 feet in length, with the pier-head, have been completed, and the South Pier, 1,250 feet in length, is in rapid progress; 2,000 feet of pier work have thus been done since May last. The railway works also are nearly completed, and a large hotel and sixteen villas are to be erected, and a capacious promenade formed, so as to render Lowestoft an attractive watering place.——An extensive tract of land in Station-street, Nottingham, has been all but purchased by the Midland Company for the erection of the very large passenger station formerly noticed.—— The contracts for the new passenger station at Hull, also before noticed, were let at York on Monday last, to Messrs. Hutchinson and Siminson, who are to receive between 50,000*l.* and 60,000*l.* for the same. This is exclusive of the cost of land, rails, &c.——The works between Chester and Warrington, on the Birkenhead, Lancashire, and Cheshire Junction, a distance of 18¼ miles, have been let to Mr. Brassey, upon a guaranteed contract not exceeding the Parliamentary estimate. These, which are the only works of any magnitude upon the line, comprise a tunnel of 2,050 yards, and a viaduct of 580 yards. The directors have also concluded terms for the erection of a joint station at Chester.——Mr. Scott, of Huddersfield, has been declared the contractor for completing that portion of the Whitehaven and Furness Junction Line called

"The Drigg Contract," an extent of about three miles and a quarter. The contract for making the extension of the Furness Railway to Broughton has been taken by Messrs. J. B. Fell and Charles Jopling. The operations will be commenced immediately. —— The *Carlisle Journal* states that three hundred men are now employed upon the general station of the united railway companies in that city. The foundation stone was laid by Mr. R. Hemberow, architect for the contractors, on Monday week. —— In one of the shafts of the tunnel at Craigend, says the *Perthshire Courier*, the workmen lately came upon a considerable block of very pure rock salt.——Messrs. Brassey and Locke have obtained the certificate of the French engineers, approving of the state of the various works on the Havre and Rouen line, and authorizing its opening. They have had an interval of three months for consolidation, whether designedly for that purpose or not is not stated, though the delay is regarded by parties interested as unnecessary and vexatious. The line was to be opened on the 20th instant. The directors, in consideration of the distress of the times, have benevolently resolved to dispense with the ceremony of inauguration, and to distribute the 10,000fr. or 12,000fr. which it would have cost, amongst the more indigent of the communes through which the line has been struck.——A gigantic project for the connection of the Mediterranean with the Northern Ocean, Antwerp and Genoa the termini, is at present on the tapis. The Sardinian and other Governments have come to an understanding on the subject, more particularly for the connection of Germany with Piedmont, across Switzerland, in the direction of the Lake of Constance. A convention has been signed guaranteeing a minimum of 3½ per cent. interest on a capital of 3,000,000*l.* [75,000,000 fr.] to be raised by a company in London.

## THE RAPHAELESQUE STYLE OF DECORATION.*

The Raphaelesque style, as we now term it, was called the grotesque by the Italians of the 16th century, from *grotte*, the word by which they denominated the antique subterranean chambers, which, about that period, were brought to light by clearing them of the *débris* of ruins which had accumulated upon them during a number of ages. On the walls and ceilings of these vaulted chambers and corridors were found the fresco decorations, the study of which revolutionized in so short a time the decorative art, and established that style which we recognise in the works of Raphael and his scholars. * *

These new materials for decoration were obtained chiefly from sculptured architectural ornaments, such as the foliage adorning the friezes of temples, intermixed with human figures, terminating in foliage, armour, military trophies, standards, and helmets, &c. A combination of these materials in decoration was called grotesque, as were also the antique mural decorations before-mentioned. Grotesques were first applied to ornament pictures. It is uncertain what artist first introduced them; Lanzi says that Vasari attributes to Filippino Lippi, who flourished towards the latter end of the 15th century, the credit of having first decorated modern paintings with grotesques copied from the models of antiquity: but as a note in the life of F. Lippi by Vasari intimates, he says merely that he designed them in a better style and executed them with more elegance than the artists before his time. At the end of the 15th century there were many painters who cultivated the art of grotesque decoration with great success. Amongst these the most celebrated was Pinturicchio, a pupil of Pietro Perugino; one of his latest works is the frescoes which he painted for Cardinal Francesco Piccolomini, in the sacristy of the cathedral of Sienna, illustrating scenes from the life of Pius II. In this work, which was finished in 1503-4, he was assisted by Raphael. His earlier works at Rome were done for Innocent VIII. and for Alexander VI., in the Appartamento Borgia, in the Vatican palace. Vasari says, that in the latter work he introduced stuccoes after the manner of the antiques, but the mode of working and compounding the plaster not being then known, they failed, and were in a bad state in his time. In all his decorations he used a great deal of gold. The decoration of the choir of Santa Maria del Popolo, at Rome, is one of his most beautiful works; at the angles of the ceiling are represented the four Evangelists. Benedetto Bonfigli was one of the early masters who painted grotesques; though much older than Pinturicchio, he was his companion in many of his works; he painted with him the grotesques in the apartment of Innocent VIII., but they were not in existence when Lanzi wrote. Pietro Perugino, about the year 1500, painted some beautiful grotesques in the Sala del Cambio, at Perugia. On the gothic vault of this room, in lunettes, are personified the seven planets; the spandrels of the arches are filled in with grotesque decorations, well designed and of great variety; in some compartments they are on a gold ground, and in others on a black ground.

About the beginning of the 16th century was introduced the external decoration of buildings, with architectural perspectives and friezes of grotesques, painted in chiaro scuro. Baldassare Peruzzi was the originator of this style; and he was followed by Polidoro da Caravaggio: both artists decorated the exteriors of many houses in Rome. At this day we see remains of their works in the old part of the city.

Morta da Feltro, a pupil of Pinturicchio, was the first artist who studied the antique mural decoration, which he imitated with great success in his works. At that time the baths of Titus were not excavated, but remains of this style existed in many other localities,—in the baths of Diocletian, and in the Coliseum at Rome; also in other parts of Italy,—at the villa of Adrian, near Tivoli, and at Pozzuolo and Baja, near Naples. He came to Rome when young during the pontificate of Alexander VI., where he studied for some time those particular remains of antiquity. He remained also a long time at the villa of Adrian, and pursued his studies of these subjects even at Pozzuolo and Baja. There are no works of this artist now existing. When in Florence he painted grotesques for Piero Soderini, the gonfalionere of that city, in a room in his palace, but they were soon afterwards destroyed.

Most of these grotesque paintings have been long ago destroyed; none are now in existence except those of the baths of Titus and of the baths of Livia. Serlio gives a most extraordinary account of their destruction, affirming that after they had been copied, they were destroyed by artists from an invidious feeling, but he does not name them, for he says they were artists of celebrity living in his day.

Giovanni da Udine, a pupil of Raphael, was the first artist who brought to perfection the painting of grotesques. At the death of Bramante, in 1514, the architect to the Vatican Palace, during the time of Leo X., the loggie were unfinished; Raphael was then charged by the pope with the superintendence of the building as architect, besides being the designer of the decorations of these loggie. The care of the execution of the grotesques and ornaments he committed to G. da Udine, of whom Vasari speaks in such high praise as the first painter of animals of that day. In Raphael's loggia he introduced into the decoration paintings of various foreign animals which the pope had in his menagerie. Many other artists assisted in this work, the best among whom were Gio. Francesco, Pierino del Vaga, Polidoro da Caravaggio, and others. About this time the subterranean chambers of the baths of Titus were discovered, 'full of grotesques, painted histories, small figures and stucco ornaments in basso-relievo.' The beauty of these works was the admiration of Raphael and his scholar, G. da Udine, the latter of whom devoted himself with enthusiasm to the study of them; he made numberless drawings of the ornaments, and particularly applied himself in attempting to discover the composition of the stucco ornaments, in which, after many experiments, he to a great extent succeeded. Many of the numerous pupils who were employed by Raphael in decorating the Vatican, left Rome upon the death of Leo X., and multiplied their works throughout Italy. In the works of his ablest scholar, Giulio Romano, Raphaelesque decoration had reached the utmost degree of excellence to which it attained; his most excellent works are at the Villa Madama, near Rome, and the Palazzo del T. and the ducal palace at Mantua.

* From "The Polychromatic Ornament of Italy," by Edward Adams, Architect; an interesting work, recently published by Nickisson, Regent-street, and of which we shall speak hereafter.

## IMPORTANT TO BUILDING SOCIETIES.

A doubt having arisen as to whether societies, acting under the Building Societies' Acts, could legally advance or grant moneys upon the security of property then existing and in the possession of the borrower, it being considered that the Act of Parliament contemplated, with a view to the furtherance of a more complete sanatory condition of the metropolis, the erection or purchase of buildings only, a case has been submitted to Mr. Tidd Pratt for his opinion. The following is a copy of the queries put and opinion given:—

"Question 1.—That under the provisions of the 6th & 7th William IV., the contemplation of building only was considered, the creation or purchase of property being the same. Is it not necessary that a party who becomes entitled to the money appropriated should build or purchase? Or can he assign property in his then immediate possession, as security upon the terms contained in the rules for its repayment, or any other moneys provided for such purpose? And if so, whether any new rules would be necessary to enable the trustees to deal with such a transaction? And whether, presuming that the trustees are incorrect in making such advance, the party taking the same, being a member, could take any advantage of it, so as to defeat the security or liability to pay? Or whether such a transaction would be affected by the usury laws, or any other laws or circumstance whatsoever?"

"Opinion.—It appears to me that, in strictness, under the provisions of the Benefit Builders' Societies Acts, the money borrowed from the society *should be to* erect or purchase property; and, consequently, that a member cannot assign, as security, property which he already possesses. If money is advanced not according to the rules and provisions of the Act, I am of opinion that the member, or any person claiming under him, might set the transaction aside, and in equity, would be entitled to a return of his deeds on payment of principal and legal interest."

## CATHEDRAL PORCHES.

### THE PORCH AT CANTERBURY.

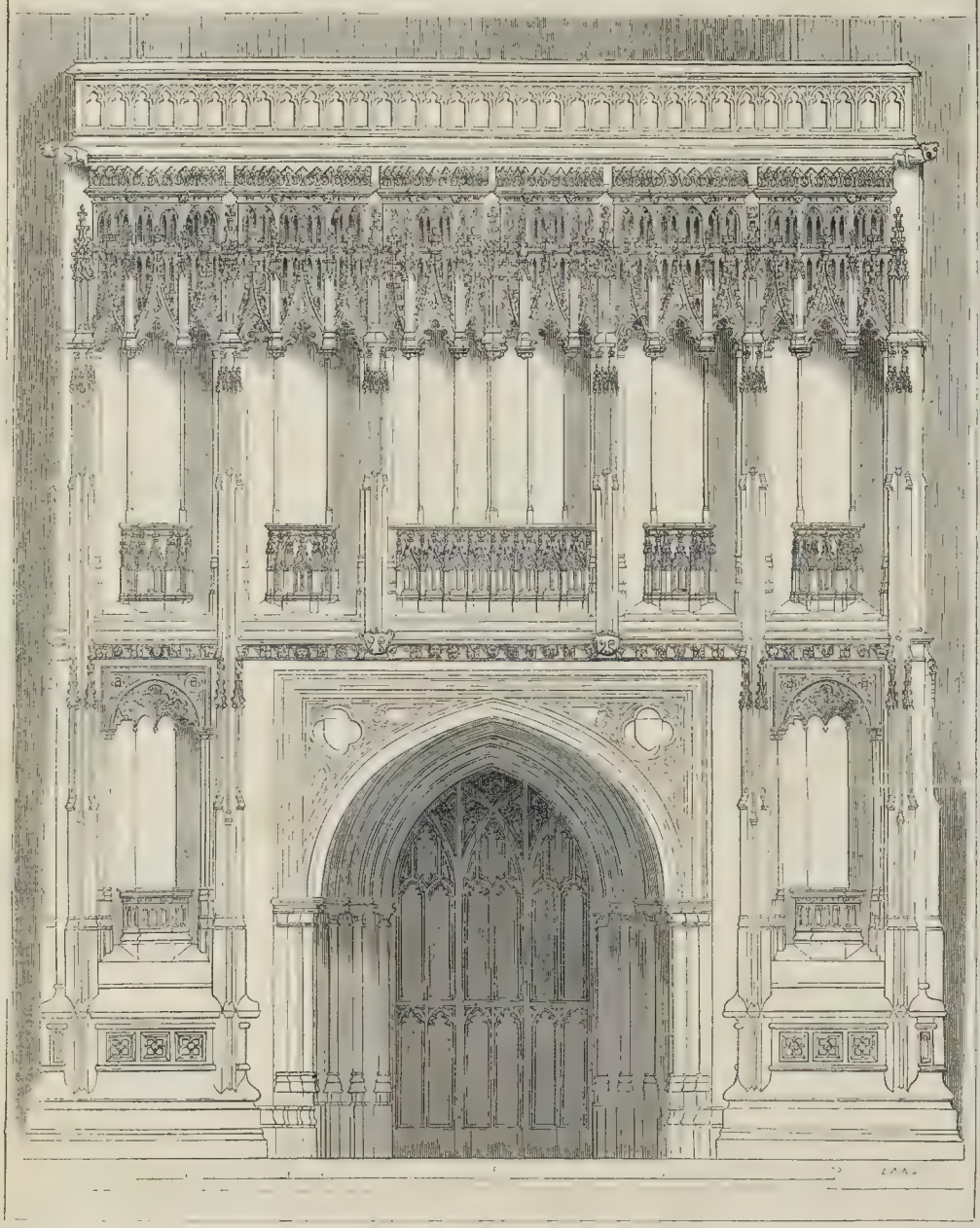
Liberally as most of our cathedrals have been illustrated by Mr. Britton and others, comparatively little notice has been taken of the very beautiful porches attached to many of them. This is the more to be regretted, as many of them are rich in detail, and so delicate as to repay the most attentive examination. With the view of calling more general attention to them (the more necessary, as some are fast falling to decay), a few of the finest may be mentioned.

The cathedrals of Salisbury, Lincoln, and Ely have each very fine early English porches. At Salisbury, the porch is attached to the north side of the nave, of which it occupies one division, rising as high as the aisles. It consists of a noble plain arched entrance, over which are two double windows, close together, resting on a string; and quite in the point of the gable are two small niches, close together, resting on another string. The interior is groined in two divisions, and its walls ornamented with sunk panelling.

The porch at Lincoln is placed in a singular situation, running westerly from the west side of the north transept. The lower part is a rich piece of groined work, with three entrances, north, south, and west, over which is a small room. The whole of this porch, both exterior and interior, is well worked and richly ornamented.

At Ely, the porch is at the west end of the nave, and is sometimes called the "Galilee." As at Salisbury, the interior is groined in two divisions; each side has a double arcade, the arches trefoil-headed, supported on very slender shafts, projecting about 2 feet from the wall; from this porch a double doorway of singular beauty leads to the nave of the cathedral. Too much cannot be said in praise of this porch. Rickman mentions it as one of

## THE PORCH, CANTERBURY CATHEDRAL.



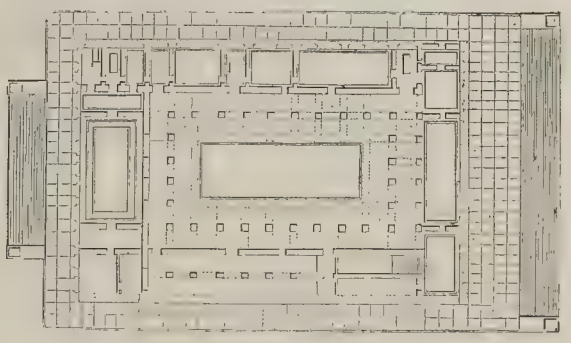
the most beautiful compositions to be found in any English edifice.

We do not recollect any cathedral porch of pure decorated work remaining, (perhaps the nearest to it is that on the north side of the nave at Exeter); but of the perpendicular style so many are to be found, that it is no easy matter to point out the best examples. Perhaps the three most deserving of special notice are those of Gloucester, Beverley, and Canterbury. At Gloucester, it is situated on the south side of the nave, and consists of an entrance, with a large niche on each side of it; over this lower stage are six niches, with rich canopies of beautiful outline. The porch is finished by a pierced battlement of very good design. The buttresses on either side are covered with panelling and niches. This porch has fallen very much to decay, and it is only by the most attentive examination, that much of its detail can be made out.

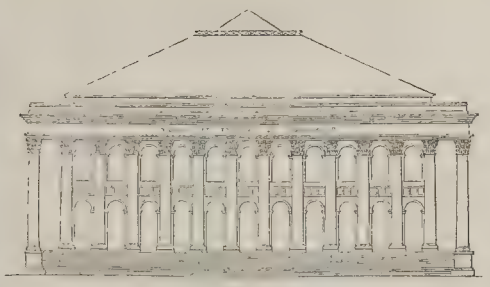
The north porch at Beverley has a panelled front, perhaps unequalled. The door has a double canopy, the inner an ogee, and the outer a triangle, with beautiful crockets and tracery, and is flanked by fine buttresses breaking into niches, and the space above the canopy to the cornice is panelled. The battlement is composed of rich niches, and the buttresses crowned by a group of four pinnacles.

The porch on the south side of the nave at Canterbury (which forms the subject of the illustration), bears some resemblance in its general design to that of Gloucester; the outline is perhaps not so good, but it is more richly ornamented. It was built by Archbishop Chichely about the year 1420. The roof is vaulted with stone, and at the intersection of the ribs are shields of arms; in the centre the arms of France and England quartered; over this roof is a small room entered from the nave. Hasted states that four of the

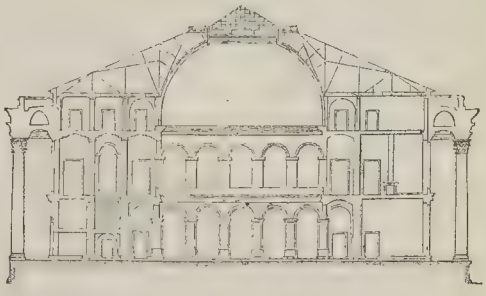
## THE PARIS BOURSE.



PLAN.



ELEVATION.



SECTION.

niches were occupied by statues of armed men, representing those who murdered Becket. This seems very improbable, as they would hardly have been placed in so prominent a position. In an old engraving of the cathedral, taken from a drawing made in 1654, the porch is finished by a battlement, but there are now no signs of it remaining. Until lately the centre niche was occupied by a very unsightly sun-dial; this has now been removed, we trust, preparatory to a complete restoration of the porch, of which it stands much in need, possibly more than that at Gloucester. Nearly the whole of the Tudor flowers on the canopies are destroyed, and much of the tracery broken away, so that to obtain a correct drawing of it has required the most minute examination.

It is very gratifying to be able to bear testimony to the improvements which have been made to the exterior of this cathedral within the last few years. The soil, which had accumulated to the height of some five or six feet above the level of the nave, has been carefully cleared away. The old north-west tower, of a style totally at variance with the rest of the nave, has been removed, and a new tower erected. Until within the last few months no good view of the west end could be obtained in consequence of the space around it being occupied by work sheds, &c. These have now been cleared away, and the space laid open to the west wall of the cloisters, so that a much better view is now obtained of the cathedral than formerly. W. C.

## THE WELLINGTON STATUE LOCATED.

Lord Morpeth has stated positively in the House of Commons, that the statue is to be erected *in Waterloo place*, and yet the removal of the scaffolding from the arch at Hyde-park-corner is going on. Such waste of money is really too bad. Mr. Barry, it seems, has designed a pedestal for it. We may have something to say on the subject before long.

## CRESY'S ENCYCLOPÆDIA OF ENGINEERING.

[SECOND NOTICE.]

A further examination of this elaborate work has strengthened our opinion of the praise due to its author. The chapter on France we have already alluded to as containing much information. We extract from it a brief description of the Paris *Bourse*:—

"The Bourse of Paris, erected from the designs of M. Brogniart, and completed by M. Labarre, is a fine model for an exchange, where the public business of a large commercial city is to be carried on. The external character is that of a Greek temple, having fourteen columns at each end, and twenty at the sides. In the middle is a covered court, where the merchants congregate, and around are a variety of apartments devoted to their especial use: on the floor above, the several tribunals connected with commerce are held.

The roof is of iron, ingeniously contrived to support the skylight of the great court.

There is throughout great simplicity in the arrangements, and beauty of proportion in the architecture, with a sufficient quantity of decoration.

The plan, section, and elevation, explain its character and proportion; it is executed with a hard and durable stone, in a most admirable manner. Its length is 212 feet, and width 128 feet. The roof is formed entirely of iron and copper, and the court or area occupied by the merchants is 116 feet long and 76 feet broad, and it is calculated will contain 2,000 persons. The *agens de change*, or brokers, have a portion railed off for their especial accommodation, and around the great court are the Tribunal and Chamber of Commerce, the court of bankruptcy, and several other halls for the convenience of the merchants and others, and the cost was upwards of 300,000*l.* sterling.

The exchange marks the importance of a city, and should always be erected in the midst of the most thronged part, and rendered capable of receiving not only the native, but all foreign merchants who attend; in its architecture we expect to find that the best talent the country can produce has been employed, and certainly in this example we are not disappointed."

Civil engineering is a modern science in England. In commencing his chapter on works in Britain our author says:—

"It is not possible to form an estimate of the sums expended by individuals and companies during the last century on roads, bridges, canals, harbours, docks, and mining operations, where the services of the engineer were demanded; that the amount exceeds half of the national debt there can be no doubt, and a thousand millions sterling would not be overrating the total outlay. Many of the bridges have cost upwards of a million, and the railways completed considerably more than a hundred millions. How much of this vast sum has been improvidently expended cannot now be estimated, but probably *more than half*. We may consider that to the middle of the last century, the drainage of land, the embankment of rivers, and the extracting of ores, was performed by individuals who had no claim to the title of civil engineers; it was his knowledge in mechanics that induced a member of the Royal Society to select Smeaton as the builder for Eddystone Lighthouse. In the middle ages, towns and cities were walled in, and castles and cathedrals built, by the enterprising confraternities of masons, who travelled from place to place under the direction of a governing body: to them were confided constructions of every kind, and the intelligent head of the lodge acted as architect and engineer; old London-bridge, and the walls which surrounded Dover, Hartlepool, and other harbours, evince their skill in such constructions. The same cause which led to their dissolution buried for a time the knowledge which had rendered such important service to the country; but when internal tranquillity was restored, the whole extent of our coast, and the navigable rivers which discharge themselves into the ocean, received improvements, though this was often effected by men who had obtained a reputation

abroad; vast tracts of land were redeemed from a state of marsh by engineers from Holland: all these important undertakings were conducted in a rude and imperfect manner; the philosopher had not directed his studies to what was useful, and mathematical knowledge was slighted by the unlearned practitioner."

Of the ports and harbours of Britain he gives very full information: lighthouses are fully treated of, especially the Eddystone; and a history and description of the principal bridges are given with much valuable information. From the latter section we learn that:—

"The total cost for building and completing Blackfriars-bridge, and making the avenues thereto, was as follows:—

| | £. | s. | d. |
|---|---|---|---|
| To Joseph Dixon, mason | 111,469 | 2 | 8½ |
| To Dixon and Spencer, carpenters | 35,844 | 8 | 5 |
| To Messrs. Cox and Co. | 10,687 | 16 | 7 |
| To William Bryant, Blacksmith | 3,555 | 11 | 4 |
| To sundry other artificers | 9,194 | 14 | 11½ |
| | £170,851 | 13 | 11½ |

| | £. | s. | d. | | | |
|---|---|---|---|---|---|---|
| Surveyor's commission of 5 per cent. on all artificers' bills, and 1 per cent. on the purchases and sales of premises | 9,139 | 1 | 0 | | | |
| Five years' salary for his constant attendance on the meetings of the committee, and for inspecting and taking care of the bridge, streets, roads, sewers, new buildings, and various matters relating thereto, from 1 June, 1773, to 1 June, 1778 | 525 | 0 | 0 | | | |
| By salaries and gratuities to the clerks of the committee, from Michaelmas, 1758, to Michaelmas, 1776 | 1,683 | 2 | 6 | | | |
| By ditto, to the chamberlain's clerk, for keeping the accounts from Michaelmas, 1760, to Christmas, 1777 | 693 | 15 | 0 | | | |
| By ditto, to the hall-keeper and his man, for summoning the committee, from Midsummer, 1759, to Michaelmas, 1776 | 433 | 0 | 0 | | | |
| | | | | 12,464 | 18 | 6 |
| Incidental expenses | | | | 4,507 | 8 | 8 |
| Interest paid on 144,000*l.* | | | | 25,920 | 0 | 0 |
| Purchase of ground and premises | | | | 35,584 | 1 | 11 |
| Cash to Watermen's Company for the purchase of the Sunday ferry | | | | 12,250 | 17 | 6 |
| Total | | | | £261,579 | 0 | 6½ |

The specification and form of contract for London Bridge which are given, will be found valuable precedents.

The amount paid to Messrs. Jolliffe and Banks for this bridge was 425,081*l.* 9s. 2d.; but the whole sum expended on it including the approaches was 1,458,311*l.* 8s. 11½d.

The chapter on timber roofs is a very valuable one (we should have been glad to find more information concerning iron roofs), and includes seventy illustrations, many of which are given for the first time.

"The roof of the hall of Christ's Hospital, London, constructed by Mr. Shaw out of Baltic timber, possesses considerable strength; the walls, 3 feet 6 inches thick, are 15 feet apart in the clear; the rise of the roof in the centre, from the under side of the tie-beam to the top of the principals, is 9 feet 4 inches; it is queen-post trussed, and the tie-beams are held up at five different points, or at every 8 feet 6 inches; the principals are distant from each other 17 feet; the length of the hall is 187 feet and the breadth 51 feet; every precaution has here been taken to unite the feet of the principals with the ends of the tie-beam, and their weight at the ends is partly borne by iron standards, which rest on shoes worked into the wall below. The principals taper, and are 12 inches by 9 inches at the feet, and 9 inches by 9 inches at the top; the tie-beams are 14 inches by 14 inches; the straining piece between the heads of the queens 12 inches by 9 inches; the struts 6 inches by 6 inches; between each pair of principals is a pair of main rafters supported by five longitudinal trusses, and which are also made to carry the ceiling-joist. These longitudinal trusses bear upon the principal tie-beams, which are 17 feet apart from centre to centre; the middle longitudinal truss comes under the ridge, and is very strongly braced; the lower beam is 12 inches by 7 inches, the king-post 6 inches by 6 inches, and head 12 inches by 6 inches; the struts 6 inches by 6 inches; into the head of the kings are lodged the main rafters, which are 7 inches by 5 inches; on these are laid the common rafters longitudinally to receive the boarding, which is laid in the direction of the slope of the roof; so that the lead which covers it is not so subject to derangement as when the boarding is laid the reverse way. The two other trusses on each side are similarly framed, the heights being varied to suit the top of the roof; that of the pairs on each side of the centre is 5 feet from under the side beam to the under side the main rafter; the outside pair are only 2 feet 9 inches in height from the same points."

## ST. GEORGE'S HALL, LIVERPOOL.

Few architects get through a large building without difficulties and heart-burnings. Those of the architect of St. George's Hall seem to be approaching; the caprices of Dr. Reid, the wants of the musical professors, and the conflict of opinions in the Town Council, bid fair to produce a storm which may tax his temper and skill. Mr. S. Holme called the building a thing of shreds and patches, and found fault with the expensive manner in which the works had been carried on. Mr. Elmes characterised the statement as that of a dissatisfied contractor, and said that Mr. Holme's conduct, in availing himself of the knowledge he acquired as a contractor to make his attack in the council, was as unprecedented as it was unjust; he added that his wishes had often been thwarted by the Messrs. Holme, who were suffering pecuniary losses by their contract.

At a recent meeting of the council, Mr. Holme said it was clear there must have been many alterations made, for the estimate had gone up from 90,000*l.* to 145,000*l.* The estimate given in April, 1841, was for 92,000*l.*; that was amended to 93,000*l.*; and the ventilation was to be 4,900*l.* Mr. Tomkinson contracted for the carcass of the building for 77,000*l.* In 1843, an addition of 28,000*l.* was made to the estimate. In October, 1843, an additional 1,000*l.* was demanded. Then came a demand of 5,977*l.* for stone instead of terra-cotta caps. Then in February 1844, a demand of 4,380*l.* was made for granite columns; but the cost of the columns exceeded that sum, and this showed that the building was erected in "shreds and patches." Then a demand of 5,000*l.* was made for alterations. In August, 1844, a new estimate was sent in for 145,000*l.* The time for executing the work, and the amount of the estimate, had both been doubled. He had never seen a number of flues turned into one flue without their being smoky. He thought the whole of the rooms on the east side of the building would be exceedingly dark, and that the rooms and passages on that side would have to be lighted with gas even in the day-time. The large room would also be dark.

It came out, however, during the discussion, that some of Mr. Holme's work had been objected to, and that this had led to ill-feeling. It seems to us somewhat anomalous for the contractor to be, in another capacity, one of the architect's masters. It would not be just, however, for us to express an opinion on the subject with only half knowledge of the circumstances. At this moment, therefore, we simply chronicle the statements.

To Test Sulphate of Ammonia.—Sir: I take the liberty of sending you the following simple mode of testing the purity of sulphate of ammonia. At this season of the year, when large quantities of this highly fertilizing manure are being used, and when it is considered that it is sold adulterated to the extent of thirty, fifty, and even seventy per cent., I trust that you will consider this worthy of insertion in your valuable and widely-circulated paper.

I am, Sir, &c., A. Angus Croll.

Chemical Works, Bow-common, Middlesex.

Heat a shovel, or any plate of iron, to redness, and place upon it a portion of the salt of ammonia. If the salt be pure, the whole will go into vapour; if adulterated, the impurity will remain on the plate of iron.

New Terminus, Liverpool.—The London and North-Western Railway Company is about to rebuild the main terminus at Liverpool, under the direction of Mr. Tite. Mr. John Jay, of London-wall, London, is the contractor for the works, at the amount of 36,000*l.* A great portion of the work is to be completed in a few months, and the whole within ten months from commencing.

## NOTES IN THE PROVINCES.

The comprehensive 'public building' scheme at Sheffield, lately noticed in The Builder, seems to have already led other towns to 'look out,' prospectively, for similar public accommodation on the great scale. Cambridge proposes to have not only her "assembly-rooms, reading-rooms, lecture-rooms, public offices," but her "post-office, excise-office, and other public institutions" comfortably grouped together in the same constellation, on the very site, too, of the townhall itself, which, it is presumed, will be also comprehended within the extensive area of so grand a scheme, if thus swallowed up and absorbed within the limits of its ample structural organism. The funds are to be raised on the joint-stock principle, to the amount of the necessary sum, namely, 11,000*l.* or 12,000*l.*, which will, it is expected, realize at least 4 per cent. to begin with, and eventually a larger return. Accommodation will be provided in the projected compound institution not only for mental food in reading-rooms, lecture-rooms, &c., but also for refreshment both of body and mind in rooms for restaurants, a tavern, &c. By the way, it is not Sheffield alone, but Nottingham, at least, along with it, that has had the merit and the spirit to take the initiative in this great structural movement.——The restoration of St. Nicholas' Church, at Yarmouth, is satisfactorily progressing, though the funds are quite inadequate. The gallery, which has so long occupied the whole nave, has been removed, and the north aisle is thus no longer separated from it. The body of the church is now said to have some grandeur of appearance, and the *tout ensemble* to be enhanced by the effect of the lancet window at the west end of the nave. ——The state of two of the county bridges was lately brought under notice at the Suffolk sessions, held at Beccles. St. Olave's bridge, a doubtful property it seems in more senses than one, since no one knows whether it belongs to the county or to the Yarmouth Haven and Pier Commissioners, is in a very insecure and dangerous state, a part of the piers under water being entirely gone. East bridge, a wooden erection in Westleton parish, too, is broken down and must be rebuilt.—— The fund for the erection of Pawnbrokers' Almshouses, at Stratford, Essex, has been realized to the extent of 3,000*l.*, and the ground has been purchased for a site.——A coloured drawing of a plan for the proposed esplanade at Ryde, the work of Mr. Thomas Hellyer, architect, has been exhibited of late at Ryde. It represents the esplanade three miles in extent—on a different and it is alleged an every way superior plan to that sought to be carried out by Act of Parliament.——The foundation stone of the new hospital at Portsmouth is to be laid by H. R. H. the Prince Consort.—— The gas movement is pervading the choice little Isle of Wight like every where else. The inhabitants of Ventnor, in public meeting lately assembled, have been formally expressing their conviction, "that the introduction of gas would be a great public benefit, and tend to the further improvement of the town;" a "resolution" merely preliminary, it is to be hoped, to immediate measures of practical description.——The completion of the inner or floating dock at Southampton is likely, it is feared, to be postponed till next spring.—— The new county prisons at Winchester are begun with the excavations for the foundations. The County Bridewell is to be converted into materials for the new building.——The Abergavenny Charity Trustees have agreed to advance 500*l.* towards the erection of a schoolroom for poor children. Mr. F. H. Williams has kindly offered to give the stone necessary for the building, and the trustees are to pay 50*l.* a year towards the master's salary.——At a Liverpool select vestry, last week, when a report on the new workhouse was read, "Mr. Earle," according to the *Mail*, "said that a more abominable plan than that of the new buildings at the workhouse he had never known. Until Mr. Wightman had gone about to collect the details of his report, not a single requisite had been provided for the inmates. Think of one or two water-closets only for 400 or 500 people! In short there was nothing provided. All the money was spent on ornamental pinnacles. Rector Brooks said the Hon. Mr. Clements, the Assistant Poor Law Commissioner, might be said to be the princi-

pal architect, for he had, over and over again, been looking at the plans. Mr. Earle said he was unable to defend Mr. Clements, because a single convenience had not been provided. He had had occasion to correspond with the hon. gentleman, and he had told him plainly the parish were in a pretty mess."——The advancing sounds of constructive implements, '*via* Worksop,' on the Manchester, Sheffield, and Lincolnshire Junction Railway, are awakening Worksop to a sense of its growing wants. The subject of increased accommodation for general market purposes has been under consideration. A site has been pointed out, and a plan has been drawn up by Mr. John Ellis.——"We have reason to believe," says the *Doncaster Gazette*, "that Mr. E. T. Copley, of Nether Hall, has munificently offered to erect a beautiful painted window in the north transept aisle of the parish church, where the north window is now situate, conditionally that the gallery in the north transept aisle be removed and necessarily that in the south transept also. The removal and clearing away of these two galleries," it is added, "would present an aspect most beautiful in this portion of the church, and would bring out in their true beauty the lofty transept arches, the proportions of which are sadly disfigured by the galleries which at present intersect them."——Halifax, we have just observed in a provincial paper, is determined to follow forthwith in the wake of Sheffield, Nottingham, and Cambridge, towards the establishment of the new and noble order of public club or communitarian chambers, which, we verily believe, were first of all suggested by the various paragraphs about "club chambers," emanating from THE BUILDER, and showered abroad, in manifold repetition, through the newspaper press, "like bright coins of a new and unknown mintage," as a cotemporary, in words at least to the same effect, poetically described them. At Halifax it is proposed to form a company, in 500 shares of 20*l.* each, for the purpose of erecting, in some central spot, a public building of this comprehensive and imposing order, in which may be clubbed together, or concentrated, the town-hall, the different boards and offices constituting the town's government, accommodation for public companies, &c. &c; so it now only remains to be seen whether the enterprizing spirit that has projected this new mode of attaining to architectural magnificence by conjoint and economical means, will be sustained until its noble object shall be fully realized. Had the idea been only broached in and confined to one of our municipal communities, the chances are that it might have ended in idea, as it began, but there seems to be a spirit of emulation at work which will probably be mutually progressive till the good work be accomplished in all. —— Two national schools, built at South Stockton, at a cost of 800*l.*, will be opened after Easter.——A correspondent of the *Gateshead Observer* complains, of the admitted "advantages conferred on Manchester by the transference of the gasworks to the corporation," that "the gas consumers pay for the public improvements effected, by the corporation, from the gas profits." But why should they not? What is Manchester? and who are its gas consumers? Manchester is a millocracy, and its great gas consumers are the mill-owners themselves, and all dependant on them, whether in mills or shops or dwellings; and why, therefore, should not they especially pay for the improvement of property which is actually in general terms their own? Besides, the whole community at large, of every town, are now becoming gas consumers, and the greater part of the profits thus derived from the administration of one beneficent improvement need hardly be grudged by those well able to afford them, when they consider, not only that these very profits are expended in the administration of other improvements of an equally beneficent order, to the increase of the value of their own individual properties and business, and to the increase of the beauty and accessibility of their own towns and dwellings; but that even if not so applied, the greater portion of these profits, at least, if not the whole, will still be abstracted from *their* pockets, although —unprofitably to them—transferred exclusively to the pockets of those for whom alone this correspondent seems to have any real sympathy, manifested, though it be, under guise of sympathy for those who, after all, even at some little sacrifice, in other respects well compensated, probably do prefer to support their own corporation, which expends *all its* profits in reflecting back new benefits on themselves, much rather than to support a monopolist company, which expends *not one single farthing of its* profits in any such benefits either to them, or, indeed, to any one beyond the sphere of its own private families or relations.——Nearly 1,000,000 able-bodied men—chiefly heads of families more or less numerous—have by this time been attracted, mainly from the reproductive cultivation of the soil, to the almost wholly unproductive, or worse than useless, "public works" in Ireland. A return of the daily average number thus employed for the week ending 27th February, gave, for Leinster, 129,258; Munster, 293,886; Ulster, 87,745; Connaught, 197,339; Total, 708,228. The government expenditure on Ireland at present, has been estimated at almost £1,000,000 a month! while the whole annual income of Ireland amounts to only £13,000,000! Mr. Labouchere, in reply to the allegation that the labourers thus led to depend on the public works for a sustenance to their families only earned eight pence a day, states that in task-work the wages are fourteen pence a day, but that otherwise eight pence is certainly the rate of payment; only, where destitute families require it for their support (and are capable of working we presume), more than one member is employed, on application, at the same wages.

## ELECTRO-TELEGRAPHIC PROGRESS.

INTIMATELY and universally associated with railways though the electric-telegraph has hitherto been, it is only now, notwithstanding its wonderful progress in general utility, that such a connection with the system which has fostered it, as shall amply repay to that system the deep obligations under which it already lies towards this its benefactor, is likely to be fairly established. The idea that the electric-telegraph might be made to conduct to head-quarters—that is to the directing minds at work on railways, whether in stations or in trains,—a series of nerve-like intimations of the movements of the current trains themselves along their arterial courses, so that all possibility of collision might be avoided and innumerable benefits be otherwise conferred by the telegraph on its foster-parent, is an idea not altogether new; but it is only now for the first time, so far as we are aware, that such an idea is in course of actual realization. On the Tours and Nantes line, says the *Echo Saumurois*, an apparatus is at this moment in course of establishment which consists of an iron-wire extending from one end of the line to the other, and through which an electric current is continually to pass, while, by means of small pistons, placed at intervals of 200 yards, the passage of a train in motion at each point of the line will be indicated to the fixed machine, each piston, by its movement, interrupting the electric current for a moment of time [probably varying in length or repetition] and thus designating the number of the post before which the train is passing at the moment. "By these means, the director of the fixed machine will receive information almost every second as to the speed of the train in motion, and as to the position occupied by it. It is unnecessary to insist on the importance of such an indication," adds the *Echo*. "By always knowing the exact position of a train on its passage, it will enable the conductor to moderate the speed of the trains, and to send assistance with greater promptitude in case of accident, so as to prevent the interruption of the road as much as possible." The telegraph, in its more general and external relations, too, is making rapid inventive progress towards the perfection of simplicity, or rather the simplicity of perfection. According to the *Ipswich Journal*, which gives a long account and high commendation of Mr. Bain's inventions,—amongst which, by the way, is incidentally notified the immediate erection of his electrical clock in the tower of Wenham church, with power of motion to be incessantly maintained by a perpetual electric current derived from the earth,—telegraphic "needles and dials will speedily be exchanged for pencils," and note paper, in all the electro-telegraphic apparatus throughout the queendom, and that, too, even in spite of the evidence given before the Commons committee, that "if an angel from heaven were to say Mr. Wheatstone did not make the best of telegraphs, he would not be believed." Mr. Bain has just got a patent for a new modification of the telegraph, which, says the *Ipswich Journal*, will ere long speak for itself, or write for itself at least, by a simple and unerring method This it is to do by the metallic marking of copper points in galvanic circuit upon paper, drawn by clock work over a roller, with *intervals*, as the current is received or sent, and repetitions, two to four of which, made by either or both of two copper pointers, rapidly note down the equivalents of the various alphabetic characters. By another modification, in which punches are made at once to cut the letters of a word out of thin paper, a speed of correspondence is attainable "that bids defiance to the most adroit telegraphists." And moreover a series of *stamps*, correspondent at one terminus to the punching process at the other, and productive of it, may be set to any series of letters, and correspondence thereby kept up by telegraph without the possibility of any one being able to interpret the meaning without the key. Wonderful as all this is, however, the very *beau ideal* of electro-telegraphic correspondence seems to be that to which we lately made some slight allusion, whereby types may be set up simultaneously in different towns, through the operation of composing machines, such as that of Delcambre, in connection with the telegraphic wires. This is gravely proposed by Mr. Hyde Clark, who himself invented a composing machine, and who shews out in detail how the "electro-composing-telegraph" might be worked; and it is curious to observe how, in pointing out the purposes and benefits derivable from this mercurial messenger, there is ever an inevitable harping on robbery and commerce — thieves and share-brokers—trickery and share-lists—how hand-bills describing thieves might be printed and distributed to policemen in all quarters in no time, and how share lists quoting stock in London at half-past three might be showered amongst the share-brokers in Liverpool by four, &c., and so forth.

## MUSEUM OF ART FOR SHEFFIELD.

ON the presentation of a memorial from the committee of the Sheffield Athenæum and Mechanics' Institution, praying the council to erect a museum of art; and the consequent motion of Mr. Alderman Dunn, that this memorial, with others to a like effect from the Literary and Philosophical Society, and the School of Design, be referred to a committee to report to the council, a debate ensued, and various amendments were proposed, all hinging on the probability that ere long "a large building for general things to be amalgamated in" must inevitably be erected, and that it became a question, therefore, whether a separate building for a museum of art ought to be erected at all, or whether it ought not rather to be embodied in the noble edifice already projected, together also with the Mechanics' Institution itself, the Athenæum, and the School of Design, which two former institutions, however, were about to be built separately, and which latter had so thriven of late, that it now also required larger premises and a museum. There seemed to be a general sentiment in favour of the concentration of all the public building wants of the town in one focus. As for the institution of a separate museum of art, it was a question whether the Act of Parliament which authorized town councils to borrow money, erect buildings, buy casts, and pay interest out of borough rates, was sufficient for the satisfactory establishment of such an institution at Sheffield, on the basis of a maximum rate of a single halfpenny a pound, yielding only 500*l.* a year. The object of several of the council was to authorize the committee to consider the question of the amalgamation of at least such institutions as the Athenæum, Mechanics' Institution, School of Design, and Museum of Art, in one handsome building, which might be an honour to the town, at a time when town was emulating town, and nation emulating nation, in intellectual and moral advancement. The original motion, however, was carried by a majority of 21 against 10—3 neutral.

## CONSTRUCTION OF SEA WALLS AND BREAKWATERS.

This subject, to which we alluded in our last, was renewed at a meeting of the Institution of Civil Engineers, on the 9th inst., in a paper by Mr. Scott Russell.

Although agreeing as a general proposition, with the truth of the observation, that it was impossible to lay down any one undeviating rule for a form of sea wall which should suit all cases,—the author had, from long and careful experiment, and examination of various localities, endeavoured to classify certain forms of artificial constructions, and to adapt them to certain cases, having reference in each case to the action of the waves to which they were to be exposed. His first process was to examine the action and character of the several kinds of waves, deducing as a given axiom, that,—First, the common form of waves is cycloidal. Second, the motion of the waves in a disturbed state is circular, and in a vertical plane. Third, the water near the top of a wave moves the same way as the wave itself. Fourth, the water in the hollow between the waves is receding. Fifth, the power of a wave is exactly in proportion to the height of its crest above the hollow between the waves. Sixth, the greatest power a wave can exert is at the moment of the crest breaking over into the hollow. Seventh, waves in the British seas have rarely been seen of a greater height than 27 feet above the hollow, and 32 feet may be taken as their greatest unbroken height; those of the Atlantic being stated to range higher. Eighth, waves have never been seen of the full depth of the water forming them, hence it is deduced that the greatest force waves can be exposed to may be determined by the depth of the water they are placed in. Ninth, there are two or more classes of waves,—wind-waves, short, high, and superficial; and storm-waves, which are long, low, and deep. Tenth, the depth of agitation caused by a wave is in the ratio of its height and length conjointly.

Reasoning upon these data, the paper then proceeded to examine two classes of hydraulic works. First, those which are designed to act upon the waves; and, second, those whose structures are exposed to the sea without any design of controlling it, but only to guide it under particular circumstances.

Of the first class are sea walls, piers, and other sea defences intended to restrain the action of the waves; for the forms of which a number of designs were given, ranging between the flat slope, with a foreshore, and the vertical wall. Of all these the preference was given to a wall having a concave or cycloidal curved face, to carry the wave up without breaking; overhanging coping curved on the underside to return the wave upon itself, and a recessed parapet on the outside to prevent the wave from being thrown inside. For breakwaters, whose object it was to resist the waves and produce still water within side, the best mode, under all circumstances of locality, variety of materials, and cost, appeared to be the depositing of the large and small materials, and allowing them to find their natural slope under the action of the waves.

Of the second class, are works designed to direct the scour at low water, but which are quite covered at high water; the foundations of lighthouses, &c.—the object being to oppose the least possible resistance to the waves, and to suffer the least from them. Groynes, embankments, and other works intended to be under high water, also coming under this class; the best form is the parabola with the foot curved outwards on each side—the apex being raised or lowered, and the base proportioned to its application. This form being extended upward approximates to that of the Eddystone, Bell-rock, and Skerry-vore lighthouses, which have withstood the action of heavy seas so successfully.

The vertical wall was condemned for many satisfactory reasons; the cost of workmanship, the expensive character of the materials, the liability to destruction, if a breach be made, and the unsatisfactory action in consequence of the waves making a clear breach over them in heavy weather.

In the discussion that ensued, many interesting illustrations were given of the truth of these positions, derived from the works at Whitehaven, those on the South Devon Coast, and those at Hartlepool, in which latter case the strong red marl, dry punned, mingled with small stone, and faced with pitching, had been satisfactorily employed at a very small cost for the construction of piers.

## Correspondence.

### PULPITS IN REFECTORIES.

Sir,—In your last week's paper a query appeared (page 121) in Professor Willis's account of conventual buildings at Canterbury, which said:—"A question was asked as to the uses of pulpits in refectories." In all Roman Catholic institutions of a collegiate nature, while the members are at meals, readings of a theological or other improving nature are always in use, as may be witnessed at Oscott College at this day.

A place like a pulpit or tribune was therefore no inappropriate appendage to the room in which refection took place. And this, I beg to suggest, is the reason why a pulpit is found in the old refectory at Canterbury.

I am, Sir, &c., W. Mason.

Neiton, March 16, 1847.

### RUSSELL'S SPEEDY "LOUIS."

Sir,—I sent you, a few weeks back, a sketch and description of the above invention, which was inserted with some errors I intended to correct. First, its name "Lewis"—which should be "Louis," being either dedicated to, if not (as reported) invented by, that patron of arts Louis XIV. Secondly, the engraver, with a view to improve my drawing, has altered the shape of the ring from *an egg form* to a perfect *circle*, which would in its application destroy the important advantage mentioned; i. e. should the hole be cut *too large*, by reversing the smaller end, the dovetail is considerably extended. In your last week's number, a correspondent signed "J. James, Lambeth," asserts that he is the father of this invention, and, despite of my statement that it was designed, at the proportions given, for light weights only, "that he made lewises of the same kind in 1845, and tried them with some of the blocks of stone used at the British Museum weighing about *ten tons*, and that he abandoned the plan, as he considered there was a risk:" adding "lifting the stone 15 feet *we* surged it three times" (a very unmasonlike act), "and upon the last occasion the block slipped from the lewises, which he considered a failure." Mr. Farrer, who is the sole superintending mason at the works of the British Museum, and who has been so from its commencement, declares that *louises* of that description were never used or tried upon those works until he tried these for me and found them efficient to their purpose, but, like all novelties, they require to be rightly understood, as in the case of slight ashlar, when the stone is set, to remove the louis, the ring should be reversed to the side, in lieu of knocking it down with a hammer at the risk of flushing the stone, which was the only evil he saw; and that he deemed the principle was good for any weight, if made proportionate.

I am, Sir, &c.,

H. H. Russell.

The Louvre.—A new plan has lately been proposed by M. Brunet de Baines for terminating the Louvre. All the plans hitherto submitted by architects have provided for the union of that magnificent edifice with the Palace of the Tuileries—a task of great scientific difficulty, on account of the two structures not being in a straight line. But the new proposition proposes to separate the two buildings, by putting the Rue de Richelieu in direct communication with the Pont des Saints Pères, leaving on one side the Tuileries, and erecting on the other the new Bibliothèque Royale. By this arrangement, the project now under consideration, of building a new opera-house on the Place du Palais Royal, would be set aside; and it is suggested to occupy the site of the projected theatre by a *château d'eau*, which would be of great utility in the event of fire. The space between the new street and the Tuileries is proposed to be laid out in a semi-circular form, and occupied with various useful buildings, harmonizing with the adjacent edifices. It is recommended that the new Bibliothèque shall be of the same style of architecture as the Louvre, with, however, a complete isolation.—*Galignani.*

## Miscellanea.

Value of Portraits.—Perhaps, said the Rev. Sir J. Page Wood, in a lecture on painting delivered recently at the Chelmsford Literary Institution,—perhaps there are no representations which interest so strongly the curiosity of mankind as portraits; a high degree of pleasure, of which almost every one is susceptible, is experienced from contemplating the countenances of those men who, by their genius or their virtues, have been entitled to the esteem and admiration of future ages, who are the speaking records of mortals who have put on immortality. It is this power which brings before us the forms of the mighty and beautiful of past ages. From the pencil of Holbein we have the representation of the eighth Henry, and the lovely and speaking face of his victim wife, Anne Boleyn. By this art we gaze on the enthralling beauty of the Scottish Mary, the stern features of her reprover Knox, and the spirited countenance of the maiden Queen, and the galaxy of wit and learning which illuminated her court. From Vandyke we have the graceful and wilful Henrietta of France, and the portrait of the unhappy Charles. His image yet lives by the hand of that great master, undimmed by time, uninjured by accident; and at the distance of 200 years, men may gaze on that cold calm face, that proud but complaining eye, and compare the melancholy features with the mournful tale. In our own time, with what interest do we contemplate a faithful portrait of the veteran chief, who has made our name glorious over the whole world; of the patriot who has contested for our rights; of the statesman who strives to

"Scatter plenty ov'r a smiling land,
And read his history in a nation's eyes."

Durham Cathedral.—Many alterations have lately been made in this very interesting edifice. The masonry which separated the celebrated Galilee from the nave has been removed, so as to give an uninterrupted view of the whole of the building; the incongruous font has been taken away, and one of Norman character introduced; and the woodwork, which cut off from the transept the aisles on each side of the quire, has been taken down. The altar screen, too, has been restored, and the Norman chapter-house considerably improved. A writer in the *Athenæum* says, that the Chapter, which met on the 19th, resolved upon several alterations. The chief of these is the removal of the organ, and the screen on which it stands. At present, the organ stands over the entrance into the quire; it is soon to be placed under one of the arches on the north side of the quire, opposite to the bishop's throne. The present screen, with its unsightly and most inappropriate carvings of apples, melons, and onions, is to be taken down, and its place supplied by one the size, character, style, and material of which are all open for consideration. By this alteration, when completed, the visitor will be enabled to see the whole length of the building, (which is now interrupted by the organ,) and to grasp its proportions, so as to take in the symmetry of its component parts, and to understand it as a whole.

Proposed Bridge across the Thames.—An inquiry into the merits of the proposed bridge across the Thames, from Lambeth Church to Westminster, has taken place at the instance of the Commissioners of Woods and Forests. It appears that Sir Samuel Brown proposes to erect the structure, as a toll-bridge: it is to be on the suspension principle, and is estimated to cost 90,000*l.*

Society of Antiquaries.—The auditors, in their report on Thursday night last, made some strange revelations as to the financial condition of this ancient society. After a long discussion the report was ordered to be printed. The recent agitation is producing good fruit.

Statue of the Queen Dowager.—It is proposed to erect a statue in the city, in honour of the Queen Dowager, by public subscription.

*The Existing Remains of the Ancient Britons, within a small district between Lincoln and Stamford, described.* By the Rev. G. Oliver, D.D. Spencer, 314, High Holborn.

This *brochure*, small as it is, is a valuable addition to topographical literature. British tumuli, the Drake stone, and Biard's leap, are the principal subjects discussed, and these are illustrated with much learning and taste.

PROJECTED WORKS.—Advertisements have been issued through the current newspapers calling for contract-tenders for the erection of new churches at Leek, Balby, and Coventry; schools at Wantage and St. John's-wood Park; barracks at Portsea; a new workhouse for the Whitchurch union, Hants; several magazines, storehouses, workshops, shed, walls, basin, pier, wharfs, tanks, &c. &c., near Plymouth; wooden quays (498 feet long) at Belfast; new buildings at Kirkdale House of Correction; a range of houses near Shoreditch: also for alterations and additions to the King's Arms, Woodbridge; the Tattingstone House of Industry; and Cadder Manse and offices; for making three miles of turnpike road and building bridges in Perthshire, &c.; paving and repairing carriage ways and pavements of fourteen parishes at Cambridge; paving and repairing roads and supplying Guernsey granite, gravel, core, ballast, and flints at Islington, and for a supply of stone for blocks, inverts, troughs, &c., at Grimsby Dock; also for the execution of the whole works on 11 miles of Shrewsbury and Birmingham, 11 miles of Midland; 3 and three quarters miles of London and North-Western at Clifton; and for 36,000 bolts and nuts, and 360,000 spikes, also 40 sets of points and crossings for Dublin and Belfast Junction; and for 2,500 tons of malleable iron rails, 800 tons cast-iron chains, and 36,000 sleepers for Glasgow and Monklands Junction line of railway.

ECONOMY IN HEATING ROOMS.—A correspondent of the *Gardener's Chronicle* says that his hall is sufficiently heated by the dining-room fire, which fire-place, at the sides and back, consists of fire-bricks or slabs of 3 inches thick, which, when red-hot, contain a great heat; and at the back of which, in the wall (next the hall), is a kind of hot-air closet about a yard square, and 5 or 6 inches deep, as the wall will admit; at the bottom of this closet is an air-brick, to let in the cold air, and at the top is another, to allow the hot air to escape into the hall. My library is also similarly heated by the kitchen-fire, and I am satisfied this plan would admirably suit a green-house, where it could be applied. I had mine so constructed when I built my house.

PROPOSED STAINED-GLASS WINDOW IN OXFORD.—Some excitement has been caused in Oxford by the refusal of the vestry to allow a stained-glass window, executed under the direction of Mr. Pugin, to be set up in St. Mary's. It was conceived that the tendency of such windows was to withdraw the mind from the Creator to the creature, and the vestry were unanimous in considering, that the attempt on the part of the committee (embracing the vicar, the principal of Brasenose, and the master of University) to set up the window, was an endeavour to Romanize the church without their knowledge or consent.

GOVERNMENT AND THE CEMETERIES.—If it be true, as generally stated, that one of the new sanatory measures of Government is to positively prohibit, by statute, any further burials in the crowded grave yards of populous districts, a very great change will take place in the value of land near large towns, of sufficient size for cemeteries, inasmuch as the difficulty of finding land distant 300 yards on all sides from houses of 50*l.* per annum value, is very great. In fact, the Woods and Forests declare they have not, near London, more than one or two sites for cemeteries in their power. —*Morning Post.*

THE NEW HOUSE OF LORDS.—Orders have been given to admit no persons to the new houses until after Easter, to enable the workmen to complete the House of Lords for business. At the end of the present session, arrangements will be made to give the public an opportunity of seeing the new building.

THE THREE GREAT QUESTIONS OF THE DAY.—Great social improvements are required:—public education is lamentably imperfect; the treatment of criminals is a problem yet undecided; the sanatory condition of our towns and villages has been greatly neglected. —*Lord John Russell.*

COMPETITION AT DEAL.—We mentioned some time ago, that it was proposed to build a new church in Deal. We understand that Messrs. T. Little, Jerrard, Thompson, Hay, Johnson, and Caveler, have been invited to send in designs for it.

SUBSTITUTE FOR PAINT.—The following is taken from the appendix to Young's "Farmers' Calendar," edition 1815:—Take fresh curds, and bruise the lumps on a grinding stone, or in an earthen pan, or mortar, with a spatula. After this operation, put them into a pot, with an equal quantity of well slaked lime. They will become thick enough to be kneaded; stir this mixture well, without adding water, and you will soon obtain a white-coloured fluid which may be applied with as much facility as varnish, and which dries very speedily. But it must be employed the same day, as it will become too thick the day following. Ochre, Armenian bole, and all colours which hold with lime, may be mixed with it, according to the colour which you wish to give to the wood; but care must be taken that the addition of colour made to the first mixture of curds and lime may contain very little water, else the painting will be less durable. When two coats of this paint have been laid on, it may be polished with a piece of woollen cloth or other proper substance, and it will become bright as varnish. It is certain that no kind of paint can be so cheap; and besides other advantages, in the same day two coats may be laid on and polished, as it dries speedily and has no smell. If it be required to give it more durability in places exposed to moisture, do over the painting after it has been polished, with the white of an egg; this process will render it as durable as the best oil painting.

EFFECTS OF A CHEERFUL HOUSE.—A neat, clean, fresh-aired, sweet, cheerful, well-arranged, and well situated house, exercises a moral as well as a physical influence over its inmates, and makes the members of a family peaceable and considerate of the feelings and happiness of each other; the connection is obvious between the state of mind thus produced and habits of respect for others and for those higher duties and obligations which no laws can enforce. On the contrary, a filthy, squalid, noisome dwelling, rendered still more wretched by neighbours and its noxious site, and in which none of the decencies of life can be observed, contributes to make its unfortunate inhabitants selfish, sensual, and regardless of the feelings of each other; the constant indulgence of such passions renders them reckless and brutal, and the transition is natural to propensities and habits incompatible with a respect for the property of others or for the laws.—*Topic.*

IMPORTANCE OF SPACE IN WORKSHOPS.—Among 104 men (letter-press printers), having less than 500 cubic feet of air to breathe, there were 13 who had spit blood, 13 who were subject to habitual catarrh, and 18 to other diseases, making a total of 44 invalids; of 105 men, who had from 500 to 600 cubic feet of air to breathe, five had spit blood, four were subject to colds, and 23 to other diseases, making in all 32 invalids: while, out of 100 men, having more than 600 cubic feet of air to breathe, four only had suffered from spitting of blood, two from catarrh, and 18 from other diseases, making a total of 24 invalids.—From *Guy's Evidence before the Health of Towns' Commission.*

## TO CORRESPONDENTS.

"*C. D. L.*"—The roadway and parapet of Waterloo-bridge were formed nearly level. It was one of the earliest bridges so constructed.

"*John N.*"—We are opposed to the system of employing artists to put in flaring skeis and landscapes to architectural drawings. Exhibitors at the Royal Academy have a free admission,—and to the lectures also.

"*Student.*"—Professor Cockerell will not lecture in the Royal Academy this session.

"*R. M. P.*"—The drawing shall be returned, with thanks.

"*W. W.*" (Bedford).—Unless there be a local act empowering the builder to enter adjoining premises, we think he is not at liberty to do so in the case stated.

"*T. G.*"—If we should find ourselves in Oxford shortly we will visit the works. It is too far to go purposely.

"*W. B.*" (Kent)—The accumulation of carbonic acid gas beneath the sound-board might have the effect spoken of, but we would not say so without seeing it. Does the preacher feel less exhaustion in another church?

"*Plaster of Paris.*"—A correspondent says,—"Plaster of Paris now in use is generally of inferior quality; probably some of your correspondents can state the best system of baking plaster and preparing it for use."

"*F. H.*"—Pasley "On Limes and Cements."

"*Ancient London.*"—We are compelled to postpone Mr. Archer's paper till next week.

"*M. D. W.*" next week.

*Received.*—"An Architect" (London). "M. I. B. A." "B. and B." (Liverpool). "J. T." "T. I. M." "W. W." "A Subscriber" (Leicester). "A Member" (Ipswich). "P. W. M." "J. R. F."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

## TENDERS

For the erection of the Talbot Tavern, Gravesend: Mr. Belcher, Fornival's Inn, Architect.

| | |
|---|---|
| Lyllestone, Gravesend | £2,095 |
| Stevens, ditto | 2,000 |
| Patrick, Belvedere-road | 1,925 |
| Cobham, Gravesend | 1,896 |
| Wood, ditto | 1,895 |
| Sanden, Fish-street hill | 1,845 |
| Parker, Whetstone | 1,844 |
| Machell, Peckham | 1,725 |
| King, East Greenwich | 1,524 |

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, March 22.—Institute of British Architects, 16, Grosvenor-street, 8 P.M.

TUESDAY, 23.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

THURSDAY, 25.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

FRIDAY, 26.—Archæological Association, Sackville-street, 8½ P.M.


## ADVERTISEMENTS.

TO CAPITALISTS.

NEW and Extensively Useful Invention of Importance, especially to Carpenters and Cabinet Makers, Ship-builders, &c.

The Inventor is desirous of obtaining a Partner to work the above as a Patent article, for which he has taken the preparatory steps, and which will not need an outlay of more than about £400. It cannot fail of a very profitable return, as when known it must become in universal request, as it will be a great saving to operatives in general, or the Inventor will part with his rights therein for a moderate remuneration.

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PAPER-HANGINGS to the TRADE.—French Papers superseded.—Messrs. HENNELL and CROSBY, Paper Stainers, Queen-street, Southwark-bridge-road, beg to inform the Trade that they can enable them to sell Satin Papers, Elegant Designs, at 2*s.* 6*d.* per French piece, Retail.—Cheapest house for Panel Decorations and Clouded Papers.

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WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 30 per cent. cheaper.—Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchants, Belvedere-road, Lambeth, London. May be had also of all Country Slate-dealers.

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London, 1854, Piccadilly, Feb. 27, 1857.

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N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

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**WILKINS'S "SILENT" WATER-** CLOSET.—To Architects, Surveyors, and Builders.
Gentlemen, Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments; while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wires, Cranks, &c., which cause much of the noise to which the old Closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.
This Closet is simple in its construction, the whole of the apparatus (including the trap), being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering with that the trap, which is generally enclosed between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.
May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

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**ORNAMENTAL DESIGNS. — Remarks** having been made by many Architects and other Gentlemen connected with the Ornamental Art, that, from want of ability, they have not been able to carry out in the way they would wish their designs in respect to Ornamental Modelling for the interior decorations of houses, metal works, &c., JAS. LEIGH, of No. 15, South-row, New Road, near St. Pancras Church, begs to inform those gentlemen above-named, that he will be happy to execute any orders that he may be favoured with, he hopes in a satisfactory manner, and at a less cost than has hitherto been charged.—15, South-row, New Road.

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Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

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CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.
Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-** tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.
BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.
Box Chimney-pieces from 12s. upwards.
THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.
Estimates given for building generally.

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**COMBE VALLEY SLATE COMPANY.** —Capital 5,000*l.* in 1,000 Shares of 5*l.* each; deposit 1*l.* per Share. Conducted on the Cost Book system. Offices, 5, Whitefriars Street, City.
The proprietors of this valuable undertaking, having after several months of persevering industry, now opened on, and cut through a large piece of rich blue rock, have great pleasure in informing the public, that their endeavours have been crowned with complete success. The Slate is of a most superior description, and suited to every purpose, that this material can be applied to. The management of the Company will be vested in the hands of three Trustees and a Committee of thirteen persons, all practical men, merchants, and traders, or otherwise more or less engaged in the Slate Trade. It will be conducted on an entire new principle; one never yet attempted by any other Company. To Builders it will present one of great advantage, inasmuch, as every shareholder may become an agent for the sale of the produce of the quarry, and he will moreover be able to have manufactured in small quantities, any kind of goods he may require, and to any plan with the same facility, as if it were executed under his own inspection in his own workshop. But no other than shareholders at the present can be expected to participate in these exclusive benefits. The quarry is situate in the parish of St. Ginner's, Cornwall, within 1 mile of the harbour of Cragington, on the Bristol Channel, it consists of 7 acres of land, all one entire bed of Slate 6 feet below the surface, and is held on a lease of 21 years, at the nominal rent of 10*l.* per annum, with no royalty. Estimates carefully prepared, plans of the estate, sections of the workings and specimens of the slate may be seen at the office where also prospectuses may be obtained. Application for shares can be made to Mr. JAMES LANE, 55, Old Broad Street, City; Mr. THOS. SANFORD, Exeter; Messrs. TYETH & LUSCOMBE, Plymouth; Mr. H. MANSELL, Guildford, Surrey; at the Office of the Builder; and at the Company's Office, of the secretary, CHAS. SAML. RICHARDSON.

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**PORTER'S CORRUGATED and PA-** TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Railings, Railway, and other Iron and Smiths' work Manufactured of the best quality. Iron Fencing and Hurdles as usual.—The Trade Supplied.

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By Her Majesty's Royal Letters Patent.

**MOREWOOD and ROGER'S PATENT** GALVANIZED TINNED METAL. This article was at first sold under the name of Galvanised Tin Plates, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal has thereby sustained injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanized Iron has a plain, zinc-like appearance, while M. and R.'s Patent Galvanized Tinned Iron has a smooth crystalline surface.
MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON. Patronized by the Admiralty, and the Honourable Board of Ordnance, being extensively used in her Majesty's Dock-yards, at the Tower, and elsewhere, for every variety of Roofing, and other purposes, where a strong, light, cheap, and durable material is required.
It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance, leakage must of course result.
This material is not likely to be destroyed by fire, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes above-named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.
This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.
For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.

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TO PLASTERERS.

**LIME FOR PLASTERING, that may be** used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORREST'S WHARF, Earl-street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

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TO THE CONSUMERS OF THAMES SAND, AND THE TRADE IN GENERAL.

**JOHN DOWNEY, Licensed Lighterman,** &c. &c., of 11, Millbank-row, begs most respectfully to inform his customers and friends in the trade, that he has purchased of Mr. WILLIAM COOPER, of Westminster, his two sand getting craft and business. JOHN DOWNEY, being now owner of four sand barges, can promise a supply of good sand with punctuality and dispatch.

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**FIRE BRICKS.—WARD & HART,** Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

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TO BUILDERS.

**W. W. RAWLINS, Lime Wharf, King's-** road-bridge, Camden New Town, begs respectfully to inform Builders and others, that he continues to supply Grey Stone and Chalk Lime, Blue Lias Lime, Roman Cement, Plaster of Paris, Plasterers' Hair, Thames Ballast, Sand, Tiles, Cement, Chimney-pots, Welch Goods, and all kinds of Building Materials, this being the nearest Lime Wharf to the North of London. Yorkshire Paving Slabs, Sinks, &c.; Thames Ballast and Sand delivered per Barge, in the river, or on any part of the Regent Canal.

---

**CHEAP ROMAN CEMENT is sold in** Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17¼ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

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**ATKINSON'S CEMENT. — WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

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**PORTLAND CEMENT.—The peculiar** property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank street, Westminster.

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**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Seel-street, Liverpool.

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**GREAVES'S BLUE LIAS LIME and** CEMENT.—Engineers, Architects, Contractors, &c., are respectfully informed, that the above articles can be supplied by the following agents, viz.—Messrs. Rutty and Verey, No. 2, South Wharf, Paddington; Mr. J. Thompson, back King-street, Manchester; Mr. T. Wylie, 56, Gloucester-street, Liverpool; Mr. J. Harrison, Linen Hall-street, Chester; Mr. J. Benehill, Broad-street, Birmingham; Mr. E. Cryer, Canal Wharf, Oxford; or by R. GREAVES'S boats, direct from the Works, at Southam, Warwickshire.
N.B. Ground Lias Lime for Concrete. Office, Stratford on-Avon.

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MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:
1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.
For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.
For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.
Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

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TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT. The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.
Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.
Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,
JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, produceable by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

# THE BUILDER.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only,
62, WATERLOO-BRIDGE-ROAD

An Apprentice wanted in country but would be preferred.
N.B. Some good Pencil Hands wanted in the Decorative Painting Department

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King-street, Portman square.—Terms, Cash only.

**PLATE GLASS WAREHOUSE, 93, High** Holborn, London, next door to Day and Martin's. MORRIS MAYERS begs to inform builders and the trade in general, that he has entered into arrangements whereby he is enabled to supply sound plate-glass in the most advantageous terms, both as to quality and price; he will be found to be considerably cheaper than any other house in the trade. Estimates given to any amount. Rough, Ground, Bent, Silvered, and Patent Plates, equally low.

**THE UNION PLATE GLASS COMPANY** beg to call the attention of Architects, Builders, and the Plate Glass trade generally to their extensive stock of Glass which stands unrivalled for color and quality, and having considerably enlarged their Manufactory are now enabled to execute orders to any extent with the greatest despatch.
N.B.—Rough Plate Glass supplied ⅛, 3-8ths, ¼, and ⅜ inch thick.
H. CHRISTIE, Agent, 99, Hatton Garden, Holborn.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent 26, Soho square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen** Tables, at the following low prices, for ready money:—

| | £ s. d. | | £ s. d. |
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| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ..... 4 4 0 | Squares of Small Crown Glass, at 1d. 2d., 2½d. and 2½d. per foot. | |
| | Fourths .... 3 10 0 | | |
| | C.C..... 2 10 0 | | |
| | C.C.C..... 2 2 0 | | |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, best Smithfield, London.

SASHES PRIMED, GLAZED, and sent to any part of London at 3d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.

Dry and ground Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 25s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

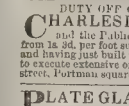
For complete Lists, priced—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

TO CARPENTERS AND BUILDERS.

**SCREW JACKS to Let on Hire.**—Apply at Mr. SMITH'S, Sashmaker, &c., No. 85, White Lion-street, Pentonville. Shop-fronts fitted up on the shortest notice.

**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; save the expense two years, at least, all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sunblind, all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, King-gate-street, London.

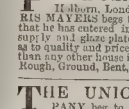
**CHAS. WM. WATERLOW,**



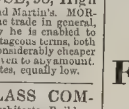
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of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



**JOHNSON and PASK,**
1, ANN'S-PLACE,
Clerkenwell,



Beg to inform the Trade, and the Building Public in general, that the premises to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiner's work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.

**DEANE'S TWO-HOLE BLACK PENS,** which are unequalled for their durability and easy action, are supplied by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, besides several of her Majesty's judges, the most eminent counsel and the reverend the clergy. These advantages and popularity have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser and disgraceful to the vender. The public are therefore cautioned, and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London Bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

TO ENGINEERS AND ARCHITECTS, AND AS AN ELEGANT PRESENT TO A LADY, AS WELL AS A MOST CONVENIENT POCKET APPENDAGE.

**TO all those who find a Difficulty in the Use** of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS' PERPETUAL PEN, made of Gold, with Points which never wear or alter, offers a most convenient substitute, as ink, which oxydises and thickens in the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 10s. It may be used with a common holder. With an everpointed Silver Pencil Case, with Leads, 5s.

Sold by the proprietor, HENRY STEPHENS, 34, Stamford-street, Blackfriars-road, London. On application, by letter, this Pen will be sent, per post, to any part of the kingdom.



**H. MORRELL'S FINE PREPARED** DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East-India Company.

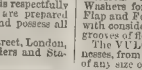
The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.

Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

**PATENT VULCANIZED INDIA-** RUBBER, CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are—its uniform elasticity in various temperatures, it does not become hard by exposure to cold. It is of greater strength and less liable to injury from heat than native Caoutchouc. It is insoluble in essential oils. It resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully used for Washers for Joints in Water, Gas, and Steam Pipes, and for the Flap and Foot Valves, &c., of Steam Engines; and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of flooring boards.

The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F. McNEILL and Co.** of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

Patronized by
HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a bad conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 50 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament. A Liberal Discount allowed to the Trade.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

**DOULTON AND WATTS,**
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

**THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.**
87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
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| Foreign Spot, in 100 feet Boxes .. | 2½d. |
| Do. do. Super 200 „ „ .. | 3d. |

Crown Squares, 100 feet Boxes—
10 in. by 8 in. and 9 in. by 7 in.
8 in. by 6 in. and 7 in. by 5 in. .. 3d.
6½ in. by 4½ in. and 6 in. by 4 in. .. 1½d.
6 in. by 3 in. and under..... 1d.
Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES, 6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH

| | per Imp. Gal. |
|---|---|
| Super Body Copal, for the bodies of Carriages | 30 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish | 16 |
| A fine pale Varnish for the lighter imitation woods.—Dries in about eight hours. | |
| Super Carriage Varnish | 12 |
| Very durable, and well adapted for Coachmakers, except for light Colors— | |
| Elastic Oak, Wainscot, or Mahogany Varnish | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods. | |
| Paper or Crystal, quite transparent Gold Size for Gilders | 10 |
| Also as a dryer in ground Colours, which much improves their appearance | 10 |
| Black Japan | 12 |
| A splendid Jet Black, for Coachbuilders' use | |
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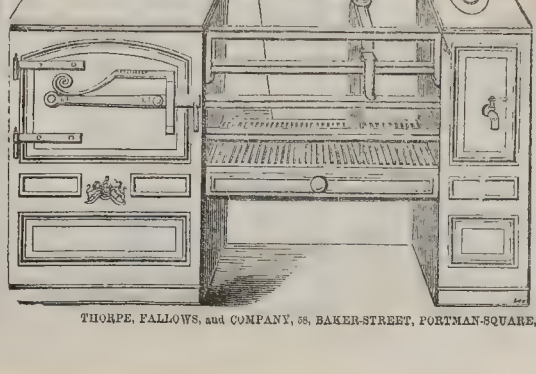
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Commanding Royal Engineer's Office,
Devonport, March, 1847.

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March 22, 1847.

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By order of the Committee,
R. FINNIS, Clerk.
March 23nd, 1847.

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12th March, 1847.

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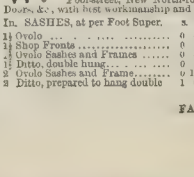
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| 1¼ Do. do., with frames, lines, and weights | 1 3 | 1¼ Do. do., with frames, lines, and weights | 1 3 |
| 1¼ Ditto, double hung | 1 4½ | 1¼ Ditto, double hung | 1 4½ |
| 1¼ Ditto, with lines and weights | 1 5 | 2 Ditto ditto, with lines and weights | 1 5 |
| | | 2 Ditto ditto, double hung | 1 5 |

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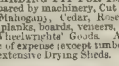
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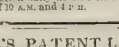
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The Builder.

No. CCXVI.

SATURDAY, MARCH 27, 1847.

THE majority of men place great dependence on chance. So long as an event is only *probable*, they seem to think it unnecessary to guard against it, if in so doing they must subject themselves to a *positive* inconvenience or expenditure, however slight. Illustrations of this fact, in different walks, will occur to every reader; but they especially offer themselves as connected with sanatory arrangements. A certain state of things may be proved to lead to illness and death; the members of a family living in such a state,—occupying, for example, an ill-drained, ill-ventilated house, may find themselves always out of health, may constantly be forced to say,—"this must arise from the circumstances under which we are living," and yet go on year after year without any effort to effect a change, or to escape from the fate which hangs surely over them. It may *not* be the house after all, they say; if we were *certain*, it would be another thing: we may be better presently: our neighbours are similarly circumstanced, and do not complain; to get a sewer and good drains, and plenty of water, is out of the question; and moving would be a trouble, *et cetera, et cetera:* and so they persuade themselves into the endurance of what will as certainly lessen their enjoyment of life, and weaken their moral as well as physical power, if not hurry them prematurely into the grave, as if they had swallowed a known poisonous drug with that express intention.

Last week, in the ordinary discharge of professional duty, we went over a house in a respectable part of Westminster, which will afford us a case in point. Were it a solitary instance we would name it specifically, without regard to private interests; but unfortunately it is not so, and injury might thus be done to individuals without corresponding advantage to the public. On entering the back parlour a slight but unpleasant odour led to an inquiry, from which we learnt that a cesspool adjoined it, the contents of which were pumped away every week, its size being small. To avoid filling this too quickly, the yard, a small one, was made the receptable of much that was offensive. At times the lower part of the house was unbearable, and in particular weather the occupants had been forced to confine themselves to the one-pair floor. It was scarcely necessary to ask the effect this had on those who lived in the house,—the sickly appearance of several told the story, but only in part. The wife of the person who held the house had died recently, after much sickness; a female lodger in the parlours, within the six years during which she had lived there, had suffered three violent attacks of *typhus fever*, caused wholly, her medical attendant told her, by the bad air, and had narrowly escaped with her life; while the old servant, who was chiefly confined to the back kitchen, assured us that the smell made her sick constantly, and that she had been told by the doctor she would be *killed* if she remained there. And killed she unquestionably may be.

None of the occupants, however, manifested any intention of making a change: as one of them said, they didn't *quite* understand how a smell could produce illness, and thought it just possible it might have occurred if they had been elsewhere, because "illness is what all are subject to!"

Such infatuation, under other circumstances, would scarcely be believed. As we have said already, this house is in a respectable part of Westminster; a wide and airy street, closely adjoining a number of houses occupied by men of wealth and rank, who, let it be remembered, are themselves vitally interested, knowing well that fever is not long in crossing a street! And if such a state of things as we have above described, and for the accuracy of which description in the minutest particular we vouch, is to be found in a good neighbourhood, what must be the condition of other districts of the same city, known to be immeasurably worse?

Facts gathered from all parts of England, shew beyond doubt how much misery and death, and loss to the living may be prevented, and how much the general sum of happiness may be increased, by proper arrangements. And yet, known causes of disease and death are allowed to continue in operation, and the obstinacy of ignorance for a time triumphs over the truthful deductions of science. At a meeting of the town-council of Bristol, last week, it was shewn by Dr. Green and Dr. Kay that the deaths in that city from one remediable cause alone, namely, the accumulation of noxious decomposing matter in the river Frome, which is, in fact, nothing better than an open cesspool, could not be less than from 500 to 600 annually? Who will estimate the suffering endured from sickness, the distress caused by deprivation, and the pecuniary loss to the community, also resulting from the same cause? And yet remedy is delayed.

The mortality of Birkenhead has increased fearfully with the increase of the place. It appears that, whilst the deaths here were, in 1841, one in forty-five, in 1845, one in thirty-six, in 1846 they were one in twenty-eight and a half! Dr. Robinson has recently published a pamphlet on the subject, in which he shows that this increase results from the ill ventilation of the houses of the lower classes, the absence of house-drains, the existence of 2405 cesspools in the township, a want of care in the selection of sites for the foundations of new buildings, the imperfect construction of middens, the overcrowding of lodging-houses and places of sepulture, the too early occupation of newly-built houses, and the want of water. He calculates that there are 330 houses and 57 courts without water, the number of inhabitants in them being 2,437. How often must we write, that

PURE AIR AND PLENTY OF WATER ARE THE TWO THINGS EVERY WHERE NEEDFUL.

A Glasgow paper furnishes a curious instance of the effect of ventilation, which would be laughable if it were not saddening. In a weaving mill near Manchester, where the ventilation was very bad, the proprietor caused a fan to be mounted, and so improved it greatly. What was the result? Why the operatives instead of thanking their employer for his attention to their comfort and health, made a formal complaint to him that the ventilator had *increased their appetites*, and therefore entitled them to a corresponding increase of wages! "By stopping the fan a part of the day," says our authority, "the ventilation and voracity of the establishment were brought to a medium standard, and complaints ceased. The operatives' wages would but just support them—any additional demands by their stomachs could only be answered by draughts upon their backs, which were by no means in a condition to answer them."

Poor things! The fan brought them better health, but they fancied they could not afford the luxury. Their course was as if, being well and enjoying their dinner, they had taken some deleterious compounds to produce sickness, and indispose them for eating.

We look for some advantage from the reports of the various commissioners appointed to inquire into improvement bills proposed by different towns, and which are now in the hands of members of Parliament. Although appointed in each case for a special purpose, much information as to the sanatory condition of towns will probably be obtainable from their reports, and the evidence laid before them, and a considerable impulse be given to the adoption of remedies for existing evils and abuses. In what light some of the corporations may appear seems to us doubtful.

The cost of these inquiries will be very great: we have heard, for example, that at Reading more than 6,000*l.* have been spent; but as they will necessarily shorten the business before Parliament, and prevent useless applications, in the long run, probably, they will lessen expenditure, and facilitate good legislation.

## THE NEW MUSEUM OF ECONOMIC GEOLOGY, PICCADILLY.

THE mystery which, for a time, hung over the site, between Piccadilly and Jermyn-street, purchased by government; the rumours which went abroad, now that it was for a post-office, and then that it was for a museum; and more recently, when its appropriation was known, the asserted intention of forming shops in the Piccadilly front of the new building; have made it an object of constant inquiry on the part of correspondents, who have also manifested a desire to know what description of edifice would be erected. We are glad, therefore, now to be able to resolve the only unresolved points, by stating, that the building promises to be a handsome structure in the Italian style, highly creditable to Mr. Pennethorne, the architect, and that no part of it will be appropriated to shops.

The public entrance will be in Jermyn-street, and the entrance for the establishment in the Piccadilly front, which will be the principal in an architectural point of view, presenting on the ground-floor a series of large circular-headed windows, very deeply recessed down to the pavement, to give the effect of an arcade, small detached columns and pediments as dressings to the windows above, and a bold cornice and projecting roof, as at the Travellers' and Reform Club-House. A series of ornamental panels will serve to display English and Irish marbles, and lead, as we hope, to their more extensive use in decoration. The door in Jermyn-street will be produced by the electrotype; and in a semicircular opening above it, there will be a sculptured tablet.

The ground floor will comprise an apartment to be called the Marble Hall, to be appropriated in accordance with its name, a lecture theatre about 55 feet square, and beyond that, extending to Piccadilly, apartments for various purposes. The grand staircase will lead from the Marble Hall to a fine apartment above, and again above that to a museum extending over the whole area, and lighted by extensive skylights as well as windows.

The lecture theatre, being in the centre part of the building, is lighted necessarily from the top, and exhibits in this as well as other respects, considerable skill. The upper part of the walls inclosing the skylight of the theatre, appear in a decorated form for a certain height above the floor of the topmost apartment, whence light is given to the theatre below, as it is also by means of an open area, railed, to the lower apartment. When we further say that there are galleries round the walls, it may be seen that the extent of floor for the reception of specimens, models, the mining records, &c., which are to be kept here, will be very great. Mr. Kelk is the builder employed.

## SOME NOTICES OF ANCIENT LONDON.

Among the remains of ancient London I am about to notice, will be seen fragments which may come under the following classification, viz., fortified buildings, religious establishments, palatial edifices, charitable asylums, gates, monuments, and domestic residences; yet in most instances the existing fragments of buildings thus classed, will appear so inconsiderable, that I fear I shall, in producing them, remind you of that worthy who carried with him a brick, in order to set forth the appearance of Carthage.

Beginning with the first of the above classification, viz., fortified buildings, I may instance that which is called, par eminence, the Tower, as the chief stronghold appertaining to the ancient city. Yet, according to present appearance, some remaining portions of the wall which formerly surrounded London, should claim precedence in point of antiquity, but other evidence tends, in my opinion, to do more than merely suggest an earlier building, one probably contemporary with the original wall, which has occupied some portion of the site lying within the Tower inclosure. However, as an examination of these evidences would occupy much time, I will pass them over for the present, in order to mention one of the towers, which surround the great keep or White Tower. This is called the Salt Tower, and has been considered the most ancient of the surrounding edifices. It has likewise been named Cæsar's Tower,* but as Julius Cæsar would, by sufficient negative evidence, appear never to have obtained a footing in London, chroniclers of latter days have treated this association with entire contempt. Yet as Rome did certainly produce eleven other Cæsars, and the title of Cæsar was afterwards given to the eldest son of the emperor, I cannot conceive that it requires any inordinate degree of credulity to suppose, that one of them may indeed have stood in the relation of sponsor to such a tower in London founded by Roman hands. That a building so founded stood either upon or near this spot, is evinced, to my thinking, by many signs.

About the distance of a stone's cast from the building I am describing, some remains of London wall formerly connected with the Tower postern still exist. The lower portion of this wall is evidently of Roman workmanship, the masonry being regular, the stones well squared; and over each course of stone there is a course of flat bricks, two deep. Each brick is 1¼ inch in thickness, varying from 17½ inches to 16½ inches in length, and from 10 to 12 inches in breadth. The depth of this course of brickwork, including the mortar, is 4½ in. The courses of stone are five stones in each course, and measure 46 inches in depth between each course of brickwork. The space, composed of regular masonry, such as I have described, is about 8 feet above the ground. Over this space is another portion, composed, apparently, of the debris of the original wall; and the remainder of the superstructure (the entire wall being about 28 feet high), comprises a series of coarse rubble, composed of huge blocks of undressed stone, mixed with flints and bits of Roman brick, and finally, a succession of masonry in small squared stones and rubble. We thus perceive an example of the various methods by which this ancient rampart was re-edified at different times, probably none of them later than the period when, in the reign of the fourth Edward, brick was made from the clay of Moorfields for the purpose of replenishing the battered and time-eaten fortification of the cherished city. And finding these evidences based upon a visible Roman foundation, one which brings us so nearly to the Tower itself, even to the postern thereof, I perceive in this fact one motive, among several others, for believing that such was probably the approach to a contemporary stronghold, or citadel, probably the palatinate seat of the Roman governor. I may not here go into other evidences, such as the discovery of the remains of Roman masonry within the Tower walls, of ingots marked with the Roman stamp, and so forth; but I will merely assert, that if such were heedfully collated, they would be found both numerous and salient. It must, however, be here admitted, in moderation of this view, that the Saxon chronicle does certainly fail to make mention of any such edifice as I have alluded to; but surely the river Thames appears to have arisen in unruly floods of yore, and the walls of which I have spoken may have become a tribute to its waters even long ere the Saxon chronicle was framed. But as this is no proper occasion for prolonging an argument of which some might say, that the gist thereof is no other than a setting forth of the history of a place, from the time of its nonentity even to the period when it began to exist, I will now drop such speculations, and will beg of you to return with me in order to note some of the more tangible matters appertaining to the Salt Tower.

When I sketched it, the 9th of November, 1846, the houses, which constituted a yeoman warder lodging and a canteen, called the Golden-chain, were demolished, and the ancient ballium wall was laid bare. Previous to the destruction of this portion of the wall, I made an examination of it, and found it to be composed of chalk blocks intermixed with flint, and faced with Kentish ragstone. The height of this wall was about 40 feet, and the breadth about 9 feet. Passages in the thickness of the wall are said to have formed a communication between the different mural towers; but I had not an opportunity of observing if any such appearances were visible in this instance. When I suggested the possibility of the ground, occupied by the Salt Tower, having been the site of a Roman building, I had no intention of conveying the notion that any visible portion of the present edifice was referable to such a period. Such evidences could only be hoped for in an investigation of the foundation, and of the lower dungeons, which are now inaccessible. The body of the building is ascribed to the time of William Rufus. The flat abutment appears to be two centuries later; it has originally had a pointed roof, the traces of which may be distinguished from the more recent superstructure; and from the character of the window, it has probably contained a small chapel or oratory.

I will not prolong this notice by any description of the interior of the Salt Tower, but will only mention that it contains some remarkable inscriptions, one of which is a memorial of Hugh Draper, committed in 1560, on suspicion of sorcery and practice against Sir William St. Lowe and his lady. Draper was the keeper of a tavern at Bristol, as well as a professor of judicial astrology. A device representing a sphere with the signs of the Zodiac, denoted by their proper astrological characters, is sculptured on the wall, over which are these lines—

"Hew : Draper : of : Bristow : made : thys :
Spheer : the : 30 : daye : of : Maye : anno 1561.

I will only mention the gate of the so-called Bloody Tower, in order that I may pass through it on my way to the church of St. Peter. One cannot very well approach the church I have mentioned without passing the keep or White Tower, and few could pass it without a wish to examine those portions of its interior which are hidden from vulgar eyes. But he who would do so must be patient and persevering, for the obstacles are great and, worse than great, they are numerous, seeing that the adventurer will be referred from one party to another, each as he descends in the scale of real consequence rising in that by which he may be disposed to estimate himself. Howbeit the dragons and griffins who guard these enchanted portals being passed, it will then be found that every device that could in any wise tend to disturb or utterly scare away the genius loci has prevailed in that place.

The chapel of St. John, one of the choicest examples of Norman architecture this country can boast, is filled with presses, the building having been pressed into the service of the Record-office. And for the safe keeping and guardianship of both chapel and records, a formidable mine of gunpowder is stored in the chamber beneath, ready to disperse the whole into air, should any bold invader presume to desecrate the one, or appropriate and carry away the others.

The chapel of St. Peter ad vincula, which is situated at the north-west angle of the inner ward, appears from existing documents to have occupied that spot in the time of Henry III. It is said to have been rebuilt by Edward I., but retains little or nothing indicative of a period earlier than the architecture of the reign of Henry VIII. I will here only allude to the altar tomb of Sir Richard Cholmondely and the lady Elizabeth, his wife, as a fine work of monumental art, and passing over the numerous illustrious personages who have traversed the brief space between the scaffold and the vaults of this chapel, I will here recal the names of two of those chivalrous men who for "dear honour's sake" staked life and fortune upon the hazard of a forlorn and misguided cause. The rubbings which I set before you are from the coffins of the Lords Balmerino and Kilmarnock, who suffered in the year 1746. These two noblemen evinced a marked difference in the quality of firmness, when it came to the final scene of their disastrous adventure. Of this, and of its effect upon the executioner, I will relate a brief anecdote in the words of Northcote, the painter. "Kilmarnock," said he, "was a nervous man: he trembled, was pale, and betrayed every demonstration of fear at the sight of the terrible apparatus of death. He knelt, laid his head on the block, and it was stricken from his body at a blow. Balmarino now ascended the scaffold; his look was intrepid, his step was firm, and slapping the executioner on the shoulder, with a loud voice and unfaultering tongue, exclaimed, 'You are a brave fellow, and have done your work dexterously. Here is a purse for you, it contains not much—five guineas only, but I am a poor gentleman, it is all I can afford to give. Now, despatch me with equal skill.' Lo! the man was not used to encounter such a great creature; he appeared to be a superior being; the executioner could not stand in his presence, it was too awful for him; the wretch was at once unmanned, he was in a tremor from head to foot, and incapable of doing his duty; he mangled the neck of the brave lord, and as he gave the last feeble stroke, was himself about to give up the ghost." "Hitherto, mark ye," continued Northcote, "he had been the great man, important by virtue of his office; but behold, one so infinitely greater than he had been wont to see, reduced him to his own insignificance; and he who had sent so many out of the world with all the dignity of his calling, was now ready to fall on his knees with awe, and beg forgiveness of the victim he was legally employed to despatch."

I will now lead you through a subterranean passage, which is said to conduct from the Tower to the ancient chapel of St. Michael at Aldgate. This fine relic of antiquity is situated under the house at the south-east corner of Leadenhall-street, hard by Aldgate pump. It is said to be the work of Prior Norman, in the year 1108; this, however, strikes me as rather too early in the 12th century for the style of the building, which, however, displays some marks of the semi-Norman, or transition style. The mouldings of the ribs appear to correspond with some other examples of that style; and the clustered column, which forms the central support, appears of the Norman character, but it is nearly buried by the accumulated soil of centuries. The materials of this building are the Flanders tile, mixed with squared chalk and Caen stone, of which latter the ribs are constructed; the bosses remain perfect, and contain roses and grotesque heads. There are at the north and south extremities of this chapel an appearance of passages, such as I have already alluded to; one of these is said to run to Duke's-place, and the other to the Tower. I attempted to enter the former, but found it choked with rubbish. I will not take upon me to vouch for the precise direction or extent of these passages; but as the work of clearing them, as well as the body of the building, from the loose soil which lies there to the depth of several feet, would be a thing of no great trouble or expense, I venture to suggest the idea of such a performance as worthy of consideration; and as a means of approach from the street has existed, this relic of antiquity might easily be rendered accessible, and by a little expenditure might be made to appear nearly as perfect as in its original integrity.

The Fishmongers' Almshouses, or St. Peter's hospital, will soon be spoken of in the past tense. It appears, that the value of the ground these buildings occupy has tempted the ancient company to which they appertain, to remove the asylum, for the purpose of laying out the ground more profitably in building sites. The present appearance is that of a characteristic building of the time of James I. The hall appertaining to it is not large, but it contains some good features, and a fireplace

* So called in a survey, tem. Henry VIII.

worthy of notice. In the words of Stowe: "These fishmongers have been jolly citizens, and six maiors of their company in 24 yeeres; to wit, Walter Turke, 1350. John Lofkin, 1359. John Wroth, 1361. John Pechie, 1362. Simon Morden, 1369. and William Walworth, 1374.

I will, in the next place, point out a few of London's ancient signs, or street monuments, of which many exist unnoticed amid the throng and bustle of the great city. The representation at the top is that of the city arms as they appear at Queenhithe, or Edreds hithe or harbour. This, from its original name, appears to have retained its use since the Saxon time. Its dues constituted a portion in the dowry of the queens of England, from the time of Henry III., who compelled the ships of the Cinque Ports "to bring their corn here, and to no other place."

Adjoining the Old Temple, the first residence of the Knights Templars, without Holborn-bars, was the inn of the Bishop of Lincoln, which has given its title to the famous seat of law near at hand. This inn was conveyed in fee to the Earl of Southampton, who was lord chancellor to Edward VI. Here died, in 1667, Thomas, last Earl of Southampton. He served Charles I., and was lord treasurer in the early part of the reign of Charles II. The ill-fated Lord Russell inherited Southampton House by his marriage with the daughter of this nobleman. It was in passing this house, the scene of his domestic happiness, on his way to the scaffold in Lincoln's-inn-fields, that the fortitude of the martyr for a moment forsook him, but overmastering his emotion he said, "The bitterness of death is now passed." It is from this house that some of Lady Rachel Russell's celebrated letters are dated. A former entrance of the chapel of Southampton House, appears to correspond with the moulding of the flat timbered roof, which is of the time of Henry VII. This part of the edifice retains its original proportions, except that its height is divided by a modern floor. Its length is about 40 feet by about 20. It is now used by a whip maker as his warehouse. Other portions of Southampton House have been incorporated with the surrounding dwellings, one of which contains a beautiful Elizabethan staircase. Old mouldings and panelling appear likewise in Mill's Tavern, Southampton-buildings, which house seems to have been constructed upon a portion of the ancient mansion.

The last of the bulk shops adjoining Temple Bar succumbed to the spirit of improvement in the month of April, 1846, giving a finishing blow to the operations of Alderman Pickett, who about the beginning of the present century greatly despoiled the antiquity and associations of this part of the Strand, by overthrowing the beetling fabrics of Butcher-row, celebrated as the residence of ambassadors and other eminent personages. The tenement had little to recommend it in the way of ornament, and was only noticeable from its exhibiting a solitary specimen of the open projecting stalls or bulks, which constituted the better kind of shops two centuries ago, those of an humbler description being no other than movable stands, such as now serve for the vendor of apples, fish, and vegetables, at the edge of the kerb-stone. The bulk, however, was a substantial fixture, projecting well into the street, and protected from the weather by a goodly penthouse of oak and plumber's work.

Over and above its connection with the thrifty dealings of a primitive time, the bulk may be said to have obtained a degree of poetical association, from the practice of erratic authors of the last century, who were ofttimes fain to appropriate those shelves for the purpose of a dormitory. The poor scholar who, having scribbled in a tavern his epigram, his satire, his eulogium, or even his broadside, in order to provide a scanty meal; or at the emporium of the bookseller, had plied the work of translation, or toiled through the stilted periods of an up-hill moral essay, had afterwards frequent occasion to realise the apothegm, that misery brings a man acquainted with strange bedfellows, when he thus bestowed himself for the night along with the homeless wretch, or some overtaken roysterer from the tavern, to dream or watch the stars till day-break.

It is said of that manifest genius, though extravagant, Nat. Lee, that he died, in one sense, not inglorious, upon a bulk in Clare-market, where he had sunk, overthrown by Bacchus, on his way from the Bear and Harrow, in Butcher-row, to his lodgings in Duke-street. Such was likewise the frequent couch of the gifted but ungoverned poet Savage, during his pitiful night wanderings. And it is related of Derrick, an inferior bard, that having been discovered by Floyd, another poor author in both senses of the word, and being suddenly awakened, he started up, exclaiming, "My dear Floyd, I am sorry to see you in this destitute state; will you go home with me to my lodging?"

The adjoining city gate, the last of the city portals now remaining, is comparatively a modern structure, and may be said to have sprung from an humble origin, its immediate predecessor having been no other than a barrier of timber, called the posts. Yet time has indented some toothmarks in the friable Portland stone, of which the fabric is composed; and a London alderman, by widening one of the side passages, without much reference to its architectural integrity, has added to its decayed appearance. Many, however, have been the stirring scenes which this edifice has witnessed during the period (175 years) of its existence.

The barriers which preceded it were opened for the triumphal return of the second Charles, on the 29th of May, 1660. And just eighty-six years after followed a stern and rueful contrast, in the event which placed over this portal the heads of devoted men, who had forfeited their lives in a desperate effort to restore the fortunes of the ill-starred house of Stewart: a solemn and eventful epic, whereof Whitehall may be said to have witnessed the beginning, and the spot I have just described, the middle and the end.

The northern bank of the Thames exhibited in old time a series of stately edifices, extending from the Tower to Westminster, the seats of many who were most renowned and powerful in their day, and whose names are yet familiar in connection with the great events wherein they bore their part.

Among such names that of "John of Gaunt, time-honoured Lancaster" is conspicuous. Of his palace, called the Savoy, a small fragment still exists within the dingy precincts of a coal-wharf, whence

> "Forth issuing from steep lanes, the colliers' steeds
> Drag the black load; another cart succeeds;
> Team follows team, crowds heaped on crowds appear,
> And wait impatient till the road grow clear."

Simon de Montford, the great Earl of Leicester, had a residence on this site. It was given by Henry III. to Peter of Savoy, who founded the place so called, and bestowed it on the fraternity of Montjoy. Queen Eleanor purchased this building, and gave it to her son Edmund, Earl of Leicester; after which it was rebuilt in a magnificent manner. Here King John of France was held a prisoner, and sometime after his release, returning to this country to apologise for the defection of his son, whom he had left as hostage, he died in the Savoy. The place was destroyed by Wat Tyler in 1381, after which it was rebuilt by Henry VII. Latterly, it became a prison for deserters. Its present destination is that of a warehouse for the sauces and condiments of Mr. Burgess, a celebrated dealer in such wares, in the Strand.

I will lastly introduce to you the Bowl Brewery, an old building in St. Giles's, lately demolished, in order to make mention of a custom which has happily long fallen into disuse. It was here that St. Giles' bowl was handed to criminals as their last draught, on their way to execution at Tyburn. Previously, however, the gibbet stood at the Elms in St. Giles, having been removed thither from Smithfield in the year 1413. The fatal tree was placed in the north corner of the hospital garden. The hospital of St. Giles was founded in the year 1117, by Matilda, queen of Henry I., out of the dues of Queen Hythe, or Edreds Hythe, for the relief of lepers. In 1354 Edward III. granted the hospital to the master and brethren of the order of Burton St. Lazar of Jerusalem, in Leicestershire, by which means it became a cell to that order, and continued so until the general suppression. It was at the door of this establishment that condemned criminals are said to have received the refreshment I have mentioned. The practice was afterwards continued at an hostel which appears to have been built on the site of the old monastic house; of this, I believe, the Bowl Brewhouse was until lately the representative. The bowl itself is said to be still in existence, but I have not yet been able to discover the proprietor.

J. Wykeham Archer.

## ROYAL INSTITUTE OF ARCHITECTS.

At a meeting of this Institute, held on the 22nd, Mr. C. Fowler in the chair, Messrs. H. B. Browning, E. Browning, and G. Snell were elected associates. A letter from Dr. Bromet was read, accompanying some specimens of silicated chalk, prepared by a chemist of Lille. The chalk was merely dipped into an aqueous solution, formed by heat, of one part of washed sand and three parts of the American potash of commerce; by means of which, as was asserted, a double decomposition is effected, and the chalk rendered hard and durable. The discoverer proposed applying it superficially also to finished structures. He considered it peculiarly applicable to delicate mouldings, which might be worked in very soft stone, and then hardened by his mixture. The expense was not great. Mr. Donaldson mentioned, that advantage had been found in dipping rag-stone, not perfectly indurated, into lime-water.

Several works, recently added to the library, were referred to members to examine, and draw out a condensed view of their contents for an ensuing meeting. As part of the same course of proceeding, Mr. Donaldson reviewed at some length the recent work on Lycia, by Lieut. Spratt, the Rev. Mr. Daniell, and Professor Forbes, which contains an account of extraordinary ruins, until now unknown. Mr. D. referred principally to Termessus, where there are ruins of surprising magnitude, comprising an acropolis, agora, and necropolis.

Mr. Godwin pointed out, that in the first volume of the work in question (p. 226), copies were given of twenty-eight masons' marks found on the stones of an old Turkish Khan, the greater part of which were precisely similar to others found in England, France, and Germany, and figured by him in the *Archæologia;* a further instance of the prevalence of the same series of marks.

Mr. James Bell then read his essay "On the Adaptation and Modification of the Orders of the Greeks by the Romans and Moderns," to which a medal of merit had been awarded.

The writer said,—The order, in Grecian architecture, constituted the chief feature, and contributed its character and proportions to the entire edifice. The column, on the introduction of the arch by the Romans, lost its importance, and together with that, its extreme delicacy of finish and proportion; in place of which luxuriance and richness were substituted, so as to harmonize more thoroughly with the sentiments of the Roman people. This change gradually led to a complete debasement of the style; the arch, after the Constantine era, gaining in importance more and more until the pointed style arose from the ruins of the classic. On the revival, the Italians by the study of the antique endeavoured to restore it to its primitive purity, and many of them were eminently successful in the attainment of their object, although the painter-architects introduced many flagrant abuses both in composition and detail.

In the north of Europe, where the pointed style had obtained a firmer footing, the change was produced by the grafting of classic details on a Gothic outline, constituting the Elizabethan and Renaissance; and, at the same time, an increased intercourse with Italy led to the adoption of the new style in all its purity, for much of which we are indebted to Sir Christopher Wren, in whose school it was thoroughly naturalized.

Since the middle of last century, the study of Grecian remains has led to the further purification of the Roman, together with a due appreciation of some of those delicacies of form and proportion which were previously either misunderstood or altogether overlooked, although the feeling of the age, so far as regards detail, tends rather to imitation than to modification. To the Germans, however, was due the merit of the most complete apprecia-

tion of the works of the Greeks,—a result which might have been anticipated from the analogy between the habits of thought and feeling, and even language, which may be traced between the two nations.

The honorary secretary, Mr. Bailey, announced the following as the subjects for essays for medals of the Institute:—

1. On the application of sculpture to architecture, and the principles which should regulate its introduction in buildings generally, with regard to beauty of embellishment and propriety of style and character.

2. On the theory and practice of constructing chimneys, particularly in dwelling-houses, with regard to the formation of fire-places, flues, and all the parts connected therewith, in order to insure sufficient draught and exit of the smoke.

The essay to contain detailed statements of experiments and practical results.

The Soane medallion will be given for the best design for a building, to contain public baths, on a comprehensive scale, with all suitable accessories, combining the magnificence of the ancients with the usages and purposes of modern times.

Respecting the royal medal, the secretary said, no communication could be made at present, as the council had not yet come to a decision with respect to its appropriation.

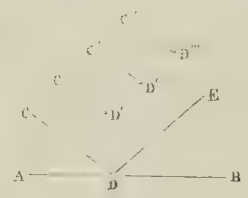
We have reason to believe that the council have fallen into the view we took of the subject last year,* and that this medal will be made an object of ambition open to the whole profession.

## REFLECTION OF SOUND.

In the very interesting and suggestive paper read at the Royal Institute of British Architects, "On the Construction of Buildings with reference to the Laws of Sound," Mr. Scott Russell stated, that it had hitherto been taken for granted that sound was reflected under the same laws as light, or billiard balls from the cushions of the billiard-table; he had, however, by sundry experiments, arrived at the conclusion that sound was promulgated through the air in waves, in a manner analogous to that in which waves of the first order moved in water: upon these water-waves he had several times experimented, and found that the theory of reflection above-mentioned was in this respect but partially correct, inasmuch as reflection only occurred when the angle of incidence was greater than 45° degrees; for when it was less than 45° the wave of water was no longer reflected, but assumed a rolling motion along the plane against which it was projected. This, he said, was from analogy, applicable to sound, although such a theory was not philosophically acknowledged. He, moreover, added, that although such was undoubtedly proved, by the results of his experiments, to be the case, yet he could not offer any explanation of the cause.

Now, it appears to me, that the wave of sound cannot be considered analogous to a ray of light which strikes upon a plane in one point, and is reflected from the same point in the well-known manner; nor as the billiard ball, which impinges the cushion at a certain point, and is immediately reflected from it as the ray of light from the plane; but it must be considered as a force which may be described as of continuous progression, inasmuch as the wave is not a solid body, the whole of whose molecules would be acted upon simultaneously, but, on the contrary, it is a body, part of which may be already reflected whilst the rest is still in a progressive motion.

Now, if AB represent a plane, and CD the direction of a billiard ball, impinging at D, the ball would be reflected in DE; *i.e.* ADC = BDE, and proceed in a direct line from the point D, with a certain impetus or force, which I will call F. If, however, we suppose that whilst the force F, *i.e.* the ball, is proceeding in the direction DE, it is subjected to the influence of several other forces, represented by $f', f'', f'''$, acting respectively in the directions C′D′, C″D″, C‴D‴, as is obviously the case in the continuously progressing wave, these forces, $f', f'', f'''$, must undoubtedly have some effect upon the direction of the reflected force F; and let us notice *how* these forces will affect it, and we shall find Mr. S. Russell's deduction perfectly correct; for it is obvious, that when CDA ∠ 45°, then CDE ∠ 90°, and the forces $f', f'', f'''$, acting upon the direction of the force F at such an angle, would increase the intensity of the force F in an outward direction, *i.e.* from the plane (similarly to a force acting obliquely on the plane of a wedge, or a head-wind upon the sails of a ship), and the wave of sound would consequently be reflected; but if, on the other hand, we have CDA ∠ 45°, then CDE ∠ 90°, and the forces $f', f'', f'''$, will evidently impel the force, F, inwards from the




direction DE; that is, prevent the sound being reflected. What has been shewn for the force F might be shewn for the forces of each and all of the molecules of the progressing wave, and will lead to the conclusion, that so long as ADC (or angle of incidence) ∠ 45°, the posterior position of the wave in progression will drive the anterior portion, already reflected, away from the plane it strikes; and that when, on the contrary ADC (or angle of incidence) ∠ 45°, the portion of the wave in progression will constantly impel the part of the wave reflected towards the plane, and cause the result described by Mr. S. Russell.

In reference to echoes, it may be interesting to mention, that in Woodstock Park there is an echo which at night will repeat twenty syllables very distinctly; there is also said to be an echo near Glasgow, which will thrice return a tune played on a trumpet.

ηχεω.

## ON BEAUTY—THE BEAUTIFUL.

[PARAPHRASED FROM WINCKELMANN.]

"Beauty may be reduced to certain fundamental principles, but not fathomed by any especial explanation. Generally it is said, that it consists in the mutual coincidence of any being with its scope, the parts with each other and the whole.—Every one, therefore, will acknowledge, that the cause of beauty, which may be considered as identical with perfection—is not to be sought for *without* beauty *(ausser der Schönheit)*, as it is to be found in all things created. Conceding this, we have yet to premise, that 'THE HIGHEST BEAUTY IS ALONE IN GOD.'"—*Winckelmann.* "History of Ancient Art." 1763, iv., 5, 6.

On reflecting on the purport of these ideas and words, and all the associations connected with them—we may again exclaim, how beautiful! All, whatever gave us joy and pleasure, and elation and edification, comes within their category, which comprises the whole sun-side of human existence. But we are compelled by our scope—and candidly confess, by the vastness of the subject—to contain ourselves within certain limits. *Beauty—the beautiful!* We do not intend—wish not, to enter on an inquiry, why a sunrise is beautiful in nature, or why Schiller exclaimed on the infuriated waters of the Elbe during a gale, "Beautiful, beautiful!" Aside all this beauty and grandeur of nature, lies the beautiful in art—the beautiful made by man's exertions, at man's hand; and it is not in vain, that genius is called creative, as it puts itself thus beside and akin to a power, even surpassing his conception. But art-beauty (*die* Kunst-Schöne), again, is of a multifurious kind, most of which also, we must lay aside—beauty of diction, graphic composition, the sweetness of tones; even that art, which, on a piece of canvass can make our eyes perceive a vastness of objects, even dive into perspectives which do not exist—save in our mind. It is on the art-piling up of materials for *structural* purposes—and the moulding of substances into a more or less nature-shape (sculpture), that we may dilate in the present place. Neither shall we grind over what has been (a thousand times) said historically and *objectionally* on these subjects, but ask at once: "What is beautiful in art—what do we call beautiful in art?" What, however, art itself is, must be first adverted to. And thus we say, that although *imagination* is highly extolled by our kind, and every thing wondersome or strange ascribed to it—yet it is to be borne in mind, that its province, its scope, is not an *absolute*, independent or *autochtonic* one, cannot be so, as nothing is independent in nature (the world)—but *nature* herself. Thus art has its basis in nature; it can not issue from it, nor transgress it—perhaps, hardly ever surpass it. But there is no *emulation* with or about nature—*can* not be!

If we consider things existing (nature), we shall find amongst its numberless laws, one or two, which we shall advert to here—as being exceedingly comprehensive and far-reaching. Nature, then, *first* impells every existing thing to push its existence (being) to the very highest degree of—inward and outward, which are synonymous —perfection. And *second*, nature accomplishes all her aims by most concise and well-managed means. As we intend to begin with the beautiful in architecture, we shall speak of the latter law first. But we have to repeat—that architecture (like any other art-branch) is nothing absolute, independent, or autochtonic; it took its rise, historically and didactically, from nature, and by its rules it must abide. What is the column, the capital, the architrave—the arch? Why —they are all fore-typed (foreshadowed) in nature; every one of them. Look at the ruins at *Debut* and *Gartas* in Nubia, as represented in Gau's splendid work—monuments coeval with, if not anterior to the oldest Egyptian temples. What are the capitals of these columns—but the very representation of those palms, which even now grow in the immediate neighbourhood? There they are—the rudiments of the petioli of their leaves, as they appear in any adult tree. But can a palm tree be beautiful? Certainly it can—*it is*. But when? Will, or can we, even call such a tree beautiful, if it is stunted and stinted in its growth, ventricose or contracted at any of it parts, leafless, and so on? Any of these forms and qualities would encroach (sic), against either or both of the above laws of nature. In fact, the (absolute or necessary) form of a palm tree, or any other tree, may be constructed mathematically, if a few data be given. The highest or main aim of the palm is to bear its spike of flowers or fruits,—these are surrounded by leaves, required for the whole vegetative process of the plant. And now we call—must call, that palm beautiful, where all these organic processes (or rather their *external* typic exponents) are pushed to the highest degree of perfection, with the least amount of means and matter. And the same is the column, of which we say, *first*, that it is then beautiful, if it *correspond* with its prototype, whence it sprung,—could not *but* derive its form from. We shall transgress now to another analogous point, which will make our ideas centre and combine. As it is the destination of the trunk to bear *something*—leaves, flowers, and fruit—columns *also* have to bear something. And here, then, the beautiful in the architrave is *given*. There is a certain quiet, repose, rest in every thing perfect, beautiful, which imparts itself to the mind of the beholder; as quiet in mind-emotion is not excluding permeation and movement, but merely stagnation, languor. Hence, the beauty of a porch or colonnade will consist in the proper distribution (distance) of the columns, and in their (mathematical—nature-) shape compared with the architrave or roof they have to *bear*. *We* do not doubt, that if all this be mathematically true, the structure will be beautiful; but, even if *this* be not *conceded*, any one will agree, that if the proportions of the single columns, in relation to architrave and the whole scope of the structure (its plan and *aim*), be not nature-correct, the thing will, and can never be beautiful. Goethe says, that "it is by the horizontal line that we are human being,"—can alone be human beings. He is right. Civilization, at least, begins with it. But we have to consider that *this* line (like any perfect mathematical figure), is also the most durable in construction, as are the arc and all arcoides.

Having thus *hastily* (we would almost say feebly) dispatched the structural part of the beautiful, we shall transgress to the *causation* of the beautiful in the human form, which, after all, may throw some further light on even our former statement. *The human form!*—We *northerns* can *know* nothing of human form; and this is mystically the reason why we can have no (fine) human form before us;

* Vol. IV., p. 325.

muffled up, as we ever are obliged to be, in sacks of wool and cotton. If our social condition will ever allow us to see (at least) male human form—in public games and festivities, then we shall be near *possessing* it. And here then, we have, unconsciously, struck at all the causation of human form-beauty. Because, our readers perceive, that *that* is called human form-beauty, which is adapted to all the evolvings and evolutions of the human frame. Consider a beauteous young female's hand—neither callified by over-labour, nor bloated or inflated by effeminacy or luxury. Every line wavy, flowing; what sweet solidity in the flesh, the cellular tissue! What capricious and determined form of every finger, every joint! And what of this hand? It will not be, and is not appropriate for one who has to saw the whole day in dogged assiduity and perseverance; nor will such a hand appertain to the musician, practising twelve or fifteen hours a day on piano or harp; nor to any similar one. But it will belong to the *woman*, who is doing all these things in their alternate, nature-ordained succession and sequel—can do them at least. And so it is with any other part of the human body. An English prize-fighter will never be a pattern of human form-beauty; because in him the bull-dog faculties and a horse's power have been nurtured—developed. The athlete of olden times was, after all, the *better man*, until we come to the Apollo of Belvidere, the pattern of every thing serious, manly, proud, strengthfull, energetic. But all the form-beauty of any limb or the whole frame, is also the pattern for the elucidation of the physiologist, the anatomist. If the latter had to construct theoretically and *secundum artem*, a limb, a body, perfect in all its scopes and relations—appropriate for any exertion, or action, or function of the human kind; they would not, could not shape it differently from what the great masters of marble have made them.

This would lead us then—in architecture, to the compasses, the square, the rule, the logarithm, the equation; in sculpture, to the scalpel, the saw, the sonde; digestion, absorption, &c. Nature uses them all—aye, most accurately and minutely, but they do not appear outwardly. Nature may have studied (brooded over) them once, but has now forgotten them, laid them aside. And the same instinctiveness, unconsciousness, pervades the man of genius. Do our readers believe, that Bramante or Raffaelle were surrounded by an array of mathematical instruments and books, when they threw down the main, grand features of St. Peter's temple? Do our readers believe, that Michael Angelo or Titian fumbled about bones and muscles, and tendons, in projecting their grand figures of human form? None of them surely did, although there might have been plenty of it at any other given period. Genius does not disdain study—but, in creating, does not require it. And thus we have arrived at another criterion of the beautiful—that it is *innate* in genius. Let any geometer and mathematician examine the Parthenon or the beauteous temples of Pæstum, with all his levels and squares, and rules; he will find them correct, every part adequate and commensurate to its purpose. So "a whole wilderness of" surgeons and anatomists may probe, and dissect, and analyse the Venus of Medicis, the Torso—or even the canvass-figures of a Raffaelle, Titian, Guido, &c. They will find every line of elevation and depression, and swelling and subsiding of muscles, correct; the bone, the sinew, the artery underneath indicated to a nicety. But by this knowledge *alone*, such works could never have been produced.

Finding, therefore, that beauty is the perfect *concordance*, coincidence of all the parts of a *whole* for a certain scope and purpose, superfused by that *idealization*, which every perfection carries with it; we conclude by repeating with Winckelmann—

"THE HIGHEST BEAUTY IS ALONE IN GOD."

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DESTRUCTION OF CITY CHURCHES.—It is reported in the city, that the church of St. Benet, Gracechurch-street, is shortly to be removed, and that many others will, ere long, share the same fate. The churches of London are amongst the most valuable works which the country possesses, and we deplore the removal of any of them.

## WOLSEY'S GATE, IPSWICH.

THIS gateway is the only remaining portion of the college which Cardinal Wolsey founded in his native town, Ipswich. It is generally supposed that it was merely an outlet from an inferior part of the building, for when we consider the desire which the Cardinal possessed for displaying his wealth and grandeur, it is improbable that he would have erected so small an entrance to a college, which we have satisfactory proof was of any thing but diminutive dimensions. We find the dean, *Willyam Capon*, the first and last of the college, writing to Wolsey in the following manner:—"Also we have receyved of Mr Dawndy clxxj. tonnes of Cane stone, and within a fortenyght next after Mighelmas now next commyng, we shall have oon c. tonnes more, so that your workemen shall not be un occupyed for wante of stone. And the said Mr. Dawndy hath promised to me that before East next commyng we shall have redy M tonnes of the said Cane stone." Thus we see that there is good authority for 1,300 tons of Caen stone being used in the building.

The gateway in question is entirely built of brick, which gives more weight to the belief that this was not the principal entrance; as, in an edifice containing so much stone, it is more than probable that the Cardinal (who is well known to have had a thorough knowledge of architecture) would have used the same material for the main outlet.

The gateway was originally more ornamented than we see it at present, as each of the side piers was crowned with a pinnacle; and a stone, bearing a commemorative inscription, has been taken away, and placed in Christ Church College, Oxford.

Although much pains have been taken to discover the style and size of the College, as yet no satisfactory clue has been obtained whereby we might judge of its appearance; perhaps, however, the new Archæological Society lately established in Ipswich may, by and bye, turn up something, which as yet has escaped the hands of the antiquary, should they give their attention to the subject. The first stone was laid on the 15th of June, 1528, by John Longland, Bishop of Lincoln; and we may safely suppose that this gateway was erected either in this or the two following years, for the college was entirely completed before Wolsey's death, in 1530. It is now in rather a leaning position, but at present no danger of its falling is contemplated. However, it is to be hoped that the only remaining monument that Ipswich possesses of the greatest man that the town ever produced will be properly protected, and not suffered to fall into decay.

It is to be regretted that there has been lately inserted, in lieu of a fitting gate, one presenting a fine specimen of carpenter's gothic! Such is the low ebb of architectural taste in Ipswich at the present time.

R. M. P.

## THE MORGAN TESTIMONIAL COMPETITION.

### TREATMENT OF ARTISTS.

THE following circumstances which have recently come to our knowledge call for inquiry. In consequence of the advertisement requesting artists to send in designs for a testimonial to Sir Charles Morgan, Mr. Calder Marshall, the sculptor, was led to apply for the particulars to the honorary secretary, Mr. Hellicar, of Newport, and having obtained them, they appeared so far satisfactory, that he was at the pains to make a careful model, after a journey to the spot, and to deliver it to him. After some time had elapsed, he accidentally learnt that an artist had been appointed to execute the statue; and not having received back his design, applied to the secretary for it. Of this application, no notice was taken, and it was not until after he had a second time written, that it was returned. Upon opening the case, the artist discovered that *it had never been unpacked;* and immediately sent a letter to the secretary, declaring that this was the fact, and calling upon him for an explanation.

His answer was, "I beg to say in reply to your note of the 18th, that you entertain a very erroneous impression respecting your model."

This equivocal reply did not satisfy Mr. Marshall, and he wrote again calling for further explanation, but has received no answer.

The model was unpacked by the person who packed it, and in presence of individuals who were looking on while it was put in the case, and all declared that it had not been touched. From the peculiar manner in which it was packed, they say it is an absolute impossibility it could have been taken out of the box without their knowledge.

## IMPROVEMENT OF LEICESTER SQUARE.

ON more than one occasion our attention has been called to the neglected state and deplorable appearance of the inclosed part of Leicester-square. No persons appear to enter it; no one manifests any interest in its maintenance; and that which might and ought to be an ornament to the metropolis is positively a disgrace. It has lately changed hands we believe, so that an improvement may perhaps be looked for. If the iron-railing were removed, the whole space levelled and paved, and one or two ornamental fountains introduced, the public would be benefitted, the neighbourhood improved, and the houses in the square greatly raised in value. We suggest to the inhabitants and owners to take some steps in the matter at once.

## BRITISH MUSEUM.

THE annual statistics and accounts have just been published. A remarkable decline has taken place in the number of visits by artists and students to the sculpture galleries 'for the purpose of study.' In fact the number has been gradually diminishing for years past, but last year it was smaller than ever, amounting to only 4,124; while, in 1840, the number was 6,354; and even in 1844 it was 5,436. The number of visits to the print room last year was only 4,390; while, in 1842, it was 8,998,—a still more rapid and remarkable decline. Up to 1844, however, in this case, the number had not declined, but, on the contrary, increased from 6,717 in 1840. There is also a decided falling off in the number of purely 'literary' visitors to the library, as observed by the *Times*; for it appears that the number of students who ransacked the book-shelves in 1840 amounted to 67,542, and in 1842 to 71,706; while, last year, the number was only 66,784. The fact that the catalogue is little else than 'a sealed book,' if there can be said to be a catalogue at all, may in part account for the rapid exhaustion of the ransackers, whose waste of time, in ransacking the catalogue itself, must be ever on the increase, as the more accessible titles become exhausted. The number of printed books registered and stamped, according to the secretary's return for last year, amounted to 30,550, exclusive of 5,117 Chinese volumes. The most valuable acquisitions in the department of antiquities (210 in all besides coins, &c.) were the Boudroom marbles, a marble bust of Apollo, a sarcophagus from Beyrout, a collection of bronzes and terracottas chiefly from Basilicata; of Babylonian cylinders and oriental engraved stones; and of bronze, iron, and gold Anglo-Roman antiquities from Stanwick; several sepulchral vases, 1,559 coins, and 52 medals, &c. &c. The expenditure of the whole establishment in course of last year amounted to £45,911, of which sum £18,129 were for purchases and acquisitions; £19,470 for salaries; £5,507 for bookbinding, &c. The estimated charge for the ensuing year is £50,666. The number of visitors to the general collections has vastly increased since 1841, when it was 319,374; the number last year being 750,601, and in the year previous 685,614.

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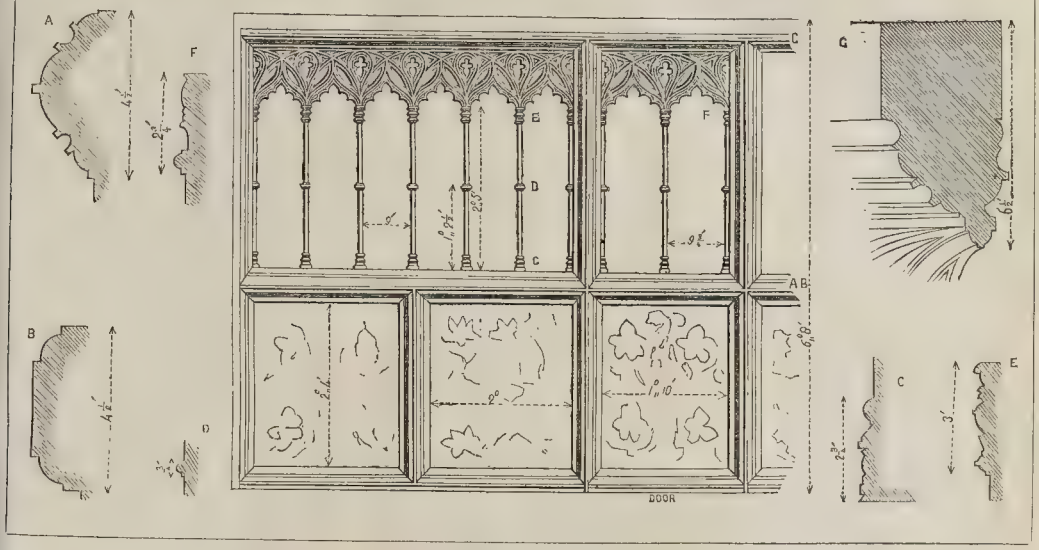
OXFORD ARCHITECTURAL SOCIETY.—At a meeting, held on the 10th, the Rev. the President in the chair,—Mr. Freeman read the report of the committee, which alluded chiefly to the publications of the Society, and the instructions which had been recently issued to the corresponding secretaries; and a lecture was then delivered by the Rev. William Sewell, on "the application of certain principles of Greek philosophy to the study of architecture," treating chiefly of the application of the Aristotelian philosophy.

DECORATED WINDOWS, NORTHFLEET CHURCH.





## DECORATED SCREEN IN LEAKE CHURCH.




### NORTHFLEET CHURCH, KENT.

A pleasant village is Northfleet, and many pleasant hours have we spent there. Although so close to Gravesend, that large tea-garden by the water's side—if we may so speak—it still retains its rural aspect and ancient quiet. The old church, dedicated to St. Botolph, stands on the north side of the village, and, to those who know how to observe, will afford interesting matter for contemplation. It is a spacious building consisting of nave with side aisles, a large chancel, and a massive square tower at the west end. The latter is a modern addition, erected, according to Hasted, in 1717. A portion of the nave at the west end is screened off, as an ambulatory. The nave has an open timber roof, and the chancel a boarded ceiling. There are remains of piscina and sedilia on the south side of the chancel, and an early decorated rood-screen, dividing the latter from the nave, of which screen there is an illustration in Parker's Glossary. The windows in the chancel are of the early decorated period (beginning of the 14th century) of good design. As we are often asked by our country readers for available examples of windows, we have selected two from this church for illustration.

The first is from the south side of the chancel; the second, shewing only the head of the window, is from the east end of the south aisle. A is a plan of the jamb, which is the same in both cases.

Scattered about in the pavement, the visitor will find many of the old tiles, and a few loose brasses worthy of examination. He will notice, too, the parish chest, bound with iron, and observe some well-sculptured drapery in a monument dated 1703.

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Competitions.—Designs are wanted for a building suitable for an athenæum and mechanic's institute at Sheffield, with warming and ventilating apparatus, gymnasia, &c. and coffee-room, news-room, library, &c. &c. The chosen architect to carry out his own designs.—Plans also are wanted for alms-houses to be erected by the pawnbrokers' charitable institution at West Ham. No premium or payment is offered or promised for these.

Improvement of Towns.—A bill for consolidating in one Act certain provisions usually inserted in Acts for paving, draining, cleansing, lighting, and improving towns, has just been read a first time in the House of Commons. It is a sort of model bill for future private Acts for such purposes.

### WOODEN DECORATED SCREEN IN LEAKE CHURCH, YORKSHIRE.

The study of the earlier examples of ecclesiastical wood-work is becoming daily more necessary, in consequence of the vast number of churches erecting in the early English and decorated styles, in which the chaste effect so desirable is frequently marred by florid wood-work.* Several decorated screens have been published, but I believe the one given above has not hitherto been noticed. It separates the north chantry in Leake Church, from the nave and north aisle, and though much of it has disappeared, it is still a great ornament to the church, retaining its ancient paint in tolerable perfection. The mullions, shafts, and tracery are painted with green and vermillion, the panels with birds, flowers, and fanciful foiled ornaments. There is another peculiar feature in this screen, which very rarely occurs in florid work, I mean in the tracery, which is moulded on both sides of the screen, the florid screens having the interior quite plain. It is to be regretted that so little care is taken of this interesting relic. The south chantry of the same church has a mutilated late florid screen and two exquisite stall-heads, dated 1519; of the rood-screen only the panels remain, though the tracery is still remembered.

Will. Hylton Longstaffe.

Darlington, Durham.

* Inter alia, the new church of S. John Darlington, is designed in the early English style, with a stiff obtuse florid traceried roof. To produce any thing like a good general effect, I conceive early English roofs should possess at least an equilateral-triangled section, and carefully avoid foliation, save in its later specimens, when foliated circles and triangles may be sparingly used. The same church is to have a panelled door. A plain one with iron-work would have been far more suitable.

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### NOTES IN THE PROVINCES.

An "old inhabitant" of Cambridge, while assuring the *Chronicle* of the "general satisfaction" with which the announcement of an intention to build club-chambers for public purposes has been received, suggests the "establishment of a regular market-house underneath some of the rooms," and the formation of a double front, by the extension of the proposed buildings from one thoroughfare backwards to another, on the corporation property on which it is proposed to build these new municipal club-chambers. Strange to say, the city of Cambridge is still without what almost every town in the empire has,—a market-house; so that the acquisition of such a desideratum, in this era of railway revolution, ought to give an additional spur to the impetus with which it is to be hoped the new architectural idea will be forthwith carried out into a "local habitation and—a name;" for even a telling, brief, and comprehensive name, is yet a desideratum for this new collective idea, and such a name, too, is of much importance, however little there may in many cases be "in a name."——The metropolis has had an energetic example set before it in the prompt realization of the project, only lately started, of an abattoir at the Trowse station, on the Norfolk Railway. Two sets of slaughter-houses have been built with every convenience for the daily slaughter of 100 beasts and 300 sheep. The buildings and yards are inclosed within high brick walls, and adjoining the slaughter-house there is a large water-tank. Trucks to be loaded with the carcases run close to the spot. ——The sewerage of the marsh district at Southampton is still under discussion. It seems to be undecided whether the sewers should be cut along the public roads or under property let out to private parties. The council's approval of a plan on the latter principle proposed by the committee has been rescinded, and the further consideration of the question referred back to the committee.——The architect's report on the repairs more or less necessary at Northwood church, Isle of Wight, being of too sweeping and extensive an order for the parish funds, or rather for the liberality or ability of the requisite subscribers, amounting indeed to the virtual rebuilding of the whole edifice, the architect has been requested to furnish an account of the repairs only which are absolutely necessary.——The price of gas at Cowes has been reduced from 12s. 6d. to 10s. per 1,000 cubic feet, in consequence of the late somewhat subdued grumbling of the consumers. As at Sunderland, before the wholesale reduction of the charge for public lamps from 45s. to 17s., any further reduction no doubt "could not possibly pay," until a more determined spirit is displayed by those who do pay. The Salisbury directors have come down a step lower than their brethren at Cowes, having reduced the price to 8s. 6d. per 1,000 feet, with a further reduction to a considerable extent where large quantities are consumed. At Romsey, no reduction from the original 12s. 6d. has as yet been obtained; but the proper means are in the way of being taken by the consumers, many of whom have determined to become as far as possible non-consumers, by burning as little as they can, until the price be reduced to a less extravagant standard.——The foundations of the new Roman Catholic Chapel at Salisbury are nearly completed.——The Plymouth council

are advertising for land on which to erect baths and wash-houses under the powers of the late Act.——The Admiralty have granted 4,000*l.* for the erection of a church at Morice Town, Devonport, the site of the new steam arsenal. ——The sum of 11,500*l.* has been certified to the Bristol magistracy to be requisite for the purposes of the Act for pitching, paving, and lighting the city for the ensuing year.——The foundation-stone of the new grand race-stand at Manchester was laid on Saturday week.—— On Monday before last a portion of an extensive cotton mill at Ancoats, Manchester, fell in, destroying life in one case, and injuring it in two others, besides smashing some valuable machinery. The precise cause of the disaster is not ascertained; but it is said to have most probably arisen from the giving way of one of the large iron beams, which were in some parts more than 2 feet thick, and about 33 feet 6 inches long (the dimensions of the room being 40 feet by 32 feet), and weighed 66¾ cwt. The damage is estimated at 1,200*l.*, and 200 hands will lose employment for weeks to come. ——Tenders have been made and contracts are about to be entered into for the building of a church and parsonage-house at Oxton, in the parish of Woodchurch, Liverpool, at a cost of about 3,000*l.*, including land. The rector of the parish has subscribed no less than 1,000*l.* towards the erection, and appropriated the Easter dues towards the permanent endowment; and public subscriptions have been set afloat for the remainder of the requisite means. ——The Newcastle town-council are about to erect baths and wash-houses for the poor at the Garth Heads, "a determination highly creditable" to them. It has been determined by the same council to proceed forthwith to erect their new gas works unless the present company come to an agreement in the interim as to the disposal of their works to the corporation, who appear to be still willing to give them a profit of 50 per cent. on their original capital, although the new works (planned and estimated by Mr. Emmett, of Oldham, for a premium of fifty guineas) can be erected for little more than half the sum offered to the company, namely, 90,500*l.* The directors, however, were not satisfied with the paltry profit of 50 per cent. on their "golden egg" producer, but at last agreed to recommend the shareholders to accept of 103,500*l.* for the works! Mr. Hodgson, who moved the resolution to build, observed that "it had been repeated over and over again, by Mr. Keenlyside, that the company was founded on public principle. But if so, he thought they might be content with a profit of 50 per cent., and with something less than an annual profit of 10 per cent. if they were so very patriotic." "As to the quality of the gas," observed another councillor, "Mr. K. should have said nothing, for all the town was complaining of it." The main object of the corporation in offering such terms as those specified, has been to avoid competition.——In the vicinity of Newcastle there is a peculiar sort of black clay, said to be invaluable for lining blast furnaces, as it stands an intense heat without fusing.——A church bridge is to be thrown across the South Tyne, in the parish of Kirkhaugh. The Greenwich Hospital commissioners have subscribed 25*l.*, and the Bishop of Durham 20*l.*, towards the structure.——A rumour that the dome of St. George's Church, at Edinburgh (a sort of miniature of St. Paul's, though itself a large edifice), was in an insufficient state, has led to an examination of it by Mr. Reid, the architect, and a complete contradiction to the rumour.——Government is said to have given orders for the construction of a new model prison near Dublin, with cells for 500 prisoners, on the plan of the pentagonal prison at Pentonville.——A total amount of 1,145,800*l.* has been advanced in loans, on the security of the Irish poor-rates, for the erection of workhouses in Ireland. Of this sum, 1,062,312*l.* remained unpaid on 5th January, 1847.——The Church Building Society, on Monday week, made grants for erecting or enlarging churches in eleven parishes.

No Poor-rates on Public Parks.—It was recently decided at Manchester that, on the ground of want of occupancy, beneficial or otherwise, Phillips' Park is not liable to poor-rates, although the lodges, refreshment houses, &c., are.

## RAILWAY JOTTINGS.

Compensation to the amount of 525*l.* for the loss of a wife by railway accident, was lately given at law against the Great North of England Company, who, as was contended, were responsible as common carriers for the safe delivery of whatever property was entrusted to them. Although a wife be thus classed with property, and held to belong to her husband, it must still remain a curious question for the lawyers whether compensation ought to be granted on the like ground for the loss of a husband, who can scarcely be held to be property belonging to the wife, if the wife, on the contrary, be property belonging to the husband. We suspect, however, that the argument savours more of the apt ingenuity of the barrister than the grave ratiocination of the judge. In France, it is not uncommon for surviving relatives to claim damages in such cases; but this is amongst the first of claims ever made in our own country for "compensation for death by accident," as it has been rather unsatisfactorily termed. It is certainly a vast improvement on the old system of deodands, however, as a contemporary remarks. Indeed, not only have the real sufferers—that is, the surviving relatives of the real sufferers—had no amends afforded them by deodands, but the idea is radically defective otherwise, inasmuch as it inculcates a doctrine not one whit more rational than that on which the canine race may be supposed to act in uniformly snapping at the mere insensate instrument by means of which many an unmerited injury has been inflicted on their faithful hides.——It is calculated that the railway "calls" for March will amount to upwards of 3,000,000*l.*; but if the Chancellor of the Exchequer, as is said, lately had the offer of loans that would have paid the half of the national debt, there must be plenty of money in the country, at least, if not in the hands of railway shareholders in particular, to meet immensely heavier demands on the purse of the moneyed interest than that of merely a few millions.——Railway bars, to the extent of 1,500 tons a week, it is said, can be turned out by the new rail mill at Cyfarthfa, with ends sawed off and altogether finished for use.—— The Great Western Station at Cheltenham, is rapidly progressing towards its expected completion in May next.——We learn with pleasure, says the *Railway Chronicle*, that the committee of the Suburban Villages Association, of which Lord Morpeth is the chairman, have arranged with the Eastern Counties for the conveyance of not less than five hundred passengers each day [whether at reduced fares or altogether free to the passengers themselves, is not stated] from and to a village that it is intended to erect on the London side of the Lea-bridge station, just five miles and a half from the Bishopsgate station. A plot of land of about one hundred acres in extent, the property of Lord Mornington, has been selected as the site of the village. Building operations will be shortly commenced upon the plan of Mr. Moffatt, the architect of the association. Such a mode of sending London out of town, even from amongst the lower strata of its almost national population, is a worthy one indeed, that merits an effective promotion, a successful issue, and an extensive imitation. —— The Halifax contract, on the West Riding Union Line, has been let to Messrs. Miller and Blackie, to be completed in two years and a half; the Cleckheaton contract to Mr. M'Cormack, to be completed in twelve months; and the Bradford contract also to Mr. M'Cormack.——The Long Preston contract, on the North Western, has been let to Mr. George Thompson. The other contracts on the line will be also shortly let.——The first stone of the great central station at the Carlisle terminus of the Lancaster and Carlisle line, was laid on Monday week before last.——The scrutineers appointed to examine the state of the votes on the question of the Sabbath trains on the Edinburgh and Glasgow railway, have reported that there was a total majority of 152 against Sunday trains. It also appeared that there had been addressed to the directors 1,573 memorials against the running of trains on Sunday, and eighteen in favour of the practice.——A letter from Orleans states that it is now ascertained beyond doubt that a portion of the ground, under and in the neighbourhood of the French central railway, is undermined by natural tunnels. The first suspicion of the existence of these subterraneous passages was created towards the end of last year, when nearly 1,600 metres of earth on the railway works were swallowed up by the opening of a chasm.

### ELECTRO-TELEGRAPHIC PROGRESS.

The Admiralty, says the *Globe*, have at length directed the extension of the South-Western subterranean telegraph to the Admiralty at Whitehall. It will branch off in the Strand, near the company's present office.——At a late meeting of the Commissioners of Sewers, the secretary of the Electro-Telegraphic Company applied for permission to lay down the wires of communication through the city from the various electric telegraphs, to be united in one centre at Lothbury. The secretary said that the company intended to bring the telegraph into the city by way of London-bridge, King William-street, and Princes-street, into Lothbury, where the terminus of the company would be, and from thence along Moorgate-street into Finsbury. The object of the company was to bring the electric line of the South-Western and Dover railways by the above line into the city; and from the terminus at Lothbury to unite them with the Eastern Counties, the London and Birmingham, and the Great Western lines, so as to form one general communication with the different railways throughout the kingdom. The company proposed to lay down the pipes alongside of the kerb, and in a line with the gas pipes, so as to prevent any nuisance or stoppage arising to the traffic, or annoyance to the foot passengers. The question that the company be empowered to lay down the wires of the electric telegraph was unanimously carried in the affirmative. Thus shortly isolation of locality will for ever cease, and the metropolis will more and more emphatically become the great brain of the empire, with which all the chief centres of population and trade, at least, if not every minor centre too, will be placed in instantaneous communion; and then, indeed, shall a revolution such as never heretofore entered into the heart of man to conceive, be in course of almost miraculous establishment.

## ALL SAINTS, HUTTON, ESSEX.

The village of Hutton is situated about three miles from Brentwood, on the right-hand side of the road to Billericay. The church is close to the high road, at a little distance from the village.

It is picturesque, while plain and unpretending; and though small, contains all the essential features of a church. It consists of nave and aisles, chancel, north porch, a modern vestry, with a large chimney on the north side of the chancel, and a wooden tower with low shingle spire (retaining the cross and the cock) on the west end of the nave.

*Exterior.*—The west window is perpendicular, of three lights, with tracery, and without dripstone. On the south side of the nave are two two-light late decorated windows, under square heads, with dripstones resting on notch heads, each light being pierced on each side. The jambs and mullions are simply chamfered. At the south-east is a plain modern dormer window. The windows on the north side correspond exactly in size, character, and position, with those on the south. At the north and south-west and south east corners of the aisles, and between the windows on the south side, are heavy buttresses, all slope, that is, the slope is carried down to the ground to the distance of some few feet, so as nearly to form an equilateral triangle. Those at the corners are placed diagonally. At the north-east corner is a buttress of three stages.

The porch is a fine, open, timber one, with a foliated barge-board. Each side is divided into four bays; each bay is trefoliated, and has on each side a kind of trefoil, the effect being decidedly decorated. The roof is of good pitch, consisting simply of rafters; only two of them have collars; these are placed at a slight distance below the ridge piece. The north door is late pointed perpendicular, with dripstone. At the east end of the north aisle, is a single trefoiled-light window, but it is covered in by the vestry.

The chancel has but the east window now

open; it is plain pointed with dripstone; the tracery has disappeared, and there are two mullions running straight up into the heads. On the south side may be traced a single light window under square dripstone, now bricked up.

*Interior.*—The nave is separated from either aisle by three arches resting on piers (each of which consists of four half pillars) with early perpendicular capitals and bases. The tower is supported by massive frame-work. The nave has an open timber roof, each principal consisting of horizontal tie-beam, with king-post and struts. Close to the door stands the font; it is composed of the bowl of a former font turned bottom upwards, and a modern bowl rests on the bottom of the more ancient one. This latter is octagonal, with a shallow square leaf on each side. At the east end of the south aisle is a plain trefoiled piscina.

The chancel is ceiled and plastered. Close to the communion-table are brasses of a knight and his lady, each figure 15 inches long; underneath are their children. The inscription is lost; according to Manning's "List of Monumental Brasses," the date is *circa* 1510. Near this is a brass-plate bearing the following inscription, it relates to George White mentioned below:—"Here lyeth George White, esquier, the sonne of Richard White, esquier, which George died the 13th day of June in the year of our Lord God 1584." There are no other monuments of interest.

HISTORICAL NOTICE.

The name is said to be derived from the Saxon hou, a hill, and tun, a town; it is otherwise written Atahou, and Hatton. It belonged, in Edward the Confessor's reign, to one Got, a freeman; but William I. gave it to Battle Abbey, as is shewn in the following extract from Doomsday Book:—"The land of St. Martin de Bello (Battle), in the hundred of Berdestaple; Gotins, a freeman, held Atahou in King Edward's time, for a manor and three hides all but 20 acres, always 2 carucates in demesne."

The following is from the Book of Chantries:—"Then one Villane, now none: then 10 bordars, now 15: then one fishery, now none: 4 servants; wood for 1,000 hogs: then 2 horses, now 3: then 4 beasts, now 19: 100 sheep, then 60 hogs, now 100 all but 8: 4 stands of bees and 3 sochmen of 1 hide: always 1 carucate, and 15 acres of free land: then worth 100s., now 6*l*, and those 15 acres worth 30d."

The rectory, or great tithes, belonged to Battle Abbey, but at the Dissolution they passed with the manor. The advowson has been in the Dean and Chapter of St. Paul's since 1325.

The manor and hall were granted by William I. to Battle Abbey. It remained with them till the Suppression, when Henry VIII., in the year 1540, granted it to Sir Thomas Darcy; he immediately alienated it to Sir Richard Rich. His son, Edwin Rich, alienated the manor of Hoton, *alias* Hutton Hall, to Jerome Weston, who soon parted with it to the White family. Richard White married Maud, daughter of Sir W. Tyrrell, of Heron. Richard; his son, succeeded; then his son, George White, who died 1584 (see inscription above), then Richard White, followed by his son Richard. His son George sold it to Thomas Cory, who left nine acres for the support of the poor and repairs of the church. Thomas Cory died in 1656, and is buried in the church. John Heyward then possessed it; then William Hatherly, who sold it to Robert Surman for 15,200*l*. Henry Hall (brother of Sir P. Hall, of Upton) bought it for 12,060*l*. He died in 1749, and was succeeded by his son Henry.

AMATEUR.

THE INSTITUTE OF FINE ARTS.—The Institute held their first conversazione in their new rooms, Great Marlborough-street, on the evening of Saturday last, when the walls and tables were literally covered with fine works of art. The rooms, which are scarcely large enough for such a purpose, were much crowded. We were glad to see a sprinkling of the Royal Academicians there, and hope that all personal differences amongst the members will be forgotten, in a generous emulation to render the society as advantageous to art and artists as it may easily be made.

## CHURCH OF ST. JOHN THE BAPTIST, SOUTHOVER.

THIS church has been a focus of attraction to antiquaries during the past year, owing to the well-known discovery, in its vicinity, of the mortal remains of William first Earl de Warren, and Gundreda his countess, daughter of William the Conqueror. These venerable relics were preserved in the church; and a sepulchral chapel attached to the edifice is now building for their reception.

Perhaps few small churches in this part of England contain more varieties of architecture than Southover Church; specimens of early and late Norman, decorated, and late perpendicular or tudor, being blended with some of the architecture of the last,—the "revived Pagan" of Mr. Paley. Of this age, is the massive brick tower at the west end.

The church consists of a single pace or nave and south aisle. The north wall, fronting the street, has been newly faced with flint, the wall being built of rubble, and formerly coated with plaster: buttresses have been erected between each window, and a handsome deeply-recessed door-way in the decorated style inserted in the tower.

The windows in the north wall are five, two of which are in the decorated style; the others, square-headed windows, are probably of the 15th century. The east end is lighted by two windows: that in the chancel, a four-light window of the tudor style (the gift of the rector); that in the aisle, a square-headed one.

On the south side, the windows are all of the tudor period: one of four, and three of three lights. The basement story of the tower is lighted by a similar window. The church is entered from the ringing chamber, by a pointed door-way, part of which is concealed by a gallery. The massive square Norman font stands near this door-way; it is of large size, and utterly devoid of ornament.

The nave is divided from the aisle by four remarkably short and massive Norman pillars and semi-circular arches; from the easternmost of which springs, in a curious manner, a late perpendicular or tudor arch and pillar, and about half of another arch, bisected by the east wall; no doubt the church was thus curtailed of its fair proportions by some utilitarian churchwarden for the sake of the materials.

The church has been thoroughly restored and repewed, it having been closed for eight months. The pews are low and painted oak; several are open benches. The windows contain some good specimens of stained glass, consisting principally of sacred emblems, the Agnus Dei, the Dove, the sacred Monogram, an ancient emblem of the Blessed Trinity, &c. The east window is filled with glass cast into a variety of elegant patterns, and relieved with coloured borders; it has a very rich effect.

The roof is probably of the Tudor period; the principal timbers are visible, and are painted oak.

H. E. D.

## THE WORTH OF AN ACORN.

WE have been favoured with the following statement of the contents and value of the celebrated Grove Field Oak, which was felled upon the estate of Mr. Thomas Gifford, of Chillington, near Wolverhampton, in 1786.

| | Arms. | | Girth. | | Feet. 750 |
|---|---|---|---|---|---|
| Butt 30 ft. long | | 5 feet girth | | | |
| 1 | 30 feet | 9 | in. | | 17 |
| 2 | 30 | 14 | | | 41 |
| 3 | 14 | 9 | | | 8 |
| 4 | 25 | 16½ | | | 47 |
| 5 | 41 | 13½ | | | 51 |
| 6 | 25 | 14 | | | 34 |
| 7 | 29 | 9 | | | 16 |
| 8 | 25 | 14½ | | | 36 |
| 9 | 19 | 9 | | | 19 |
| 10 | 18 | 11 | | | 15 |
| 11 | 12 | 12 | | | 12 |
| 12 | 30 | 12½ | | | 32 |
| 13 | 24 | 10 | | | 16 |
| 14 | 26 | 12 | | | 26 |
| 15 | 26 | 17 | | | 50 |
| 16 | 15 | 12 | | | 15 |
| 17 | 12 | 17 | | | 24 |
| 18 | 12 | 8½ | | | 6 |
| 19 | 12 | 19 | | | 30 |
| 20 | 10 | 24 | | | 40 |
| 21 | 23 | 11 | | | 19 |
| 22 | 15 | 12 | | | 15 |
| Contents in feet | | | | | 1,310 |
| Total amount | | | | | £250 0 4 |

14 cord, 3 feet, of wood; 5 tons of bark.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Rome.*—German art-critics have now started the idea, that *historical* paintings should depict historical (*welt-geschichtliche*) events. They apply this remark reflectingly on a late picture of Mr. Rahl, of Vienna, now at Rome—"The Triumphal entry of Manfred into Lucrecia," exhibited in the Art-locale near the Porta del Popalo. The execution, however, is said to be good, and, technically, quite perfect. A cartoon by the same Mr. Rahl—"The Persecution of Christians in the Catacombs of Rome," is said to be one of a historical character. Here, however, it seems that the artist has placed a mosaic image of Jesus Christ in the back-ground, which might have existed at that time in basilicas,—in catacombs, never.

*Byzantine Church in Bohemia.*—The transactions of the R. S. of Prague of 1846 contain a memoir of Mr. Wocel on the Byzantine church at Zabor. This is the only specimen of round-arch architecture existing in that realm, and has been hitherto completely unknown, at least unappreciated. The materials for Bohemian architecture and art are increasing every day.

*Medal in honour of Napoleon.*—Messrs. Galle and Barre, die-sinkers of Paris, have just executed two medals in memory of the translation of the ashes of the emperor to France. The front of both represents the head of Louis Philippe. The reverse of the one exhibits two figures, vested in *drapérie*, standing on the deck of an antique ship; the one seen *en face*, with the regal crown and sceptre in hand, leans with its left arm on the second, seen in profile, and holding a cinereal urn. On the forepart of the vessel a cock is represented. The inscription is:—"Cineres Napoleonis in patriam relati." In the *exergue*, xxx. Nov. 1840. On the reverse of the other medal, the Hôtel des Invalides is represented, and on a ground strewn with immortelles, four persons, adorned with laurel crowns, bearing the cenotaph of Napoleon, on which lie the imperial insignia. The genius of navigation precedes them.

*Cologne Art-Exhibition.*—"This exhibition also shews, that art-excellence comes by starts, and can be neither commanded nor obtained at any, even the *highest* bidding, if it does not lie within the man; and if it does, we may assist or shackle him for a moment; no matter which, talent will always be talent." After these general observations of the *Kunstblatt*, we come to a brief enumeration of the architectural part of the exhibition. Mr. Osterwald, of Köln, exhibited a complete lateral elevation of the fine pointed-arch church of Altenberg, in which the age-tinted colour of the stone has much come to the artist's aid. Of Mr. Michelis, of Bonn, we have two internal views of the *Münster-Kreuzgang* of that city, built in the 12th century, also a general view of Trarbach, famous for its great architectural antiquity. The view of the corridor of a convent has a particularly grand effect, by the light striking in by one huge window in the back; the motive of this picture is taken from the house in which Beethoven was born.

*Enlargement of the Paris Royal Library.*—The long lasted contest between *sense* and jobbing is at last decided in favour of the former, and the library is to be *remodelled* on its *present site*—central, convenient. A vote of a grant for the enlarging of the building has just been laid before the Chambers. The present plan will not cost more than four or five millions of francs. The entire Palais Mazarin will be preserved; the houses, however, which surround the three smaller courts to the north (hitherto used as officers' dwellings), will be demolished. The same will be the case with the buildings of the late treasury, forming the north-east angle of the block. The three (obnoxious) houses in the Rue Vivienne will be razed to the ground—all which combined will permit the construction of *new* galleries on the north and east side of the huge square, as well as the enlargement of the adjacent streets. Consequently, the space of the library will be *doubled*, the building isolated on all sides—and freed from the hazy chimney-smoke of the officers of the library. The merit of this victory is owing to Count Laborde, author of "Le Palais Mazarin et les grandes habitations de ville et campagne au. 17me. siècle." Paris, 1846.

## BRIDGE BUILDING IN HOLLAND.

INSTITUTION OF CIVIL ENGINEERS.

At a meeting on the 16th inst., the paper read was "A description of the method adopted in preparing the foundation, and in building the bridge over the Poldersaart, on the line of the Amsterdam and Rotterdam Railway," by the Chevalier Conrad; compiled by Mr. C. Manby, secretary, from documents furnished by Mynheer Wenckeback.

This bridge derived its importance from the peculiarly treacherous nature of the ground upon which it was constructed; for although in Holland bad foundations are the rule rather than the exception, the difficulties were in this case so peculiarly great, as to demand particular notice. The Poldersaart is a canal encompassing and conveying away the water from the Polders, or spots of drained land, in the commune of Kethel. The railway, traversing it at a considerable angle, rendered a skew-bridge of three openings necessary; the centre one 13 feet span, for the navigation, and the two side arches, 21 feet span each, for the drainage waters. The proceedings were commenced in the usual manner, with the intention of having separate foundations for each pier. This was by shooting in large quantities of sand to form dams, within which, when pumped dry, the foundations would have been excavated. After a length of about 70 feet of sand-dam, 10 feet deep, had been filled in, without exhibiting any signs of sinking, a heavy thunder-storm occurred, during which the whole mass of sand-dam was suddenly engulphed to a depth of 29 feet, whilst there arose simultaneously, at a short distance down the canal to above the water level, a mass of bog earth of an area of 4,489 square feet. The mass increased at subsequent periods of the proceedings to the area of 9,628 square feet. It was evident that an extensive subterraneous shifting of the bog-earth had occurred, and there was reason to fear for the safety of the adjacent dykes and other works. Piling and fascine works were tried without success. Piles of 70 feet in length, when driven and tied together by waling pieces, swerved bodily from their position, and became useless. Fascines equally failed in producing stability. The engineer therefore determined after directing the canal water into a side cut, to surround the site of the intended foundation with mounds of sand, allowing for their subsidence into the gulph below, and their squeezing up the bog-earth around and within the spot. This was at length completed and the foundation pit was enabled to be pumped dry. It then became necessary to remove all the bog-earth from within the space for the foundations, which was accomplished by digging out spaces of a yard square, and filling them in with sand as they proceeded, until by commencing at the exterior and working inwards to the centre, all the bog-earth was removed, and a bed of sand had been formed in its place. The piles for the ordinary foundation used in Holland were then driven through the made ground, and the structure was completed with perfect success. The sand-dams, and the masses of upraised bog-earth outside, being subsequently dredged up in the ordinary manner to restore the canal to its original bed. In this description, the circumstances most deserving attention, appeared to be the sudden rising of the bog-earth during a thunder-storm. This is, however, of frequent occurrence in Holland; and it would appear as if the adhesion of the masses of bog earth to the bottom was so slight, that the vibration communicated to the water by the thunder sufficed to destroy the equilibrium, and the bog turf, which from its slight specific gravity will float even when wet, instantly rose to the surface. When, therefore, as in this case, a heavy mass of sand was placed in the vicinity of such bog earth, the bottom was unable to resist the pressure, and the least vibration caused it to break through the crust, being engulphed amidst the lighter material, which it forced up in the direction of the least resistance. The paper treated at some length on all the precautions necessary in this and similar constructions in Holland, where such bad foundations are of very constant occurrence.

In the discussion which ensued, descriptions were given of the simpler methods employed in similar situations in England, where bridges of greater weight and span were constructed upon foundations of nearly as treacherous natures. For instance, on one of the branches of the Norfolk Railway, for a bridge, of which the swinging portion weighed 100 tons, a series of sixteen piles, driven 50 feet deep into the silt, in 12 feet water, supported a cast-iron kerb, upon which a cast-iron close-jointed cylinder was lowered and secured; within this, the centre foundation was built, and had stood perfectly. Other instances of raft or floating foundations, common in Lincolnshire, were adduced, shewing the simple means by which such local difficulties were overcome in England.

## THE LIGHT AND HEALTH TAX.

In the Commons, on Friday last, Lord Duncan asked Lord Morpeth, as Chief Commissioner of Woods and Forests, whether any alteration was contemplated in the mode of assessing the window-tax. He was induced, he said, to do so, by the fact that his Lordship, as one of the directors of the Metropolitan Association for Improving the Dwellings of the Industrious Classes, had sanctioned a report issued by that Association, in which it was stated, that "the directors had bestowed much time on the question of the window-tax, as bearing upon the dwellings proposed to be erected by the association, and though the tax, according to the present mode of assessment, would bear heavily upon the tenants, they confidently hoped that an alteration in the mode of rating would shortly be effected." Lord Morpeth, in reply, said, that he quite agreed with his noble friend that the subject of the window-tax was closely connected with sanatory considerations; but it was also a financial question, and he had received no intimation from the Chancellor of the Exchequer that it was his right hon. friend's intention to give up his office, and leave him (Lord Morpeth) at liberty to deal with the window duties.

A petition, as under, from 263 of the ratepayers of Reading, praying the repeal of the window-tax, was lately presented to parliament by Mr. Brotherton:—

"The petition of the undersigned inhabitants of Reading,

"Respectfully sheweth,—That the tax levied upon windows is oppressive on your petitioners, is unequal in its operation, prejudical to health and cleanliness, prevents the improvement of house property, and lessens the means of employment for the industrious classes.

"Your petitioners, for the reasons aforesaid, beseech the House of Commons immediately to repeal the tax levied upon windows in Great Britain."

Reading, March 6, 1847.

This may serve as a precedent for other bodies anxious to petition to the same effect.

## New Books.

*Lanzi's History of Painting in Italy.* Translated by Thos. Roscoe, Vol. I. Bohn, York-street. 1847.

Mr. Bohn has done well in including Lanzi's well-known and valuable history in his "Standard Library." It will form three volumes, and will thus be obtainable for a few shillings. "Lanzi's history," as Mr. Roscoe observes, "brings into full light the leading professors of the art, exhibits at due distance those of the second class, and only glances at mediocrity and inferiority of character insomuch as to fill up the great pictoric canvas with its just lights and shades. The true causes of the decline and revival of the art at certain epochs are pointed out, with those that contribute to preserve the fine arts in their happiest lustre; in which, recourse to examples more than to precepts is strongly recommended. The best rules are unfolded for facilitating the study of different manners, some of which are known to bear a resemblance, though by different hands, and others are opposed to each other, although adopted by the same artist; a species of knowledge highly useful at a period when the best productions are eagerly sought after at a high rate. It is a history, in short, worthy of being placed at the side of that on the Literature of Italy by Tiraboschi, who, having touched upon the fine arts at the outset of his labours, often urged his ancient friend and colleague to dilate upon a subject in every way so flattering to the genius of Italy; to Italy which, however rivalled by other nations in science and in literature, stands triumphant and alone in its creative mind of art."

The present volume includes the Florentine school, the Sienese school, and the Roman school, with a biographical notice of the author and his original preface.

We are glad to see announced among the volumes in progress, "Lectures on Painting by the Royal Academicians." Our artistical literature is so meagre, and withal so confined to a few readers, that we hail thankfully this certain means of further diffusing a knowledge of the lectures in question.

*Hand-book of Anatomy for Students of the Fine Arts.*—By J. A. Wheeler. Highley, 32, Fleet-street.

This little book was published, the compiler says, as a pocket-companion for easy reference by the student when actually engaged in drawing, and it fully bears out his intention. Although concise, it is comprehensive and very clear.

## Miscellanea.

New (Independent) Chapel, at Manchester.—The first stone of this edifice was laid last week in Cavendish-street. The plan consists of a nave and side-aisles, with transepts, and apse, or organ gallery at the east end. The nave is divided from the aisles by five lofty arches, on clustered columns, supporting a clerestory of coupled lights under one arch, with side panels in each bay. The west front consists of a principal entrance, deeply recessed, with columns, and enriched arch moulds; a lofty window over, with a continued arcade across the entire front, connecting the tower at the south-west angle with the general design. In the gable is a five-light window, and a canopied niche, with octagonal pinnacle over, separating the north aisle from the nave. The tower is in four stages, flanked with bold buttresses in four offsets, and terminating with canopies under the corbel tables of the spire, which is broached. The upper stage of the tower is arcaded, and pierced for two lights. The total height of the tower and spire is 166 feet. A deeply-recessed porch, two stages in height, is formed between the buttresses of the south side of the tower; in the gable and above is an enriched three-light window under one arch. The aisles are flanked with boldly-projecting buttresses, terminating in canopied heads above the moulded and enriched parapets. The transepts are arcaded with five arches, three pierced for lights; and all the arches are dog-toothed. In the several gables are two-light windows, with side panels, and the angles are flanked with buttresses, crowned by octagonal pierced pinnacles. The east end of the chapel is lighted by a large wheel window, in ten lights, over the organ gallery. The roofs are open, carried by curved brackets, springing from enriched corbels; and an ornamental screen terminates the east end. The building is calculated to seat from 1,400 to 1,500 people. The *Illustrated News* of last week gives a view of the church, but the architect's name is not mentioned. The style is the early transition to decorated, and the whole of the work will be externally executed in stone.

Farewell to St. Mary Magdalene's at Doncaster.—No one having taken advantage of the offer of the town council to allow the ruins of St. Mary's Church to be translated either to the proposed new cemetery or any where else, for preservation, at least, if not for restoration; and all obstacles to the progress of the new markets, as observed by the *Gazette*, having been cleared away; the last vestige of these venerable monuments of the past, sharing the fate of time, must inevitably go to the ground, leaving not even a wreck behind of what has been; so it only now remains to the lover of antiquity to bid a long farewell to the church of St. Mary Magdalene.

Carlsruhe Theatre and Church.—On the site of the theatre just destroyed a church is to be erected, while the new theatre will be built in the garden of H. R. H. the Hereditary Prince.

Projected Works.—Advertisements have appeared in recent newspapers, calling for contract-tenders for the erection of a school in St. John's Wood Park; a pier 500 yards long, with a dock, and other works, at New Holland, Lincolnshire; five large magazines, sundry storehouses, workshops, &c., and a pier, and basin, wharf, tanks, &c., near Plymouth; an engine and boiler-house, filter-drain and well, with other works, connected with the Carlisle Water Works; certain additions to the laundry, and other works, on the Poplar Union Workhouse premises; for the restoration and enlargement of Landwade Hall, near Newmarket; and for alterations and additions to the Tattingstone House of Industry; for the performance of certain works, in building walls for three burying-grounds, at Oxford; repairs of thirty-seven miles of road between Southampton and Salisbury; of footways and carriage-ways at Westminster; pavement in Holborn; turnpike-roads from Sudbury to Bury St. Edmunds; and for a supply of 2,000 feet of Carline Nose stone kerb at West Ham; and a quantity of flints, gravel, stone, and other road materials, near Portsmouth; also for the whole works on twelve miles and thirteen miles of the Shropshire Union railways, three-quarter mile of the Glasgow, Ayr, &c.; 1,100 yards of the Drumpeller; and four miles seven furlongs of the Glasgow, Kilmarnock, &c, including 560 lineal yards of tunnelling; for 200 tons cast-iron chairs for the Glasgow and Carlisle railway; and for a supply to her Majesty's several dockyards of Welsh or Cornish slates; and brass, tin, and zinc; and of 200,000 blue bricks at Birmingham, and twelve miles in length of 12-inch cast-iron socket pipes and appendages for Boston Water-works.

Scarboro' Church Competition.—Fourteen plans were sent in for the restoration of the parish church of Scarboro', and were considered by the committee. The first premium (50*l.*) was awarded to Mr. Christian. The *Hull Packet* says,—"They had some difficulty in deciding which were the second and third best, as the plans of Mr. Pearson, of London, and Mr. Johnson, of Lichfield, were upon a par in point of merit, and they determined to divide the two lower premiums of 30*l.* and 20*l.* between them, making them both 25*l.* each. Mr. Christian is to be entrusted with the entire renovation of the building. The whole of the galleries are to be cleared away, the nave to be thrown open, considerably lengthened, and a stained-glass window to be added at the east end; the pewing to be entirely renewed; the south transept, at present used as a school-room, to be thrown open; the north side and west end to be entirely rebuilt; the old wood-work to be taken out of the remaining windows, and the mullions and tracery to be restored, and the roofs to be considerably heightened."

Church Building in the Island of Granada.—A recent letter from the Roman Catholic Bishop of Granada, in the West Indies, says, that since 1838, when there was but one little chapel in it, six new churches have been erected there, all in mason-work, and slated or tiled—they are from 80 feet in length, by 40 in width, to 130 by 50 feet, and high in proportion. The letter continues:—"The poor negroes carried the stones of which some of them are built *from one to seven miles on their heads.* This you could not believe unless on competent authority. *I vouch for its truth;* nay, the stones of which one of the churches has been erected, were actually dived for by the negroes into the sea, and put into a flat they had anchored at the spot to be rowed afterwards to the shore, and have the contents thereof carried on the heads of the willing and devoted negroes to the site of the building."

Proposed new Churches in the Metropolis.—The new vicar of St. Pancras has proposed to the parishioners to raise funds for *ten* new churches, and has been liberally responded to. A portion of the parish of Bermondsey has been made into an ecclesiastical district, and a new church will forthwith be erected.

Great Bell for Montreal.—The great bell, recently cast by Messrs. Mears for the cathedral at Montreal, weighs 13¼ tons. For casting it 25 tons of metal were fused, and the mould was filled in twelve minutes. The diameter at the mouth is 8 feet 7 inches, and the height to the shoulder 5 feet 11 inches.

Enticing and Harbouring Engaged Workmen.—In the northern circuit, on the 17th inst., Mr. Pim, an extensive iron-founder at Hull, charged Messrs. Joseph Butler and Co., ironfounders, at Stanningley, near Leeds, with enticing away four moulders, who in consequence quitted the employment of the plaintiff and entered that of the defendants, where three of them continued to be harboured notwithstanding a notice and warning given by the plaintiff's attorney to the defendants. The case of the plaintiffs on the issue as to enticing the man away, mainly rested on a letter written in the name of the defendants to "Mr. John Bagshaw, ironmonger, Hull," offering him employment. The defendant, however, endeavoured to shew that the men had acted under the influence of the "Moulders Union," which compelled them to quit the one employment, if not to enter the other; and the jury at length found for the defendant on the issue as to enticing the men away, but for the plaintiff on that which charged the harbouring; and they assessed the plaintiff's damages at 30*l.*

A Parish with Nineteen Paving Boards!—"How inefficient the cleansing of the poorer districts must be, may be inferred from a curious fact stated by the witness (Mr. Worrall) that in the parish of St. Pancras, in which he resides, there are nineteen paving boards! In a parish with nineteen paving boards, it will not excite surprise, that 'in some parts there is no paving at all;' that 'where there is any, it is inefficient;' that 'the paving in those districts which are inhabited by the poorer classes—courts, alleys, and lanes—is generally neglected;' that the surveyors of pavements neglect their duties; that the persons who contract to remove the ashes and dirt, take away the profitable ashes, but leave the unprofitable filth for months together in the poorer districts, though bound to remove it every fortnight; that the very places, in fact, which require most cleansing are most neglected." — *Ranking's Half Yearly Abstract* Vol. IV.

Illuminative Gas from Excrementitious Matter.—In France the scarcity of coal, and perhaps the enterprising and peculiar spirit of research among its chemists, has led to the discovery that excrementitious matter may be made to yield illuminative as well as other gas, while the product or residue will still afford a rich and valuable manure. From what is said about the mixture or puddling into mortar, &c., we are led to suspect that the invention or discovery, which has been patented, has some sly connection with the singular process of the "French Count and his engineers," who lately astonished the inhabitants of Birmingham; but, at all events, the material is to be converted into inodorous mortar, which is to be sold by the patentees or others, at 5d. per cwt., ready prepared for the manufacture of a gas which is declared to be superior to ordinary gas, and evolved in double the quantity that an equal weight of coal is capable of producing.

The British Museum.—A return, obtained by Mr. Moffatt, M.P., shows that the total amount of money that has been expended in the new buildings and fittings of the British Museum, from the commencement of the rebuilding in 1823, up to Christmas, 1846, is 606,500*l.* The estimate of the cost of completing the building, in which sum is included the expense for fittings in the years 1847-48, amounts to the sum of 106,911*l.* The amount that may be required for fittings in subsequent years cannot, at present, be estimated by the architect, as it will depend upon the nature and extent of the collections in progress.

Removal of Old Buildings in Windsor Castle.—It is said that the range of buildings built in the reign of James I., between the Salisbury and Julius Cæsar Towers, and hitherto occupied as dwellings by certain of the Military Knights of Windsor, are to be taken down forthwith, in order to improve the prospect from some of her Majesty's apartments.

New Buildings' Bill and the Master Carpenters.—The committee in the above bill will again meet on Wednesday evening next, when the schedules in the present bill will be taken into consideration. As the schedules form that part of the bill which applies particularly to the public in the practical working of the enactment, they specially invite communications on the subject.

Mr. Ruben—at Prague.—When the Bohemian committee of Parliament, and the art societies of that realm had decided on the *regeneration* of art, they, as almost a matter of necessity, turned their eyes towards *Munich*, and Mr. Ruben was made director of the R. A. Whatever *one* man could do, under given circumstances and in a given period, Mr. R. has certainly done. The Society of Arts received by him a complete remodelling. A connection with other (even foreign) societies was established; artists of renown in every country were *invited* to send specimens for the exhibitions, and an especial fund was created for the emulation of a great art-work. At the Academy also, important improvements were introduced; more progressed pupils obtained rooms of their own (*ateliers*). Mr. Ruben formed a collection of utensils, as well as of ornaments, weapons, &c., and constantly led his pupils *outwards* into the open stores of nature, for directing and invigorating their sense by that never failing source of observation and study. The results, a greater art appreciation and art patronage, are obvious, and require no further detail. Looking around the whole extent of the land and its history,—Mr. Ruben originated the execution of worthy art-works; as the monument of Emperor Charles IV., whose model has been executed at Dresden, by Mr. Hähnel, the casting at Nuremberg, by Mr. Burgschmidt. A stone quay has been erected along the Moldau, on which a splendid fountain will be placed, of which Mr. Kranner is the architect, Mr. Max (a pupil of Schwanthaler), the sculptor. Mr. R. has projected the completing of the *Belvidere*—a building of the early renaissance period, and its *adornation* with frescoes from Bohemian history. Mr. Ruben is also the director of the studies at the Industrial Institution (*Gewerbverein*).

The Army and Navy Club Competition.—We have heard with much astonishment that one, at all events, of the committee acting in this matter, is visiting the offices of certain of the competitors, and examining the designs about to be submitted. Such a proceeding is calculated entirely to destroy confidence in their good faith, and should be immediately reprehended and prevented by the body at large. They have taken upon themselves an onerous duty, and are bound to perform it honestly and fairly, indeed probably wish to do so, but act in ignorance. We store the names for a future occasion.

Art in Rome.—The Pope has commissioned a number of the first Italian artists to execute, partly from original portraits, partly from medals and coins, the likenesses of all the sovereign pontiffs his predecessors (258 in number), that these may be copied in mosaic to adorn the Basilica of St. Paul, where a similar series perished in the fire. The pictures will afterwards be permanently placed in the Vatican Museum.

Smithfield a Profitable Site for Building.—We are told that the income on city tolls from Smithfield market is under 5,000*l.* a-year. Now, there cannot be the slightest doubt that if converted into building sites for squares, &c., the ground rents would yield a much larger revenue than that.

Immense Casting.—On the night of the 11th inst., a beam for a railway bridge was cast at the foundry of Messrs. Stephenson and Co., at the Lound, Kendal, of the immense weight of nine tons, being nearly two tons heavier than any casting hitherto made at the same foundry.

Monument to Lord Byron.—A monument to Lord Byron at Missolonghi, attached to the vice-consulate, is spoken of. The house in which the poet died no longer exists, having been blown up; the proprietor has offered the site for the erection of the monument, and a handsome sum towards it.

Summer Rambles for Antiquaries.—The British Archæological Association will hold their next congress in Warwick at the end of July, and the Archæological Institute will meet in Norwich about the same time.

Incorporated Society of British Artists.—The exhibition of works of art in the gallery of this society, Suffolk-street, will be opened to the public on Monday.

Waste of Silver.—To put the silver edging to muslin, which is always torn off and thrown away before converting the material to use, costs the country 20,000*l.* a year!

CHATHAM.—The roof of the second and third building slips in the dock-yard, says the *Morning Post*, are to be covered with galvanized zinc, instead of the roofing paper with which they are now covered. The workmen have commenced stripping the paper from the second roof, preparatory to putting on the zinc. Two Artesian wells for the supply of water, as condensing water for the engines of the new metal mills, are being bored for by the contractors, Messrs. Clark, of Tottenham-court-road. One well is completed, at a depth of 126 feet below the surface of the flooring, and receives a full supply of water. When the two pumps, which are to be ten inch, are completed, the supply from both is expected to be 400 gallons per minute.

## TO CORRESPONDENTS.

"*A. H.*"—No point is more unsettled than is "what constitutes interference with the light and air of a neighbour." An answer, without seeing the premises, would probably mislead.

"*A. S.*"—To gauge, or gage, as applied in the mixing of cements, implies a mixing in certain proportions.

"*Poor Amateur*" cannot get good Italian chalk for less than he mentions.

"*T. C. S.*"—The volume may be had by direct application to the office.

"*A. B.*"—We do not know of a class, at any of the Institutions, for learning the art of measuring.

"*Sir H. D.*"—We shall be happy to receive the papers mentioned.

"*W. D.*"—Cresy's "Encyclopædia of Engineering" has much information on centres and bridges.

"*H. S.*"—The drawing shall be engraved.

*Received*:—M. J. B. A." "Steerage-way." "W. E." "C. B.?" "A Subscriber." "W. F." "W. and Sons." "J. S." (Stamford-street). "R. B." (Tower-street). "Engineering Field Notes on Parish and Railway Surveying and Levelling." By H. J. Castle, surveyor and C. E. 2nd Edit. Simpkin and Marshall. 1847. "The Ancient World; or Picturesque Sketches of Creation." By Professor Ansted, F.R.S. Van Voorst. 1847.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

CARVINGS IN WOOD.—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal embellishment, substituting the inadequate material for those numerous imitations which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 441, West Strand, or at the Works, Ranelagh-road, Thames-bank.

ARCHITECTURAL CARVING WORKS (IRVING'S PATENT), late Sir Francis Chantrey's Foundry, Eccleston-place, Pimlico, lending out of Chester-square

Architects and Builders are respectfully informed, that Carving in Wood, Stone, and Marble, by Patent Machinery, is carried on at the above premises. Tracery for Churches, in wood and stone, beautifully executed, at prices which will enable architects to carry out their plans in having decorated churches, and other buildings, at comparatively small expense. Machines are set into the country, to work on the spot, at a great saving in price. Fonts, chimney-pieces, Gothic windows, fluted columns, monuments, and head stones, are likewise beautifully executed, and ready for fixing, or fixed. Mouldings, wood and stone, made to any pattern; scrolls and inlaid work executed in all their branches. For the beauty of their workmanship, the public are respectfully informed that a show room has lately been fitted up on the premises, and business any other establishment in London, for the inspection of their works.

CARVING BY MACHINERY.
JORDANS PATENT

TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decoration, to the peculiarities of their Machinery and the proofs of its efficiency, which are to be found in the fact of its being employed at the Government Workshops for the interior decorations of the New Palace at Westminster, and on the pages of the Public Press elected by the Exhibition of the Royal Academy.

*The Athenæum*, of March 6th, in speaking of the Specimens of Carvings produced from Jordan's Patent, says, "These are really astonishing. A bunch of Hops and Corn of Patience and Barley are worthy to hang by the side of Grinling Gibbons's Works. A portion of the Ghiberti Florentine Gates were also very successful. The Machinery employed accomplishes precisely the things assigned to the Sculptors assistant. It clears away all the superfluities and prepares the object for the final touches of the Artist. No matter how high the relief or how difficult or intricate the undercutting, no difficulties baffle this Machinery."

The Proprietors hold it to be due to themselves and to the Public to state that they have at present only one Establishment which is their Machine Carving Works at Belvedere Road, Lambeth, formerly Coade and Seely's Terra Cotta Works, where specimens may be seen and estimates for large works obtained.

By Her Majesty's — Royal Letters Patent

WILKINS'S "SILENT" WATER-CLOSET.—To Architects, Surveyors, and Builders.

Gentlemen, Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The number of Water-closet pans suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any laboured comment in its favour.

This closet is simple in its construction, the whole of the apparatus including the trap, being contained between the floor of the room and the seat of the closet, thereby requiring no entrance to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

ROYAL ARMS FOR CHURCHES.—The Royal Arms of the Present Reign, fully Emblazoned in gold and Heraldic style, and quite new, in a frame of Gold and oak, adapted for a church or any large interior, to be exposed at the Mediæval Ap.ly to Mr. PARTRIDGE, 132, Great Portland-street, Cavendish-square.

PHOTOGRAPHIC PORTRAITS, at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 183, Strand between Norfolk street and St. Clement's Church.—Portraits, Including case, from 10s. satisfactory, ones guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvass, combining the truth of the daguerreotype with artistic skill. Hours from 7 en to Four.

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, scrolls, bed in slabs, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Entire flowers fixed complete 3d per cent. cheaper than papier maché.

GAS.—The Introduction of Gas into private dwellings is rapidly increasing; it is therefore of the greatest importance, equally to the consumer but to the gas company and gas fitter, that the most secure and simple means of regulating it be applied. The patentees of CARTER'S SAFETY GAS VALVE, can from many years' experience and the high testimonials they are daily receiving, confidently recommend it to all persons interested in gas lighting, as being more secure, more durable, and not so liable to get out of order, and in every respect superior to the old plug cock, so frequently leaky or set fast by grease. It has the great advantage of being inexpensive, and easily applied to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, 30, New-cut, near the Blackfriars-road.

BUILDERS AND IRONMONGERS are requested, when writing for JENNINGS'S SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters (RIGHT OR LEFT), as they face the front.

JENNINGS'S SHUTTER FASTENER. Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall as at present, neither Hundreds of shops have been secured by the inventor, and testimonials of their use and efficacy may be obtained from the owners. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders and Ironmongers, who have it in their notice to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.
Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction as combining economy, solidity, safety, and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the smallest possible exertion of power, and is unobserved. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, and, by a simple arrangement of order, are always safer. Persons insuring with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises, to be shifted or action, without machinery, thereby avoiding the unpleasant use of oil.

REVOLVING SAFETY SHUTTERS, WITH PATENT CONVEX IRON LATHS.
PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory of the great importance, strength and stiffness the lathe of REVOLVING IRON SHUTTERS, in affording increased security is obvious, and it is only necessary to point out the fact, that the patent convex lath are full one-third stronger than the ordinary flat laths, to insure their general adoption.

The patentee invites attention to his greatly improved gearing, for working the patent shutters, which, possessing all the good stages of the endless screw or rack and wheel, cannot, as each is liable to run down, and entirely avoids the inconvenience of using the ratchet-wheel; and is at once simple and durable in its action, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering it applicable for being put to the SAFEST and MOST EFFECTIVE use. These shutters are fixed horizontally rather above or below the window, or vertically, for which position the greatly increased strength of the convex laths renders them peculiarly suitable. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Estimates and Specimens forwarded on application. IMPROVED DRAWN METALLIC SASH BARS, ASTRIGALS, MOULDINGS, STALLBOARD PLATES, &c. Patentee and manufacturer, JOHN HARCOURT QUINCEY, 115, Old-street, London.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They can be made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters as secured by this Patent is the safe and favorable mode of effecting that object. To large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and none are known to have got out of order, which they have adopted every real improvement enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any and all other laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, having greater strength, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safely fixed.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, Sash Plate Glass, and Internal Brass Pitchers of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

ART-UNION OF LONDON; Incorporated by Royal Charter.
PRESIDENT—H. R. H. the Duke of CAMBRIDGE.

The list for the current year will close on Wednesday next, the 31st inst. at. Subscribers will receive for each guinea paid, besides the chance of obtaining a work of art at the distribution, a pair of proofs, the "Last Embrace," and the "Naval Review Wedding," engraved by Mr. Charles Rolls and Mr. F. A. Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of 500*l.* offered by the society for an historical picture.

GEORGE GODWIN, } Hon. Secs
LEWIS POCOCK, }

4, Trafalgar-square, March 27th, 1847.

THE EXHIBITION OF SELECT SPECIMENS OF ENGLISH MANUFACTURES, on and after the 11th of March, will be OPENED GRATUITOUSLY every day, except Saturday and Sunday, between 11 and 4, at the SOCIETY OF ARTS, Great Room, John-street, Adelphi. TICKETS of ADMISSION and Catalogue may be had of the Members of the Society, of the Exhibitors, and of the undermentioned:—

OXFORD-STREET: Mr. John Mortlock, No. 250; Mr. J. Phillipps, No. 260. REGENT-STREET: Mr. White, No. 210.—PALL MALL: Messrs. Graves, No. 6, and Messrs. Colnaghi, No. 13.—NEW BOND-STREET: Mr. Pratt, No. 118.—OLD BOND-STREET: Mr. J. Cundall, No. 12.—PICCADILLY: Mr. W. Pickering, Bookseller, No. 177. STRAND: Mr. Mulledge, No. 63; Messrs. Greenhill, No. 148; Mr. J. Tennant, No. 149. FLEET-STREET: Mr. George Bell, No. 186; Messrs. Grant and Griffith, corner of St. Paul's Churchyard. Lud-gate-street.

N B No Tickets can be had, except by members, direct from the Society's House.

PAPER-HANGINGS to the TRADE.—French Papers superseded. Messrs. HENNELL and CROSBY, Paper Stainers, Queen street, Southwark-bridge-road, beg to inform the Trade that they can supply them to sell Satin Papers, Elegant Designs, at 3*s.* 6*d.* per French piece. Retail.—Cheapest house for Panel Decorations and Clouded Papers.

FRENCH PAPER HANGINGS.—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 99, Frances Street, Leicester Square, established 1823, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

TO ARCHITECTS, BUILDERS, AND OTHERS.
ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained at MINTON and Co.'s Warehouse, 2, Hyde-place, Surrey side of Blackfriars' Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire places, &c.

WORCESTER ENCAUSTIC TILES. Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained of the London Agents, Messrs. GRIEVE and GRELLIER, Marble-mart, Belvidere road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

WILLIAMS'S PATENT SLATE RIDGES and HIPS. The above article is recommended as the best and most durable Ridge and Hip for fixing and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 50 per cent. cheaper.—Sold by Patentees, J. WILLIAMS, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchants, Belvedere-road, Lambeth, London. May be had also of all Country Slate-dealers.

TO BRICK AND TILE-MAKERS.
THE AINSLIE BRICK and TILE MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which may be seen at work at their Depôt, and at the Company's Office, 193a, Piccadilly, from Ten A.M., to Five P.M. Mr. ROBERT SCRIVENER, who has been appointed Manager in the room of Mr. JAMES SLEIGH, will be in attendance at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company.

London, 193a, Piccadilly, Feb. 27, 1847.

PATENT ARCHITECTURAL ROOFING TILES.



ARCHITECTS, Builders, and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and effect surpass every other kind of roofing, whilst their cost but little exceeds the cost of quarries, and for common purposes, and their superiority over slating is at once apparent.

For prospectuses and full particulars, apply to Mr. J. G. HUGHES, at the Company's Offices, 126, Strand.

Price, from 18*s.* to 22*s.* per square.

MARBLE MORTARS,—A large parcel of Prime Sicilian Marble Mortars just imported from Leghorn by J. B. WHITE and SONS, Marble Wharf, Millbank-street, Westminster.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Woods and Forests, Houses of Westminster, To be had at the manufactory, 79, Prince-street, Lambeth. A stock of elbows and various shapes always on hand.

CAEN SUFFERANCE WHARF, ROTHERHITHE.
LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Limehouse, to the wharf of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Alencamp, Normandy, and at the wharf, and further particulars may be obtained of Mr GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.
P. FOUCARD and W. TUCKWELL, Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf imported July last, exclusively for their own use, which for durability and fine texture is superior to any now imported. Orders received by Mr TUCKWELL at the Wharf, and at the offices of Mr. R. P. WITHALL, Surveyor, 8a, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.
SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other Stone Dressing required, are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, and other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Bow Chimney-pieces from 12*s.* upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

# THE BUILDER.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. B. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
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| 6d. | 7d | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
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| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 3 ft., £3. 3s. | 3 ft. 6 in., £3. 13s. 6d. | 4 ft., £4. |
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Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 8s. | £3 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 6 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do. at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

STOVES, FENDERS, FIRE-IRONS, and KITCHEN RANGES, combining every improvement. A superb choice of Drawing-room and Dining-room Register Stoves, Steel and Bronzed Fenders, Steel Fire-Irons of the most chaste and elegant Patterns, adapted for every taste and fashion. The Improved Cooking Apparatus, so admired for its simplicity and capabilities, viz. Roasting, Baking, Boiling, Stewing, Steaming, Boiling, and Frying. This Range will generate sufficient steam, with the aid of pipes, to warm a large dwelling and conservatory; is well deserving the notice of architects and surveyors. To be seen in full operation daily, at DEANE, DRAY, and DEANE'S, the Finsbury Iron Works, 56, Chiswell-street.

HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

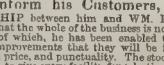
CAST-IRON SOCKET-PIPES, RAIN-PIPES, AND EAVES GUTTERS.

F. A. TIDDEMAN, Purfleet Wharf, Earl-street, Blackfriars, keeps a stock of Socket-Pipes, Rain-Pipes, Half-round, and O. G. Gutters, &c. &c. &c. Contracts taken to any extent.

IRON TRADE.—SAMUEL HOOD & Co. Iron Merchants, 67½, Upper Thames-street, respectfully request their friends to be exact in addressing them as above: considerable inconvenience having been occasioned to them by letters, orders, and patterns for castings, intended for them, having been delivered to another house, with whom they have no connection.

IRONFOUNDRY.
103, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER),

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.



TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames street.

SMOKY CHIMNEYS EFFECTUALLY CURED.
WILSON AND CO.'S
PATENT
VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.
The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.
They are now manufactured of artificial Stone Cement.
The Trade supplied with them at the Manufactory,
YALE PLACE, HAMMERSMITH GATE, MIDDLESEX.
N.B. Licenses granted to Manufacturers.

DEANE'S TWO-HOLE BLACK PENS, which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, besides several of her Majesty's judges, the most eminent counsel and the reverend the clergy. Their cheapness and popularity have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser, and disgraceful to the vendor. The public are therefore cautioned, and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed
"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by

Her Majesty's Woods and Forests.
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinburgh.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London, and Bull's Head Yard, Manchester.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

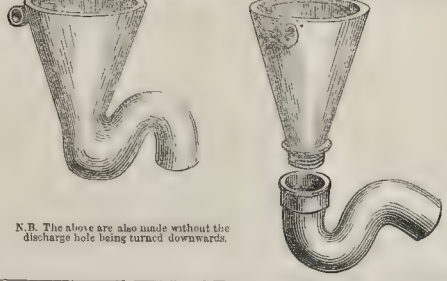
Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.
Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

Foot Pavements.
Kitchen Floors (particularly where it is essential to keep damps from rising).
Garden Walks and Terraces.
Carriage Drives.
Coach-houses and Stabling.
Dog-kennels.
Barn Floors.
Granaries.
Tun-room Floors.
Malt-house Floors.
Piggeries, &c. &c.
Covering of Railroad and other Arches.
The only effectual mode to prevent the percolation of water,
which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage, to be derived from the application of SEYSSEL ASPHALTE.
The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.
In order to guard against the use of spurious materials, it is important that all applications for Works to be executed be made direct to this Company, and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.
Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.
87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS

| | per ft. |
|---|---|
| Foreign Sheet, in 100 feet Boxes .. | 2½d. |
| Do. do Super 200 „ „ .. | 3d. |

Crown Squares, 100 feet Boxes:—

| | |
|---|---|
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. .. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. .. | 1½d. |
| 6 in. by 3 in. and under..... | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES,
6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH.

| | per Imp. Gal. |
|---|---|
| Super Body Copal, for the bodies of Carriages ..... | 20 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish ..... | 16 |
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**VALUABLE GROUND TO LET.**—The road is made and lighted with gas, and the water-pipes laid down. Term Ninety-seven Years.—Apply to NEWBON and EVANS, 1, Wardrobe-place, Doctors' Commons, or at the office on the ground, Cambridge-road, King-street, Hammersmith.

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**THE House of an Architect (lately deceased)** a few miles west of London, TO BE LET, and the Business and valuable professional Secret and Supplemental &c., TO BE SOLD, affording an excellent opportunity for a gentleman commencing business.—For particulars, apply by letter, to A. B., Architect, 3, Gumley-row, Isleworth, or to Mr. MACKENZIE, Solicitor, Campanile Cottage, Canonbury, Islington.

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**TO LET, a Compact and Convenient** Wharf, between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of these Trades, having excellent water and land carriage ways.—For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace-road, Lambeth.

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**TO BE LET, for Four Years, a Plot of** Building Ground, for Ten Fourth-rate Houses, well situate The back ground is suitable for builder's premises. Other smaller plots to let for eight or six-roomed Fourth-rate Houses.—Apply to Mr. BATTERBURY, 40, Albert-street, Camden Town.

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**TO BE LET, on Lease, spacious Business** Premises, of great depth, No. 181, High Holborn, with Manufactory behind, an excellent Dwelling-house, 24 feet frontage, with Hospital Shop, Shop-parlour, and Offices; Kitchen, with two Rooms over, large and extensive warehouse room on the basement, with other conveniences.—Apply to Mr FARRANT, Vestry house, opposite St. Martin's Church, Charing Cross.

TO SPECULATORS, Builders, Building Societies, and others.

**TO BE LET OR SOLD, 3 Acres of very** superior Freehold Building Land, with strong frontages, near Richmond Bridge, and overlooking Richmond Hill, Kew park and gardens. The Rails ad to Richmond has made houses of £50 and £60 rental much in request, which, with the very desirable situation of the land, make it almost certain of an advantageous speculation; the adjoining land is covered with superior houses, which are all let at large rentals. Two-thirds of the purchase may remain on mortgage, if wished. Further particulars, Mr. LLOYD, Architect, 8, Warwick-court, Holborn.

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**SEVERAL LOTS** of valuable Building Ground, in a street leading out of Eaton-square, Pimlico, TO BE SOLD on terms advantageous to purchasers. For further particulars and terms, apply to Messrs. J. and W. MEYMOTT, 88, Blackfriars'-road, Solicitors.

**TO BE SOLD OR LET**, Two valuable Plots of Freehold Ground, situate on the right and left in Hatfield-street, entrance in Goswell-street, directly opposite Saint Thomas's Church, Charterhouse.—For particulars, apply to Mr. JOHN GORE, 12, North Wharf-road, Paddington.

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**TO BE SOLD, by Private Contract, in** One or more Lots, the Carcases of Six genteel Private Residences, in the immediate vicinity of Regent's-park.—For particulars and terms apply to Messrs. J. and W. MEYMOTT, 88, Blackfriars'-road, Solicitors.

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**TO BE SOLD, Houses ready for occupa-** tion, containing six well-proportioned rooms, with kitchen, Coal cellar, and Water-closet; Sashes, Bells, and Fixtures complete Ground-rent £6 each house. Term 67 years. A portion of the purchase-m ney may be paid by instalments as additional rent, within any period not exceeding seven, whereby the expense of a mortgage will be avoided, and an arrangement can be made in case of the death of the purchaser, that the rent shall be reduced to the ground-rent only.—Apply to NEWBON and EVANS, 1, Wardrobe-place, Doctors' Commons; or at the office, Cambridge-road, King-street, Hammersmith.

## SALES BY AUCTION.

LONG LEASEHOLDS.—Sale Room, Church Hill, Woolwich. Wednesday, 31st March, 1847.

**MR. H. W. ROWLSTONE has received** instructions to SELL by AUCTION, at his Sale Room, Church Hill, Woolwich, on WEDNESDAY, 31st March, 1847, at Five o'Clock, the following long leasehold property:—

Lot I. A substantial Brick-built Family Residence, situate at Sussex-place, Plumstead road, having neat elevation, with large fore court, containing on first floor, drawing room and two bed rooms; on ground floor, two parlours, kitchen, and wash-house in rear with tank and pump; on basement, large kitchen, with approach from the front, and cellar; also, garden in the rear with side entrance. Held for an unexpired term of Sixty-three Years, from Michaelmas last, at ground rent of £6 per annum, at present much under it to Mr Simmonds, for 29l per annum

Lot II. No. 30, Orchard-place, Plumstead road, is a Recently-erected Four-roomed House, with kitchen in the rear, and front cellar; having a garden at the back, and a large fore court; situate within three minutes' walk of the Royal Arsenal. Held for an unexpired term of fifty-seven Years, from Lady Day, 1847, at ground rent of 2l. per annum, now let to Mr. Cripps, at a yearly rental of 16.

Lot III. No. 1, Britannia Cottages, Sand Hill, Plumstead, is a Substantial Built Shop and Premises, containing two bed-rooms, shop with modern frontage, back parlour, front and back kitchens, the back kitchen fitted with copper and oven; large wash-house; and large piece of garden ground with side entrance. Held for an unexpired term of Sixty two Years, from Michaelmas last, at ground rent 15l. 15s. per annum, is now let to Mrs. Williams, at a yearly rent of 30. The property may be viewed by leave of respective tenants, printed conditions and further Particulars of Sale will be ready in a few days, and may be had of F. PEARCE, Esq., Solicitor, Rectory Place, Woolwich, and at the office of the Auctioneer and House Agent, H. W. ROWLSTONE, Church Hill, Woolwich.

## SALES BY AUCTION.

SECOND PORTION OF SALE.—Avery Row.—Builder's Stock.—To Painters, Glaziers, Plumbers, and Masons.

**MR. H. BIERS will SELL by AUCTION**, on TUESDAY the 30th, and WEDNESDAY the 31st March, on the Premises, Avery Row, Bond Street, the portion of this valuable Stock, appertaining to the Painters', Glaziers', Plumbers', and Masons' department, and which consists of Fine old White Lead, Oil, Turps, Plate and Sheet Glass, dry Colours, &c. &c. Also, Statuary, Vein, Sardilla, Sienna and other marbles of superior quality and in great variety. York and Portland Steps, Landings and Kerb; Cash, and other engines, Blocks and Falls, powerful Stone Jacks, together with the tools belonging to the several Trades May be viewed the day previous, and Catalogues had on the premises, and at No. 13, Broad-street, Golden-square.

Approved bills: vide conditions.

LARGE QUANTITY OF SUPERIOR SCAFFOLDING, LADDERS, BOARDS, POLES, CORDS, and PUTLOGS; also the capital Floor Boards, Bath Stone, Crab, and other Engines, Stone Jacks, &c

**MR. H. BIERS is instructed to SELL by** AUCTION, the contractor having finished at St. Mark's Church, Haverstock-hill, Edgware-road, on Wednesday next, the 31st of March, at 12 o'clock precisely, without reserve, the very superior scaffolding, a large quantity of ready and well-seasoned prepared floor boards, Bath stone, crab and other engines, stone jacks, and a large quantity of surplus materials, the whole of which must be immediately cleared. May be viewed on Tuesday, morning of sale, and catalogues had on the premises, and at the office, 13 Broad-street, Golden-square.

TO BUILDERS, COACH-MAKERS, TIMBER-MERCHANTS, MANUFACTURERS, and others requiring spacious premises in a wealthy neighbourhood and capital situation for business.

**MR. H. BIERS will SELL by AUC-** TION on the Premises, Nov. 13, Avery Row, Brook Street, Grosvenor Square, on — March, (unless an acceptable offer is made), the valuable Lease of those convenient Premises, which comprise: extensive and lofty Workshops, Painters and Store-rooms, a spacious Yard, Sheds, Sawpit, Coach-house, Stable, and well arranged Counting-house, attached to a commodious Dwelling-house, with a separate entrance; the whole arranged in a most desirable manner for the business of a builder, and which business has been carried on by the premises for many years. This valuable property presents an excellent opportunity for any Trade or Profession requiring Space, Light, and first-rate Situation, and also for a Building Speculation. The Premises are held upon a Lease, 34 years of which was unexpired at Midsummer day, 1846, at the very low rent of £120 per annum.

Particulars are preparing, and when ready, may be had of JAMES HOPWOOD, Esq., Solicitor, King William Street, Charing Cross; on the Premises; and at 13, Broad Street, Golden Square.

BUILDING MATERIALS, MITCHAM, SURREY.

**MESSRS. EVERSFIELD and HORNE** will SELL, by AUCTION on the Premises on TUESDAY, April 13th, and following day at 12, the whole of the valuable materials of the mansion known as Mitcham Grove, and numerous outbuildings, comprising a large quantity of lead in cisterns, pipes, gutters, dormers, ridges and flats; slated and tiled roof, sound timber in joists, girders, floor boards, and battens, doors, partitioning, plate glass, and a variety of the walnut fittings of library, handsome statuary and other marble chimney pieces, the erection of greenhouses, fittings of brewhouse, laundry and kitchens, large copper, metal cocks, lever, lead force pumps; handsome gothic hall stone, &c., together with the sound brickwork, York and diamond paving, for such house gates, and numerous other effects. May be viewed three days previous, and catalogues had on the premises; at the Plough, Clapham; Swan, Stockwell, White Hart, Mitcham, Spread Eagle, Tooting, George, Balham Hill; and of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

TO STONEMASONS, PAVIORS, BUILDERS, CONTRACTORS AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION on the premises, 30, Commercial Road, Lambeth, on WEDNESDAY, April 7th and following day, by order of the assignees of S. and G. Sharp, bankrupts, the first portion of their valuable, large and well-selected stock of several thousand feet of York and Rockhill paving, York landings, Purbeck and York sinks and steps, coping and cills, &c., Portland stone in block, sounding rods, curbs, and other cut stone, also, about two well-built stone trucks, four carts, cart-harness, two chaises, and numerous other effects; also at the same time, the beneficial lease of the commodious premises, held for a term of twenty-one years from Michaelmas 1843, at a low rent.—May be viewed three days previous to the Sale, and Catalogues had on the premises, also of Messrs. DONNE and TAYLOR, Solicitors to the Bat. 29, New Broad-street, and of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

TO BUILDERS, CARPENTERS, COACHMAKERS, WHEELWRIGHTS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION, on the premises, Creek Wharf, Hammersmith, on THURSDAY, April 15th, and following day, at Twelve, without reserve, by order of the Proprietor, declining the retail trade, the valuable STOCK OF TIMBER, consisting of yellow and white deals and planks, prepared battens and floor boards, a large quantity of ash timber, in planks, fellies, stocks, poles and rails, elm timber and planks, birch and beech planks and quarters, arris rails, fir quartering, pan-tiles, laths, old iron, &c. Also several draught horses, a well-built spring van, timber wheels, and carriage, two gigs, chaise, and cart harness, blocks and falls, jacks, pile engine, a well-executed model of St. Peter's Church, Hammersmith, and numerous other effects. N.B. A portion of the WHARF TO BE LET.—May be viewed three days prior to the Sale; and catalogues had on the premises; also of Messrs. WATSON and SONS, Solicitors, 12, Bouverie-street, Fleet-street, and at Hammersmith; at the Three Pigeons, Brentford; the Rose and Crown, Kew; and of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

HATCHAM HOUSE ESTATE.—First-rate Building-ground, offering excellent opportunities to Builders and others.

**MESSRS. BEADEL and FOULKES have** received instructions from the Proprietor, J. A. Hardcastle, Esq., to LET by AUCTION, at the Mart, in the course of the following Month, a considerable portion of the exceedingly valuable ESTATE, known as HATCHAM HOUSE, (the remainder of which will hereafter be sold for building purposes), pleasantly situate on the Deptford high-road, and adjacent to the New-cross Station, on the Dover Railway. The first portion will comprise the eligible frontage of upwards of 1,000 feet to the Old Kent road and the Five Bells Tavern, with an average depth of about 150 feet. The piece of ground adjoining, on the north side of the road, leading to the Mansion, possessing a frontage of 230 feet, and a depth of 146 feet, which will be divided into lots suitable for the erection of semi-detached houses; roads will be made, and sufficient sewerage provided. Particulars and conditions with plans arranged, are in preparation, and may shortly be had of W. N. BEECHEY, Esq., Haberdashers' Hall, Gresham-street; of G. ALLEN, Esq., 60, Tooley-street; at the MART; and of Messrs. BEADEL and FOULKES, Surveyors and Land Agents, 23, Gresham-street, where a plan, showing the intended disposal of the property, may be inspected, and further particulars known.

HATCHAM HOUSE ESTATE.—First-rate Building-ground.

**MESSRS. BEADEL and FOULKES will** SUBMIT to AUCTION, in lots, at the Mart, in the course of the following Month, by direction of the Proprietor, J. A. Hardcastle, Esq., the GRAND PORTION of this very desirable BUILDING PROPERTY, close to the New-cross Station, sufficient for the erection of about 40 houses, comprising the ground on the south side of the Old Kent road, from the Old Kent road to the Mansion, including a frontage of about 270 feet, and a depth of about 130 feet—the ground abutting on Five Bells lane, which is widened, and the two portions fronting a new road intended to be made from the corner of Five Bells premises; roads will be made, and a sufficient sewerage provided. Particulars and conditions, with plans thereof, are in preparation, and may shortly be had of W. N. BEECHEY, Esq., Haberdashers' Hall, Gresham street; of GEO. ALLEN, Esq., 60, Tooley-street; at the MART; and of Messrs. BEADEL and FOULKES, Surveyors and Land agents, 23, Gresham-street, where a plan, showing the intended disposal of the property, may be inspected, and further particulars known.

## SALES BY AUCTION.

HATCHAM HOUSE ESTATE.—To Timber-merchants.

**MESSRS. BEADEL and FOULKES are** instructed by the Worshipful Company of Haberdashers, to SELL by AUCTION, on WEDNESDAY, March 31st, upon the Premises, adjoining the high-road to Deptford, and adjacent to the New-cross Station on the Croydon Railway, in lots, a portion of the useful TIMBER, cleared for building purposes, consisting of elm, ash, chesnut, sycamore, Venetian and Carolina poplars (many of the latter of large metrings), a quantity of useful sounds, hartwood, and about 1,000 faggots. The Gardener at the Mansion will show the lots; and Catalogues may be had at the Five Bells Tavern, Old Kent road; of W. N. BEECHEY, Esq., Haberdashers' Hall, Gresham-street; and of Messrs. BEADEL and FOULKES, Estate Agents and Timber Surveyors, 23, Gresham-street, City.

BRIXTON, SURREY.—Villa residences, Building Ground, Dwelling Houses and Shops, for Auction held for long terms at a peppercorn and a well secured ground rent.

**MESSRS. BROWN and ROBERTS beg** to notify they have received instructions from the mortgagees to submit FOR SALE, the latter end of April, in Twenty-three lots, the following valuable properties, viz.: four handsome Swiss villa residences, and a plot of building ground in Sutherland-terrace, Coleharbour-road; a convenient residence; a plot of building ground, and a well-secured ground-rent in Shirlon-terrace, Loughborough-road; likewise eighteen cottage residences, three dwelling-houses and shops, and a large plot of building land, comprising part of the back of the estate in Coleharbour-road, Coleharbour-road, the greater portion in the occupation of respectable tenants, and of the value of upwards of 80l per annum, presenting a desirable opportunity to purchasers either for occupation or investment, the larger portion being sold free from ground-rent, thereby materially increasing the security nearly equal in value to freehold. Descriptive particulars may be had fourteen days prior to the sale, and further information obtained in the interim by personal application to Messrs HENRY BROWN and T. A. ROBERTS, 23, Throgmorton-street.

TO TIMBER MERCHANTS, SHIP AND BARGE BUILDERS, BUILDERS AND OTHERS.

**MESSRS. DAVIS and VIGERS are** instructed by Edward George Barnard, Esq., to SELL by AUCTION, on the premises, Acorn-yard, Rotherhithe, on Tuesday, March 30, and following day, the first portion of the extensive stock of thoroughly seasoned Timber, towards of 300 oak trees from the best timber countries, logs and limbs, ash plank, &c.; two floats of Riga and other fir timber, a valuable stock of ship-building wire, African oak, &c.—To be viewed two days prior to the sale. Catalogues to be had on the premises, and of the auctioneers, 3, Frederick's place, Old Jewry.

FIFTY TONS OF WROUGHT IRON, COPPER, &c.—To Ship and Millwrights, Anchorsmiths, Barge-builders, and others.

**MESSRS. DAVIS and VIGERS have** received instructions from Edward George Barnard, Esq., to SELL by AUCTION, on the Premises, Acorn-yard, Rotherhithe, on TUESDAY, March 30, and following day, at Eleven for Twelve, about 50 tons of rod and bar iron, part forged, ballast, cables, mooring-chains, six anchors, grappling, eye, ring, drift, and set bolts, spikes, nails, hooks, screw-rings, a great variety of useful iron tools and implements, anvils, mandrils, pile monkey, crow and draw bars, crow crows, coal hooks, iron pipes, cast iron, screw-jacks, 10 trucks, gouge wedges, cups, caulkers' tools, sheet and bolt copper, copper spikes, nails, and fastenings; a copper plate spiking machine, and a vast quantity of good and useful materials for ship-building and other purposes; being a portion of the valuable stock of the above extensive and well known established business. To be viewed two days prior to the sale.—Catalogues may be had on the premises, and of the Auctioneers, 3, Frederick's-place, Old Jewry.

## PUBLICATIONS.

Just published, a new edition, for 1847, price 4s.,

**LAXTON'S BUILDERS' PRICES**, containing nearly 11,000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Buildings Act, and the modification of the Act.—To be had at the office of the "Civil Engineer and Architects' Journal," 10, Finsbury-street, Whitehall; WEALE, High Holborn; SIMPKIN, MARSHALL, and Co., Paternoster-row; and at the office of "The Builder," 2, York-street, Covent-garden.

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Persons desirous of having the work direct as published, will be pleased to forward their names to the Editor and Publisher, CHARLES WYMAN, 20, Bench Walk, Temple. Canvassers and the Trade in the Country who will Canvass their Counties, will be liberally treated with.—Prospectuses ready with the First Part, May 1st, and the publications continued every month till completed.

LONDON: Printed by CHARLES WYMAN, of 20, Cumming, street, Pentonville, in the County of Middlesex, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent-Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, March 27, 1847.

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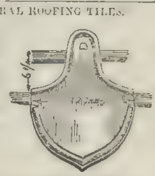
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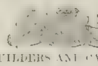
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FOR SALE at the following prices (being about one-half their value), viz., one 2 ft. 10 in., and one 3 ft. opening, 9-inch piers, [illegible] each; one 2 ft. 10 in. opening, 9-inch piers, carved patries, 60s.; two 12-inch piers, with carved trusses, 3 ft. opening, 5l. each; four 11-inch piers, 3 ft. and 3 ft. 2 in. openings, carved blockings and moulded shelves, 6l. each; also two monumental tablets for sale, cheap. Apply, 34, Dorchester place, King's-cross.

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Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf to [illegible] July last, exclusively from their quarries at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, or at the offices of Mr. [illegible] WITHALL, [illegible], where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

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N.B. Estimates [illegible] of the before mentioned works can be given, worked in the quarry at the lowest price and on the shortest notice, by applying as above.

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tects and others, that GOTHIC WINDOWS, and every other [illegible] executed at the [illegible] possible rate, and packed for the country ready for fixing, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, [illegible], or [illegible] sizes from the saw, or prepared ready for fixing or fixed, avoiding either [illegible].

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THE WORCESTER ENCAUSTIC TILES, in all their beautiful [illegible] in addition to the usual extensive stock of Chimney [illegible].

Estimates given for all [illegible].

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[illegible] several [illegible] through a large piece of rich blue rock, have great pleasure in informing the public [illegible] complete [illegible] to [illegible] The management of the Company will be vested in the hands of three Trustees and a Committee of thirteen persons, all practical men—merchants, and traders, or otherwise more or less engaged in the Slate Trade. It will be conducted on an entire new principle; one never yet attempted [illegible] one of great advantage, inasmuch, as every shareholder may become an [illegible] shop. [illegible] expected to [illegible]. The quarry is situate in the parish of St. Ginner's, Cornwall, within 1 mile of the harbour of Cragington, on the Bristol Channel, it consists of 7 acres of land, all one entire bed of slate 6 feet below the surface, and is held on a lease of 21 years, at the nominal rent of 10l. per annum, with no [illegible] at the [illegible] also prospectuses may be obtained.—Application for shares can be made to Mr. JAMES LANE, 75, Old Broad Street, City; Mr. THOS. SANFORD, Exeter; Messrs. TYETH & LUSCOMBE, Plymouth; Mr. H. MANSELL, Guildford, Surrey; at the Office of the Builder; and at the Company's Office, of the Secretary, CHAS. SAML. RICHARDSON.

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which are unequalled for their durability and easy action, [illegible] and the principal [illegible] of the city of London [illegible] the most eminent [illegible]. Their cheapness and popularity [illegible] imitations of the [illegible] purchaser, [illegible] are therefore cautioned [illegible] not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

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The Builder.

No. CCXVII.

*SATURDAY, APRIL 3, 1847.*

DIPPING into Mr. D'Israeli's new novel the other day, hight "Tancred," we stumbled over a proposition, by the author, for improving architecture in Britain's happy land, which is at once so novel, so startling, and so *rensonable*, that we should do wrong if we did not bring it prominently before our readers. He is discoursing upon London, and right pleasantly he does it: he points to its vastness as its most striking point, and says it is the illimitable feeling that gives it a special character. But he complains that, after all, London is not grand. "It possesses only one of the qualifications of a grand city—size; it wants the equally important one—beauty. It is the union of these two qualities that produced the grand cities—the Romes, the Babylons, the hundred portals of the Pharaohs—multitudes and magnificence—the millions influenced by art. Grand cities are unknown since the beautiful has ceased to be the principle of invention. Paris, of modern capitals, has aspired to this character; but if Paris be a beautiful city, it certainly is not a grand one. Its population is too limited, and, from the nature of their dwellings, they cover a comparatively small space. Constantinople is picturesque. Nature has furnished a sublime site, but it has little architectural splendour, and you reach the environs with a fatal facility." And then he comes back to the acknowledgment, that London overpowers us with its vastness! Place a forum or an acropolis in its centre, continues our author, and the effect of the metropolitan mass, which now has neither head nor heart (what has become of St. Paul's?) instead of being stupifying, would be ennobling. "Nothing more completely represents a nation than a public building. A member of Parliament only represents at the most the united constituencies; but the palace of the Sovereign, a national gallery, or a museum baptised with the name of the country—these are monuments to which all should be able to look up with pride, and which should exercise an elevating influence upon the spirit of the humblest. [Most true.] What is their influence in London? Let us not criticise what all condemn. But how remedy the evil? What is wanted in architecture, as in so many things, is—a man. Shall we find a refuge in a committee of taste?—escape from the mediocrity of one to the mediocrity of many? We only multiply our feebleness and aggravate our deficiencies. [True again.] But one suggestion might be made. [Now it's coming. Prepare for it, good reader, and don't be alarmed.] No profession in England has done its duty until it has furnished its victim. The pure administration of justice dates from the deposition of Macclesfield. Even our boasted navy never achieved a great victory until we shot an admiral. Suppose an architect were *hanged!* Terror has its inspiration, as well as competition!"

Well done Young England. This recipe for good architecture is really delightful. HANG AN ARCHITECT? What can be simpler or more likely to do good execution? There are several who de[illegible]e it, or at all events ought to be suspended, which sounds like the same thing. This would indeed be breaking the neck of the difficulty, and elevating the profession in right earnest. Mr. D'Israeli evidently observes how architects are being shouldered on either side, and thinks it high time that they were set up in a new *line*. They have been run down long enough: now, he says, they shall be run up. He knows that true artists have lofty ideas, and, moreover having employed one himself, has a notion that suspense is part of their destiny, and that they are better prepared by use for the fate he suggests for them, than the eels were in the old story.

It is perhaps wrong of us, however, to crack jokes on so grave a matter,—a matter affecting in two senses the heads of the profession. The question that first suggests itself is,—who has been marked down as the first victim?—for Mr. D'Israeli being in Parliament, there is really no knowing how soon the proposed remedy may be tried. Conscience will make some ask, "Is it I?" Should the House, in its great mercy, allow the profession to pick their own man by ballot, we would wager a new "set-square" that the choice would fall upon Barry; our accomplished friend (the trying circumstances under which we have considered him placed, will excuse the freedom), being most in the way of others at this moment. If Parliament should appeal to us for advice, we will save Mr. B. to finish his great work, give them two men for choice, and be satisfied with the execution of either of them.

Mr. D'Israeli's hanging, of course means hanging in chains, *in terrorem*, and the effect could not fail to be extraordinary. Architects would have their luckless fellow ever before their eyes: would think twice before completing their designs, and lay every first stone with fear and trembling. The Act, in old time, "for preventing diversity of opinion," is nothing as compared with D'Israeli's last desperate act, for the prevention of mediocrity in architecture.

Before preparing the bill, however, we would, in a small voice, bid our legislators inquire, if there be no unfavourable influences to which architects are sometimes subject; if they are never trammelled by legislative enactments, over-ruled by employers, harassed by committees, or cramped for want of money? Whether, in short, there are not some other delinquents who might be hung at the same time, with equal justice, to keep poor *Architecton* company? D'Israeli himself evidently thinks there are, and we must quote a bit more of the book to let him speak for himself. It says:—"Though London is vast, it is very monotonous. All those new districts that have sprung up within the last half century, the creatures of our commercial and colonial wealth—it is impossible to conceive anything more tame, more insipid, more uniform. Pancras is like Marylebone, Marylebone is like Paddington (not quite); all the streets resemble each other, you must read the names of the squares before you venture to knock at a door. This amount of building-capital ought to have produced a great city. What an opportunity for architecture suddenly summoned to furnish habitations for a population equal to that of the city of Bruxelles, and a population, too, of great wealth. Marylebone, alone, ought to have produced a revolution in our domestic architecture."—Mr. D. is scarcely aware how little architects had to do with it.—"It did nothing. It was built by Act of Parliament. Parliament prescribed even a façade. It is Parliament to whom we are indebted for your Gloucester-places, and Baker-streets, and Harley-streets, and Wimpole-streets, and all those flat, dull, spiritless streets, all resembling each other, like a large family of plain children, with Portland-place and Portland-square for their respectable parents. The influence of our parliamentary government upon the fine arts is a subject worth pursuing. The power that produced Baker-street as a model for street architecture in its celebrated Building Act, is the power that prevented Whitehall from being completed, and which sold to foreigners all the pictures which the King of England had collected to civilize his people."

Without meddling with the doctrine to be inferred from the last sentence, there is much truth in the paragraph, and we recommend it for consideration to both houses of Parliament.

A considerable improvement has been made in our street architecture since the birth of the Baker-streets, and the aspect of London is rapidly altering. The public buildings even now going on, will of themselves play no inconsiderable part in this. A few words as to the progress of some of these will not be out of place here.

The House of Lords is rapidly approaching completion, and will be ready for the peers when they re-assemble after the recess, according to promise. The general effect on entering is magnificent; such a blaze of gilding, carvings, and coloured decorations, is not to be elsewhere found in England. Lord Brougham said, the other day, what many will say hereafter:—"He had been paying a visit on that morning to the most magnificent building he thought he had ever seen, doing the greatest possible honour to the very skilful, learned, and ingenious architect, by whom such a splendid palace had been prepared for the reception of Parliament."

The quantity of carving in the house, and its general excellence, will puzzle those who have been taught to think there are no good carvers in our days. Every inch of the woodwork is marked by the tool, and the throne at the southern end (a centre and two wings, resplendent with gold and colours), and the strangers' gallery, reporters' gallery, and peers' entrance, opposite, are elaborate in the extreme.* In the canopy over the centre of the throne are niches, intended for the reception of statuettes of the patron saints of the

* The chair was not in its place when we visited the building. *The Observer* says—"It is of the finest mahogany, standing about seven feet in height; the whole is richly gilt, and is surmounted by an open Gothic crown of elegant workmanship, supported on either side by the lion and unicorn, bearing shields. Beneath the crown is a triangular foliated compartment, containing the Sovereign's monogram, 'V.I.R.' The cushioned back is composed of regal velvet of the finest pile, bordered with the arms of England. Surrounding the Royal arms are enamel ornaments in the Byzantine style, alternating with crystals of the purest water. In the openwork panels of the arms are heraldic lions, elegantly introduced amidst luxuriant foliage. The top of the arms of the throne is level, the ends being in an octagonal form, richly moulded. The upright supports, on which are carved pinnacles, rest upon lions couchant. The front of the seat has a moulding of rose leaves, below which is a space occupied by three rose-formed compartments, containing the badges of England, Ireland, and Scotland—the rose, the shamrock, and the thistle—in the centre of which is the monogram, 'V.I.R.;' beneath which is another moulding, decorated with rose-leaves. The chair of the Prince of Wales is about four feet in height, the back forming an oval, surrounded by a moulding of rose-leaves, and cushioned with velvet, richly embroidered with the badge of the Prince of Wales, girt with Gothic scroll-work. The arms are horizontal, and in the front form a half circle, placed with the outer edge against the legs, which also form a similar half-circle; in the centre is a circular ornament containing the letter 'W.' The whole is finely gilt. The chair for Prince Albert is of similar design, with the exception of the embroidery of the back, in which is introduced the arms of his Royal Highness. The table for the clerks of the house is made of sturdy English oak, and of a quadrangular form, with a pannelled top, standing on decorated carved legs, which divide it into compartments, each capable of accommodating one individual. From these legs spring carved rails to the corresponding legs on the other side, dividing the area of the table into squares, intended to represent the ancient arms of Westminster. The chairs for the clerks are also of oak, about four feet in height, with square backs, moulded, and cushioned with embroidered velvet.

three kingdoms, and on the wall immediately above, appears Mr. Dyce's fresco of the Baptism of King Ethelbert. Five other arched compartments remain to be filled up by frescoes. These spaces are at present hung with crimson drapery, powdered with crowns and roses. Around the house, under canopies, between the windows, will be placed statues of all the barons who were instrumental in obtaining the Magna Charta. Artists have been named for the execution of these, and have been applied to for terms.

The soffit of the peeress' gallery, on either side of the house, forms a canopy over the third row of the peers' seats below, and is decorated with the armorial bearings of the various lord chancellors, from the foundation of that office up to the present time.

The brass railing of the gallery is of excellent design, and we should not omit mention of the beautiful brass gates by which the house is entered.

Plain glass at present fills the windows, and will continue to do so for some time to come. The architect has but just now succeeded, after several failures, in obtaining stained-glass to meet his wishes. A sort of standard window has, we believe, been fitted up, and the work will now probably be proceeded with.

The public hall, adjoining, is elaborately decorated, and has a flooring of encaustic tiles. When Mr. Barry last reported, which is now some time ago, there were 1,186 men engaged on the works.

Some account of the mode of heating adopted, will be found in another page.

The new hall and staircase of the British Museum will be opened to the public, it is expected, on Monday next, and workmen are busily occupied in clearing away the scaffolding from the portico, completing the flight of (twelve) steps up to it, gravelling the roadway in front, and finishing the painting inside. Polychromy has been called in to aid the interior effect of this part of the building, and with considerable success, too. The sunk panels are blue with a yellow star in each, the enrichments are variously coloured,—red and white predominating; and the stiles, beams, &c., are covered with frets, guilloche, and scrolls, in flat colours, for all of which precedents have been found in the museum collection. These decorations were executed by Messrs. Collman and Davis. The parapet of the stairs is of carved stone highly polished.

The exterior of the northern wing of the Board of Trade, Whitehall, is fast approaching completion. Report says, that a design to elevate the Horse Guards has been approved by the government. At the Carlton Club, a part of the new façade is up; and the Museum of Economic Geology, described last week, is shewing itself above ground. Mystery still shrouds the proposed addition to Buckingham Palace: rumour speaks of an alteration in the elevation, but we have no certain information concerning it. The public must pay their money before they see the sight; and, instead of commenting in time, with a view to obtain excellence, must be contented with abusing the result, when too late to amend, and sighing grumpily over lost opportunities. When Mr. D'Israeli's new act comes into operation, these things will be better ordered.

"Hang an architect," and all will come right.

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PEMBROKE COLLEGE, OXFORD.—A new dining hall is about to be erected at this college according to designs by Mr. Hayward, architect, of Exeter. Mr. M. Arding, of London, is the contractor for the same works.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.*

BY PROFESSOR GRIFFITHS.

SULPHATE of lime is a native calcareous compound, presented in considerable abundance, and is of much importance to the architect and the builder; it occurs in various forms, the most common of these being familiarly known as "gypsum," "alabaster," and "plaster stone." Sulphate of lime is a compound of *sulphuric acid*, *lime*, and *water*, these substances being united or held together by a very powerful chemical affinity, and under all ordinary circumstances they manifest no tendency to separate during the lapse of ages; if, however, any variety of this substance be heated red-hot, the water is wholly expelled, whilst dry or anhydrous sulphate of lime remains, and if this be finely powdered and mixed with water, it will combine with the water, and "set" into a solid mass.

From the circumstance of the abundance of gypsum at Montmartre, near Paris, and its heating or calcination being carried on there to a very great extent, the chemically anhydrous sulphate of lime is familiarly known as "plaster of Paris;" its importance in decorative architecture is too well known to need comment. If the "gypsum" or "plaster stone," be heated to a degree beyond that which is simply requisite to expel the water, the resulting "plaster" loses the property of "setting" when mixed with water, because at a high temperature the sulphuric acid and the lime undergo a chemical change, by which a portion of *sulphuret of calcium* is formed. This is a direct union of *sulphur* with *calcium*, and is perfectly different in all its habitudes to the compound of *sulphuric acid* with *lime* or *oxide of calcium*.

"Plaster stone" is rendered anhydrous in two ways: these are technically called "burning" and "boiling;" the former is generally adopted if the plaster be intended for the use of the builder, the latter if for the use of the potter or figure-maker. The "burning" is conducted by heaping lumps of the "raw stone" with fuel; this is generally done at night, that the workmen may the more readily judge when the lumps become fairly red-hot, at which time they are sufficiently "burned," and are successively removed and afterwards ground to powder, which should be kept out of the contact of air and water with the greatest possible care, or it will soon become *hydrated*, and thus lose its property of "setting."

If the "stone" be overheated, parts of it will acquire a yellowish cast, and evolve a sulphureous odour from the formation of *sulphuret of calcium*, and if such carlessly burned plaster be employed, it will either set very imperfectly or cause the work to rise in blisters; a ton of "plaster stone" when well and properly burned generally loses from four to six cwt. of water.

The "boiling" is conducted by grinding the "raw stone" to a fine powder. This is placed in a long brick trough heated by a flue. The water immediately begins to evaporate, and its escape is promoted by constantly stirring the powder, and so abundantly does the water evaporate, that the whole bulk of the powder is agitated, as if it were boiling, hence the origin of the term by which the process is technically known.

If several pounds of good plaster of Paris be mixed with water, a very considerable degree of heat is evolved during the "setting," and this for the same reason as in "slaking" quick-lime, namely the water passing from the liquid to the solid state, and its latent heat thus becoming sensible heat; for the whole "setting" of the plaster depends upon the intense chemical affinity that exists between *anhydrous* sulphate of lime and water, by which the latter is solidified, and every work in plaster owes its hardness, its texture, its durability to such solidification of water.

"Alabaster" is another variety of native hydrated sulphate of lime; and when perfectly white, it may be regarded as chemically pure. Some specimens are beautifully veined, of a rich brown colour, by the presence of peroxide of iron; and common "plaster-stone" invariably contains this substance.

The native varieties of sulphate of lime, namely, "gypsum," "plaster-stone," and "alabaster," are not absolutely insoluble in water, and, therefore, cannot be advantageously employed for works exposed to the weather, for their finely-polished surfaces will very soon become dull and rough from the solvent power of the water that falls upon them; but for internal work, as it is well known, they are all most admirably fitted.

A very simple experiment will prove the solubility of pure white alabaster in water, thus:—dissolve a portion of white soap in strong spirit of wine, to form a clear transparent liquid, called, *tincture of soap;* pour a few drops of this into *distilled water*, and no white curdling will ensue. Place a piece of alabaster in distilled water for a few hours, then remove it, add the tincture of soap, and it will immediately curdle; thus proving that the water has abstracted or dissolved a portion of the alabaster.

Soap is perfectly soluble in pure or distilled water, hence no curdling ensues when added to it; on the other hand, if the water contain sulphate of lime, the soap is immediately decomposed; it is a compound of soda, and fatty or oily matter, and the *lime* immediately combines with such matter, forming an *insoluble* soap, or curd.

The tincture of soap is a very simple and accurate test of the relative purity of water; it is popularly known as "the well-diggers' test," for the *hardness* of spring water generally depends upon the presence of sulphate of lime, derived from the strata of the earth in which the springs originate, or throughout which they percolate.

The blue clay of London abounds with sulphate of lime, in the form of beautiful transparent crystals, known to the mineralogist as *selenite*, and hence most of the well-water of the metropolis is *hard*, and unfit for the purposes of washing.

The crystals of *selenite* consist of forty parts, by weight, of sulphuric acid, twenty-eight parts of lime, and eighteen parts of water; this is readily expelled by heat, and then the actual sulphate remains *anhydrous*, and devoid of regular form or *amorphous*.

Having devoted so large a space to the examination of lime and calcareous compounds, we must terminate here, and proceed to some other important materials employed in construction.

Clay is a most abundant natural production, and enters largely into the composition of many materials employed in architecture. There are many varieties of clay, and these are popularly named after the uses to which they are applied; thus, "brick-clay," "potters' clay," "porcelain clay," and "pipe-clay" are all in universal employment; but these, and other varieties, agree in the character or property of plasticity when mixed with water, and it is on this account that clay is so very valuable to the brick-maker and the potter. The property of plasticity of clay, let the variety of the substance be pure or common, is not destroyed by a large admixture of foreign substances; as, for example, finely powdered flint or finely divided sand; for, in fact, some of "the clay" (as it is called in the potteries) contains only one-fourth its weight of absolutely pure clay, oxide of aluminum or alumina, the remainder being silicious matter; and yet the mass, when mixed with water, or "tempered," admits of being kneaded and formed, either by "throwing or pressing," into various useful articles with the greatest facility.

If clay, or the above mixture, be exposed to a bright red heat, it becomes a solid mass of extreme hardness, and all plasticity is perfectly destroyed; and however finely burnt clay or pottery may be powdered, still it will no longer form a plastic mass when mingled with water.

When chemically examined or analysed, clay appears to be a mixture of pure alumina with several metallic oxides, and is therefore by no means uniform in composition, but every kind of clay contains alumina, or the pure oxide of aluminum in combination with water, and to the water the plasticity of the alumina is entirely referrible.

Clay is the only substance popularly called an earth that has the property of plasticity, hence it is the basis of every kind of earthenware, from common brick to refined porcelain, and "these two extremes include more of the comforts and elegancies of life than are to be found within the chemical range of any other substance."

Pure clay is known in the chemical labora-

* See p. 120, *ante*.

tory by the name of *alumine* or *alumina*, a name derived from *alum*, a well known substance that crystallizes in regular octohedra, and is a compound of *sulphuric acid*, *potash*, and *alumina*.

The curious fact of alumina being identical with that which confers plasticity upon clay, was known in the infancy of chemical science; it was called an earth, an argillaceous, non-alkaline earth, and resisted all attempts at decomposition or resolution into any other forms of matter. Barron entertained an opinion that alumina was of a *metallic* nature, and Lavoisier had sufficient penetration to state that it was a *metallic oxide* whose elements were held in union by an affinity too powerful for any known agent to overcome. Notwithstanding these surmises as to its nature, alumina was experimentally acknowledged to be a simple or elementary substance until the year 1808. Soon after Davy had decomposed the fixed alkalies, potash and soda, and proved them to be oxides of the metals potassium and sodium, and found that the power of potassium, or its affinity for oxygen, was superior to all other substances, he was induced to apply it to alumina, reasoning as follows:—If alumina be a compound in which oxygen exists, it is probable that the intense affinity of potassium for such element, will deprive alumina of *it*, and so elicit the *base*, be it what it may, of alumina. An appeal to experiment established the fact of alumina being a compound of oxygen and a peculiar substance apparently *metallic*, for which Davy proposed the name of *aluminum*, but he scarcely examined its properties on account of the extremely minute portions that he could obtain by his analysis. Many chemists refused to admit this view of the compound nature of alumina—refused, that is, to rank it with other metallic oxides; but all are now agreed about the matter, since Wohler's accurate analysis in 1828, when he succeeded in procuring the metal *aluminum* in tangible quantity, and found that upon causing it to exert affinity for oxygen, the sole product or compound was *alumina*. Thus from the evidence of analysis and synthesis, alumina is proved to be an oxide of the metal aluminum, and the original notions of Barron and Lavoisier are corroborated by actual experiment.

In the science of chemistry, the term *alumina* is of more convenient employment than that of *protoxide of aluminum*, which is the strict ultimate term, and it is likewise usual to denote all the oxides formerly called alkalies and earths except lime by the termination *a*; on the other hand, all metals of modern discovery are distinguished by the termination *um*; *vide* the list of elements.

The chemical properties of aluminum are of no practical utility in construction, but those of alumina are of the greatest possible interest and importance.

By the action of ammonia upon a solution of alum, the sulphuric acid, and the potassa of that salt are removed or withdrawn, whilst its pure alumina precipitates in the form of a perfectly white substance, and this when collected and dried at common temperatures retains about half its weight of water, it is therefore a hydrate of alumina. This will readily mix with more water, and form a plastic mass, but no solution of alumina takes place, and for all practical purposes it may be regarded as absolutely insoluble in water.

Some kinds of fine white clay, although containing an enormous per centage of alumina, are not chemically pure, and these, when breathed upon or wetted with water, emit a peculiar odour, like that of moist "Fuller's earth," or some varieties of stone employed for pavements; this odour is known by the name of *argillaceous*, and was supposed to be peculiar to pure alumina; recent researches prove, that pure alumina thus treated has no odour, but if a very minute portion of oxide of iron be present (as it always is in the very purest native specimens of clay), that the odour is immediately evolved, when breathed upon or moistened with water.

Artificially, pure alumina, and all natural specimens of clay containing it, retains water with great and persistent affinity. This can only be expelled at a bright red heat, and leaves the alumina *anhydrous*, but no longer plastic or miscible with water. In this anhydrous state the substance is excessively hard, therefore its fine powder is occasionally advantageously employed for grinding and polishing metal work. This affords a striking example of the physical or mechanical character of a substance being wholly altered by the abstraction of water.

Alumina is perfectly infusible, and hence its extreme value as a material for the manufacture of crucibles, and other vessels that are intended to withstand intense heat.

"Cornish clay" and "pipe-clay" each contain a very large per centage of pure alumina, and, accordingly, they are extremely refractory in the fire, but the presence of sand and lime renders them fusible. Many "clays" naturally contain the two last-named substances, and are, therefore, perfectly unfit for the manufacture of bricks.

All "clays" contain more or less of the oxide of iron; and to this substance their various shades of colour is chiefly referrible; and when a light yellow clay is heated red-hot, or, technically speaking, "burned," it assumes a bright red colour, on account of the iron assuming its highest degree of oxidation, or, in other words, becoming *per*oxide of iron.

"Burnt clay," being anhydrous, hard, and insoluble in water, forms an excellent material for the foundation of roads, &c., and is now most abundantly used in many operations of building and of civil engineering.

By selecting a white clay, and artificially blending it with various metallic oxides, the potter is enabled to produce all the well-known varieties of coloured pottery, paving tiles, &c.; thus a red colour is conferred by the peroxide of iron, blue, by the oxide of cobalt, green, by the oxide of chromium, black, by the oxide of manganesium, and various intermediate tints by the judicious intermixture of these and other metallic oxides in certain proportions. The heat of the kiln in which articles of pottery are "baked," causes intense chemical affinity to ensue between the alumina and the colouring oxides, so that the tints, or stains, are perfectly indelible by the most protracted exposure to all vicissitudes of the weather.

The quality of bricks materially depends upon the judicious "tempering" of the clay with water, and the subsequent "burning," to expel the water. This matter appears extremely simple, but in fact it demands much practical skill.

For example, if the "brick earth" contain a very large proportion of real clay, the bricks made of it will shrink and crack in the mere drying by exposure to the air; and if it contain a large quantity of sand, then the bricks will be heavy and brittle.

"Tempering" the very same clay in two different ways, will even produce a decided difference in the quality of bricks, as the following account of an experiment will shew in a remarkable manner.

A sample of clay was heavily beaten for half an hour, then divided into two parts; one part was beaten for three-quarters of an hour longer; a brick was made of each portion with the same pressure, in the same mould, then dried and burned under the same circumstances; these bricks were tested as to strength by placing them on a sharp edge, and gradually loading each of their ends with weights; the result was, that the brick made of the clay beaten for half an hour, broke with thirty-five pounds at each end, or *seventy pounds* on the whole; whilst the other did not break until the addition of sixty-five pounds at each end, or *one hundred and thirty pounds* upon the whole.

The strength depended upon the materials of the clay being closely and accurately brought into contact by the mechanical force of the blows used in the "tempering," and thus enabled by the after-process of "burning" to exert chemical affinity for each other in a more powerful and perfect manner than, in their comparatively porous state, of the shorter tempering.

For making good sound bricks, the clay should be dug some years before it is wanted, that it may have time to "mellow," or in other words for the alumina, the silica, and the oxide of iron to act well upon each other by the intervention of the air, then good "tempering," and judicious "burning."

Alumina occurs as an essential constituent of several building materials, as, for instance, in all kinds of slate and granite—the latter consisting of three distinct substances, viz. *quartz*, *mica*, and *felspar*. The first of these is pure silica, the second is a compound of magnesia, and the third, or *felspar*, a compound containing a large amount of alumina.

When the *felspar* predominates, especially in the form of large white crystals, the granite is extremely prone to crumble and decay, and is perfectly unfit for the uses of the architect. Some of the Cornish granite is so remarkable for its spontaneous disintegration, that the variety of white clay called "Cornish clay" (so highly prized for the manufacture of porcelain), entirely results from the decomposition of the felspar.

In these papers on "Chemistry as applied to Construction," frequent mention has been made of *silica*; it is presented by nature extremely pure in the substance popularly known as "crystal," or "rock-crystal," the form of which is a six-sided prism, having a six-sided summit; and from its being perfectly colourless and transparent, the ancients deemed it to be water, congealed into a more solid state than that of ice, and therefore incapable of thawing.

Modern chemistry proves "crystal" to be anhydrous, and to consist of the same substance as flint or *silex*, hence the derivation of the term *silica*. Some of its characters are now to be mentioned.

All varieties of the substance called *quartz*, contain silica in various states of purity, and the fine white sand obtained either from Lynn, on the coast of Norfolk, or from Alum Bay, in the Isle of Wight, present silica nearly as pure as "crystal." Silica is characterized by extreme hardness, insolubility in water under ordinary circumstances, infusibility in common furnace heat, and until the year 1808 chemists regarded it as a *simple earth*.

Sir Humphry Davy experimented upon silica by means of the metal potassium, and made the important discovery of its *compound* nature, proving it to consist of the element *oxygen*, and a peculiar new inflammable substance, which he named *silicon*; other chemists have modified this term into *silicium*, regarding it as a metal, and as such it is ranked in the list of elements already given.

*Silicon* or *silicium* is a dark brown powder, infusible, and inflammable, producing *silica* by uniting with oxygen, so that the pure matter of crystal, quartz, flint, and sand, may be called *oxide of silicium*; but this substance under certain conditions has the power of uniting with metallic oxides, after the manner of an acid, and is frequently called *silicic acid*, and the compounds that it forms with such oxides are called *silicates*.

The general chemical characters of *silicon or silicium* require more perfect investigation before it can be assigned its proper station amongst the elements. It may belong to the class of non-metallic elements; it may belong to the class of metallic elements; and as experiment proves that the *bases* of all the other substances so long regarded as *earths* are most decided *metals*, analogy strongly justifies the opinion that the substance in question is also a *metal*; it is of no practical importance, but its native combination with oxygen, viz. *silica*, is of the highest value to the architect, engineer, operative, and artist.

The chemical affinity of finely divided silica (sand) for alumina is so great, that the two substances combine to a certain extent, when presented to each other in a moist state, as in the preparation of "brick earth" and "porcelain clay;" hence the advantage of keeping these materials for a very considerable time before use, that the combination may take place and be ultimately perfected by the process of "tempering." The duly tempered clay may then be regarded as *hydrated silicate of alumina*, and the operation of "burning" drives off the water, leaving the *silicate* anhydrous, hard, and of extreme durability. Brick or pottery, when composed of absolutely pure alumina and silica, may be considered as *anhydrous silicate of alumina*; if oxide of iron be present, as it is in common clay, then the result is *anhydrous alumino-silicate of iron*.

Although silica is infusible alone, if it be mixed with potassa, or soda, and heated intensely, it exerts chemical affinity for these metallic oxides, combines with them to form a perfect fluid, which, when cooled, constitutes the invaluable material known as *glass*. In order to understand its chemical nature, some of the properties of potassa and soda require description.

These substances were formerly called "the

*fixed* alkalies," because they do not evaporate when exposed to a very high temperature, and also to distinguish them from the alkali *ammonia*, which readily evaporates even at common temperatures.

The first of these fixed alkalies was formerly called *potash*, from the circumstance of its being yielded by the combustion of vegetable matters in iron cauldrons or pots. The name is now modified into *potassa*, to harmonize with chemical nomenclature. The second of these fixed alkalies was, and is still, called *soda*, on account of its being yielded by the combustion of a marine plant, called *salsola soda*. The volatile alkali was called *ammonia*, from being found in *sal ammoniac*, a substance first discovered in the vicinity of the Temple of Jupiter Ammon, in Upper Egypt. The word *alkali* is of Arabic origin, and implying *of* or *from a plant*.

From the early ages in which potassa and soda were known until the year 1807, they were regarded as elements; but Sir Humphry Davy found that they could be decomposed by voltaic electricity, that they yielded oxygen and inflammable *metals*, which he named *potassium* and *sodium*, so that the fixed alkalies are true *metallic oxides*.

They are both solid substances, perfectly white, exceedingly caustic and corrosive,—far more so than lime; they dissolve perfectly in water, and change the yellow colour of turmeric root to a deep brown. Either of these alkalies, heated with silica, will yield glass; but they are rarely, if ever, used in a pure or caustic state by the manufacturer of glass on account of their great expense; he employs them as *carbonates* of potassa or soda, and these are well known as common "pearlash" and common "soda."

When mixed in due proportion with sand, and heated in the glass-house furnace, the silica enacts the part of an *acid*, expelling the carbonic acid, taking its place, and producing, with the resulting potassa or soda, a *silicate of potassa or soda*.

In the manufacture of "crown" and "plate-glass" soda is the alkali used, whilst for that of "flint-glass" potassa is most commonly employed; but this glass has an addition of a certain quantity of *oxide of lead*, more familiarly known as "litharge," which has the property of uniting with the silica and the potassa; so, whilst "crown" and "plate" may be chemically regarded as almost pure *silicates of soda*, "flint-glass" is a *silicate of potassa and lead*.

In glass, then, soda or potassa are present, which, in their pure states, are readily soluble in water, and change the yellow colour of turmeric to brown; but, as combined with silica, or with it and oxide of lead, having no such properties, so remarkable are the changes effected upon substances when they are caused to exert chemical affinity for each other, and are also compactly bound together by attraction of aggregation.

If this attraction of aggregation be overcome, as by reducing a portion of glass to an extremely fine powder, and then placing it upon a piece of paper, stained yellow with turmeric, the addition of water will dissolve out a portion of the alkali, and it will turn the paper brown: chemical affinity between the water and the alkali being promoted by diminishing attraction of aggregation.

In some glass there is a very great excess of alkali; and therefore it is extremely prone to decay, or to become dull, even in the solid form of a sheet or plate, by long continued exposure to water.

The ancients appear to have added a larger quantity of alkali than that absolutely required for the vitrification of the sand; for upon the examination of a specimen of ancient glass, it was found beautifully transparent, but always damp, and it even yielded alkaline indications to the turmeric paper without requiring reduction to powder: it was a silicate of potassa with excess of potassa, this being probably added to assist the fusion.

In museums we very frequently find specimens of ancient glass deeply corroded, and their surfaces covered with a beautiful iridescent film; time having allowed moisture to effect its work on the solid though highly alkaline material, the alkali having been partly abstracted, the film of insoluble silica remaining.

## VENTILATION AT THE HOUSE OF LORDS.

On Friday last, Professor Faraday delivered a lecture at the Royal Institution, descriptive of the method of ventilating the new House of Lords. He stated, that his opinion had been asked by the Government upon the plan, the merit of which was entirely due to Mr. Barry, and said, that in the account he was about to give, he should make no comparison between this plan, and that of any other individual.—Nothing was more easy in theory than ventilation, and nothing more difficult in practice. Place 100 persons in an apartment well-ventilated, under the most favourable circumstances, and it would be impossible to please them all. In the present instance, he could merely tell them what the architect expected would be the mode of action, the opinion being, he believed, founded on sound views. He shewed from drawings and models, that the House of Lords and its adjuncts, consisted mainly of three divisions; the House itself, with the throne at one end and strangers' gallery at the other; the lobby at one end of the House, and the Victoria Hall at the other. The approximate dimensions of the House might be stated at 90 feet long, 45 feet wide, and 45 feet high. The carcase was entirely fire-proof, and this condition of the structure it had been necessary not to interfere with. The points to which attention had been directed, were:—To supply a certain degree of warmth through an impervious floor; to produce a current of air which should not be sensible, and which there were means of influencing the temperature of, and to change the air as completely, as required by previously ascertained *data*. The apertures for entrance and exit of air were both in the ceiling, those for admission being along each side, and those for exit being along the middle, the motive power, and the principle of the circulation, having to be explained.

The principal heating apparatus was a steam boiler, on the plan of Lord Dundonald, placed in the basement, under the flue of exit, which boiler also supplied a steam jet, issuing in the flue with sufficient force to draw the air after it. The principal steam-pipe communicated with several cokels, placed at the point where the air gained admission, and where after having passed through perforated zinc, over which water was constantly trickling, in order to free it as much as possible from soot and impurities—it was heated, and passed immediately under the floor, along the whole length of the house: this floor being formed of perforated plates covered by thinner plates of metal. It would then ascend flues at the angles of the Victoria Hall, communicating with horizontal flues and chambers above the ceiling, where it gained admission to the house, through perforations in the ribs of the panelling. Now the principle of the circulation within the house, on which great confidence had been placed, was this:—The air being admitted at the sides, at two divisions of the three, into which the ventilating arrangement above the ceiling was divided; the upper part of the walls being occupied by windows, and both sides of the house being exactly similar; it was expected, that the air would have a tendency to descend down each side, to the floor, when the two currents would unite in the centre, and re-ascend to the ceiling, being then drawn out by the motive power. The lecturer shewed several experiments, tending to prove that this circulation would take place, and the expectation had in a great measure, been confirmed by a trial in the building. Some pastile powder was burnt within the range of the current, before its admission to the house, and the scent of this pastile powder was perceptible through all stages of the course, reaching the final exit flue in fifteen minutes. But this was not all, for this powder being burnt, only in the current which gained admission at one side of the house, the scent was perceptible at one side, but not at the other; and he, the professor, had walked across the house in every part of the length, and had always found, that the scent was perceptible at one side only. He found, that the aromatized atmosphere commenced somewhere about the centre, thus proving most clearly to his mind, the correctness of the reasoning, on which Mr. Barry had proceeded. He had further been led to approve of this plan, from the extreme care which the architect had taken, in providing for the different seasons of the year, and extraordinary influences. Other apertures of ingress had been provided under the galleries, which could be made use of as occasion might require; the section of the passage being in all cases so large, that there could be no sensible current. Provision had also been made for cooling the air, by passing the piping through water obtained at the Houses of Parliament from the wells in Trafalgar Square, which had been found to be at the temperature of 45 deg. even in summer, and with which the cokels were filled, in place of steam.

The professor then exhibited the mode of action of the steam jet, the motive power before mentioned, shewing, by means of flame and by the vapour of gunpowder, how, when issuing within a larger tube, it would draw the air after it from a considerable distance.

He said he had great confidence in the result of the plan, and he proceeded to recapitulate what was expected from it. It was hoped, that there would be an absence of any perceptible drafts; also that the walls would be free from being discoloured by these causes, which frequently made one side of a room appear darker than another. There would further, it was hoped, be no tendency to movement of dust in the house; that all sudden changes would be avoided; and lastly, there was the certainty, that the building would be fire-proof. He concluded by apologizing to his hearers, and to the architect, for the imperfect description which he had been able to give, and by stating, that whatever be the opinion as to the numerous other schemes, which had been suggested, it ought in justice to the architect to be stated, that he had to take a building planned for another mode of ventilation, and not for his own.

As the success of the scheme above described, is so soon to receive a complete trial, it would be prudent to postpone any remark upon it; but the opinion of Professor Faraday cannot but be considered as satisfactory to our professional readers, proving, as it does, how inadvisable is any interference with the complete control of an architect, over his own work. Should, as it seems probable, the result be successful, it will prove most clearly the foundation for the views, long ago expressed by us, as to the ventilating arrangements, in connection with the architect's duty as the designer of a building. We have always argued, that any interference with the duties of an architect is inadvisable, unless it can be clearly shewn, that the advice of another party would benefit him; and even should the present scheme fail, the opinion given in favour of it now, would shew, that there are no grounds for assuming, that any individuals know the duties of an architect better than he does. But this mishap we have now no expectation of, and we hope that the details will be published, in a more complete form than we have had it in our power to give them in this notice of the lecture.*

## AWARDS OF THE OFFICIAL REFEREES.

### STONE HEARTHS FOR COPPERS.

Mr. Parker, of Greenwich, having set some coppers with hearths in some cases 9 inches and in others 12 inches wide, the district surveyor gave him notice of irregularity,—"The hearths in front of chimney-openings to coppers now fixed not being at the least 18 inches in front of the arch over the same, contrary to schedule F.;" and the same not being amended, he took the case to the referees.

The builder contended there were no regulations in the Act relative to furnaces for coppers.

The referees determined that the furnace-opening to a copper is a chimney-opening within the meaning of the Metropolitan Buildings Act, and as it regarded the matter in question, that the slabs or outer hearths before the furnace-openings of the coppers were not

* In the library of the institution, a copy of Mr. Foley's statue of Innocence, reduced by Cheverton's machine for the Art-Union of London, was exhibited. Drawings explanatory of several schemes of ventilating rooms, and also the public sewers by means of pipes passing up the fronts of the adjoining houses, and communicating with the chimneys, were exhibited by Mr. and Mrs. Varley. Amongst other objects of interest was a MS. work on the Coliseum, copiously illustrated with elaborate drawings of every part of the building, taken at the time of the excavations by the French during the years 1811, 1812, and 1813. We could not avoid regretting, that so careful an examination had never been published, or that this work did not form part of the collection at the British Museum. It was contributed by Mr. G. Walford.

conformable to the said Act; and they directed Mr. Parker forthwith to amend the same, by laying in front of each of such furnaces or chimney-openings (on a brick fender or on the solid ground), a slab or slabs of brick, tile, stone, slate, marble, or other proper and sufficient material, at the least 12 inches longer than the furnace or chimney-opening, and at the least 18 inches in front of the arch over the same.

EXEMPTED BUILDINGS.—REGENT'S CANAL COMPANY.

With regard to a certain building, believed to be of the second class, now being built on the south side of the Regent's Canal, in the district of St. Pancras, for the Regent's Canal Company, no notice was given to the surveyor of the district, on the ground that buildings erected by the said company were exempted from the Buildings Act.

At the hearing, it was argued that the Canal Company was "a dock company, and that the building in question being to be erected on the land, and to be used for the purposes of the said company, was to be deemed to be a structure belonging to a dock authorized to be executed by Act of Parliament, and therefore exempted from supervision, under the last paragraph of schedule B., part 2, of the Metropolitan Buildings Act."

The referees awarded, "that such buildings and structures only as are within, and in connection with, the works of any dock belonging to any dock company, established and incorporated by Act of Parliament, are within the meaning of the last paragraph of the said schedule B, part 2, and exempt from the supervision prescribed by the said Act.

"And inasmuch as the building in question is not within and in connection with the works of any dock, but is out of the precincts of any dock, and not to be used in connection with any dock, being to be used as stabling for horses employed on the canal, such building is not a structure belonging to any dock, and is not exempt from the supervision prescribed by the Metropolitan Buildings Act."

EXTERNAL CORNICES AND PROJECTIONS.

With regard to building operations in progress at No. 238, Strand, the district surveyor gave notice to Messrs. Bellingham and Co., builders, that "the cornice and entablature over the archway on the east side of the said house are not built of the materials required by the Act, overhang the ground belonging to another owner, obstruct the light and air, and are otherwise injurious to the owner or occupier of the building adjoining thereto on the east side."

The question went to the referees, and the award was, "that inasmuch as the cornice and entablature over the archway on the east side of the house, No. 238, Strand, eastward from the shop front (not being the cornice and entablature of any shop front), are not formed of the same materials as are by the said Act directed to be used for building external walls, or of such other proper and sufficient materials as the official referees have approved or permitted, the same are contrary to the Metropolitan Buildings Act; and further, that inasmuch as the said cornice and entablature overhang the public way, the same are also contrary to the said Act;

And we hereby direct the said Messrs. Bellingham forthwith to take down and remove the cornice and entablature projecting from the said house over the said archway, and in continuation eastwards of the cornice and entablature over the shop front of the said house."

BUILDERS' TENDERS.—The following list of tenders for building the schools and master's house, at Heanor, Derby, has been forwarded to us as a curiosity:—

| | | | |
|---|---|---|---|
| E. Fish, Nottingham .... | £1,230 | 8 | 7 |
| H. Evans, Heanor ..... | 715 | 0 | 0 |
| G. Thompson, Derby .... | 689 | 10 | 0 |
| F. Freeman, Guilsthorpe.. | 685 | 0 | 0 |
| A. Smith, Belper..... | 675 | 0 | 0 |
| J. Woodhouse, Heanor .. | 661 | 10 | 0 |
| C. Moody, Derby ..... | 621 | 0 | 0 |
| G. Ward, Derby ..... | 594 | 0 | 0 |
| M. Donaldson, Derby.... | 574 | 0 | 0 |
| J. Nadin, Derby..... | 571 | 12 | 10 |
| J. Winstanley, Derby.... | 571 | 10 | 0 |
| J. Smith, Derby ..... | 563 | 10 | 0 |

## BURFORD'S PANORAMA OF CAIRO.

THE ability and knowledge of art required for the production of such a work as this are not properly appreciated by the public. Mr. Burford ought to stand high in estimation as an artist of no common order, and is better entitled to the dignity of R. A.-ship than many who enjoy it. From sketches by Mr. David Roberts, and with the assistance of Mr. H. C. Selous (a man of great talent, who is but beginning to know his own power and make it felt), Mr. Burford has produced a work of great excellence, which we advise all our readers to visit.

Cairo, founded in the year 969 of our era, stands in a sandy plain, and occupies a space equal to about three square miles. It is surrounded by a stone wall, and contains nearly 400 mosques, many of which are large and elaborately decorated. The streets, though narrow, are kept remarkably clean: a recent edict, compelling their being watered, swept, and the dirt removed two or three times a day. Listen to this, ye Londoners!

The city contains about 30,000 houses, some being handsome modern erections of stone, from the quarries of Mokkattam; "others partly of stone and ill-burnt bricks, of a dull red colour; whilst the meanest are constructed of clay. The best are large and commodious, rather than elegant, being far more picturesque than classical; they usually enclose an open court, into which most of the windows look, and are two or three stories in height, with terraced roofs. The front in the street is usually painted in stripes of various colours, especially red, and presents on the ground floor a small door, surrounded by elegant carving, having a large iron knocker and wooden lock; there are also two or three small grated windows placed too high for any one to look in at; on the second and third floors, which project about 2 feet over each other, and are supported on carved corbels, are large bay windows, farther projecting about 1½ foot, and inclosed by a very ornamental lattice work, sometimes painted red or green, from which the inmates obtain a view up or down the street, without being themselves seen."

The panorama is taken from the summit of one of the curious mounds which formerly encircled the city, and includes a view of great extent and variety.

## SPECIAL NIGHT AT THE SOCIETY OF ARTS.

THE council of the Society of Arts, being anxious that their exhibition of British manufactures and decorative art should be seen by men of influence and station, issued cards to her Majesty's ministers, members of both Houses of Parliament, men of science, &c., for Monday last, and received during the evening about 150 distinguished visitors. Ladies were scarcely expected, and the council were evidently taken by surprise when the Duchess of Sutherland was announced. Her grace however, although nearly alone, a swan in a crowd of crows, examined every thing, and was evidently gratified by the visit.

We heard two members of parliament admit it was the first time they had seen Barry's great pictures, and that they had no idea that England possessed such works; yet both were highly cultivated men and knew every picture that is to be found in Italy!

The exhibition, although it must not be taken as a true exposition of English manufactures, is very satisfactory as a beginning, shewing beyond a doubt, what might be done with a wider organization and stronger inducements to manufacturers to send their productions. The greatest credit is due to the managing body of the Society of Arts, for the manner in which the matter has been conducted; good cannot fail to result from it.

HEALTH OF TOWNS.—On Tuesday last, Lord Morpeth brought in his bill for improving the health of towns. It contains no reference to the subject of intra-mural interments, the Government thinking this subject worthy of a Bill to itself. On the same evening Lord Morpeth presented a petition from the Metropolitan Working Classes Association for improving the public health, praying for a sound and comprehensive health-bill.

## RAILWAY JOTTINGS.

THE vapours and gases hitherto passing freely off through the chimneys of locomotives, loaded with valuable heat, have of late had a tax of 72° Reaumer levied on their 'absentee expenditure' for the use of the indefatigable *cheval du fer*, by the aid of collective apparatus invented by M. Cabry, engineer in chief of the Belgian line of railway forces, and consisting of a reservoir in the smoke box separate from the boiler tubes, but correspondent with them, and pierced with the same number of holes: water for the condensation of the heat thus detained, is conveyed from the tender by a fixed pipe beneath the apparatus, and a circulation through the heat reservoir is effected by two other tubes fixed at a higher level. An experiment, of a satisfactory nature, it is said, has been tried with this instrument on the Brussels and Antwerp line.——The advantages derivable from railway transit in the conveyance of that fleeting and ticklish commodity, "fresh fish" to a ready though distant market, were strikingly illustrated in course of last week, when 20,000 mackerel caught at Plymouth were whisked off by rail and poured all at once into Billingsgate, where the sudden glut enabled or compelled the retailers to dispose of them at six and even eight for a shilling.——At an inquest on the body of Edward Whitman, carpenter, one of the poor sufferers by the falling of four arches, erected for the formation of a roadway to the premises of Messrs. Pickford and Co., carriers, at the Camden Station of the London and North Western line, the coroner expressed his determination to make a most searching inquiry into the cause of the disaster. William Sanders, a carpenter, in the employ of Messrs. Piper, who was also buried under the brickwork, on being asked by the coroner if he could account for the fall of the arches, said he could not, except that there was an iron tensor rod found broken. Mr. Piper on being asked by the coroner whether he was prepared to say that the building gave way from any fault of his, said certainly not. The jury were then discharged with the understanding that the proceedings would be resumed at Camden town for the purpose of instituting the searching investigation determined on.——On the very same day on which these four arches fell, no less than one-and-twenty arches of the Liverpool viaduct of the Liverpool and Bury line went rattling down, one after the other, in rapid succession, as we have seen a long line of juvenile recruits in "Prussian exercise," one overturning the centre of the other's gravity, till all were fairly prostrate in succession. It is not yet known how the first arch fell, otherwise we should have a key to the whole catastrophe; especially as "it is certain that each buttress afterwards, incapable of sustaining the weight of the arch reared upon it, when that on the other side of it had fallen, was forced immediately outwards, till the entire destruction of the whole was completed in about the space of a minute, or a minute and a half from the fall of the first." In short, the mutual dependance of each upon all and all upon each must have been of a very beautiful and harmonic order, meriting a final issue of a far different description from any so peculiarly associated with card building, or that other juvenile exercise in construction and the mutual disposal of gravitative forces which this untoward issue itself so forcibly suggests. The noise with which one buttress stormed the other in the general onset, it is said, "resembled the quick discharges of as many small pieces of artillery, and was heard for more than a mile off, along the north shore." The six northernmost of the arches "had been only so far completed as to allow of the centerings being withdrawn a few days previous, but the others had been all completed some three months since. They were all of brick, and had been in course of construction ever since last spring."——An extensive hotel at the Stratford station of the Eastern Counties line is now in course of erection. When finished, it will form, it is said, one of the largest buildings of the kind on that line of railway. The station at the junction with the Cambridge line was to be opened for public use on the first of the present month. ——The masons employed at the works of the high level bridge across the Tyne have requested an advance of wages at the rate of 2s. per week. Their present wages are 26s. per week.

TUTBURY CHURCH, STAFFORDSHIRE.



## TUTBURY CHURCH, STAFFORDSHIRE.

The parish church of Tutbury is situated half way up the hill upon which stood the castle, built by one of William of Normandy's most enthusiastic followers, Henry de Ferrars, who had left his native land in company with the Conqueror, and to whom William gave such ample estates in Derbyshire and Staffordshire, that the family have been unto the present time most intimately connected with the history of those counties. The hill rises abruptly from the banks of the Dove, and presents a strong and commanding point for the erection of a strong-hold, advantages seldom lost sight of in the troublous ages which succeeded the Norman invasion. This castle became one of the most famous in England, and remained in the hands of the Ferrars family until it was forfeited to King Henry the Third by Robert de Ferrars, the rebel Earl of Derby. That monarch bestowed it on his second son, Edmund, Earl of Lancaster, and his descendant, Thomas, Earl of Lancaster, having fortified it against King Edward the Second, but being unable to hold it, it was surrendered again into the hands of royalty. In 1350, John of Gaunt rebuilt the greater part of it, and it became the principal seat of the Dukes of Lancaster. Its latter history is chiefly remarkable for the sojourn within its walls of Mary Queen of Scots as a prisoner, and for Lord Loughborough's maintaining a garrison here to support Charles the First. He was, however, compelled to surrender it to Sir William Brereton, the Parliamentary commander; and at the conclusion of the war, about 1646, it was reduced nearly to its present ruinous condition. There is little now left but the external walls and a few towers and gates, scarcely enough to give a notion of its original strength and importance.

The Priory, which now forms part of the parish church, was founded by Henry de Ferrars in or about the year 1080, but the editors of the last edition of "Dugdale's Monasticon" incline to think that it was more probably in the time of King William Rufus, in whose reign the charter of foundation was evidently framed. It was dedicated to the Virgin Mary and became a cell to the abbey of St. Peter super Divam in Normandy. The granter grants great privileges to the monks, which were confirmed and added to by his grandson: and it continued to flourish in great prosperity until the suppression of the monasteries. The site of Tutbury priory was granted in the 6th of Edward VI. to Sir William Cavendish, who pulled down the priory and part of the church, together with the chapel of St. Stephen, to build himself a large house. The property is at present in the hands of the Duke of Devonshire, who has the gift of the living.

The west front of the church is particularly beautiful and remarkable for the richness of its Norman details. The principal door is a study for the architectural student, presenting as it does examples of varied enrichment, among which the chevron and billet moulding, as well as the bird's head decoration abound. The circular-headed window above, is equally profuse in ornament, and the arcade at each side is particularly interesting for the example it affords of the interlaced circular arch, producing the pointed arch; the spaces on the wall between each are sculptured in diaper-work; a bead-moulding also sculptured divides the stories; the flat buttress of the tower on that side next the door, bespeaks its age; the heavier buttresses at the angles of the tower are the work of a much later period, as also is the upper story of the tower, and its battlement, as well as that over the western gate. The lower window in the tower was originally a door; but the pillars on each side have been removed, and one row only of the ornamental stones which formed the top allowed to remain; and this accounts for the anomalous and tasteless combination of parts it now forms; the whole of the portion to the left of the door is also a modern antique, and in equally bad taste, having been executed when the church was repaired some years since, and the principles of Norman architecture little understood.

Within, the chancel roof is supported by massive Norman pillars; but the chief glory of the building is the fragment of the original work exhibited in our view.

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The Artists' General Benevolent Institution.—The annual dinner in aid of this institution took place on Saturday last, at the Freemasons' Tavern, Great Queen-street. The Hon. Thomas Baring was in the chair, and was supported by a number of well-known artists and friends of art. 560*l.* were subscribed.

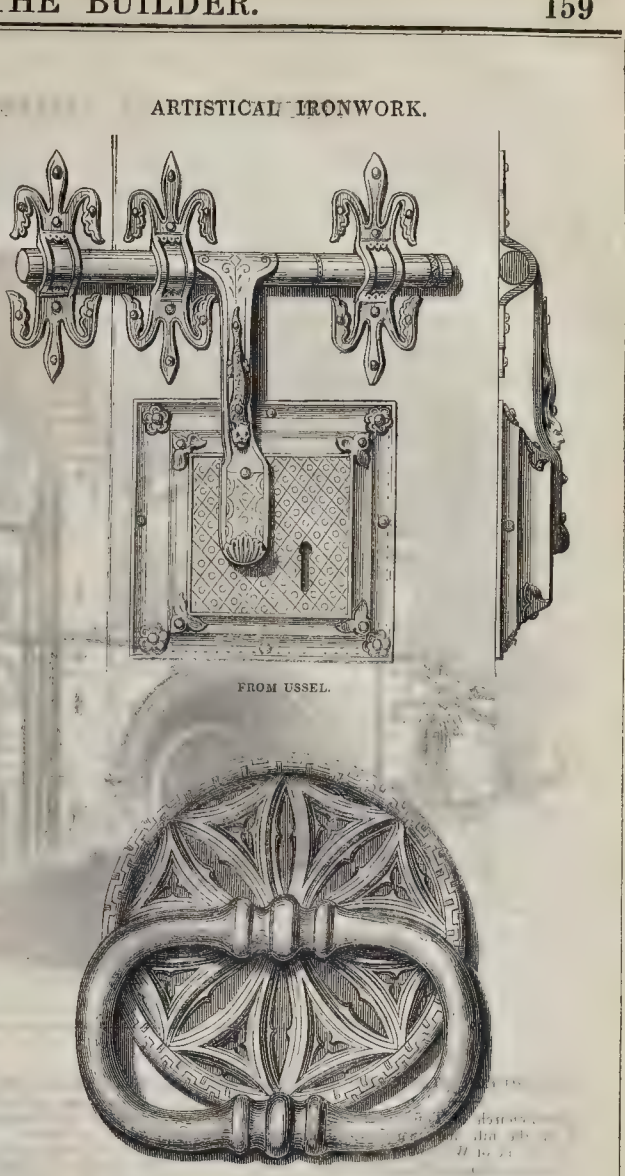
Chinese Glass Painting.—We are told that several specimens of Chinese painting upon glass, of which the colouring, especially that of the faces, is rich and delicate, have lately arrived at Glasgow.

## ARTISTICAL IRONWORK.

Annexed, we make some further additions to the number of examples we have already given, and which we may venture to say have had a useful effect.

No. 1 is a beautifully decorated lock, shewn in front and in profile. The ornament upon it is very good. The hasp forms also the handle of a bolt, which passes through staples fashioned like a double *fleur-de-lis*. This ingenious contrivance is worthy of reproduction, and must give great additional security in closing the door. The lizard upon the hasp is a very common ornament of the 15th and 16th centuries. The door of the church of St. Nicholas, Gloucester, has a very fine knocker similarly ornamented; and a ring-handle on the door of St. Saviour's, Southwark, may be cited as a metropolitan example. The arrangement of the nail-heads in the lock are also worthy of notice, as they shew how carefully the older artists studied the general effect of all articles of use or necessity comprehended in their designs. This lock is upon the door of a farm-house at Ussel (Corrèze).

No. 2, a ring-handle, is to be found in our own country, upon one of the doors to the private residences in Eton College. The escutcheon here is large, and richly ornamented. Many such exist, and present very great variety in design and elaboration in ornament; indeed, the work of the older artists in metal appears to be as full of invention and study as the public edifices they adorn; the *artist* appears in all the works of the artificer; and the famous blacksmith of Antwerp was but one among many who possessed the qualification of art, and applied it continuously to their works.




## EXHIBITION OF THE SOCIETY OF BRITISH ARTISTS.

The manner in which this exhibition has been spoken of by some of the journals must pain every generous lover of the fine arts, anxious to find able and impartial artistical criticism; and must tend, when the statements are compared with those of an equal number of other papers and found diametrically opposed, to destroy public confidence in periodical reviews, and to render the artist totally indifferent to praise or blame. For our own part, we have no hesitation in saying that, so far from being worse, the exhibition is decidedly an advance upon those of former years. Works of the first class there are perhaps none (how few are produced within the year in this or any country?), but of their class a large number are first-rate; and if we compare the works of each individual with his previous productions, and this seems to us the only way of arriving at a satisfactory conclusion, we shall find that a considerable proportion of them have made a stride onwards.

The president for example, Mr. Hurlstone, has cleaned his palette since last season, and has painted better than he has done for years. His "Girl of Sorrento at a Well" (No. 47) and "Sybilla, a filatrice of Meta" (274) are most excellent pictures.

Mr. Pyne's "Neckar at Heidelberg" (No. 30) is decidedly one of his finest productions, honourable alike to himself and the country. Well do we remember the glorious ruin, so nobly placed, and the enthusiastic old Frenchman who has lived there many years, drawing and etching every portion of it. The contemplation of Mr. Pyne's picture re-called some pleasant days.

Mr. Allen has produced a remarkably fine landscape, called the "Vale of Clwyd, seen from the hills dividing Flintshire from Denbighshire,"—certainly his best work for a considerable time, and full of beauty. The distance and sky, especially, are admirably treated.

Mr. Prentis, also, has made an advance. "The Close of a Selfish Life" (No. 25) is a work of great power,—full of thought, and thought-inducing. An old man is on his death-bed,—

> "And that which should accompany old age,
> As honour, love, obedience, troops of friends,
> He must not look to have."

Two hired crones are alone in the room,—one is removing the ring from the dying man's finger, the other, at a drawer, is examining the goodness of some linen she is about to remove; a volume of Hume's Essays, fallen open on the ground, serves to suggest that even religion was wanting to console the lonely one.

Mr. Montague has improved greatly; his "Dutch Passage-boat crossing a River" (61), and "The Mill Ford" (94), are amongst the best things he has yet done.

Mr. Baxter's "Wanderers" (54), a young mother at the road-side, with a child at her feet,—

> "She once, perhaps, in village blest,"

is full of fine feeling and careful painting.

Mr. Clater, again, has made a surprising improvement on his last two years' work. No. 114, "Gipsies' Camp—Evening—Preparing for the Meeting of the Tribe," may be pointed to in proof of the assertion.

Mr. Anthony, with much genius, is still extravagant. No. 113, "A Summer Morning," must, however, be exempted from this charge: it is a gem. The freshness and repose belonging to morning are charmingly conveyed.

Mr. Woolmer has a picture of considerable size and pretence, "The Morning after the Battle of Hastings," but it is less satisfactory than some of his smaller works. In 412, "An Arcadian Scene," the neck and arms of the kneeling figure shew how much more satisfactorily he could render his ideas than he usually does, if he would let industry aid imagination.

Mr. Holland should have been mentioned before, especially for No. 246, "Sunset," a picture of great poetical beauty, and justifying us in placing him also amongst those members of the society who have done better than their previous best this season.

Mr. Clint, Mr. Tennant, Mr. Boddington, Mr. Hassel, Mr. Pidding, Mr. Herring, Mr. Josi, and Mr. J. Wilson ought also to be mentioned.

In this hasty review, which had one special object, we have omitted mention of the two pictures of the greatest pretence in the room: No. 95, "Lord Hardinge's Bivouac on the Field of Ferozeshah," an elaborate work, by Mr. Salter, and "The Widow of Nain," by Mr. Latilla. The latter, although flat, and painted rather from the early masters than from nature, has nevertheless an elevated character and high intention, which ought to secure consideration for it.

If the visitor would enjoy a laugh, he should look for No. 174, "Launce's Lecture," a

capital little picture by Mr. Dicksee, which deserves a better place. The expression of both man and dog is excellent.

## THE SHEFFIELD ATHENÆUM COMPETITION.

Sir,—There is much reason to fear that the *Sheffield Athenæum Competition* will prove an *addendum* to the list of invitations to architects which have of late proved so unsatisfactory, both to the profession and the parties inviting.

Your Journal of last week contained the advertisement desiring designs to be submitted, upon the understanding that the successful competitor should carry the work into execution; and the instructions very properly add "*provided the conditions above specified are complied with.*"

These conditions refer to the style and scale of drawings;—the accommodation and the expense. Let us place these two latter conditions in juxta-position, and see if they do not involve a failure.

Site, 72 feet by 63 feet (nearly rectangular), to contain "(1) *A lecture room* with light gallery, capable of seating 1000 persons. (2) A reading and news room. (3) A library. (4) Coffee room. (5) Chess room. (6) Gymnasium. (13) Seven class rooms (three to contain thirty pupils each, and four to contain fifty pupils each). (14) A board room. (15) An office for manager. (16) A porter's room. (17) A kitchen and necessary conveniences. Such are the requirements,—seventeen special provisions. On the other hand, we have the sum of 4,500*l.* to work with.

A little reflection will show us that the lecture room to afford such an accommodation or area must be placed above, consequently the whole carcasing must be of the most substantial character.

There are two frontages, the shorter being principal. Any arrangement will require an open area at the back for lighting, &c.; allow 20 feet by 20 feet for this. Take for the several heights of these floors, including from foundation to parapet, 70 feet (it cannot be less), and it gives 289,520 cubic feet. Shall we take this at a carcase price? It gives us 7,000*l.* There is yet one more provision to be covered by the 4,500*l.*, namely, "a warming and ventilating apparatus of efficient character."

Really, Sir, our Sheffield friends must be called upon to revise these 'instructions' or 'particulars' before any architect can entertain their 'invitation.' With the utmost diffidence of one's own opinion, it seems to me to be a compromise of principle in that architect who shall offer a design with such pretensions. 290,000 cubic feet! 4500*l.*!!

Yours truly, Oh! Oh!

## THE ARMY AND NAVY CLUB COMPETITION.

We have heard with much satisfaction, that our remark in last week's number was received in the spirit in which it was written, and immediately acted on. The committee invited any gentleman who had inadvertently seen plans before they were sent in, and was cognisant of the architect's name, to abstain from attending during the selection, and the invitation was accepted. It gives us great pleasure to find an anxious desire prevailing in the committee to decide honestly and fairly, and that they appear to be proceeding with great care. Sixty-nine designs have been received, some of them prepared at great cost. They were numbered as they arrived, and are being examined in that order. When the committee have selected a certain number of designs as the best, in doing which it seems nearly certain that they will seek professional assistance, the whole will be submitted to the members at large for their opinion, and ultimately, there is no doubt, will be exhibited to the public.

The Paris Institution of Civil Engineers.—The endeavour on the part of the Minister of Public Works to establish an institution of civil engineers in Paris has been eminently successful, and an appropriate building will soon be finished to receive it. The French government are said to be anxious to induce young men of talent to adopt civil engineering as a profession.

## FOREIGN INTELLIGENCE.

*Burning of Theatres.*—The burning of the German theatre of Pesth, in Hungaria, the largest building of that city, is generally ascribed to the action of the new (Baron Hügel's) heating apparatus, constructed on the principle of reverberation—*réfoulement*—of caloric. There, as the fire happened towards morning, no lives were lost. The conflagration at Carlsruhe was an event—terrific, awful. Then—that of Stuttgard. German architects propose now a legislative enactment, that a certain proportion, or ratio should be laid down,—by which the number, position, size, &c. of *doors* is to be *regulated*. One of our German contemporaries says, that to every area of the theatres capable of holding 300 people, one door should be appropriated, be it in new buildings or those already established

*The Largest Monolith in the World.*—The obelisk of Luxor, now on the Place de la Concorde at Paris, weighs (according to Mr. Lebas, the engineer) 246 tons English. This, however, is greatly surpassed by the granite column of one single block, which has been raised by the French architect, Mr. Montverrand, at St. Petersburg. It is about 96 feet high, and weighs *three times* as much as the obelisk of Luxor.

*Monument to an Artist King.*—This memorial to King René, of France, made after the model of Mr. David d'Angers, is now in the hands of the founder to whom this artist usually confides his work. The municipality of Angers was, some time, wavering where to place this monument, but have of late decided on the vicinity of the old Château, in which this artist king was born.

*Sharp Practice—at Times, Good Practice.*—A couple of years back the municipality of Paris expended considerable sums for the embankment and *quaying* of the Isle St. Louis, on the Seine. This was done under the tacit impression, that as it was *city property*, they would be subsequently enabled to do with it as they liked. Accordingly, the land was laid out in building plots—when Government interfered, and *said*, that these spaces could *not* be covered with buildings, as they would interfere with the free circulation of the air, and therefore impair the salubrity of the adjacent parishes; that, in fine, private emolument can never encroach upon or interfere with public convenience, and, far less, welfare.

## THE GAS MOVEMENT AT LIVERPOOL.

### GAS FOR NOTHING?

With reference to the Liverpool Gas movement, we have received a communication from Mr. Cox, the engineer of the Guardian Company, which we willingly present to our readers, reserving our remarks till they have perused its contents.

Sir,—My attention has been drawn to a paragraph in the *Bristol Mirror*, purporting to be copied from your paper, in which it is stated that in my evidence before the surveying officers, at Liverpool, I said that "Companies might sell gas, with a profit, at 2s. 8d. per thousand cubic feet; and moreover, that at Bristol it actually costs less than nothing."

It is due to the gas companies at Bristol, as well as to myself, that I should correct this statement. What I said was, that the Liverpool Guardian Gas Company would be able to supply gas at 3s. 8d. per thousand cubic feet, with a remunerating profit; but I prefaced this, by stating that advantages peculiar to Liverpool would enable them to do so: that no inference could be drawn of the cost of gas in one place from its cost in another, as it must depend on local circumstances, and that it was possible, in some places, to make it for nothing, such as where a demand for a costly description of coke made the value of the produce of coke more than the cost of the coal,—and I instanced a private works in Bristol, whose consumption of this sort of coke exceeded their make, and enabled them to produce gas for next to nothing. No inference was intended to be drawn from this statement, that the gas companies at Bristol could make gas for nothing, even by adopting the same process as is used by this private company, as there would be no sale for the produce of coke at a remunerating price: and I most distinctly deny that I in any way meant to say either that the Bristol gas companies made their gas expensively, or charged for it highly, or that I gave any opinion at all on the subject; though, at the same time, I may observe that my evidence that gas can, in some situations, be sold at 3s. 8d. per thousand cubic feet, will not appear, even to persons unacquainted with the subject, so extraordinary, when it is considered that the present price at Liverpool is only 4s. 6d., and that to large consumers at Bristol it is the same.

Had I said what the paragraph quoted imputes to me, that all gas companies could supply at 3s. 8d. (not 2s. 8d.) at a profit, I should have stultified myself when, at the same time, I gave evidence that other companies with whom I am connected charge 6s. and 7s. per thousand cubic feet, and while I myself, as lessee of two works, am charging 10s. per thousand.—I am, Sir, &c., John Cox.

Bristol, 23rd March, 1847.

Our readers will at once perceive that Mr. Cox cannot have seen our articles on "The Gas Movement," particularly those of 30th January, 20th and 27th February, and 6th March, or, indeed, any one of them, otherwise he would have been led to suspect that the little newspaper extract which he quotes,—and even that too erroneously,—was only a small portion of a longer article, the context of which might materially affect the inferences to be drawn from the passage quoted, if not too its more immediate sense,—as also, more particularly, does the erroneous quotation itself of the passage in question, which we ourselves have seen correctly enough rendered in at least half a hundred of the provincial and other papers, but which a portion of the Bristol press appears to have erroneously quoted. In the article of 20th February, from which alone the extract could have been taken, and in the numerous and perfectly accurate repetitions of that extract itself in the newspapers of the day, there was no such unqualified statement as "*that at Bristol* it actually costs less than nothing." On the contrary it is twice repeated, in that article, and, unless we are very much mistaken, was so expressed in *all* the extracts from it that we have met with, that "*in* one *manufactory* at Bristol,"—such was stated by Mr. Cox to have been the case; and not a word is said about "the gas companies at Bristol" at all. Moreover, in quoting from Mr. Cox's own evidence, as reported in the Liverpool papers [in which reports, by the way, the error of 2s. 8d. instead of 3s. 8d. must have arisen, and not with us], this very passage *was itself prefaced* by the precautionary remark that "*the variation of the price of gas in various localities is very great. This probably in part arises from the variation in the expense of coals;* but that is by no means sufficient in many cases to account for the difference:" and, in the very next sentence follows the remark in question, about a "manufactory at Bristol." But besides all this, we also took care, in the very same article, to point out the fact that "It is under a patent, however, 'for the creation of heat,'" and "by means of the profit arising from the preparation and sale of coke," under that patent, that "gas *in some circumstances*, can be reduced in cost to *little or nothing.*" And we even added that the patented process was more particularly applicable "*where there is a large demand for coke*, and at Liverpool," &c. Mr. Cox, therefore, is led 'distinctly to deny' what we have never either stated or inferred, insinuated or imputed, far less left to be understood without sufficient explanation. We desire at all times, and in all cases, to state every thing honestly and fairly; and we are very much mistaken indeed if we do not pass out of the jet of Mr. Cox's gaseous ordeal, not only unscathed, even in his own estimation, but with a fixed persuasion, moreover, on his own mind, no less than on the minds of our readers in general, that we are neither capable of voluntary misrepresentation, nor very likely to fall into that which may, nevertheless, involuntarily arise in even the most carefully conducted journals.

Lord Northampton's Fourth Soirée to the fellows of the Royal Society was given last Saturday, and was more numerously attended, as it seemed to us, than on any previous occasion. Prince Albert was amongst the visitors.

## THE BRIGHTON SURVEYORSHIP.

At a recent meeting of the Brighton Commissioners, the committee appointed to examine the testimonials of candidates for the office of surveyor, brought up their report. From this it appeared that testimonials had been received from the following gentlemen:—

Allen Anscombe, Brighton; William Assiter, Maidstone; Thomas Baylis, Ledbury; William Caveler, Margate; J. W. Cole, Coventry; John Dallimore, Brighton; John S. Erlam, London; Geo. H. Fenwick, Kennington; Charles Geoghegan, London; Thomas Y. Littlewood, Thornton Heath; Joseph Henry Spicer, London; John Stead, London; Thomas Wilson, Odiham; and R. W. Wright, Bristol.

The committee, after examination, reduced the list to seven, viz., Messrs. Anscombe, Baylis, Caveler, Dallimore, Spicer, Stead, and Wright; and ultimately recommended the commissioners to appoint Mr. Stead. After much discussion, the commissioners proceeded to the election, and Mr. Stead was chosen. The numbers were:—For Mr. Stead, 46; Mr. Dallimore, 30; Mr. Anscombe, 9.

## VENTILATION OF MINES—GOVERNMENT INTERFERENCE.

INSTITUTION OF CIVIL ENGINEERS.

At a meeting on the 16th inst., the paper read was by Mr. Joshua Richardson, "On the ventilation of mines." After stating the necessity for establishing a more complete system of ventilation as a measure of common humanity, and the advantageous results in a commercial view which would arise from enabling the miners to develope their physical force with more benefit to themselves, and allow them to do a greater amount of task-work for the same sum, the paper proceeded to describe the system of ventilation at present pursued in Newcastle and its vicinity as being that of the district where the greatest attention had from necessity been paid to the subject, which is one of undoubted difficulty: it is at the same time one of almost national importance, for as a mercantile nation much of our greatness depends upon our manufactures; and unless the fuel for producing power is obtained at a reasonable price, the results of all our attention and skill will not enable us to compete with foreign labour. Without good ventilation our mines cannot be worked, or at least must be so imperfectly conducted as to render fuel scarce and expensive. Much attention has been paid by very able men to this subject, and still the necessity becomes more apparent for some great alteration, to avoid the gradual but certain waste of human strength from long sojourn in mephitic air, or the frightful loss of life from the explosions of the gases exuding from the coal in the progress of getting.

The nature of these gases, which are the carburetted hydrogen, the olefiant, the sulphuretted hydrogen, and the carbonic acid gas, were severally treated of. The three first are known as fire-damp, being explosive when mixed with certain proportions of common air; the latter is known as choke-damp or after-damp; it is produced in large quantities by explosions, and completes the fatal work left undone by the explosive gases. It also exists in old workings and ill-ventilated mines.

These gases require a large supply of pure air to dilate and render them innocuous, and a still larger quantity is necessary to support the respiration of the number of men and animals employed in a mine. The entrance, therefore, of the fresh air and the exit of the foul air, should be free and capacious. This is generally effected by having two pits, one termed the "downcast" and the other the "upcast" shaft, sunk to the coal-bed; down the former of these the fresh air sinks, and after travelling along through the various galleries, as it is guided by doors and other means in various directions, it returns to the bottom of the latter (the upcast) shaft where a furnace is established in which it is rarified and rendered so much lighter that it readily ascends the upcast shaft; thus causing throughout the mine a current of air, which, when all succeeds according to the design of the mining engineer, affords ample ventilation in all parts. Sometimes, however, an unusual escape of deleterious gas takes place by the carelessness of the boys having charge of the traps and partition-doors in the air-ways; some of them are left open or improperly kept shut, and the current of air is diverted or stopped; or one of the workmen from heedlessness or cupidity in desiring to have more light for his work, opens the safety lamp, the inflammable gas is ignited, and an explosion ensues. From one or more of these causes arose all the accidents that have occurred, and it appears that hitherto no precautious measures have sufficed to prevent their occurrence.

The paper dwelt at some length on the present methods of ventilation, and the objections to them, illustrating the positions by quotations from the best authorities on the subject; all of which went to shew that, in spite of all the care and attention that had been given to the question, all the skill of the engineers, and the introduction of the safety-lamp in 1816, the loss of life had been greater since that period than it was in a corresponding period previous to its introduction. This must not be charged entirely to the lamp; for, although it may have rendered men bolder, and induced them to trust too much to the lamp, in venturing into those parts of the mines which formerly would have been abandoned, still it must be borne in mind that, as the coal was got at greater depths and distances from the shafts the ventilation became more difficult, and from the greater number of persons employed in one mine, if an accident did occur, the loss of life was greater in proportion.

The merits of the safety-lamps produced almost simultaneously by Sir H. Davy, Mr. G. Stephenson, and Dr. Reid Clanny, were canvassed, and the greater amount of merit, as well as the credit of the first production of it, was thought to be due to Mr. Stephenson. The author then entered into calculations, shewing that the dimensions of the "upcast" shaft should, in all cases, be increased in proportion to the augmented volume of the air from the expansion at the higher temperature at which it leaves the mine after traversing all the passages; and if this were attended to, not only would the general ventilation be better, but, in the event of an accident occurring, by an explosion, or the derangement of some of the air passages from falls of the roof, &c., an extra power could be applied, which would at any rate prevent a portion of the frightful loss of human life which now occurs. It was evident from the whole statement, that although, in certain cases of fiery mines, some improvements might be advantageously introduced, yet that, in the majority of good mines, the present methods sufficed to maintain them in a healthy and safe state; and that, in almost all cases, it was the culpable neglect of, and not the want of, the means of prevention, that caused the destruction of health life and property in the mining operations of the kingdom.

In the discussion which ensued, the interference of Government by legislative enactments, with respect to methods of ventilation, was deprecated. It had become fashionable now, whenever a difficulty occurred, to recommend legislative enactments as an universal panacea, as if a committee of the House, or a body of commissioners, none of whom probably possessed any practical knowledge of the subject, could at once fall by inspiration upon the methods of prevention or cure which had so long eluded the careful investigation of scientific and practical men, whose time, talents, and fortunes had been all devoted to the subject from that great incentive to exertion, "self interest." When the example of foreign countries was quoted, it should be at the same time shewn in how backward a state they were in engineering, in mining, in commerce, and in fact, in every thing with which the Government interfered, as compared to the high state of perfection arrived at in this country. What was their position with respect to common roads, canals, railways, the extent of their mines, and the general amount of manufactures, as compared to those of England? and yet they had the "advantages" of the "wisdom" and the "fostering protection of Government;" whilst in England there was nothing but competition to urge manufacturers and miners to bring their produce to market of the best quality and at the cheapest possible rate. In short, it was asserted that, to do any good, Government must leave the matter alone.

We are not, now, offering any opinion of our own on this point, but simply reporting what was expressed by others.

## NOTES IN THE PROVINCES.

H. R. H. the Prince Consort has signified his intention of honouring Portsmouth with his presence, early in the summer, to lay the foundation-stone of the new hospital to be erected there, on land which the Board of Ordnance has liberally granted. Her Majesty the Queen has graciously bestowed her patronage on the institution.——Several mural paintings have been discovered on the south side of Easton church, Suffolk. They were concealed by accumulated coats of whitewash. ——The capacious new reservoir at Kensington, Liverpool, lately opened in connection with the Green Lane Water-works, recently gave way, so as to allow the water to ooze out and escape in nearly 50 places, by the pressure of the contents forcing it through the puddling on which the brickwork is erected on the western embankment. The water, which did not nearly reach the level of the waste-pipe, was quickly turned off into the common sewer, which has had the benefit of a good cleansing, while fortunately very little damage it is thought has been done to the reservoir, although confidence in its sufficiency must have been seriously shaken. Indeed, it is believed that, had the accident not been discovered before night set in, the undermining process would have led to a very serious destruction of property, if not of life also. The fear engendered by the Harrington catastrophe cannot but be still before the eyes of the residents of Kensington and its vicinity.——The building committee of the Gateshead Mechanics' Institute lately laid before a meeting of the annual committee an elevation and plans of the proposed edifice, to be erected in West-street, which had been prepared by Messrs. Wardle and Walker, of Hood-street, Newcastle, architects. The building fund being small, no improvident expenditure will be incurred in architectural ornament, which, as the *Gateshead Observer* curtly observes, would have anything but an ornamental effect in the shape of a mortgage; but the structure will show a good and handsome front, and be a credit to the institution and the town. A general meeting of the members was to be held, in order to take the plans into consideration, and advise the building committee as to their future proceedings.——At Stirling, a Water Supply and Sewage Manure Company, with a capital of 15,000*l.*, has been projected. Although few towns command natural advantages equal to Stirling, for securing not only an abundant supply of pure water at a cheap rate, but also for the application of a proper system of sewerage, the inhabitants have long suffered from the inadequacy of the supply of water and the want of any general under-sewerage, so that the streets and open sewage channels are constantly filled with fœtid, offensive, and unwholesome matter, the effectual cleansing of which can best of all be carried out in connection with a company offering the twofold benefit of a full supply of water and a proper system of sewage, the sewage water from which will go far to pay its own way, and to benefit the agricultural vicinity by an every way profitable disposal to farmers as manure.——The grand jury of the city of Cork have adopted, as their own, the memorial for a school of design presented to them by Sir Thomas Deane. A prayer so recommended to Government, remarks the *Cork Examiner*, cannot but be successful.——It seems that the million sterling, or thereby, expended on the relief works in Ireland during the month of February was "entirely independent of the expenses incurred through the commissariat and other public departments for the same general object!" If the depth of the wretchedness of this miserable and "etiolated" country,—as it has been significantly termed by Mr. Chambers, the journalist,—may be estimated by the rapidity with which the means for its relief mount up into more and more immense accumulations of sterling money, and by the still greater rapidity with which such literal and physical loads of gold and silver are not only shovelled by wholesale into the gulph, but swallowed up and absorbed within it as if no such vain endeavour had been ever made to

reach the bottom and consolidate the bog,—its depth would literally appear to be the unfathomable void of a bottomless pit. In fact, the evil seems to feed on what has been administered by way of remedy, and to grow with the growth of its quasi-antidote. And now comes the grand self-generated difficulty—the retreat—which can scarcely fail to be in itself a source of new disaster. A fifth part of that immense army of labourers, so many of whom have been needlessly attracted from other employment, such as the reproductive tillage of the ground, are forthwith to be shaken off the "public work" rolls, and turned adrift, at a week's notice at furthest, a notice which, as an M. P. (who plainly speaks from any thing but the dire experience of those who know from trial how difficult it often is to procure employment) declares to be amply sufficient for the procurement of an honest livelihood. In some districts, indeed, the proportion of those to be thus disposed of will be far more than a mere fifth; but however great the evils attendant on this new measure may prove to be, the crisis is now perceived to be such, that immensely greater evils still are likely to result from the past and present abandonment of the soil, and of all future prospect of the usual harvest. The most serious alarm is now declared to be felt by those who see in the very way of the suffering people no other surety than that of being gored on either horn of this terrible dilemma. Either the public works must be so far suspended at the risk of fearful evil to tens of thousands, or the hope of a harvest must die within the breasts of all, at the risk of a still more fearful evil to hundreds of thousands, nay to millions. Even already, thousands of welldoing farmers, panic stricken, are literally flying the country as emigrants to the land of universal refuge across the Atlantic Ocean. Gross abuses of the public work system are still said to prevail on the part of superintendents as well as of labourers, thus exhausting the far more than princely means, designed for the benefit of the destitute alone, to no good end, and that too at both extremeties of the scale of dependance—from above in extravagant superintendence, as well as from below in worthless work,—and thus in burning the candle at both extremities is evil accumulating on evil, and all at a cost even nationally ruinous though worse than useless.

## WESTMINSTER COURT OF SEWERS.

A general Court of Sewers for the City and Liberty of Westminster was held at the Court House on Friday, Capt. Bague, R.N., in the chair. A long report was read from the surveyor to the court, setting forth that a sewer in Hertford-place, Notting Hill, had been built with pit-sand mortar, contrary to the regulations of this commission.

The clerk of the works gave evidence, that during the progress of building the sewer, he observed that pit-sand mortar was being used for that purpose. He ordered the men at work to desist, but they took no notice whatever, and on a subsequent visit he found that the sewer had been completed. The sewer had been built by Mr. Holmes, of Notting Hill.

Mr. T. L. Donaldson was of opinion that a formal notice in writing should be given to the parties.

The subject led to a good deal of discussion, and it was finally resolved unanimously, that Mr. Holmes should take up the whole of the work and rebuild the same according to the directions of their surveyor.

Mr. Dethick, a builder, of the parish of St. Anne, Westminster, appeared before the court to complain of the exorbitant charge made upon him, by the surveyor of that parish, for relaying the pavement removed in the construction of a sewer, viz., 3s. per yard, which was considerably more than ever had been demanded in any other parish. He wished the advice of the court thereon. The subject was referred to the surveyor of the court, to report thereon at the next meeting.

*Arching over the King's Scholars' Pond Sewer.*—It having been determined at a former court that the King's Scholars' Pond Sewer should be arched over jointly at the expense of this commission and the Westminster Improvement Company, the question of the amount of contribution on the part of the public came this day before the court. Mr. Donaldson was of opinion that it would be unfair to charge the public more than was absolutely necessary to meet the wants of the particular locality. The first size sewer might be amply sufficient for their own local purposes, but would be insufficient for a district, and therefore he believed the expense attendant thereon should be equally borne by the district to be benefitted. He should accordingly move that 10s. per foot be the fixed price for each side when any main line of sewer was required to be arched over. Mr. T. Harrison objected to this, as it might so happen that the covering of a sewer would not cost 1*l.* per foot, and they had no right to derive any profit from the public by the work. The Clerk said no main line of sewer would cost less than 1*l.* per foot. If they left the question open without fixing any maximum price, in every sewer that was to be constructed, builders would be continually coming before that court to complain that expenses had been unfairly placed upon them.

Mr. J. White deemed it immaterial as to the size. If anything could increase its value, it would be any additional depth they might obtain.

Mr. W. Donaldson objected to their fixing depth as the test of payment. Were it so, builders would lay in a temporary drain, rather than an efficient one, to save expense.

It was finally resolved, on the motion of Mr. Harrison, seconded by Mr. T. L. Wood, that for any sewer to be built in future at the charge of any district, the contribution of the public should be as follows:—No. 3, 4s. per foot; No. 2, 5s. 6d. per foot; and No. 1 7s. 6d. per foot; and any size exceeding No. 1, 10s. per foot.

## Miscellanea.

Preservation of Metallic Surfaces from Rust.—A Sheffield manufacturer in lately advising with us as to the best mode of preserving the polish of steel surfaces in packed goods, especially during transit, assured us that the difficulty is one which has given great and perpetual annoyance. The packing of steel goods in some simple mode of galvanic connection with slips of zinc, the more electro-positive metal, so as to render the less positive steel more negative, and hence less oxidizable, we at the moment recommended for trial, but probably even in such cases, though more particularly for engineering or other purposes, a recent suggestion to coat the surfaces in a peculiar and permanent way with copal or lac varnish may be of value. It has been proposed to effect this very desirable object by dipping or washing the finished article in a dilute solution of acid, two parts sulphuric, and one nitric, and then when dried, without fingering or rubbing, by coating it with the varnish, which, it is said, under such treatment, will never peel off, unless, of course, the surface be exposed to friction or abrasion. Copal, with a little litharge added, is considered as best suited for this purpose.

Stained-Glass Window, Liverpool.—A stained-glass window, executed by Mr. Wailes, has been put up in St. Martin's church, Liverpool, at the cost of about 350*l.* The prominent subject is the Crucifixion, with the Virgin and St. John on each side, and St. Mary Magdalene embracing our Lord's feet, the figures being as large as life. This group occupies the three centre lights of the upper portion of the window; and in the corresponding compartments beneath the transom are the apostles St. Peter, St. Paul, and St. James. A border of groups is carried round the whole window, composed of smaller figures, illustrative of the Passion and other events of our Lord's life. The tracery at the top of the window is filled by four angels, together with the pelican, the dove, and the lamb; the highest compartment of all being occupied with the Ascension. The window is said to contain between 3,000 and 4,000 pieces of glass, and has 120 figures in it.

Depression of the Glass Trade.—At Sunderland, according to the local papers, the glass trade is very much depressed, and 300 glass-men and labourers have been dismissed from Messrs. Hartley and Co.'s extensive establishment. This untoward state of things is said to be occasioned by foreign competition, which is likely at least to lead to a serious reduction of wages if not of work itself.

Building and Bankruptcy.—At the Bankruptcy Court in Basinghall-street, on Wednesday a meeting was held under a fiat sued out against Mr. Stewart, a barrister, and proprietor of the Hippodrome and Norley estates at Notting Hill, in which he had made extensive building improvements. It was now sought to declare him a bankrupt as a builder, dealer, and chapman. Mr. Lawrence appeared to oppose the adjudication, on the ground that a nobleman or gentleman was at full liberty to build on his own estate without being liable to the bankrupt laws. Mr. Stewart had taken the ground on lease for 99 years, and had built for improvements. If it were held that he was liable to be made a bankrupt of, the Marquis of Westminster, the Marquis of Bute, and other noblemen, would also be liable. Mr. Duncan, who appeared in support of the fiat, said the cases were very different. Mr. Stewart was not improving his own freehold, but had taken the ground on a building lease, and, therefore, built for his own profit, and making that profit on the materials, was liable to the bankrupt laws. His Honour said that he was inclined to the opinion that this did not bring the case within the bankrupt laws, for Mr. Stewart had taken a long lease, which it appeared to him gave such an interest as to entitle him to build for the improvement of his property; but as there was some difference of opinion, he would consider the case, and give judgment next Thursday.

The Fall of a Church Ceiling in Manchester.—The accident at St. Michael's church, Manchester, has probably been heard of, by this time, by most of our readers. When the ceiling of a church built only 58 years ago tumbles in, to the extent of 50 feet by 12 feet (ceiling, joists, lathing, and plaster), it ought to make persons think of the danger to which they may be every day exposed by bad building, and lead them to discourage it. Mr. Bellhouse and Mr. Shellard, who were deputed to examine into the cause of the accident, attribute it to the decay of some of the timbers which supported the plaster ceiling. We have since heard of the fall of a factory, in the same town, through failure of an iron girder.

Another Purpose for the Pyramids.—The new Governor of Jamaica, Sir Charles Grey, lately created some amusement by asserting at the meeting of the Royal Agricultural Society, "That the pyramids erected by the Egyptians *were intended as immense tanks for supplying and irrigating the surrounding plains with water!*" The astounding doctrine, says our authority, seemed to take the meeting completely by surprise. And well it might; especially those members of it who had seen a sectional view of these extraordinary constructions. It is even more absurd than the theory that they are the granaries erected by Joseph, which was once propounded.

The Royal Stables at Windsor.—Since the discovery of the dry-rot throughout the extensive boarding around the riding school at the royal mews, at Windsor (the whole of which has recently been entirely removed), it has been found that the wooden divisions of the stalls and other portions of the woodwork in the royal stables are similarly affected. In several of the stables the stalls have been newly constructed, and it is feared, in consequence of the inroads made by the rot, that the whole will have to be removed and undergo a similar process.—*Morning Post.*

The New Works at Jersey.—The new north pier, says the *Daily Correspondent*, is now in progress. The foundations at the head were laid on Thursday last. The tide receded to a very great distance, as if to enable the workmen to lay two tiers of stones along the line of the works. The time allowed to the contractors for completing their undertaking is five years and eight months, and the cost of the works will be 109,000*l.*, which, with 57,000*l.* paid for the south pier, incidental and contingent expenses, engineer's plans, &c., will amount to about 180,000*l.*

A bad Practitioner.—Some one has said, that "intemperance is a great architect—it builds gaols, hospitals, lunatic asylums, workhouses, and hulks." It may be added, on the other hand, that it soon knocks down all that a man may have previously built up,—whether it be reputation or houses, and speedily saps the foundation of all that is good.

PROJECTED WORKS.—In the newspapers of the past week, advertisments were issued for contract-tenders for the whole or any portion of the works necessary to be done in the erection of the Priest's house, Catholic church, Yarmouth; the restoration and reseating of the parish church of Bottesford; the erection of a chapel and school-room at Brentwood; the whole or any portion of the works required in the erection of the south wing of the proposed addition to the Manchester Royal Infirmary; certain works at a house in Bedford; excavating and constructing Southgate-street Dock and works at Gloucester; for the erection of New Kingswood near Bath; of a training school at Carmarthen; the rebuilding of Llandilo Church; the several works to be performed in making a cattle-market at Wolverhampton; the building of 1,155 feet of sewer in Fulham-road; and of 2,125 feet of sewer in Mile-end-road, &c., and arching over 1,059 feet of sewer at Bethnal-green, and 72 feet at St. John's, Wapping; also for the whole works necessary for deepening and improving the drainage of the Pow of Inchaffray, Perthshire, for nine miles; paving in Holborn, Broad-street, and High-street; also for a supply of road materials for the metropolis roads, and of gravel for the Colchester-road trustees; also of cast-iron pipes, sluice cocks, street watering posts, &c. &c., for the Carlisle Water-works; and for the construction of the works on four miles of the Glasgow and Ardrossan, and of portions of the Newcastle and Carlisle Railways; and 1,000 tons of cast-iron chairs for the Manchester, Sheffield, and Lincoln Junction railway; also for the erection of the proposed railway station at Chester.

THE OLD GRAMMAR SCHOOL AT IPSWICH.—At a meeting of the corporation, to consider a proposal for preserving the old Grammar School, a letter from Sir Francis Palgrave was read: it said, "I do hope that the doom of your refectory may be averted. Such an act of Vandalism would be shameful. This is the *only* specimen in England, and so far as I know in France, of a refectory of the Black Friars' preachers, and as each order of monks and friars had its own scheme, its destruction, so foolish, so needless, will be reprobated." The Town-clerk remarked, it would be presumptuous for him to question the authority of Sir Francis Palgrave; but he had before him documents to show that this building never was the refectory of the Black Friars' preachers—that the refectory stood in the Old Grammar School playground, which was between the Grammar School and Foundation-street. "The late Mr. Kirby published twelve prints of old buildings in Suffolk, and amongst these was a view of Christ's Hospital, in Ipswich. It was well known that this building formed part of the buildings occupied by the Black Friars' preachers, as well as the Upper Foundation. The whole of these premises formed the Monastery of the Black Friars' preachers, and they were purchased by the corporation, and appropriated to various uses." A strong feeling prevailed in favour of restoring the building. The Mayor remarked, and we honour him for the feeling, that he, with many of the older inhabitants of the town, had received the last part of his education in the Old Grammar School, and, with the parties to whom he had alluded, he could not but look with veneration upon an edifice associated as it was with so many early associations and pleasing recollections. He hoped, therefore, that with the few alterations required, the building would be allowed to remain untouched. Mr. J. M. Clark, of Ipswich, has made drawings for the restoration.

COMPETITIONS.—A premium of 100*l.* is offered for the best, and 50*l.* for the second best plan, &c., for the arrangement of the wharf and works, and the construction of the necessary station, custom-house, and hotel accommodation at Newhaven harbour, on the London, Brighton, and South Coast Railway.—The time for receiving designs for the Sheffield Athenæum and Mechanics' Institute building has been extended to the 14th of May next.

THE FRENCH PROTESTANT CHURCH, erected a short time ago in Bloomsbury-street, Holborn, narrowly escaped destruction by fire last week. The joists and floor boards were ignited, through some defects in the hot-air flue; but smoke becoming evident during service, the fire was extinguished without doing much damage.

A BUILDER SHERIFF.—Mr. William Cubitt, of the Gray's-Inn Road, is nominated one of the sheriffs of London for the ensuing year. A better choice, we may venture to say, could scarcely have been made. It seems likely, too, that Mr. Cubitt will be returned to Parliament before long.

[Advertisement.]

Particulars of estimate for contracts, for alterations to Mr. Burdett's premises, Wandsworth-road: W. W. Jenkins, Esq., Architect.

| | |
|---|---|
| Laurence | £637 0 |
| Wilkinson and Son | 497 10 |
| Thompson | 497 0 |

Last accepted.

## TO CORRESPONDENTS.

"*Sting.*"—The reports of proceedings at the Institute of Architects, which appear in THE BUILDER, are made exclusively for it. Although dated Saturday, our Journal is published early on Friday morning, while the Journal referred to by our correspondent as containing these same reports, without acknowledgment, does not appear till Saturday, so that our pages are available for it, although apparently published at the same time. Our information is at the service of contemporaries; we simply ask an acknowledgment.

"*W. B.*"—The drawing scarcely suits us. It shall be returned, with thanks.

"*C. W. O.*"—We should be glad to see a description of the mode employed.

"*A Word in Season.*"—The mere opinions of an anonymous writer are of course worth nothing.

"*A Subscriber.*"—Thanks: we will endeavour to see it.

"*R. M.*"—No.

"*J. S.*"—We are compelled to decline inserting the letter, after due inquiry.

*Received.*—"A. N. C." "R. R." "Mr. T." "W. P. G." "W. F." "G. S. T." "W. J. V." "F. D." "J. B." "E. S." (Walworth). "R. M." "Reason." "Archi" shall appear. "A Mason" (Rochester), ditto. "W. H. L." (Darlington), ditto. "An Architect" (Bishopsgate), ditto. "Working Mason" (Leicester), ditto. "The Baronial and Ecclesiastical Antiquities of Scotland," illustrated by R. W. Billings and W. Burn (Blackwood, 37, Paternoster-row). "Memorials of Charterhouse," drawn and lithographed by Mr. C. W. Radclyffe, (Moore, Caroline-street). "The People's Important Guide as to Receiving from Debtors under 20*l.*, in the Local and other Courts," by T. H. Rose (Sherwood and Co.). "The Westminster and Foreign Quarterly, for April," (Luxford, Whitefriars-street).

NOTICE.

THE NEW OPERA HOUSE, COVENT GARDEN.—The next number of THE BUILDER will contain a full account of the construction of the New Opera House, and an elaborate engraving of the interior. Early orders should be given for extra copies.

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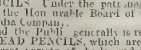
EASTER HOLIDAYS.

ROYAL POLYTECHNIC INSTITUTION.—LECTURES in illustration of ANIMAL MECHANISM by T. Rymer Jones, Esq., F.R.S., Professor of Comparative Anatomy at King's College. Mornings and Evenings during the week. The Gymnotus Electricus, or Electrical Eel, exhibited in a Transparent Vessel. Lectures on Armstrong's Hydro-electric Machine, by Dr. Bachhoffner. The Working Models and Machinery clearly explained. The varied Optical Effects include a New Series of Dissolving Views. Experiments with the Diving-bell and Diver, &c., &c.—Admission, 1*s.*; Schools, Half price.

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TO THE BUILDING WORLD.

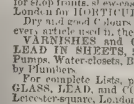
**H. BANKS**, Sash Maker and Joiner to the Trade, 78, Bethnal-green-road, London.

French sashes made and glazed at 8d. per foot; ditto, with frames, weights, and lines, 1s. 1d. per foot; 2-inch ditto, glazed, at 9d. per foot; ditto, with frames, weights, and lines, 1s. 2d. per foot; 1½-inch greenhouse lights, 7½d. per foot; 2-inch ditto, glazed, at 8½d. per foot. Every other article equally low, and of the best materials and workmanship. A full list of prices forwarded by return of post to any part of the country.

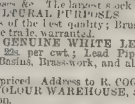
N.B. Glazed goods securely packed for the country.

**CHAS. WM. WATERLOW,**

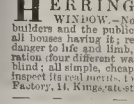
MANUFACTURER



of Sashes and Frames and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



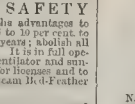
SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



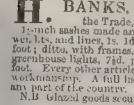
**JOHNSON and PASK,**

1, Angel-street, Clerkenwell,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiner's work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



**J. BARKER'S DOOR, SASH, and SHOP-FRONT MANUFACTORY**, 83, Theobald's road, Bloomsbury. Prices for Cash:



1¼ inch ovolo glazed sashes and frame, with lines and weights, 1s. 2d. per foot; 2-inch ditto, ditto, 1s. 3d. per foot; 2½ inch ditto, ditto, glazed sashes and frame, with lines and weights, 1s. 4d. per foot; 2½-inch casement sashes and frame 1s. 4d. per foot; ditto, glazed, 1s. 5d. per foot; 1-inch four panel square doors, 8d per foot; 2-inch ditto, ditto, 10d. per foot. All ties moulded both sides, is. per foot.

All kinds of joiners' work prepared and glazed upon at proportionate prices. Materials and workmanship warranted.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low prices, and the work executed by JOHN PIKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 19, WHARF ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

MORTGAGE AND ANNUITY OFFICE, No 123, CHANCERY-LANE.

**PERSONS** requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £10,000, or so much as the property will bear, by applying to Mr BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co.**, GRAINERS and WRITERS to the Trade only,

65, WATERLOO-BRIDGE ROAD.

An Apprentice wanted a country lad would be preferred.

N.B. Some good Pencil Hands wanted in the Decorative Painting Department.

**MR. THOMAS BURTON**, of the late firm of Thomas Burton and Sons, builders, 151, Aldersgate-street, has taken extensive warehouse premises, and erected workshops, for the purpose of carrying on the building business, at BURTON'S WHARF, Commercial-road, Lambeth; where all works he may be favoured with will be carried out with every attention and dispatch.

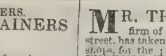
**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove, which all new Beds where are subject to that are exposed in the ordinary way.

Old Beds, dressed by this process are perfectly freed from all impurities, and by expanding the feathers the bulk is greatly increased, and consequently the Bed has a resilient touch softer. The following are the prices of New Feathers:—

| Mixed, per lb. ..... | 1s. 0d. | Foreign Grey Goose ..... | 1s. 8d. | Best Irish White Goose ..... | 2s. 6d. |
|---|---|---|---|---|---|
| Grey Goose ..... | 1s. 4d. | Best Foreign Grey Goose ..... | 2s. 0d. | Best Dantzic White Goose ..... | 3s. 0d. |

HEAL and SONS'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court road.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F. McNEILL and Co.** of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of

**THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.**

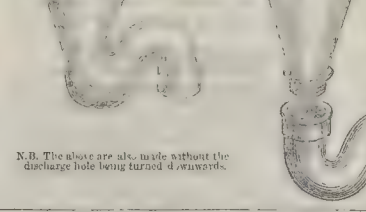
Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are Lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of application, with TESTIMONIALS, sent free of seven years' experience, from Felt for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament. A Liberal Discount allowed to the Trade.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

**DOULTON AND WATTS,**
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

**THOMAS MILLINGTON'S** present TARIFF of GLASS, COLOURS, and PAINTS. 87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| Foreign Sheet, in 100 feet Boxes .. 2½d. | per ft. |
|---|---|
| Do. do. Super 200 .. .. .. 3d. | |

Crown Squares, 100 feet Boxes:—

| 10 in. by 8 in. and 9 in. by 7 in. | |
|---|---|
| 8 in. by 6 in. and 7 in. by 5 in. .. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. .. | 1½d. |
| 6 in. by 3 in and under..... | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,

of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES 6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the

NEW BOURSE AT HAMBURG,

and will shortly have completed the

LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,

and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH.

| Super Body Copal, for the bodies of Carriages ..... per Imp. Gal. | 20 |
|---|---|
| This Varn. will not crack by exposure to the weather, and will preserve its brilliancy for years.—Price in about ten hours | |
| Super Copal Varnish ..... | 16 |
| A fine pale Varnish for the lighter bodies in woods. Dries in about eight hours | |
| Super Carriage Varnish ..... | 12 |
| Very durable, and well adapted for Coachmakers, except for light bodies | |
| Elastic Oak, Wainscot, or Mahogany Varnish ..... | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods. | |
| Paper or Crystal, quite transparent | 10 |
| Gold size for Gilders ..... | |
| Also as a dryer in ground Colours, which are improved in their appearance | 10 |
| Black Japan ..... | 12 |
| A splendid Jet Black, for Coachbuilders' use. | |
| Brunswick Black ..... | 6 |
| A Black Varnish for Iron-work, Stoves, &c.—It dries immediately ..... | 6 |
| Furniture Varnish for Japanners .... | 14 |
| Dries in two hours | |
| White Hard Spirit Varnish, for Cabinet Work ..... | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods .. | 20 |
| Rather lower drying than the above. | |
| Mastic Varnish, fair Pictures..... | 2, |
| Turpentine Varnish..... | 5 |
| Patent Polish ..... | 16 |
| Naphtha ..... | 10 |
| Patent Liquid Wood Knotting ..... | 16 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £. s. d. |
|---|---|
| 2½ inch Lift Pump on Plank ..... | 4 0 0 |
| 3 .. do. do. ..... | 4 16 0 |
| 3½ .. do. do. ..... | 6 0 0 |
| 4 .. do. do. ..... | 6 10 0 |
| Well Pumps in Square Tails, with Iron Box, equally low. | |
| ¾ inch Bib, Ball, or Stop Cocks. | 0 1 8 |
| 5-8th .. do. do | 0 2 1 |
| ½ .. do. do | 0 2 6 |
| Pan Water-Closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire .. | 1 10 0 |
| Blue Basin, extra..... | 0 4 0 |
| Ditto, with Sunk Handle, extra .. | 0 4 6 |
| Spring Valve Closet, on Brahma's principle, complete ..... | 3 10 0 |
| Beer Machines, from one to six motions, in numerous cases. | |

Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

PAINTS AND COLOURS.

Best White Lead, 27s.; Seconds, 25s
Thirds, 23s.
Milled Sheet Lead and Lead Pipe, 26s.
Linseed Oil, 3s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 3s. 10d. per gallon
Brunswick and Navy Greens, Cromes, Blacks, Blues, Rests, Patent Dryers.
Best Town Glue, 40s. per cwt.
Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

**THE PANKLIBANON IRON WORKS,**
WHOLESALE AND RETAIL, 73, BAKER-STREET, PORTMAN SQUARE.



THORPE, FALLOWS, and COMPANY, 38, BAKER-STREET, PORTMAN-SQUARE LONDON.

**ARCHITECTS,** BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE-GRATES, Fenders, and Fire-Irons, ever offered to the Public, at prices considerably below General charges. The Proprietors at the same time beg to invite attention to their extensive Stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Nickel Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epergnes, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermio Stove is in daily operation. Also

CUNDY'S IMPROVED HOT-AIR STOVES, for heating and ventilating rooms.

# THE BUILDER.


**REGENT-STREET. Extensive Premises** TO LET, within a few doors of Regent-street, consisting of several ranges of Workshops, Large Yard, and Residence suitable for a Coach-maker, Cabinet maker, Builder, or any business requiring great space. Enquire of Messrs. DRUCE and Co., Bazaar, Baker-street.

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TO BUILDERS, CARPENTERS, AND OTHERS.

**LAND TO LET, in a line with West-**bourne-grove, for large or small Houses. Bricks and all materials may be had if required.—For plan and particulars, apply to Mr. POLTON, at the Earl of Lonsdale Tavern, Portobello lane, Westbourne grove. The Advertiser has several Carcases to be finished on mutual terms.

---

TO ARCHITECTS AND SURVEYORS.

**THE House of an Architect (lately deceased)** a few miles west of London, TO BE LET, and the Business and valuable professional books and implements, &c., TO BE SOLD, affording an excellent opportunity for a gentleman commencing business. For particulars, apply by letter, to A. B., Architect, 2, Gumley row, Isleworth, or to Mr. MACKENZIE, Solicitor, Campanile Cottage, Canonbury, Islington.

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TO PERSONS REQUIRING MARINE RESIDENCES, AND BUILDERS.

**SOME Splendid Sites for Building on the** West Cliff, Folkestone, TO BE LET on lease for 97 years. The scenery vies with the most romantic in the Isle of Wight, and commands the English channel and fine views of the coast of France. The salubrity of the air cannot be surpassed on the British coast. This offers a first-rate opportunity to builders, houses being so much in request that the demand far exceeds the supply.—For particulars, apply to CHRISTOPHER PORTER, Folkestone.

---

BEDFORD NEW TOWN, NEAR EUSTON SQUARE.

**BUILDING PLOTS TO BE LET in this** desirable locality. The sewers are made, vaults turned, and foundations taken out, thus affording great facility to builders and others willing to take immediate advantage of the season. No charge for road and paving. Respectable parties will be treated with liberally.—For plans and particulars apply to Mr. ALLEN, 2, Bedford-street, Upper Seymour-street, Euston square.

---

ST. JOHN'S WOOD PARK, IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET in this** most desirable and salubrious situation, commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City!—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

---

**TO BE DISPOSED OF.—A BUILDER'S** BUSINESS, of Twenty-six Years' standing, with a valuable DISCOVERY in HOUSE and SHIP PAINTING, the jobbing department alone realising upwards of [illegible] a year. The premises are held on lease, at an annual rent of 34*l.*, part of which is sublet at 42*l.* a year. As the advertiser possesses property in country which requires his immediate personal attention, the above most eligible investment will be parted with at a sacrifice. Apply (if by letter, post-paid), to Mr. DOWD, House Agent, 4, Bury-street, St. Mary-axe.

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**DESIRABLE BUSINESS to be Disposed** of in the rapidly thriving Town of Swindon. To Quarriers, Stonemasons, Builders, &c.—A very eligible and Old Established Business in the above branches with a Brisk Trade now on hand, including a Quarry in full work. A great spirit for building is now existing both in the Old and New Town, to which large quantities of stone are daily supplied from the Quarries, and peculiar reasons can be given to warrant the opinion that an enterprising individual would find a lucrative return for investment of capital and a moderate share of industry and perseverance. Commodious Work-shops and Lime Kilns, with the regular plant of requisites.—Apply to Mr. C. A. WHEELER, Swindon. Personal application will secure the more ready attention.

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STONE BLOCKS FOR SALE.

**THE Committee of the Surrey Iron Railway** Company Hereby Give Notice that they are now removing the stone blocks upon which their iron tram plates were fixed, and are ready to receive offers for the purchase of the same. The whole number is estimated at something above [illegible]. These stone blocks are being stacked up in the Company's wharf at Wandsworth, and may be viewed upon application to the superintendent there, and the Company will deliver the same to purchasers who can remove the same into craft at their own expense in the Company's basin at Wandsworth, communicating with the river Thames, free of lockage. These blocks are about 16 inches wide, and 8 inches deep, and are applicable for forming river and wharfage embankments, and foundations, &c., and are easily to be worked to a good face. There are also about [illegible] tons of broken blocks for sale. Tenders to be left at Dyers' Hall, College-street, Dowgate-hill, addressed to the Committee of the Surrey Iron Railway Company, before eleven o'clock on Wednesday, the 14th day of April next.—By order of the Committee, B. C. LUTTLY, Clerk to the Company.

Wandsworth, 17th March, 1847.

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## SALES BY AUCTION.

TO PLUMBERS, PAINTERS, AND OTHERS.

**MR. WILLIAM ELLIS (late Ellis and** Wales), has received instructions from the assignees of C. Brown, a bankrupt, to SELL by AUCTION, at 5, Somerset street, Aldgate, on TUESDAY, April 6, at Twelve o'clock, Valuable Stock, comprising 15 tons of lead, hydraulic force, copper, jack, brass, ship, and other pumps, cisterns, several closet apparatus, 400 feet run lead pipe, various thicknesses; traps, heads, and shoes; service boxes, various taps, valves, washers, waste, and quantity of useful brass work, crown and other glass, oils, varnishes, and colours, ladders, steps, beams, planks, weights, trucks, tackle, falls, &c. May be viewed, and Catalogues had of A. B. BELCHER, Esq., Official Assignee, King's Arms Yard, Coleman-street; Mr. W. P. GRAY, Camomile street, and at the offices of the Auctioneer, 150, Minories, City.

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CHANCERY-LANE.—To Builders, House Decorators, Paper hangers, and others.—A well assorted Stock of about 3,000 Pieces of French Paper-hangings, Rich Patterns in Satins, Flocks, and Gold, being the First Selection offered in this country, from a highly approved Paris Manufacturer, to be SOLD by AUCTION, by

**MR. J. J. CLEMMANS, at the Auction-**rooms, Quality-court, 48, Chancery-lane, on WEDNESDAY, April 7th, 1847, at Twelve o'clock, comprising elegant Drawing-room, Dining, and Bed-room Papers, in a variety of Patterns.—May be viewed on Tuesday and morning of sale, when Catalogues may be had at the rooms, Garraway's Coffee-house, Change-alley, Cornhill; at the King's Arms, Kensington; Yorkshire Stingo, Paddington; Black Lion, Bayswater; Boar and Castle, Oxford-street; Angel, Islington; Swan, Stockwell; Holland Arms, Brixton-road; George, Commercial-road; and of Mr. J. J. CLEMMANS, Auctioneer, Surveyor, Valuer, Estate and House Agent, &c., Holywell-row, Finsbury square.

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FOR SALE.—Valuable Lock Basin, Wharfage, and River side Property, communicating with the River Thames.

**THE Committee of the Surrey Iron Railway** Company Hereby Give Notice, that they will offer for SALE by PUBLIC AUCTION, in the month of May or June next, when further particulars and conditions of sale will be stated (unless disposed of in the mean time by private contract), Their Lock and basin communicating with the river Thames at Wandsworth, also their extensive wharf adjoining thereto and other property. The whole comprises between eight and nine acres of land and water; there are also upon the property a brick-built lock, keeper's house and garden, two brick and timber houses (one with an extensive garden), a brick-built counting-house, a timber-built warehouse with stone pitching, two swing bridges, three cranes, with chains complete, and other wharf property and materials. The property is part freehold and part copyhold, and may be viewed upon application to the superintendent upon the wharf.—By order of the Committee, B. C. LUTTLY, Clerk to the Company.

Wandsworth, 17th March, 1847.

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## SALES BY AUCTION.

EXCELLENT MATERIALS of Two large Houses—Iron Repository, do. Chest, 3,000-gallon Iron Tank, Fixtures, &c.: Brick-lane, Old-street, to be SOLD by AUCTION, by

**MR. RICHARDS, on the Premises, No. 56** and 57, Brick-lane, St. Luke's, on MONDAY, April 5, 1847, and following day, at Eleven o'clock each day, without reserve, by order of Mr. Robt. Webb. The materials to be taken down comprise 60 pairs of sashes and frames, with plate and crown glass, and boxing shutters; 60 large workshop skylights; 70 four-panel and other doors, staircases, sound wainscotting and partitions, flooring-boards, [illegible] quartering, bookcases, presses, closet fronts, dressers, sinks, patent water-closets, ranges, stoves, coppers, coach house gates, marble and Portland stone mantle-pieces and hearths, quantity of loose materials, &c. &c. May be viewed. Catalogues on the premises, and of the auctioneer, Tottenham.

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TO STONEMASONS, PAVIORS, BUILDERS, CONTRACTORS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION on the premises, 30, Commercial Road, Lambeth, on WEDNESDAY, April 7th and following day, by order of the assignees of S. and G. Sharp, bankrupts, the first portion of their valuable stock in trade, consisting of several thousand feet of York and Rockhill paving, York landings, Purbeck and York sinks and steps, coping and cills, &c., Portland stone in block, scantling and slab, granite, curb, chimney-jambs, &c., also two well-built stone trucks, four carts, cart-harness, two chaises, and numerous other effects; also at the same time, the beneficial lease of the commodious premises, held for a term of twenty-one years from Michaelmas 1842, at a low rent.—May be viewed three days previous to the Sale, and Catalogues had on the premises, also of Messrs. DONNE and TAYLOR, Solicitors to the fiat, 28, New Broad street, and of the Auctioneers, Coal Exchange, or 1, Little Smith street, Westminster.

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BUILDING MATERIALS, MITCHAM, SURREY.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION on the Premises on MONDAY, April 12th, and two following days at 12, the whole of the valuable materials of the mansion known as Mitcham Grove, and numerous outbuildings, comprising a large quantity of lead and copper, in cisterns, pipes, gutters, dormers, ridges and flats; slated and tiled roofs; sound timber in joists, girders, floor boards, and battens, doors, partitioning, twelve Portland stone columns; plate glass, and other sashes, the wainscot fittings of library, handsome statuary and other marble chimney-pieces, the erection of greenhouses, fittings of brewhouse, laundry and kitchens; large coppers, metal cocks, brass barrel force pumps; a handsome Gothic hall stove, &c., together with the [illegible] York and diamond paving, coach-house gates, and numerous other effects. May be viewed two days previous, and Catalogues, Sixpence each, had on the premises; at the Plough, Clapham; Greyhound, Croydon; White Hart, Mitcham; Wheatsheaf, Tooting; George, Balham Hill; and of the Auctioneers, Coal Exchange, or No. 1, Little Smith-street, Westminster.

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ISLE OF WIGHT.—To Builders, Capitalists, and Others.—The East Cowes Castle Estate, adjoining the Royal Domain of Osborne, for Sale by Auction, in 177 lots.

**MR. FRANCIS PITTIS begs to announce** his instructions from the proprietor to submit this singularly beautiful Estate to SALE BY AUCTION, in lots, at the Medina Hotel, in East Cowes, on Tuesday, April 27th, 1847, at two o'clock. This desirable Estate was for many years the property and residence of the late celebrated architect John Nash, Esq. It comprises 40 acres of rich Pasture Land, studded with luxuriantly flourishing Timber and flowering Shrubs, and extending in a variety of beautiful and picturesque slopes from the Royal Domain of Osborne nearly to the harbour at East Cowes, commanding the most pleasing and diversified scenery to be found in the famed Isle of Wight. The situation is particularly sheltered, and the Land has been planned with a view to the erection of houses of a genteel but moderate character, which are much required in this highly favoured neighbourhood. It is intended to let the several lots at ground rents, subject to very easy restrictions, with the option to the lessee to purchase the fee simple within a given period, and at a stated calculation, thus presenting to builders and others an opportunity of embarking in safe and favourable terms in one of the most promising building operations hitherto submitted to public notice in the Isle of Wight. The roads are now planned, and the public are invited to view the property. The materials of the Castle will be sold immediately after the Auction of the Land.—Particulars and plans may be obtained at the Auction Mart, London; of Messrs. HOLME, LOFTUS, and YOUNG, Solicitors, New Inn, London; or of J. W. BECKINGSALE, Esq., Solicitor, Newport.

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## COMPETITIONS.

SHEFFIELD ATHENÆUM AND MECHANICS' INSTITUTE.

**ARCHITECTS are respectfully informed** that the time for receiving designs for the building required for this Institution is EXTENDED to Friday, the 14th of May next. JOHN TAYLOR, Managing Director.

27th March.

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LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.—NEWHAVEN BRANCH.

**PREMIUMS for PLANS and DESIGNS** of Works at Newhaven Harbour.—The Directors are prepared to give a premium of 100*l.* for the best, and 50*l.* for the second best plan and design for the arrangement of the wharf and works, and the construction of the necessary station, custom-house, and hotel accommodation at Newhaven Harbour. A plan of the Company's property, and other particulars, may be obtained on application to the Secretary, at the London Terminus, on and after MONDAY, the 5th of April next, to whom also the designs may be forwarded, not later than SATURDAY, the 1st of May next. Each plan to be distinguished by a private mark or motto, and to be accompanied by a sealed envelope, containing the name and address of the designer. By order, T. J. BUCKTON, Secretary.

London Terminus, 27th March, 1847.

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## CONTRACTS.

TO BUILDERS.

**BUILDERS desirous of Contracting for** the Erection of New Kingswood, to be built near Lansdown, Bath, may see the plan and specifications at my office, 1, Belmont, Bath, from the [illegible] of April until the 22nd. The lowest contract will not necessarily be accepted. Each builder to state the separate amounts of the various branches of his estimate, and to deliver the same on the 22nd April before 11 o'clock in the morning, at my office, addressed to the Committee. JAMES WILSON, Architect.

Bath, 29th March, 1847.

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TO BUILDERS.

**THE Welsh Education Committee being** about to establish a training school for the education of schoolmasters, at Carmarthen, invite builders to TENDER for the erection of the building. The committee request that such persons as intend to prepare estimates for the same, will send their names and addresses to the Rev. W. J. Kennedy, at the National Society's Office, on or before the 10th day of April next, after which time [illegible] will be [illegible] to the several parties, stating the particulars and conditions upon which their estimates are to be made out, and will be received by the committee.

National Society's Office, Sanctuary, Westminster,
30th March, 1847.

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TO BUILDERS.

**ALL Persons desirous of Contracting for the** works to be performed in the rebuilding of Llandilo church, Carmarthenshire, according to drawings and specifications prepared by Mr. G. G. Scott, London, may inspect the said drawings and specifications any day except Sunday, until the 24th of April inst., by applying to Mr. DAVID GWILLIM, parish clerk, on or before which day sealed tenders for the said works will be received by the Chairman of the Church Committee. Each tender must contain the names of two responsible persons who will become bound, with the contractor, for the due performance of his contract. The committee do not pledge themselves to accept the lowest tender. For any further information, apply to the Reverend J. W. PUGH, Chairman of the Church Committee, Llandilo.

Llandilo, April 1, 1847.

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## CONTRACTS.

TO BUILDERS AND OTHERS.

**NOTICE IS HEREBY GIVEN, that** TENDERS, for a Specific Sum, for Erecting 5 LARGE MAGAZINES, with sundry Storehouses, Workshops, Landing-shed, &c. and Enclosure Walls, also for constructing a Basin and Pier (to reach below low water mark), Wharf, Tanks, &c. &c. at Bull Point, on the river Tamar, about 3 miles from Plymouth, and in the neighbourhood of the existing Powder Works at St. Budeaux, will be received at the Ordnance Office, Pall Mall, London, on or before 23rd April, 1847.

Specifications and Detailed Plans of the proposed Buildings and Works may be seen and forms of Tender obtained after the 18th inst. daily at the Commanding Royal Engineer's Office, Devonport, between the hours of 9 and 4 o'clock until the 22nd April, next.

Commanding Royal Engineer's Office,
Devonport, March, 1847.

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TO BUILDERS AND OTHERS.

**THE Court of Sewers for Westminster and** part of Middlesex will be ready at the Court House, No. 1, Greek street, Soho-square, on Friday, the ninth of April, 1847, to receive TENDERS for Building 1135 feet of Sewer in the Fulham-road, between Church street and Robert street, Chelsea. A plan and specification of the above work may be inspected, and a form of tender and other particulars obtained at this Office daily, between the hours of nine and four. Parties offering must be in attendance at one o'clock precisely, on the 9th of April, with a sealed tender, marked on the outside, "Tender for Works." Each tender must be strictly in the printed form prescribed. The Court does not bind itself to accept the lowest tender.

LEWIS C. HERTSLET, Clerk.

Sewers' Office, No. 1, Greek-street, Soho-square,
31st March, 1847.

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TO CONTRACTORS, BRICKLAYERS, AND OTHERS.—COURT OF SEWERS, TOWER HAMLETS.

**NOTICE IS HEREBY GIVEN, that the** Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on Wednesday, the 14th day of April, at two o'clock in the afternoon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS (sealed up) from any persons or person willing to enter into contract for the works necessary in extending the sewer from White-horse-lane along Mile-end-road, to the Regent's canal, being a length of 212 feet in the hamlet of Mile end Old town; and in arching over 1,059 feet of sewer at the back of Southampton street, Teal street, Ann's-place, and Albert-street, in the parish of Saint Matthew, Bethnal Green, at the back of Ratcliff highway, in the parish of Saint Paul, Shadwell, and between Little Pearl street and Grey Eagle-street, in the parish of Christ Church; and 72 feet at the back of Calvert-street, in the parish of Saint John of Wapping. Plans and specifications of the said several works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of eleven and three o'clock. Separate contracts will be required for each of the said works respectively. The contractors will be required to sign provisional agreements to secure the due execution of the said contracts and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners. No tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon. Dated this 31st day of March, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B.—The Commissioners do not pledge themselves to accept the lowest tender.

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TO BUILDERS, IRON FENCE MANUFACTURERS, AND OTHERS.—Wolverhampton New Cattle Market.

**PARTIES desirous of Tendering for the** several works to be performed in making a New Cattle Market at Wolverhampton, are hereby informed that the Drawings and Specifications thereof may be seen on and after Monday, the 5th of April next, at the office of Mr. BANKS, Architect, Wolverhampton. The works are intended to be let in three separate departments, namely Earth work, Building, and Ironwork.—Tenders for same must be sent on or before the 1st of May next to F. C. Farwell, Esq., Solicitor, Wolverhampton. No pledge is given that the Lowest Tender will be accepted.

Wolverhampton, March 25th, 1847.

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ST. BARTHOLOMEW'S CHURCH, WHITWORTH, LANCASHIRE.

**PARTIES desirous of Tendering for the** Carpenter's, Plumber's, Slater's, and other trades, are informed that the plans and specifications may be seen at the office of the Clerk of the Works, on the site, from Monday, 12th April; and the Tender, endorsed, to be delivered post paid, on or before Saturday, 24th April, addressed to the Architect, JOSEPH CLARKE, Esq., 1, Lincoln's-Inn-Fields, London. The parties tendering are required to take out their own quantities; and the Incumbent does not bind himself to accept the lowest tender.—Whitworth is distant about three miles from Rochdale.

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ST. MARK'S CHURCH AND SCHOOLS, DUKINFIELD, CHESHIRE.

**BUILDERS or other parties desirous of** Tendering for the whole, or the trades separately, may see the drawings and specifications at Mr. ROBERT HALL'S, the Queens Arms Inn, near the Station, Dukinfield, from Thursday, the 8th April. The Tenders, endorsed at the corner, to be forwarded, post-paid, on or before the 20th of April, addressed to JOSEPH CLARKE, Esq., No. 1, Lincoln's-Inn-Fields, London. The several parties to take out their own quantities; and the Incumbent will not hold himself bound to accept the lowest tender, if not satisfactory. There is very ready conveyance by canal or railway.

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CONTRACT.—TO WHEELWRIGHTS, AND OTHERS.

**THE Commissioners of the Town and Parish** of Woolwich, in the County of Kent, will meet at the Town Hall, William street, on Tuesday Evening, the 20th instant, at Seven o'clock, to receive TENDERS from such person or persons as may be willing to furnish them with Six Carts within three weeks from the above date, similar to the Watering-carts used on the Greenwich and Woolwich Turnpike Trust. No Tender will be received after the time specified or noticed unless it contains the address of the party tendering, together with the name and address of one respectable person, as surety for the due performance of the Contract. The expense of the Bond to be paid in moieties by the contracting party and the Commissioners. Parties Tendering to be in attendance or some one on their behalf. Further particulars to be known on a written application to Mr. E. Sargent, or personal application to Mr. George Postle, Foreman of the Roads, Woolwich. EDWARD SARGENT, Clerk.

45½, Saint Mary street, Woolwich,
1st April, 1847.

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SAINT GILES IN THE FIELDS, AND SAINT GEORGE, BLOOMSBURY.—To Paviors and Others.

**NOTICE IS HEREBY GIVEN, that the** Committee for Paving, Cleansing, and Lighting these Parishes, will meet in the Vestry Room of Saint Giles-in-the Fields on THURSDAY, the 15th day of April next, at Ten o'clock in the forenoon precisely, to receive proposals from such person or persons as may be willing to CONTRACT to pave with the best new Nine-inch Aberdeen Granite the upper part of Holborn, and such parts of Broad street and High street as the Committee may direct. The present granite pavement to be the property of the Committee, at whose expense it will be carted away when taken up. Security to the satisfaction of the committee will be required for the performance of the contract and the names, places of abode, &c. of the persons to be offered as sureties must be delivered in with the proposal. The Committee will not bind themselves to take the lowest tender, and will defray the expense of the contract and bond. The persons sending in proposals must attend at the vestry-room at the time of meeting. The specification for the above work may be seen on and after the 29th instant, at the Clerk's Office, No. 21, Hart-street, Bloomsbury-square; and also at the office of Mr. BIRCH, Surveyor, No. 33, Little Russell-street.

By order of the Committee, R. FINNIS, Clerk.

March 22nd, 1847.

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LONDON: Printed by CHARLES WYMAN, of 49, Cumming-street, Pentonville, in the County of Middlesex, Printer, at the Printing office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent-Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, April 3, 1847.

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Office of Metropolitan Building s.8, Adelphi-terrace, 7th April, 1847.

**NOTICE IS HEREBY GIVEN,** that the Examiners appointed by and in pursuance of the Metropolitan Buildings Act, will hold their next Examination of Persons desirous to obtain a certificate of qualification for the office of District Surveyor on FRIDAY, the 30th day of April instant.

Persons desirous to be examined must apply on or before the 24th instant, and their applications must be accompanied by a preliminary statement, according to the course of examination prescribed in the rules for that purpose, copies of which, and any other information on the subject, may be had at this Office, or at Mr WEALE'S, Architectural Bookseller, 59, High Holborn

Subsequent Examinations will be held in the months of July, October, and January, or at such other periods as shall be appointed, of which due notice will be given.

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THE WORCESTER and AUSTIN TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of chimney-pieces and FONTS.
Estimates given for building generally

**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important and valuable effectually stopping knots in Wood, however large, and preventing them eating through and disfiguring the paint or varnish.
Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.
In the application, it will be perceived, it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.
Sold wholesale and retail by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.
The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is thereby most valuable for Railway Rollers, Gas, and Water pipes, Hothouses, Parking Houses, and for Shipping. Its adhesion is great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation in stuccoed buildings, and is not affected by spra, or sea water.
PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, is proportionate to 72 to 20, or that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an elastic as and flexible mixture. If blended with other paints it has a better tone than white lead. For house painting generally, it is most preferable, being perfectly innocuous.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily to them the hours of 11 and 2, where information can be obtained, by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and levels of the public sewers, and the easiest mode of effecting Drainage into which they recommend all such Premises to apply for at the above office.
By the Court,
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER AND PART OF MIDDLESEX, No 1, Greek-street, Soho-square

**TO BUILDERS and Others interested in** buildings or ground fronting or lying up, within the district under the jurisdiction of this Court, drained by water-courses falling into the River Thames, between the city of London and the Parish of Fulham.
The Commissioners hereby give notice that by an Act, 11 & 12 Geo. 3, chap. 37, it is enacted that, previously to the erecting, pulling down, or rebuilding of any sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, ground, or void, or any sewer under their management in, or within their jurisdiction, a notice in writing shall be given to the Clerk of the said Commissioners, at their office, Greek-street, Soho-square, and a plan made of such intended sewer shall be directed by the said Commissioners, and not otherwise.
And that, previously to the operations call, and the plan to be made, the ground is to be staked out and levelled to be taken upon oath, and attested at the proper time, and at the place to be appointed by the said Commissioners, or their Surveyor, or such other person or persons as they shall think proper to appoint, and that the Commissioners have directed that, upon application being made to the Clerk of the Court, by letter, or otherwise, of any person, intending to build over any sewer, notice will be given to the Surveyor to the Court, to attend such intended building, and to direct the depth at which the sewer shall be laid.
And the Commissioners do hereby give notice, that where the lowest floor is proposed, or intended to be laid, under the level as not to admit of their being drained with a proper current, they will not allow any communication with any sewer under their care, or the service of such buildings.
It is recommended to all persons about to purchase or take houses, or other property, to ascertain whether such premises have separate or distinct drains to communicate with the sewers.
All petitions must be presented at the office at least three clear days before the day appointed for the commissioners; and all such petitions will be called over in the order of their application, and the names of any persons not present when called, or who appear by representation will be struck out, and the petitioners must in consequence attend again.
All communications made with any sewer without leave of the Commissioners, will be dealt with and the parties concerned in the same will subject themselves to a fine.
The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners in respect of any sewer, but every person intending to build over, or to alter, any sewer, must give to the Surveyor to the Court of Commissioners of Sewers seven days' notice in writing of his intention so to do, and of the nature of the alteration proposed to be made, and must not proceed with the intended building or alteration until he shall have received the Surveyor's directions in writing, and shall have given him reasonable facilities for inspecting the same.
By order of the Court,
LEWIS C. HERTSLET, Clerk.

**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby not only rendering the feather itself entirely inodorous, but they are rendered quite free from the unpleasant smell of the stove, which all new feathers are subject to that are dressed in the ordinary way.
By the above process in this process are perfectly freed from all impurities, and in expanding the feathers the bulk is greatly increased, and consequently the Bed is rendered more elastic and durable. The following are the prices of New Feathers:—

| | | | |
|---|---|---|---|
| Mixed, per lb. | 1s 6d | Foreign Grey Goose | 1s 6d |
| Grey Goose | 1s 8d | Best Foreign Grey Goose | 2s 0d |
| | | Best White Goose | 2s 6d |
| | | Best Dantzic White Goose | 3s 0d |

BEAL and SONS LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

DUTY OF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, cut; and having just built one of the largest Kilns in London, is enabled to execute at once orders with unprecedented despatch. 1, King-street, Portman-square.—Terms, Cash only.

**THE UNION PLATE GLASS Company** beg to call the attention of Architects, Builders, and the Trade generally, to their manufacture of Glass, which they have unrivalled for colour and quality; and having considerably enlarged their Works, they are now enabled to execute orders to any extent with the greatest despatch.
N.B. Rough Plate Glass supplied one fourth, three-eighth, one-half, and three-quarter-inch thick.
H. CHRISTIE, Agent, 99, Hatton-garden, Holborn.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. T. is Plate Glass can be procured of any dimensions. Applicat ons by samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen** Tables, at the following low prices, for ready money:—

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds | 4 4 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot. |
| | Fourths | 3 10 0 | |
| | C.C. | 2 10 0 | |
| | Seconds | 2 8 0 | |

SHEET GLASS of all descriptions equally low.—White Lead, Oil Turps, Colours, and Varnishes, at WILLIAM FREDERICK PENTON'S Wholesale Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

SASHES PRIMED, GLAZED, and sent to any part of London at 5d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the lowest wholesale terms.

| FOREIGN SHEET. | BRITISH SHEET. |
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| BRITISH CROWN | PROPAGATING GLASSES |

Coloured and Ornamental Glass, Plate, Broom, and Sheet Plate, for shop fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.
Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.
VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 28s per cwt.; Red Lead, 22s per cwt.; Pump-Water Closets, Basins, Brass-work, and all materials used by Plumbers.
Price and Sale Lists, priced—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 3, Princes-street, Leicester-square, London.

**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having its repay the outlay by two years; abolish all danger to life and limb in cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sunblind; all simple, cheap, and effective. Apply for licenses and to inspect its real merits, at HERRING'S Patent Steam Bed-Feather Factory, 14, Red-lion-street, London.

CHAS. WM. WATERLOW,



MANUFACTURER of Sashes and Frames, Joiner to the Trade, 131, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale.
Estimates and Tenders prepared for the country. Steam-struck Mouldings on any pattern.—N.B. This Establishment is worth the notice of all engaged in building.



**J. BARKER'S DOOR, SASH, and SHOP-** FRONT MANUFACTORY, 83, Theobald's-road, Bloomsbury Prices for Sash



14 inch outside glazed sashes and frame, with lines and weights, 8s. 9d. per foot; 2 inch mitre bar, glazed sashes and frame with lines and weights, 1s. 4d. per foot; 2½-inch casement sashes and frame 1s. 4d. per foot; ditto, glazed, 1s. 5d. per foot; 1½-inch four panel square sashes, per foot; 2-inch ditto, ditto, 10d. per foot; ditto, moulded both sides, 1s. 0½d. per foot.
All kinds of joiner work prepared (and fixed if preferred) at proportionate prices. Materials and workmanship warranted.

**PHOTOGRAPHIC PORTRAITS,** at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 1st, Strand (between Norfolk-street and St. Clement's Church). Portraits, in every size, from 5s. Views, Pictures, and Groups executed. Likenesses by this method can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvas, combining the truth of the daguerreotype with artistic skill. Hours from 10 to 4 or 5.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low rate, and work executed with punctuality and despatch. Apply at the BITUMEN PAVEMENT OFFICE, 26, WHARF ROAD, CITY ROAD.—N.B. Country Agents and Builders in Partnership can enter into contracts on the most liberal terms, and furnish the best bitumen for covering bridges and arches.

**DEANE'S TWO-HOLE BLACK PENS,** which are unequalled for their durability and easy action, and perfectly conformable to the Stock Exchange Regulations, have been for upwards of half a century supplied to the Bank of England, the Government of her Majesty's Stores, the Ordnance Board, Counsel and the Revenue Office. Their cheapness and superiority have induced many unprincipled people to put forth imitations of this valuable article, which can only be to the purchaser, and disgraceful to the vender. The public are therefore cautioned against such frauds, and requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,
"G. and J. DEANE'S 3 Hole Black Pens, 40, King William-street, London-bridge."

**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby not only rendering the feather itself entirely inodorous, but they are rendered quite free from the unpleasant smell of the stove, which all new feathers are subject to that are dressed in the ordinary way.
By the above process in this process are perfectly freed from all impurities, and in expanding the feathers the bulk is greatly increased, and consequently the Bed is rendered more elastic and durable. The following are the prices of New Feathers:—

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| Mixed, per lb. | 1s 6d | Foreign Grey Goose | 2s 6d |
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BEAL and SONS LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

PLASTERERS' HAIR.—To Builders, Plasterers, &c

**JEREMIAH LORDAN,** Hair and Glue Merchant, 7, Butlers-buildings, Bermondsey-street, begs to call the attention of the Trade to his large stock of excellent Plasterers' Hair, which he has always on hand at the following very low prices:—Common 80 lbs., Best 90 lbs. per load, Glue 34s. and 38s. per cwt.—Cash on delivery, at the Warehouse.

**ARCHITECTS, BUILDERS,** and the Trade in general, are informed they can be supplied with cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balustrades, cornices, centre flowers, sashes, &c. Models, &c. &c., for the Trade. Estimates given. Address to JEREMIAH and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.
A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 33 per cent. cheaper than papier maché.

TO PLASTERERS

**LIME FOR PLASTERING,** that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORBEST'S HARF, East-street, Blackfriars. Sheds for the slacking and mixing of Lime. Accommodation for loading and landing bricks, sand, ballast, &c.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**PORTLAND CEMENT.**—The peculiar property which this Cement possesses, of entirely resisting the action of sea water, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proofs of the fact can be inspected at the undermentioned address.—J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be painted or panelled on brickwork immediately set in, by the addition of Pigment or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, in its application for which purposes it defies the ravages of Time and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Peel-street, Liverpool

TO ENGINEERS, ARCHITECTS, CONTRACTORS, AND BUILDERS

**GREAVES'S BLUE LIAS LIME** and CEMENT.—No. 9, South Wharf, Paddington.—Messrs. RUTHERFORD GREAVES most respectfully solicit the attention of the above trades and parties to their Lime, and will be most happy to receive orders. The Lias Cement is of a beautiful stone colour, free from any admixture, and is unequalled for its setting and hardness, and is fast becoming the only Cement used for all the best works. The Lias Lime is of a pale blue colour, and possesses many valuable properties, which will be duly appreciated by all who use it.
1 It possesses in a high degree the valuable property of setting under water.
2 Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. It is the only Lime which may be made equal to that of the finest marble. NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.
It is peculiarly adapted for internal stucco for walls, shirtings, architraves, and all ornamental enrichments of all kinds, for which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor Estate, &c.
For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.
For the floors of halls and for party-fire houses, as bullet-proof, and uniformity of texture, give it an immense advantage over wood, and at the same time, much more economical. The most satisfactory references can be given to the Duke of Buccleuch, Messrs. Cubitt and Wyatt, Mount Coal Company, DRUCE, LANE, Plaster of Paris and Cement Manufacturers, 20, Upper Lisson-street, Lisson-grove.
Agent for Liverpool and Manchester, Mr. H. PART, 28, Canning-place, Liverpool

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC GENERALLY.

**JOHN'S and CO.'S PATENT STUCCO CEMENT.**—The following are the positive advantages possessed by the Invention over every Cement hitherto introduced:—
It will effectually resist Damp. It will never require to be turned again, nor ever require repair. It will never crack, blister, nor scale off. It will form a complete Stone casing to any Building it may be used for, and resemble Stone that it is impossible to detect the difference, even by the most practised eye. It will keep fresh and good in the tank, in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Public generally, as it is entirely free from any of the injurious properties which other Cements possess, and which, in many instances, have caused the destruction of property to a large amount. It will not require the aid of any Mechanic to apply it, as any person used to whitewashing can put it on. It will be found the cheapest Cement ever introduced. It will keep fresh and good in the tank, in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Public generally, as it is entirely free from any of the injurious properties which other Cements possess, and which, in many instances, have caused the destruction of property to a large amount. It will not require the aid of any Mechanic to apply it, as any person used to whitewashing can put it on. It will be found the cheapest Cement ever introduced.
Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials, may be had at the Patentee's Manufactory, and of the Agents, at the office of Mr. Bunney, and of MANN and CO., SOLE AGENTS for the Patents, 39, Manchester, Queen Street, Cheapside, London, of whom alone it may be obtained.
JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Cement; it requires only to be thrown up to produce a durable and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently cause oil in the wall to rise (when all ingredients with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT has no affinity for stone, but dries hard with it, giving the outside the appearance of a stone wall or building, and unlike any other paint, while finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

The Builder.

No. CCXVIII.

SATURDAY, APRIL 10, 1847.

AT the end of November last, we were the first to communicate to the public the precise nature of the alterations that were contemplated in Covent Garden Theatre, embracing, with the concurrence of the official referees, important provisions for the safety of the public in the event of fire.* Afterwards, we had the satisfaction of entirely setting at rest, by a personal survey, reports against the stability of the walls, then current; and we now give our readers an elaborate and correct view† of the new interior, which has been constructed in a marvellously short period, and with great skill and effect. Not many weeks ago, as we noted at the time, we had seen the bare inclosing walls standing exposed, from the foundation to the roof, and the old chandelier, under the decorated ceiling, blazing in extraordinary contrast with the hubbub and apparent ruin below. And when we entered the theatre on Tuesday night last, on which occasion it was first opened for operatic performances, the change that had been effected appeared little short of miraculous, although we had watched the progress step by step.

A main point to be dwelt on is, that notwithstanding the rapidity with which the works have been carried on, they have been done in the soundest and most substantial manner, and so as to entitle Mr. Albano, the architect, and all concerned in them, to great praise. A brief record of the proceedings, before speaking of the appearance of the house, will doubtless interest many of our readers.

We may premise, that Covent Garden Theatre, as we used to know it, was erected in 1809 by Mr., now Sir Robert, Smirke; the previously existing building having been burnt down. The first stone was laid by the Prince of Wales and the Freemasons on the 31st of December, 1808, and the building was erected and opened within nine months from that day. It is reported that the cost was 150,000*l.*‡

Turning, then, to the present structure, operations were commenced on the 2nd of December last; but during the week there were only a few workmen employed, in consequence of not having entire possession of the house. The first steps included moving away an immense quantity of theatrical property, which had been stored for years in various parts of the theatre, and was useless. Our grandfathers might have had their earliest theatrical recollections revived, by tricks and scenery belonging to the palmy days of pantomime, which had long slumbered mid dust and cobwebs.

The work was then begun in earnest, by pulling down the whole of the interior of the theatre within the external walls, and the inner foundation walls and arches, to the depth of about 22 feet below the level of the pit corridor. The new foundation walls for carrying the iron columns for the fronts and backs of boxes (thrown considerably farther back), and the walls for the new stone staircases, were commenced about the 21st of December, by bedding Yorkshire landings on a good gravelly soil, with four double courses of footings in brick and cement, five bricks thick at the base. Between the new foundation walls and the old main walls, fire-proof arches were turned in brick and cement over two rooms immediately under the level of the ground floor, and a second tier again above these, under the level of the pit tier of boxes and corridor. When these were completed, the fixing of the stone bases was commenced, to receive iron columns (from 6 to 8 in. in diameter) which were fitted into deep sockets, their caps carrying the timbers of the grand tier, which were secured with bolts going through the caps, and were fastened to the main walls by strong iron ties, passing through the walls with nuts and washers. These caps carried the columns and timbers of the next tier; and, in like manner, columns were repeated for each of the tiers, thus obtaining a continuous bearing from the foundation walls. The columns are 10 feet 4 inches apart in front, and 11 feet 6 inches apart at the back of the boxes. The last tier of columns had flanches cast on them to receive strong story-posts, which were framed into the roof. While the timbers of the upper tier were being framed, the carpenters and joiners were proceeding with their work in the various tiers of boxes and corridors, and framing the timbers and curbs of the ceiling: these are carried by cantilevers framed into the story-posts beforementioned. The ceiling, besides, was hung to the roof with strong iron straps and straining pieces, which gave ground for a foolish report that the new ceiling would bring down the old roof, when, in truth, it is dependant on it only in a very slight degree.

The ribs for the new ceiling, which has a parabolic section, and is elliptical in plan, are formed each of two pieces of plank, cut into proper shape, and lined on the face with ¼-inch battens, from 2 to 3 inches wide, nailed to the ribs. This boarding was exposed to great heat for some time, that no shrinkage might afterwards take place, and all chinks were then filled up, and canvass was fastened all over the back of it with a strong mixture of marine glue. These precautions were necessary, because, as the decoration of the ceiling (painted on paper elsewhere, and brought to the house ready at once to be put up) is fastened to the face of the boarding, any shrinkage afterwards would probably split it.

The ceiling, then, being thus made ready for the artists, the painting, gilding, and other decorations (to be afterwards alluded to), and the preparations for hanging the chandelier, were finished, and the scaffolding struck in order to complete the pit and stall seats.

We ought to have said (although it has been already mentioned in this Journal), that when building the foundation walls and cutting the shoulders for the first tier of fire-proof arches, a course of bond timber 12 by 6 and 12 by 9 was found, which, although apparently sound, it was thought necessary to examine. When cut into, it was seen to be entirely rotten at back, and was then taken out in short lengths, and the space filled in with bricks and cement. Other courses were afterwards found in the same rotten condition, and were then removed, to the extent, in all, of about 1,400 feet run. A great number of cills and lintels, to the extent of about 400 feet run, discovered to be in the same state, were also removed, and relieving arches were turned in their stead.*

Simultaneously with the progress of the above works a new box-office and entrance were made: the open-arched arcade in Bow-street was inclosed, and the adjoining rooms extended flush with the façade of the building. A new stage-entrance and stage-staircase, and a large, handsome retiring room, of the whole width of the stage, under the proscenium, have been formed for the convenience of the musicians, with very ready means of access from the street.

The grand entrance has been materially improved; the ceiling of the hall has been raised and divided into panels, filled in with enriched mouldings, supported on Doric columns, which are formed out of the square pillars that formerly supported the ceiling; and the square ends of the walls, and the lintel over the entrance to the grand staircase, have been removed, and a new soffit formed. The steps at the foot of the grand staircase, which projected into the hall, have been taken up and refixed further in, by reducing a very wide landing; gaining a clear height, by raising the lintel, of 3 ft. 6 in., and 2 ft. 6 in. by the removal of the steps. The ceiling of the staircase being found too high to be well-lighted, was lowered. These alterations are important, as a full view can now be obtained of the columns and ceiling of the grand staircase, whereas before only the margin of the cornice at foot of columns on staircase was visible.

The arched colonnade leading from Bow-street to the Piazza, Covent-garden, has been covered in, some of the spaces with doors and some with sashes, and converted into an entrance-hall and crush-room for the pit,—a great convenience. The ceiling is divided into three compartments, with beams and Doric columns; two fire-places have been made in it, and the floor raised. The access to the house here is by a flight of steps right and left. The pit is approached by means of these stairs, and is entered at the back only.

The old gallery-staircase in Bow-street, adjoining the Bedford-avenue, has been pulled down, and the space it occupied formed into a vestibule to the pit crush-room, by turning fire-proof arches over the basement to carry the stone paving. The adjoining room, formerly the treasury, is converted into a cloak and ticket-room, and another room built for the accommodation of the nightly guard.

At the top of the grand staircase, under the floor of the Shakspeare room, where considerable alterations have been made, trusses of timber and iron have been introduced for the purpose of supporting the girders, their bearing being increased by inclosing the arched arcade below. The space the gallery staircase formerly occupied has been floored over and paved level with the saloon and corridor of the grand tier. Two mezzanine floors, one at each end of the grand saloon, have been taken down to give these rooms the same height as the saloon; and by these arrangements have been formed a handsome *suite* of anti and crush-rooms from the grand staircase, the whole length of the front of the theatre. The arched staircase which was formerly in the saloon, communicating with upper tier of boxes, has been taken away, and the ceiling divided into three compartments, supported by Ionic columns and entablature.

The walls of the saloon, we may mention here, are hung with a green watered paper, with white and gold ornamental dressings to the doors and other openings. The woodwork is painted satin-wood; the columns Sienna marble.

Before terminating our notice of the struc-

* Vol IV., p. 570.
† See p. 170 in present number.
‡ An account of the building, with illustrations, will be found in the first volume of Britton's "Public Buildings of London."

* For some remarks on this circumstance, and the use of wood bond generally, see p. 33 *ante*.

tural alterations, we must mention one great improvement outside. By an arrangement with the parish, the road in front of the grand entrance has been remodelled, and a tram-way for carriages formed beneath the portico, so that visitors are set down under cover most conveniently.

The royal entrance, in Hart-street, has been considerably improved; as have also the approaches to the Queen's box and the retiring-room.

We will now again enter the house and see what has been effected there. Our engraving will aid us in giving a clear idea of the brilliant appearance it presents. The face of the centre box on the ground tier, is 18 feet 9 in. further from the curtain than it originally was, thus elongating the horse-shoe form to that extent, and rendering the lines of the boxes very beautiful. Each tier above recedes still further, the top-most being 2 feet 3 inches behind the lowest. The stage has been brought forward 9 feet into the house; and the distance from the front of the centre box to the front of the stage, is 59 feet, including the orchestra, which is 12 feet 6 in. deep, and accommodates eighty-five musicians. The greatest width of the internal area, is 62 feet;* in front of the orchestra it is 54 feet 8 inches. The greatest height of the house is about 54 feet.† The height of the Corinthian columns which form the proscenium, as shewn in the engraving, is 25 feet 10 inches; the diameter 2 feet.

In the old house, it will be remembered, there were four tiers of boxes, including the slips; in the present we have six. The centre portion of the fourth and fifth tiers is appropriated as an amphitheatre for the general public, with seven rows of seats in each, extending backward over the corridor below. Above these, in the sixth tier, is the gallery.

The area of the house is wholly filled with stalls; half being reserved under that name, the other half forming the pit. The seats here are all circular in plan, as they are also in the amphitheatres.

Our engraving shews the boxes divided on every tier by caryatides; and this, when the house is completed, will be the case. At present the caryatides are up on the grand tier only, so that there is a want of apparent support for the ceiling. When these are fixed, the effect in this respect will be greatly improved. The spaces between the caryatides are each, for the most part, divided into two boxes, by moveable partitions and drapery, not shewn in the engraving.

The figures, together with all the ornaments in relief on the boxes, proscenium, &c., are moulded of a material called *canabic*, for which the architect of the theatre, Mr. Albano, has a patent. As its name imports, it is composed of hemp: it is light, takes a sharp impression, and is moreover cheaper than *papier mâché*. It would seem to be very durable, too, and deserves to be better known than it is.

Let us now describe these ornaments somewhat in detail. The sixth tier has been mounted with a large festoon of fruit and flowers, sustained by raised ornaments at equal distances, the cushion (which, as well as all the hangings, is of red damask) being supported by rich gilt moulding; the lower freize is likewise richly gilt. The fifth tier is covered with panels in the Renaissance style, each panel embracing an equal division of the front of the house, with a drop of flowers and shell between them, and rich frieze moulding. The fourth tier is mounted with similar panels, but in the centre of each is a Satyr's head, the expression of which is bold and good. These panels are connected by a continuous stream of flowers, which renders them complete. The frieze moulding is repeated. The third tier is arranged with seventeen panels, the centres of which are oval medallions, all having different subjects, in bold relief, surrounded with oak wreaths and acorns richly mounted, the four seasons, and other subjects, being tastefully executed. The ground of these panels and medallions, and panel ornaments, is a turquoise blue; the figures are finished in flake white, and draperies and other parts in gold. The frieze here is a bold ornament, composed of a large scroll with figures of Pan, &c., and boys with musical instruments introduced. This, surmounted by an egg-and-tongue-moulding in white and gold, completes the tier, with the capping moulding. The second, or grand tier, is mounted with a rich acanthus leaf, with a massive moulding below finished in imitation ormolu. The frieze above the acanthus leaf is of a light character, the design being composed of small figures of Cupid,—some reposing in the centre in a nest, and others flying towards the centre,—the remaining part being filled up with roses and other flowers. The capping moulding is here again of a rich and varied design. It will be seen that, with the exception of the small panels, which are light blue, the whole of the house is white and gold, producing a charming effect.

Colour is reserved for the ceiling, the decorations of which are shewn clearly in our engraving. It may be stated broadly as 80 feet in length, and 60 in width, and was painted by Signori Ferri and Verardi, with the exception of some of the figures, which we believe were executed by M. Zarra. The decorations on the ceiling consist of a large scroll centre-ornament, perforated for the purpose of ventilation, and gilt, and mounted with bold fruit-and-flower-moulding, with egg-and-tongue, and other small members, so as to form five different margins, which are embraced on the outer edge by eight massive shields, and again are connected with lines of golden rope, running to the outer circle of the ceiling. There are four groups, connected by garlands. The group nearest to the proscenium represents Music and her many attributes, with Infant Genius. Lyrical Tragedy occupies the centre of the house. On the right is Comedy; on the left, Painting and Sculpture, with a metaphysical presentment of Art. The exterior architectural border is in high relief, and embraces four divisions — Astronomy, Mechanics, Trade, and Commerce, environed by figures and decorations in lower relief. Other groups represent the Seasons; and the names of celebrated composers are given in tablets. The painted ceiling terminates on a very bold egg-moulding, which is gilt, and forms also the cornice of the top tier of boxes.

In the proscenium ceiling, the same egg-moulding is repeated, and formed into margins with a frieze, consisting of birds and squirrels in high relief, gilt. This is introduced again in the upper and lower edge of ceiling; the centre part is formed into smaller panels by moulding, the centres of which are filled with ornamental paintings. In the centre are the royal arms. The columns, with their capitals, are also white and gold. The spandrel above contains on one side a figure representing Britannia, and on the other a figure of Italy, on gold backgrounds.

The front of the boxes, it may be observed, swells out at the foot, which, besides affording convenience to the occupants, materially aids the effect by reflecting the light. The form of the proscenium too, is exceedingly good, and displays very excellent taste.

The chandelier is of large size, and would of itself light the house sufficiently; there are, however, in addition, branches for wax candles, projecting from the front of the grand tier and second tier.

The number of persons who may be seated in the house may be stated as follows:—There are eight proscenium boxes, thirty in the pit tier, thirty-four in the grand tier, thirty-four in the third tier, twenty-eight in the fourth tier, twenty-eight in the fifth tier, and twenty-eight in the sixth tier, or 190 in all.

| | |
|---|---|
| Allowing six persons to a box, these will seat commodiously | 1,140 |
| The stalls hold | 256 |
| The pit | 263 |
| The amphitheatres 148 each | 296 |
| The gallery | 300 |
| Making in the whole | 2,255 |

Exclusive of standing room. Judging, however, from the number of persons in many of the boxes on Tuesday night, this may be considered under the mark.

The means of properly heating and ventilating the house appear to have received due attention. Hot-air stoves are fitted up under the pit stalls, with flues to conduct the warmed air over the house; and every gas-lamp in the corridors has a ventilating-pipe above it. On these, and some other points, however, we reserve our opinion, not venturing to form one hastily. For the extinguishing of fire, should it occur, mains, supplied from cisterns in the upper part of the house, are provided, with cocks and hose on each tier.

As regards the conveyance of sound, we are disposed to consider the new opera-house singularly successful. During the performance we visited every part of the house, and found in every place that the lowest sound from the stage was distinctly audible.* The boxes are all lined with wood; the walls of the corridors, the Queen's entrance, and the grand staircase are rendered with Martin's patent cement.

As to the cost, concerning which some inquiries have been made of us, it is impossible to speak positively; the nature of the works precluded specific contracts, and the accounts have not yet been made up. 40,000*l.* will probably not cover it.

Mr. Albano richly deserves all the praise that can be offered to him. During the progress of the works he has never left the spot, and has himself, as we are informed, designed and arranged the whole, whether structural or decorative. He has earned for himself a good reputation both as a constructor and an artist.

The whole of the decorations, with the exception of the ceiling before mentioned, were ably executed under his direction, by Mr. Ponsonby, of the Regent's-circus. It is hardly necessary to say that all the Canabic ornaments were painted and gilt while the other works were being proceeded with, and were put up afterwards without any loss of time. The builder employed was Mr. Holland.†

* 2 feet wider than the Queen's Theatre in the Haymarket, and 6 feet wider than that of Drury Lane.

† The height of the former house was ..... 51 feet
" the Queen's Theatre ..... 56 "
" Drury Lane ..... 60 "
" La Scala at Milan ..... 75 "
" San Carlos, at Naples ..... 60 "

* For some remarks on this head, see p. 129, *ante*. For others on theatres generally, p. 81, &c.

† The official referees, in accordance with the provisions of the Buildings Act, have made several surveys. Feb. 13th, when the walls were up, and "the timbers, floors, roofs, and partitions fixed," Mr. Hosking and Mr. Poynter wrote, "That, so far as the works in the alteration and re-construction of the interior of the theatre have been executed, they have been done in a sound, workmanlike, and satisfactory manner; and, in pursuance of the said Act, we hereby certify our approval of the same." And ultimately (March 31st) they certified, "With regard to the works comprised in the said alterations in and to the said building, that they have been built sufficiently strong, and that they are sufficiently set to be safe."

## THE PROFESSION OF THE ARCHITECT

### INFLUENCED BY ARCHITECTURAL EDUCATION.

All are ready to impute the causes of failure to any other object than themselves; but we believe that we truly ascribe the chief obstacles in the profession of architecture to architects. And, whatever other causes there are, that contribute to ill-success, there is one which we are bound to consider, viz., education. We have said enough to shew, that "engineering" is but one department of architecture. But the general world believe, that they are as much distinct as law and medicine; and the calculation of the strength and stress of timber, the designing of iron roofs, of buildings under water, and many similar matters, which an "architect" must comprehend, properly to practise his profession, even as it is understood by some, are held to have no connection with architecture, but to be the province of engineers. This is not merely a popular opinion. At the commencement of the works of the Houses of Parliament, an extensive cofferdam and river wall were required. To whom must this be entrusted? We might be excused for supposing the architect; but the Government thought otherwise,—it was not an architect's business,—they consulted an engineer. Now, why the delusion, as it seems to be, that architecture and "engineering" are two professions, and that an amount of knowledge is required in the latter, which is assumed to be unnecessary in the former, should be so carefully fostered, we do not understand. We cannot have the least objection to any one devoting his chief time and attention to the construction of railways, or of reservoirs, or of harbours, any more than we have to his choosing, as his main object of study and professional practice, any other department,—ecclesiastical architecture, or domestic architecture, or whatever else he may think most worthy or best adapted in his particular case, of being made a principal. But it does not follow, if really he is properly qualified to undertake *any* of these, that he ceases to be an architect, any more than that he who has become celebrated for some class of diseases, ceases to be a physician.

The right course of education has yet to be prescribed for the united profession, although it has been attempted in one branch. We would have the pursuit of architecture free to any who may choose to qualify themselves for it, but we do say there is danger, when the influx of a new class is accompanied by a name for that which was already defined,—that a course of training may be substituted, not less empirical than that, the supposed defects of which may have led to the innovation. He who designs a church or a palace must not be a designer merely of that small portion which meets the eye; and he who is fitted to design a bridge, a lighthouse, or a factory, must be something more than a calculator. There is, indeed, but one profession, and one preparatory course. That pursuit it is no ill-considered assertion to say, is of more extensive scope than any which can engage the attention of man, or of which any recognized appellation so utterly fails to give an impression. The term architecture, which some would confine to the *art*, whilst they admit the impossibility of a separate existence of that "art," is inadequate, even when employed as it is more generally by architects. Painting and sculpture, in their highest walks, and ornamental art in most of its departments, we have already taken some pains to shew, belong to the profession of the architect. The resources of what, with the insufficiency of language, we call "architecture," are in every beautiful form and natural production, and in the laws which regulate the mechanism of the universe, and necessarily demand qualifications in the professor, which scarcely admit the possibility of a limit. Now we believe, that "architecture," if the education necessary for it were conducted somewhat in the manner which we hope to be able partially to indicate, would present the nearest approach to these qualifications which any prescription will supply, and that the use of a new term, one much less comprehensive than that till lately adopted universally, is only calculated to mislead. We have recognized the principle of subdivision into departments, as necessary in any profession, and our meaning will be still further shewn.

We have said, that we are anxious to open our inquiry into the causes of the peculiar impediments to success in the profession of architecture, by a confession of the miserably imperfect state of architectural education. That a pursuit in life, which more than any requires a prescribed course of study, as well as every aid, essential for the speedy transaction of mere drudgery of business, should be precisely that which is most deficient in both the one and the other, is a circumstance which should ere this have received much greater attention. We fear that there *is* reason to say, that the attainments for which Sir Christopher Wren was thought worthy to hold the chair of the Royal Society, are now inadequately appreciated by "architects," and the education necessary for the profession of architecture, can be in no degree complete, unless it holds in an important rank, objects of study, for which a higher reputation, justly or not, is generally ascribed to "engineers." Admitting that at the commencement of railway construction, architects were strangely blind to the opportunities open to them, it must be allowed that the new class, called into existence, shewed an energy in supplying any disadvantages which they may have possessed, and that they soon rendered themselves best fitted to undertake these works. But the circumstance, which we believe we are accurately stating, that architects would not, at sufficiently short notice, have qualified themselves for these undertakings, so as to ensure a successful result with the same certainty as in the case of a building, shews that professional education is not what it ought to be, a preparation for the practice of a comprehensive profession, to be expended according to the direction into which unforseen influences may lead. Scholastic education is rightly intended to be the preparation for active life, the particular course of which it is felt to be almost impossible to prearrange, and the most important knowledge which it is sought to impart, is that which is universally applicable, and indispensable, whatever may be the calling of the future man. A profession is chosen, and the student has made a nearer approach to his future course, yet comparatively all must still be uncertain; and even later in life, he knows not at any time, to what department the altered prospects of a day may require the devotion of his energies. His only safe course to provide for the future, whether as a school-boy, or as an architectural student, is to perfect himself in the knowledge of elements, to lay up so many talents, that out of these, he may select such as opportunities will allow the cultivation of, since, as one deep thinker and poet has said, we do not *forget* knowledge; acquirements are always retained, though they may await the demand of an actual want, to call them into vitality and productiveness.

It is not, therefore, merely that there is no course, collegiate or otherwise, prescribed as a preparation for the profession—no examination and diploma to distinguish him, as an architect, who may be confided in, in what involves immense outlay, as well as health and comfort—but that nothing that can deserve the name of a system, has ever been suggested. Consequently, a student—if the name be not profaned in thus using it—follows the bent of his taste or impulse, and—mere drawing excepted—it is only a chance whether what he takes up will ever be called for in active life. The object of all education should be, to make the mind an index to knowledge, rather than to attempt completion in a few things. For all professions, that education would be best, which might perhaps be styled "superficial," and it will require the full amount of exertion to attain even that. Thus, drawing should be mastered in all its departments; facility in expressing the ideas should be held one of the *tools* of the art, indispensible as compass and rule, rather than an accomplishment, in which skill could necessarily be obtained only by a *few*. Mechanics and natural philosophy, chemistry, geology, and mathematics, are of more moment to the architectural student, than is the perfect knowledge of every characteristic of some one style of architecture. In the former case, the elements of future researches are acquired; in the latter, too valuable time is taken from this elementary course, which *would* be productive, in hazardous conjecture upon the chances of life. Measuring and estimating work, the principles of design and construction, and sufficient knowledge of the constructive details, the anatomy of ordinary buildings, to delineate them accurately in drawings, should be then, the matter of earnest attention in the student, rather than those more abstruse researches which require the attention of the architect. In short, it is politic, so far to provide for the chances of the future, that no subject that may suddenly require consideration, will have to be deferred during the attainment of elements. How many have had to *commence* the study of such subjects as we have mentioned, when time was much too valuable to be so expended.

The preparation for the *profession* of architecture, we said, involves far more labour than it would, were there more system in some departments of its practice, matters of business, rather than of art or science, that scarcely deserve to have the labour of *study*, and yet are essential to the practice of the profession. Even the higher branches of knowledge might be presented to the reader in such concise form, that there might be reasonable hope of acquiring a comparatively accurate insight into them, during the limits of ordinary life. The existence of many departments of architecture is thus forgotten, and the *art* itself, the main end of architecture, has little influence. Time and thought have to be expended, and memory burdened with what should be matters of routine, or have proper aids for reference. Contrast the state of chemical science, previous to the arrangement of the nomenclature, and the discovery of the principle of combining equivalents, and the state of that science in consequence of the mere mechanical facilities from these aids. Consider the unnecessary outlay of time, through the want of concise tables of reference, through having for one fact to read through volumes, instead of consulting indices. The price-books may well exemplify our meaning: before there were such aids, the attention must have been withdrawn from the art, merely to preserve in the recollection what can be much better got by reference. What knowledge of history could one retain, or acquire, without chronological tables? He who consulted a good atlas, might have a better knowledge of geography than one who merely circumnavigated the globe, though the one might devote a day, and the latter a life, to the undertaking. In any other study, every aid that can shorten the labour of the student is diligently provided; in every other profession there are manuals, precedents, and data of every kind. Yet in the profession of architecture, we do not even know a book which gives information, as to the usual routine in carrying out a work, the duties of the architect, and the rates of professional remuneration for various services. Were there such an authority—as there ought to be—universally admitted as such, a week would suffice to give what now there is extreme difficulty in getting at all, and to many, how great would be the time then allowed for higher objects. Gwilt's Encyclopædia, and Bartholomew's Specifications, both seem to have been projected with some knowledge of such wants, yet only aid in supplying them. A good book of precedents, and data connected with the tenure of land, leases, contracts, valuations, forms of proceeding with, and rights of, local boards, forms of notices, and agreements, is equally necessary.

How much may be done by method in imparting information, the pamphlets of the Cambridge Camden Society have shown, and the "Church Schemes," published by the same Society, are also instances of something resembling what we wish to see in many branches of investigation. And how much time would be saved by architects, were there merely a depôt for inventions connected with buildings, as lately pointed out in this Journal? In fact:—we repeat—system and order, are the life and soul of every study, and of the practice of every profession, and every aid which can contribute to them, will prove a proportionate gain to those researches, which really *require* the unfettered energy, the full devotion of intellectual power. He who would lay down a fit course of study for the profession of architecture, would be the author of a national good. We trust we have before contributed something to the knowledge of what architecture is, and of what should be the ingredients of that study.

## THE WELLINGTON STATUE SEEN AS THE COMMITTEE WISHED IT.

SITES FOR MONUMENTS.

THE consummation of the committee's hopes, (the removal of the scaffolding, and waste of a little more money,) seems likely, if any thing in this world can do so, to open their eyes, so long wilfully blinded. Every spar that is taken down makes the monstrous disproportion of statue to arch, the former being looked at as a part of the latter, more evident, and the height and impropriety of the arch as a pedestal merely, if it is to be *so* considered, more glaring. The proceedings here have been so discreditable to us as a nation, in an artistical point of view, that we blush when reflecting on them. How much longer the farce is to be played seems uncertain. It must be much more to the amusement of neighbouring nations than ourselves.

The *Westminster Review* (for April) is strongly opposed to the present position of the group, yet modestly says, "remove the arch rather than the statue;" and suggests "that the arch should be at once pulled down, and its materials applied to some purpose of ornament and utility combined. The site is not a bad one for an equestrian monument, *placed nearer the ground*, and the arch is only an impediment to the carriage way. We would throw the upper part of Grosvenor-place, and a corner of the Green-park, into a square, and place the Duke in the centre, with his back to the eastern front of St. George's Hospital. This arrangement of the ground would give cheerfulness and space to approaches now inconveniently narrow, and would admit of much more pleasing architectural decoration, in the shape of entrance lodges to the parks, than that which has been attempted and overdone in a triumphal arch of misplaced and pompous pretension."

And this is said because, as set forth previously, the writer feels that the arch was intended to receive sculpture and has it not. Surely, the proper course will be to allow the architect to carry out his original design, and to give the arch that amount of decoration which it requires.

The reviewer remarks, as curious, that among all the arguments used for the removal of the statue, the consideration of aspect in reference to *light* seems to have escaped attention, and shews that its principal front, viewed on the north side, necessarily appears as a dark and lifeless mass.

"Although there can be no absolute obscurity on any side of an insulated building, it should be remembered that, during the greater part of the day, every lofty edifice throws a shadow to the north, by which minute decorations are necessarily hidden, or partially concealed. When not hidden, they can seldom be viewed to advantage on the north side, because the spectator, having the sun in his face, is blinded by the glare of light surrounding them.

The aspect of every building or monument, designed for the embellishment of a great city, requires to be as carefully considered as the choice of a position for valuable paintings in a public gallery. Members of the Royal Academy have abundant reason for knowing, that, when a picture is hung between cross lights, or placed, like a window-shutter, between the sun and the spectator, the object of the artist is as much defeated as if the colours were brushed from his canvass; and so with buildings. The architect who may sketch upon paper a cheerful-looking residence, often disappoints his employer by unavoidably giving it an air of gloom, if compelled by circumstances to build his principal front with a northern aspect. It is only by boldness of outline, or deep projecting masses, that a building, standing in its own shadow, can be distinguished at a distance from a bare wall or mound of the same height."

The reviewer thinks that a knowledge of this fact, on the part of the architect of Cologne Cathedral, was the reason why, while he lavished decoration on the south side of the choir, he left the north quite plain.

The real arguments against the continuance of the statue on the arch, need no strengthening; they are incontrovertible, and so far as we can learn, universally admitted to be so by all unprejudiced minds.

## THE DIORAMA, REGENT'S PARK.

ONE of the two new views with which the diorama has opened, namely the interior of St. Mark's, at Venice, is eminently successful; the second, Tivoli, is scarcely so much so. It wants interest, the principal monument of the neighbourhood, the Temple of Vesta, is omitted, and the day-effect is not sufficiently brilliant. The interior of St. Mark, however, painted by M. Dyosse, will well make up for any weakness in the former. This interesting structure is shewn under two aspects, day and night, and the effects are quite marvellous.

"There is no building in Western Christendom now existing of which the interior conveys an impression at all similar to that produced by St. Mark's. As soon as you cross the threshold, you feel admitted into the Byzantine empire. From the resplendent cupolas and apsides above, to the rich and variegated pavement below, the whole is pervaded by the same character of mystic solemnity; dark and shadowy, but not gloomy, and full of complexity without confusion. The gold-grounded mosaics, spread over roof and wall, give to the building the appearance of being lined with precious metal." When the lamps are lighted, worshippers gather round the altar, and the organ peals forth "the Kyrie," the illusion is completed, and you stand in Venice to all intents and purposes.

## DESIGN IN MANCHESTER.

THE manufacturers of Manchester spend about 20,000*l.* a year for French designs and patterns; and yet will not be persuaded to support their own school of design. At the last annual general meeting, the council complained greatly of want of adequate support from their fellow townsmen; and the number of pupils is much smaller than it ought to be. The recent exposition of arts and manufactures, it was stated, had been visited by more than 40,000 persons. Mr. James Thomson, of Primrose, had expressed his intention to present to the school a die for a head-prize medal, now in course of execution by Mr. William Wyon, from a design by Mr. Gibson, of Rome, and had also given a superb set of chalk drawings from antique Roman ornaments, commissioned by him to be executed in Italy, for the express purpose of presentation to the Manchester school.

Mr. Edmund Peel Thompson stated, in proof of the want of schools of design in this country, that within the last nine months, the firm in which he was interested had a sudden and very considerable demand upon them for new patterns. The only limit was time. The firm devoted the whole of their drawing establishment to the production of patterns, but found they could not get a tithe of the quantity wanted within the period. Where were they to go to make up the deficiency? They knew they could not get the required patterns in that town, they could not get them in London, and therefore they were necessitated to send a confidential servant over to France. In the course of a few weeks, he returned with several patterns, and the expense incurred was some hundred pounds. The obtaining of these patterns was the means of giving employment to several hands for many weeks.

Mr. Schwabe said, it was well known that continental nations had long since possessed the advantage of schools of design. There were a great many in France; in Germany, of which country he was a native, education was considered incomplete without a knowledge of drawing. Spain was a country to which he had not been accustomed to look for examples of any kind, yet in Cadiz, a city containing 50,000 inhabitants, with very little trade, with a magnificent harbour but very few ships, he had seen a school of design boasting between 250 and 300 scholars. He thought the neighbouring town of Liverpool would do well to take an example from Cadiz. When in Spain, he visited Barcelona, the Manchester of the continent, and was exceedingly gratified by the school of design there; it contained between 700 and 800 scholars. It was supposed by some persons that the French are gifted with a superior taste by nature, and that we must go to France for our designs. He believed that if Englishmen were properly taught, they would make just as good designers as Frenchmen, and expressed his conviction that if art was properly cultivated in England, we should have no occasion to go to Paris for our designs. On the continent, the schools of design were supported exclusively by the towns themselves, through their municipal bodies.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Munich Art Academy.*—A public notification signed by the Director, de Gärtner states, that—as his Majesty, the King, has resolved on giving to the academy a new organization, more adapted to the spirit of the times (!), to which the opening of new localities has been added; it has become now possible to arrange the plan of art-studies in its perfect completion, and according to the royal orders. The academy thus *renewed*, will open after Easter.

*Amsterdam—Collection of Designs of Old Masters.*—This collection of the late Secretary of State, Mr. Verstolk van Saelen, has fetched extraordinary prices, mostly from indigenous purchasers. A design of Hobbima, realized 3,660 francs; one of Rembrandt 2,976 francs; an Andrea Van der Velde, 2,310 francs; Peter Wouvermanns, 2,004 francs; Claude Lorraine, 1,800 francs, &c.

*Mr. Schinkel's Portrait.*—The features of this Berlin architect, to whom that capital owes its most splendid buildings—and who had risen, not only to the highest degrees of civic honour (being a commander and privy buildings councillor), but even gained the personal confidence of the late and present King of Prussia, are brought before the eyes of his admirers in a worthy, though not splendid form. The physiognomy is eminently German—thinking, sensible, and stern. It is drawn and lithographed by Mr. Beyer, of Berlin, in a creditable manner.

*Futility of Modern Structures.*—The new synagogue *erecting* at Mayence by the architect Opfermann, shewed, some months ago, signs of *decay*. Parts became ruinous, and last month the whole of the walls, which had risen to a height of forty feet, were to be taken down (there is no proper term extant for *such* operation) to the very foundation, and the whole place presents now the appearance of a modern artificial ruin. As the authorities had stipulated some stringent and business-like clauses in the agreement, the architect and contractor have to share the loss.

A similar case, of greater import, has also just taken place at Hanover. The Secretary of War had pressed hard on the Legislature for voting 500,000 dollars towards the building of a new armoury, stating that the *old* one threatened destruction. So the money was voted, and the building begun. But no sooner had it somewhat proceeded, than seven vaults tumbled down, and others will probably share the same fate.

*Paris Paving.*—According to official surveys, just published, the paving of that city comprises 3,321,000 square méters; of which 1,083,000 méters are maintained at the expense of Government, and 2,238,000 at that of the municipality. The amount of traffic may be judged from the number of carriages, which is 80,000.

*American Antiquities.*—Mr. Ludewig of New York, has of late laid before the American Ethnological Society of that city, some interesting details on *Palenque* remains and sculptures. Mr. L. has found in the National Gallery of Washington, some stone fragments covered with hieroglyphics and other sculptures, which had hitherto escaped notice. They have been drawn in natural size by Mr. Goldsborough—and turn out to be the complements of those interesting tablets, represented by Mr. L. Stephens in his fine work on central America (Vol. II., p. 345), and which had been hitherto unexplained, as they were incomplete. They combine, moreover, sculptured figures *with* hieroglyphics—and may, therefore, be the incipient point whence an American Champollion may inchoate his research. Mr. Ludewig calls the character of these stone tablets *toltegue*, to distinguish them from those hieroglyphics used in Mexican MSS.

*New Disaster.*—The great Berlin Opera House has nearly shared the fate of those of Karlsruhe, Pesth, and Stuttgard. It became here also quite evident, that not sufficient doors are extant for the sudden egress of such multi-

tudes—and that "it is no use to *open* the door, after the steed is stifled." The impression on this topic was so powerful at Berlin, that the king's architect, Mr. Langerhanns, was induced to issue an especial report for the satisfaction of the public. We cannot omit to record, that the Prince of Prussia, heir to the throne, was amongst the first to extinguish the fire, and that his royal highness wounded his hand by so doing.

*'National' Architecture.*—"Graffenries and Stürler's Swiss Architecture (*Schweizerische Architectur*), or Selection of Wooden Houses from the Bernese Oberland,"* is passing through a second edition. These Swiss architects have made extensive studies of the habitations of the Bernese *Hochalpen*, which, it is to be regretted, become every day more scarce, and make room for those would-be city structures of stone, not congenial to the damp and moist atmosphere of Alpine nature. The authors further remark, that these structures are so ingeniously and *cunningly* planned, that they may serve as models for every modern building, where great convenience and comfort are contemplated. The plates give the elevations and ground-plans of these Alpine houses, and may be found useful.

*Athletizing of the Working Classes.*—Dr. Köchlin delivered of late an interesting lecture on the above subject in the Dresden *Turn-Verein*, taking for his theme,—"What can the moderns learn from the mode of education pursued by the Greeks and Romans?" We are precluded from devoting to the subject more space than saying—*very much indeed!*

*Cemetery of the City of Nüremberg.*—Few towns of equal size can boast of a cemetery containing the ashes and monuments of so many great men as that of St. John's, in the once free city of Nüremberg. Here repose *Albrecht Dürer*—once an ornament of this country—Hans Sachs, the shoemaker and thrifty poet; Michael Behaim, the cosmographer; Baumgärtner, the religious reformator: all cœval sons of a great time. Of minor notorieties, Harsdöfer and Birken, the rhyme-playing Pegnitz shepherds; and, of a later period, *Grübel*, the nature-poet, may be mentioned; the latter placed high even by Goethe. He was by profession a whitesmith—a mechanical genius, whose works were even valued in Italy, whilst he also left three volumes of pretty poetry.

*City Embellishments, Paris.*—The common council have in their last (March) sitting decided on the enlargement (by way of expropriation) of the partof Rue Coquillière, comprised between the Place St. Eustache and Rue J. J. Rousseau. They have equally voted the prolongation of the Rue Lafayette, at a breadth of 16 mètres, comprising the limits of the Rue Montholon and that of the Foubourg Poissonière. The common council have also voted 265,000 francs for the building and repairing of the great sewers under the Boulevards extérieurs, between the Barrières Belleville and Ménilmontant,—under the prolongation of the Rue Mouffetard to the Rue Pot de Fer, and the Rue de Roches, and others. The introduction of a new singing method in the city schools and other similar works of public utility, were also adequately encouraged from the civic treasury.

* Bern, 1847. Thirty-two plates, with French and German text. £2. 2s.

## RAILWAY JOTTINGS.

The anomalous want of a proper fulcrum in railway locomotion appears, from experiments at Maidenhead, reported by the *Morning Post*, to be at length in the fair way of ultimate obviation under the auspices of the patent of Mr. Galloway, C.E., for horizontal driving and biting wheels adhesive to a central rail, whereby, or by some such apparatus, there appears to be a fair prospect of the attainment of the many obvious advantages of a proper fulcrum, such as the ascent and safe descent of very steep gradients; the great increase of general power and speed, mutually convertible, by the substitution of adhering wheels of larger or smaller diameter, with varying adhesion, according to the power or speed required; the consequent keeping to time and prevention of accidents; the obviation of much tunnelling and cutting, and the consequent multiplication of railways and cheapening of traffic, &c., &c. It would be too sanguine, however, to anticipate the accomplishment of so many advantages without further proofs of the efficacy of the patented apparatus, especially in such circumstances as might arise in frost and thaw, greasiness on even the new rail in steep gradients, &c.——The Eastern Counties Company have started a fourth class of open passenger carriages at one halfpenny a mile.——The London and Brighton are competing with the South-Western, especially in affording opportunities for cheap travelling during the Easter holidays, when double journey tickets are charged as single fares only, with an interval of five days between the departure and the return.——The Andover station of the Basingstoke and Salisbury line is to be forthwith built: and many men have been employed in opening and working a clay pit in Wherwellwood, at good wages, clay being much wanted nearer the line, where it is scarce and expensive. Sawyers and carpenters also are busy with sheds and workshops.——The Great Western Company have caused experiments to be tried with a tire fitted on a new principle, which is said to have stood the severe test of being cut in two places, and afterwards run at a high speed with heavy loads, without further change.——In order to open the way for certain alterations in the approach to the town of Wolverhampton, on the Stour Valley line, which had not been contemplated by the company's Act, it is understood that a sum of 2,000*l.* is to be given to the South Staffordshire Hospital as a "consideration." The directors of the Preston and Wyre line, says a Manchester paper, have liberally granted a free passage along their line to all persons going to Fleetwood to lecture at the Fleetwood Mechanics' Institution.——A manufactory of locomotives has been established at Leith.——A plan for carrying the Glasgow, Paisley, Kilmarnock, and Ayr railway across the Clyde at Glasgow is described by the *Caledonian Mercury*. It consists, says our authority, of five lofty arches. Two of them span the streets on the right and left banks of the river. Two small arches cover the footpaths. Two of the large arches span the Clyde, and one the green bank from the edge of the Clyde to the footpath. When completed it is likely to be considered one of the wonders of the west.——The Irish Great Southern and Western's 48 miles extension to Maryborough has been experimentally opened. The great viaduct over the river Barrow is the principal object of interest upon this new portion of the line. It is 496 feet in length, and 25 feet in breadth, being supported by ten piers four feet wide each, the spans between the piers being 50 feet each. It is formed of four continuous internal lattice-beams, which support the roadway—one rail being placed over each of these beams and two internal lattice-beams which support the end of the flooring, and form the hand-rail. There are only 200 tons weight of iron in the whole bridge, and about 60,000 rivets. The material for the construction of this line is found *in situ*, and could not be better suited for railway purposes; the gravel hills or escars, quarries of the finest limestone, being all ready to the hand of the contractor, Mr. Dargan, for building and ballast.——At a meeting of the Great Western Midland (Irish) Railway, held week before last in Dublin, Lord Dunsandle, the chairman of the company, made the important announcement that Government is at this moment deliberating on the extent to which they will, by grants of the public money, assist the already incorporated Irish railways.——By the Havre and Paris line, *viâ* Rouen, lately opened throughout, a journey which, little more than two years since, occupied six-and-thirty hours, can now be accomplished with ease in six hours and a half. And thus too, the time distance between the first and second grand metropolitan centres of the world has been reduced to twelve hours only. A few cursory remarks on the principal works constructed on this great Parisian highway may not be here inappropriate, although some of them have been already noticed. The Havre station, comprising a passenger station, a goods' station, with immense warehouse sheds, and engine sheds, carriage sheds, and coke-ovens, together with accommodation ground attached to them, covers an area of 36 English acres. The passenger station abuts on the Cours Napoleon, from which it is separated by an iron railing. The goods station is one of the most commodious of the kind ever constructed in Europe. From this station it is calculated that the company will carry, when the line is in operation, no less than 1,000 tons of merchandise a day. There is nothing remarkable on the line until we reach the Mirville viaduct, which is composed of forty-eight arches across a deep valley. The highest of these arches, constructed of brick, is 32 mètres and a half, from the level of the rails, to the surface of the ground. The foundation is of hard clay; but one or two of the piers are on a concrete. There is no other work of art of importance until we reach Pavilly, where there is a short tunnel. Shortly after this we reach the Barentin viaduct, crossing the valley of Barentin. It has twenty-seven arches of 50 feet span each, and describes a radius of about half a mile. The highest arch is 100 feet from the level of the rails to the level of the ground. Then comes the Pissy Poville tunnel, of 2,200 mètres in length. After emerging from this tunnel, the line runs through a deep cutting. The Deville tunnel opens within the Octroi of Rouen, and the line continues a little above the Rue Renaud, until it enters a tunnel which passes under the cemeteries of St. Gervais and St. Maur, a length of 1,184 mètres. The traveller then emerges into light, and arrives at the Rouen station. To reach the Paris line at Sotteville there are three tunnels to pass through. The tunnel under the boulevards Beauvoisin and St. Hilaire, 1,500 mètres in length; a small one under the Rue des Sapins, 80 mètres; a viaduct of four arches across the rivers Robec and Aubette, in the valley of Dametal; a slight embankment; and a tunnel of more than 100 mètres under the Mount Ste. Catherine. From the foot of a wooden bridge over the Seine the line passes on an embankment, describing about half a mile radius, bounding one of the finest race-courses in the world, the plains of Sotteville, and forms a junction with the Paris line.—— The *Journal des Débats* published a letter dated Leipsic, 27th ult., mentioning that during the last year there were conveyed by the German railways 16,412,229 travellers, and 31,833,939 quintals of merchandise, which produced a sum total of 54,646,232f., and represents an increase of 16,431,208f., that is, 43 per cent.——The *Augsburg Gazette* of 25th ult. states that the house of Rothschild had offered the Saxon government sufficient money to complete the railways throughout its dominions as quickly as possible. It is proposed that they should be completed in the month of August, 1849. The terms of the loan are said to be most advantageous for the Saxon government.

The Morgan Testimonial Competition.—We have received the following letter:—"Dear Sir: Having commenced the statue of Sir C. Morgan, which was assigned to me by the *unanimous* voice of the subscribers, as appeared in the London and local papers of Dec. 26th, 1846, I felt myself called upon to inquire whether the paragraph which appeared in The Builder of March 27th, was founded on truth. I have this day received information on the subject, and am authorized to state "that the model referred to was publicly exhibited with the designs of every other competitor in the town-hall at Newport." In the absence of Mr. Hellicar, who has been some time on the continent, and is not expected home for three weeks, I have to request that you will contradict the statement of the 27th of March in next week's Builder, as having no truth whatever in it.

Very truly yours, J. E. Thomas.

Belgrave-place, April 3rd.

Without in any way impugning our correspondent, in whom we have perfect confidence, we must be permitted to say that Mr. Marshall's assistants still resolutely assert, that the model had never left the case. If Mr. Thomas of his own knowledge asserted the contrary, we should consider the question settled, but the present denial, coming from a third and unknown party, is scarcely so conclusive. For our own parts we are quite willing to hope that the packing was so well done as to deceive the sculptor's workmen and lead to the impression they entertain.

## INTERIOR OF THE NEW OPERA HOUSE, COVENT GARDEN.*

MR. B. ALBANO, ARCHITECT.



### OF REGULAR GEOMETRICAL FIGURES, AND THEIR USE IN ARCHITECTURE.

SIR,—Feeling much interest in the occasional observations on beauty in architecture in your very useful journal, and wishing that the subject was more clearly defined, I beg to direct your attention to an article in your volume of 1846, page 620, entitled "Principles of Symmetrical Beauty," read before the Society of Arts, by which Mr. Hay maintains that the primary elements of all symmetrical beauty are centered in *the square, the equilateral triangle, and the pentagon*. Now, recollecting having read in the *Athenæum*, June 24, 1843, a review of one of Mr. Hay's works, setting forth that "there are, as in sound, so in form, only three simple primitive homogeneous parts,—*the circle, triangle, and square*," I am somewhat surprised at his now substituting the *pentagon* for the *circle*, without any reason being assigned. The equilateral triangle, square, and pentagon, have, however, been set forth as the three primary figures before, and this suggestion Mr. Hay has evidently availed himself of. In the "Natural system of Architecture as opposed to the artificial system of the present day," by Mr. W. P. Griffith, p. 29, we have the following remarks:—"In treating of forms, keeping symmetry and proportion in view, as in architecture, *all figures used must be regular, with equal sides and angles*; the Greeks on this account selected *the three simple or primary figures, viz., the trigon* (*triangle*), *the tetragon* (*square*), *and pentagon*, as their primary numbers or units. The term simple or primary is used to denote these figures as original, because they cannot be separated into others, or because they are not compounded of others; whilst compound or secondary figures are multiples of the former."

While upon this subject I may observe, that in the above-mentioned work, p. 36, a certain

* See page 161 in present number.

alternating principle is set forth as applied in producing the orderly diminution of pinnacles, which seems to correspond with the "Rules for constructing a pinnacle," as given by Mathias Roriczer in 1486, and now first published in the last number of the "Journal of the Archæological Institute." Dry and uninteresting as this subject may appear to many of your non-professional readers, I feel assured, from the numerous evidences now being brought to light, that some important points on the subject of beauty in architecture will be substantiated. I was particularly struck with the window from Herne Church, engraved in your present volume of THE BUILDER, in which the three primary figures alluded to completely guide the formation of the geometrical tracery.—Yours truly, A. B.

## THE BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND.

(CATHEDRAL OF ST. MUNGO, GLASGOW.)

UNDER this title, Mr. R. W. Billings and Mr. Burn, the architect, have commenced what may be considered a work of national interest,* strongly entitled to warm support. The architectural antiquities of Scotland have been disregarded, and in many cases are passing away without adequate record. We may hope now, however, that the want will be most worthily supplied, and a book produced that may stand on the same shelf with Britton's "Cathedral Antiquities," and "Architectural Antiquities," of England. The abilities of the authors are well known, and the way in which the first number of the work has been produced, affords sufficient proof of the zeal with which they have entered on the task.

The present number contains four engravings of Glasgow Cathedral, executed by Le Keux, and two woodcuts. We give one of the latter, a view in the crypt of the same cathedral, and extract the following from the letter-press:—

"At the northern extremity of the city of Glasgow, on an elevated and solitary spot, to which the noise of the busy swarming town scarcely penetrates, stands the Cathedral of St. Mungo, the noblest unmutilated specimen of ecclesiastical architecture in Scotland. To reach it the traveller has to pass through a line of sordid filthy streets; and its first appearance is not inviting, from the unfortunate predominance of the north-western tower or belfry, the upper portion of which is the work of a comparatively late period. It is from a point near the north-western extremity that the full effect of the building is most satisfactorily felt. Its predominant characters are height and length, and the details are so arranged as, with wonderful felicity, to aid these features. The roofs, both of the aisles and of the central departments, have a very abrupt slope, and the windows, in the style generally denominated the early English, are narrow and lancet-shaped. The transept projects so little beyond the aisle, that the building scarcely presents the usual cruciform ground plan, and thus the long perspective is scarcely broken. A considerable descent of the ground towards the east adds greatly to the elevation of the choir and to the general loftiness of the structure; and if there be any portion of it which does not aid in this prevailing character, it is the spire, evidently of a later date than the rest of the building, and characterised by the canopied windows of a more florid style of architecture. The individual parts of the exterior are not profusely ornamented; but the windows, buttresses, and gurgoiles are so numerous as to impart great richness to the solemn dignity of the old undecorated Gothic. The silence of the place, and the multitude of tombs with which the old grave-yard is paved, are in full harmony with the character of the edifice. Near its eastern extremity, in a deep hollow, runs a stream, and on the opposite bank rise, tier above tier, the hundreds of tombs of the modern Necropolis, appearing like a vast and indefinite continuation of the original grave-yard, and certainly seen to greater advantage through the uncertainty of distance, than on a nearer approach. The southern side, exhibiting some details of a later style of architecture, is inferior in simple grandeur to the northern; but a small low edifice, with groined arches, intended apparently as the basement story or crypt of a continuation of the transept, will strike the stranger who climbs up and peeps through its only window, with the richness of its interior decorations. A feature of the exterior that must not be omitted is, a line of massive gurgoiles, of very expressive character, consisting each of a monstrous open mouth, on the lower jaw of which a grotesque face is represented in bas-relief.

VIEW IN THE CRYPT OF GLASGOW CATHEDRAL.



Entering by a wide door on the south, the first object likely to be noticed is the rich screen separating the choir from the rest of the building. The gloomy low browed arches to the right lead to the crypt, which the reader will remember to have been so powerfully described by Sir Walter Scott in Rob Roy, as a place of worship in the early part of the eighteenth century. It occupies the whole area beneath the choir and the chapter house, and, as the level of the ground declines in this direction, a considerable mass of light passes to the interior. It is quite insufficient, however, to detract from an intense feeling of solemnity, to which, at the same time, the luxuriance and symmetrical solidity of the groined arching impart a sense rather of admiring awe than of gloom."

It is desirable that the letter press in future numbers should be fuller and more complete.

* Published by Messrs. Blackwood, Edinburgh; and 35, Paternoster-row, London.

## NOTES IN THE PROVINCES.

THE Guildford carpenters have almost all struck work for an advance of wages,—a demand which very few of the masters have as yet complied with.——A few days since, in opening a passage in the Canterbury precincts, long closed, a stone archway was discovered, which has since been fitted with a new oaken door of communication from the deanery to the cathedral.——The Dock Company, says a Southampton paper, have contracted for, and already begun the construction of a second dry dock, to be completed in November next. Messrs. William Cubitt and Co., the builders of the company's first dry dock, were the successful competitors, the amount of their tender being little above 17,000*l.*; that of Messrs. G. Baker and Son, the contractors for the new custom-house now so near completion, was, it is said, nearly 18,000*l.* The new dock, though of comparatively small cost, will almost equal the present one in capacity. It is to be 250 feet in length upon the blocks, and hold two 500 ton ships at once.——The foundation-stone of a Roman Catholic Chapel, says the *Bristol Journal*, has been laid at Thurnham. 2000*l.* were given by Miss Dalton, of Thurnham Hall, towards its erection.——The church of St. James, Bath, is to be enlarged, and a tower added by the city architects, at a cost of 2,000*l.*, which has been subscribed for the purpose.——The first stone of the chapel to be erected at the Church of England Cemetery, Birmingham, was to be laid by the Hon. Frederick Gough, on the 6th instant.——In consequence of combinations among the workmen, observes the *Birmingham Gazette*, the ironmasters of Wales have also united in resistance. Wages are said to be 40 per cent. higher than they were two years ago. Where a strike takes place, the masters agree to assist each other with iron at reasonable terms, to complete their orders, and they have resolved not to engage any who cannot produce a written discharge from his last employer.——The first stone of the Roman Catholic Church of St. Marie, Sheffield, was laid on Thursday week. The site chosen is partly on the ground occupied by the old chapel.——A memorial praying that the ancient abbey of St. Albans be converted into a cathedral church, and the see of one of the new bishops be established at St. Albans, has been addressed to government by Lords Salisbury, Clarendon, Verulam, Dacre, Cowper, and other noblemen and gentlemen.——A subscription list has been set afloat for the collection of a sum of 1,225*l.*, necessary for the purpose of reseating with open oak seats, and of putting into thorough repair and restoration, the church of St. Mary, Bottesford, Leicestershire. Rates to the amount of 460*l.* have also been granted in aid of the same good end, which is said to be now one of actual necessity.——The Fen office in the Isle of Ely has been improved by a new flight of steps and stone entrance, erected by the Duke of Bedford.——The formation of a park on the east side of Hull has been suggested.——A site for the new Hull Club House for the bankers, merchants, &c., has been offered and accepted.

The building is to stand on the west side of Trinity-house-lane, and is to cost four to five thousand pounds.——The cases of the arches of St. Mary's chapel ruins, at Doncaster, have been laid bare, and the ruins have thus, it is said, been made to present a very beautiful appearance. The order for their final demolition, however, has been given, and notwithstanding all that has been said and done, no one has had the taste or spirit to remove even a portion of the remains for preservation.——The new church of Holy Trinity, built by subscription at Walton Breck, was to be opened, according to the *Liverpool Mail*, on the 4th instant.——The new port of Birkenhead was opened on Easter Monday. The shipping accommodation which the two docks will afford will be equal to that of the Prince's Dock at Liverpool. Near these docks are the extensive warehouses of the Birkenhead Dock Company, twelve of which, each capable of holding 4,000 bales of cotton, are already completed; forming a substantial mass of mercantile buildings, constructed by Messrs. Hilton and Morris.——The subscription for the erection of an Athenæum at Bolton now amounts to nearly 5,000*l.*; and a general meeting has been held to take the necessary steps for proceeding with the building.——A project is entertained, says the *Bradford Observer*, of erecting a school and school-house in the populous village of Queenshead. About 600*l.* are wanted for this purpose, and a bazaar was to be held at Halifax, on the 9th instant, in aid of the project.——A piece of ground, called "the five-acre field," for a new burial-ground to Huddersfield, has been presented by the guardians of Sir I. W. Ramsden; and the mother of this youth has even most liberally offered to build a church on the site.——The Leeds new gaol is now receiving its last coat of paint, and on two days of last week it was visited by 2,463 persons. It is said to be an "imposing" edifice, "second to none of its class" in the empire.——The mason's strike, at Sunderland, terminated on Monday week before last, in consequence of the whole of the masters having acceded to the full demands of the journeymen, namely, twenty-seven shillings a week wages, and to be allowed to leave work at four o'clock on Saturday afternoons, instead of five o'clock, the hour from almost time immemorial.

## THE GAS MOVEMENT.

NOVEL PROJECT.

On Tuesday week before last, a special meeting of the Liverpool council was held, for the purpose of considering the merits of the two local gas bills now before parliament. Sixteen petitions were presented from the different wards in favour of the Guardian Gas Company's bill. On a motion that the report of the Lighting and Health Committee be adopted, and an amendment, in all respects to the contrary effect, a discussion followed, during which Mr. Bennett stated, on the part of the Lighting and Health committee, that it was because the committee were "rather dissatisfied" with the report and estimates of Mr. Cox, the engineer to the Guardian Company, and "did not believe it possible" for that company to make good gas and sell it at the proposed price, namely, 3s. 8d., that they were "in a great measure induced to come to their present determination," to recommend the council to bind themselves to oppose the Guardian bill, and to persuade the two present companies to amalgamate; the latter a measure no less certain, as was remarked, to encourage and establish monopoly than the former was to suppress the only popular and promising prospect of cheap gas, and to crush the very parties to whom the community was already admittedly indebted for the successive reductions already made by the two old companies in the price of their gas, from 7s. down to 4s. 6d. per 1,000 cubic feet. Mr. Parker could see no right reason why the council should "fight the battles" of the two old companies; and Mr. Aiken, while he believed that the people of Liverpool at large were in favour of the new company, thought the time was come for the corporation to purchase the works of both the old companies, and to supply the town themselves with gas, as they proposed to do with water. A memorial to this effect was also presented from the "House-owners' Guardian Association," and the noble precedent at Manchester was appealed to.

Mr. Rathbone, in order to show that the price of gas could be reduced (below 4s. 6d., or down to Mr. Cox's estimate, 3s. 8d.), "produced a parliamentary document, from which it appeared that a population of 40,000 was supplied with gas at 3s. 2½d. per 1,000 cubic feet," coals, in the locality alluded to, being 10s. per ton. Mr. Danson pointed attention to the fact, that the Guardian Company, by compelling the old establishments to reduce their prices from 7s. to 4s. 6d., had been the means of effecting a saving of no less than £36,000 per annum to the inhabitants! And he might have also pointed attention to the consequent fact, that these two establishments must have therefore been previously in the habit of coolly pocketing this very 36,000*l.* per annum themselves, over and above all their present more than sufficient profits!! He further observed that the saving thus effected by the Guardian Company, in the mere expense of lighting the street lamps, would enable the town to set up no less than 500 additional lamps,—an accommodation much wanted, he said, in the lower neighbourhoods of the town.

The notice by the new Leeds Gas Company of their intention to reduce the price of their gas from 6s. to 5s. is said to have been either followed or accompanied by a notice of the old company to the same effect.—A general and hopeful reason, which might now with equal force be urged in almost all quarters, in favour of the reduction and equalization of the price of gas, is said to have been lately advanced by the Gas Company itself of Salisbury, in explanation of their intention to carry out a reduction of 2s. per 1,000 cubic feet,—namely, that "since the opening of the railway, coal can be purchased 20 per cent lower than formerly." The inhabitants of Winchester are beginning to open their eyes to the fact that "a comparison of the prices charged at Winchester and Southampton presents a difference in favour of the latter for cheapness that the prices of the raw material at the two towns does not account for; and the only conclusion we can come to is, either that the Southampton Gas Company are getting too little, or that the Winchester company are getting too much."— The price of the article at Winchester, twelve miles only from Southampton, is 100 per cent. higher, although the price of coals at Winchester is only 13 per cent. higher than it is at Southampton, the *reason* or *necessity* of which, even with the assistance of *Coke*, must form a very difficult proposition for the Winchester Company to solve.

A project, similar to one some time since spoken of in The Builder, but originally started about a quarter of a century ago, when Sir H. Davy, Professor Brande, and others, took an interest in its realization, has been recently revived, viz., a "Joint Stock Company, to be called The Silurian Chemical Works, and to be established at Newport and Cardiff, a branch at each place, with the object and intention of purchasing and working up refuse and other small coal, to the extent of 2,000 tons per day, or 600,000 tons per annum, into coke, tar, ammoniacal preparations and gas; and for conveying the latter product, in a perfectly purified state, from Cardiff to London, on a route *vid* Gloucester, &c.; and also, for enabling the directors of the Great Western, and other railway companies, to effectually, and yet economically, light the whole of their roads and branches with gas—so as to prevent, as far as possible, all accidents which may arise from want of light in the dark and dreary seasons of winter. The capital of the proposed company to be one million sterling, in transferable shares of 40*l.* or 50*l.* each, with half-yearly dividends; and the whole concern to be managed by a board of direction, to be appointed in the manner usual with joint stock companies, and to be held alternately at Newport and Cardiff."

Since the above was written, a still more remarkable project has been announced, viz., that of the "Cardinal and Central Gaslight, Ventilation, Animal Charcoal, and Carbonaceous Manure Company," provisionally registered, in 75,000 10*l.* shares, and based on Radley's patent for making gas from bones and animal matters hitherto unproductive for purposes of general illumination. Gas, it is declared, of quality superior to any ever made in the metropolis, can thus be produced in immense quantities at a cost of less than 4d. per 1,000 cubic feet! If there is no mistake about this announcement, here we have the prospect of a speedy realization of some of those "financial wonders" in the future history of gas which we ventured lately to anticipate. Doubtless the value of the products will immensely reduce the cost.

## DURHAM CATHEDRAL.

Sir,—In your paper of the 20th inst., is a notice of the recent alterations in Durham Abbey, from the *Athenæum*, from which any stranger would infer that some real improvements are going on. Some of the alterations, such as the new pulpit, the font, the restoration of the altar-screen, and the removal of the classical screens, are indeed good, though it may be matter for grave consideration whether it was wise to remove the old screen before the nature of a new one was fixed on. But the following brief statement of facts may place the other alterations in a different light.

As to the galilee. When the galilee was formed by Bishop Pudsey, the west entrance to the cathedral became useless, so Cardinal Langley, when altering this part, placed his tomb and altar in the doorway arch, and blocked it up with a florid reredos-screen, which was curiously painted and gilt. It remained until last year, and was very interesting to antiquaries, as being the last remnant of the many wooden screens formerly in the building, and formed a fitting accompaniment to Langley's tomb. The galilee had a charming effect of seclusion and quiet, which was utterly destroyed when the screen was taken down and concealed in some out of the way corner. Since then, the arch has been fitted up with doors fronting the nave (in a part of the arch where doors could never be), but cannot be used as an entrance to the galilee, in consequence of Langley's tomb interrupting access. It is neither a doorway nor connected with Langley's chantry, which has lost much interest and completeness, nor is there an uninterruped view as stated, for the sham doors prevent it. Is this an improvement?

About the same time as the above *restoration* (?) was committed, the backs of some of the side stalls in the choir were taken out, and curious pews now project behind, completely into the side aisle, obtaining room at a very serious sacrifice of all ecclesiastical propriety. Moreover, the *Durham Advertiser*, a week or two back, stated, in a notice of the intended removal of the organ (which has now taken, or is taking place), that "The end stalls will, we understand, be thrown back, so as to make more room in the choir." What is meant by this ominous sentence I know not; but if it means that the stalls are to be advanced into the fine open central tower, there cannot be two opinions on such a barbarity.* Are these *improvements?*

As to additional room, it very seldom happens that any is really wanted; sixteen or twenty persons form a very good every-day congregation. I may add, that a goodly proportion of the Durham inhabitants are much opposed to the vandalisms going on, and agree with me in the above remarks. Is the spirit of Wyatt for ever to rest on this devoted building? Why cannot there be an architectural society for the county of Durham?

I am, Sir, &c.,
Will. Hylton Longstaffe.
Darlington, 27th March, 1847.

New Roman Catholic Church at Brecon.—A new Roman Catholic Church on a style of splendour is forthwith to be commenced in the town of Brecon, South Wales, a very large sum of money having been subscribed for that purpose by the leading families in the principality, both Protestant and Catholic. The new church will be in the Gothic style of architecture, says the *Morning Post*, and the foundation-stone will be laid in the course of the first week in May.

* I am aware certain cathedrals have the stalls in the tower as well as the choir, but they cannot for a moment be compared in effect to those with a clear lantern tower; and where there is room, let not such a bad precedent be copied.

## CONDUCT OF COMPETING ARCHITECTS.

Sir,—In a recent article you say "Nobleness of heart, high feeling, integrity, were expected in olden time from the architect." Listen. A competition is in the market. Behold what a stir there is in the architectural hive; how they rush to and fro, tumbling one another over; how they jostle and struggle and wriggle. What is all this? One would expect to find these men in the secret recesses of their dwellings, studying, arranging, and calculating on the subject-matter. What is it they do? What vain thing do they imagine? They are *canvassing for votes*. Yes, these noble, honest, honourable men, are seeking votes for designs, of which no interested party in common justice should be cognizant. Is that a competition in which the man is actually prechosen by his preponderating interest? It is a farce, a wicked deceit; and what mean, unknown, underhand beings, act thus? Who be they, that we may hold them up to execration, and lash the rascals naked through the world.—Alas, vainly you seek among the crowd who struggle for the dear life, for wives and children, for actual food. Robes, Sir, and fur gowns hide all, it is among those whose names are highest in their calling, who *have* wealth and station, and know not want; it is these, who backed by their party, thrust the struggling wretch back into the kennel, who canvass and succeed; these are those noble, honest, honourable men, who so nobly, honestly, honourably, uphold the integrity and respectability of our professional name. Why, then, should we complain of the opinion in which we are held, when such is our shameful practice? Oh, weep, weep for the nobleness of that art, which Michael Angelo, the haughty; Raffaelle, the noble; and Palladio, the honest; served in all honour, for which the cloistered holy man, the upright artist mason, yet receive praise and place.

Go forth in battle against this crying evil, this wretched farce of sealed competition; let no false delicacy prevent your speaking truth—speak, and spare not. Shew up its degrading influence, upon the employer and contractor—all to blame—and receive the heartfelt thanks of those at least to whom the character of noble, honest, honourable men, is still dearer than success. Your hint concerning the Army and Navy Club competition draws forth these remarks.—I am, Sir, &c.,

J. B. Waring.

36, Ormond Chambers, Great Ormond-street.

P.S. Can you not prevent the destruction of St. Benet's Church? Not the slightest memorial of Sir C. Wren should be lost. A man who will soon be appreciated as the only one who ever understood the application of the Italian style to English edifices.

## COMPETITION PLANS.

Sir,—The high character which your journal possesses, and with such good reason, on all subjects connected with the architectural profession, induces me to refer to you on the following points.

I suppose the case of competing designs sent in for a building of considerable extent, in which the requirements are many, and the difficulties of the site considerable, both as regards the form of the ground, and also the obtaining of light, the opportunities of which are circumscribed by the high walls of adjacent houses.

Suppose that of the designs submitted, there are three classes.

1st. Designs of which the plans of the interiors are well arranged to suit the purposes of the building, but their elevations, or exteriors, not so handsome as others.

2nd. Designs of which the elevations are more handsome than the first, but the interiors not so good.

3rd. Designs not so well arranged internally as the first, but better than the second, and with elevations better than the first, but not so good as the second.

Supposing three such designs, which ought to be selected as the one to be preferred?

Some may say without hesitation, "the middle class," which partakes (in part) of the advantages of the two other classes. But if that were chosen, we should have a design of a building confessedly inferior *in some points* to many of the rejected designs.

In such a case as I have supposed of competing designs, the real point for decision appears to me to be this—what is it which most essentially constitutes that which a building ought to be? Is it the arrangement of its interior, or the architectural proportions and pleasing effect of its exterior elevation?

May I ask the favour of your opinion on these points, or that at all events you will have the goodness to insert this letter, which will probably have the effect of drawing forth some remark from other correspondents, or from some of your able contributors.

I am, Sir, &c., A. N. C.

*** With that view we insert the letter. *En passant* we may remark, that every case should be judged on its own merits, with especial reference to the published instructions. If we may venture on that dangerous ground, a general principle, we would say, that the design which fully supplies the requirements advertised, with the greatest architectural skill and taste, consistent with the instructions, is entitled to be selected. In the case of a club-house, for example, accommodation *with* beauty is the great requirement; in the case of a public monument, perhaps, beauty alone. To carry the argument to absurdity, it may be remarked, that if when a man advertised for the best design for a house, he received one ordinary design, that could be soundly carried out to meet his views, and one, however beautiful, design for a church or monumental cross, his consideration would of course be due to the first rather than to the latter.

## THE BRISTOL IMPROVEMENTS.

Messrs. J. M. Herbert, barrister-at-law, and Ambrose Poynter, official referee of metropolitan buildings, the surveyors appointed by the Woods and Forests to make inquiries in Bristol respecting the proposed Act for regulating buildings and party-walls, and for improving the city, have reported thereon, and by order of the Commons their report has been printed. The following is an abstract of the most interesting portion of it, relative to the proposed improvements, in the carrying out of which, as we have already slightly noticed, the corporation has entered into a friendly contract with the rate-payers, not to proceed further, until they shall have again considered the matter at two meetings of council, to be held a month apart, after the 24th of June, 1848.

The most important movement in contemplation, is the projected street from Temple-street to the railway terminus, necessary to accommodate a traffic in which, on an average, 2,000 passengers arrive and depart daily by the Great Western railway alone. The approach, to be called Victoria-street, is proposed to be run in a straight line from the terminus to Bristol-bridge, with a width of 65 feet, but the council for the present have limited the project to that portion which extends from the terminus to its junction with Temple-street. This appears to the surveyors to be a serious defect in the plan, and they are of opinion that it is in the highest degree desirable that the bill should provide for the whole scheme at once, and that as speedily as possible. The opening of Victoria-street, they observe, is no less desirable on sanatory and moral grounds, than as a public convenience. The buildings to be removed are, with some exception, "of the worst, meanest, and most ruinous description, without sewerage, huddled into confined alleys, and inhabited by the dregs of society." The outlay for the present portion of the plan is estimated at 24,000*l.*, and the return from frontages, &c., 11,000*l.*, causing an expenditure of 13,000*l.*; while the entire scheme would require 84,510*l.*, and produce 44,220*l.*, causing an expenditure of 40,290*l.*

The next improvement consists in the widening of Bristol bridge, by throwing out a new footway on corbels, which the surveyors think should be done on both sides. The widening and improving of Limekiln-lane, and Hotwell-road, is the next in importance, and is also recommended to be carried out. The widening of Clifton-place by the formation of a direct road, on Colonel Worrall's plan; an improvement at Park-place, to complete the communication between Bristol and Clifton-road, by way of Woodwell-lane, &c.; the improvement of Silver-street by the removal of two houses, and hence the continuance of the line of Bridewell-street; and the raising of the roadway to diminish the declivity at Redcliff-hill, are all favourably reported on; but the proposal to form a new street from Broad-street to Nelson-street, and one from Wine-street to Ciderhouse-passage, forming a junction with the former, is considered to be of more doubtful utility, although intended to open a more direct communication from the northern vicinity of the city to the railway terminus, and in other respects advantageous, by clearing away a bad and crowded neighbourhood in the very heart of the town.

## HONEST BUILDING.

### SOUTH STAFFORDSHIRE HOSPITAL.

Sir,—Being in Wolverhampton a few days ago, I looked round the building now erecting for the South Staffordshire Hospital, and was not a little surprised at the manner in which the masonry is being done.

The building is somewhat in the Italian style, the main part of the work being in brickwork, with stone pilasters and stone dressings to the windows. The pilasters, instead of adding strength to the building, are mere sham masonry; the brickwork is carried up the whole height, from 25 to 30 feet, with a slight recess left for the stone; the pilasters are afterwards stuck up against the wall in the recess, without bond to the brickwork or any other fastening, save a small iron cramp inserted into the brickwork at the top of each stone, each pilaster being in three or four stones, thus set one on the end of the other. The angle pilasters are also done in the same manner, and thus, instead of adding strength to the building, absolutely weaken it by the absence of the necessary bond between the stone and brickwork. How the cavity between the stone and brickwork is filled in I do not know, as I did not see any of them being set up.

The dressings to the windows are slight stone jambs, apparently about 6 or 7 in. by 5 in., set up in recesses left in the brickwork. On these jambs are placed entablatures; and several of the windows have pediments over them; and for the first time in my experience I observe that the pediments have the raking mouldings jointed at the apex, with a mitre joint,—a method of construction quite new to me in Italian masonry, as I have always considered the pediment over the window-opening a legitimate means of adding strength to the lintel and decorating the construction.

In passing round the building, I observed a number of fragments of broken cornices and other mouldings; and on inquiry I learned that a day or two before a considerable length of the cornice had fallen down, carrying with it the whole of the scaffolding, and doing great damage to the projecting corners of the windows: this must evidently have occurred from want of the proper wall hold.

These things led me to make inquiry who and what are the parties concerned; and I find the contractors are a plasterer and his sons, respectable men, but totally without experience, this being their first job as general builders; but I think the architect and clerk of the works are not without blame in the matter.

I did not go through the interior, I therefore cannot say how the timber work is done; but if no better constructed than the exterior masonry, the subscribers cannot congratulate themselves on having a strong substantial building.—I am, Sir, &c., Strength.

Stourbridge, March 29, 1847.

*** As a guarantee of the truth of the above, I inclose my address.

Another Boiler Explosion.—On Monday last, one of the steam-boilers belonging to John Wood and Brothers, Glossop (Derbyshire), blew up with great violence, unroofing the boiler-house and knocking down the wall with such force, that stones flew across the yard into the mill windows, and smashed both glass and frames. We have, before this, urged the necessity of some supervision of boilers. Scarcely a week passes without the occurrence of an accident, as well with new boilers as with old ones. Every new boiler should be tested by a responsible inspector.

## New Books.

*The Polychromatic Ornament of Italy.* By Edward Adams, Architect. Nickisson, 1847. Part I.

The design of the work of which this is a portion, is to give a connected illustrated history of decorative art in Italy, from the Roman period down to the middle of the sixteenth century. A few weeks ago we printed an extract from the present part, which relates to the first half of that century, and have now only to speak of the illustrations it contains, and offer our encouragement to the author to proceed with the undertaking. The increasing taste for polychromatic ornaments, much to be desired and cultivated, renders it important that good examples should be spread abroad. In the Raffaellesque style of decoration are to be found many beautiful and harmonious combinations of form and colour, and the cheerfulness and gaiety which can by means of it be obtained in our rooms (and, acting on the spirits, this is no unimportant matter, mark you!) render it well adapted for interior decoration.

The first plate shews a development of a coved ceiling in a room in the Farnese Gardens at Rome. Plate 2, a perspective view on the first floor of the Loggiato of the cortile of the Vatican, where ornament is more sparingly employed, and more subservient to the architecture than in some other examples. Plates 3, 4, 5, 6, 7, 8, and 9, shew the decorations of this gallery at large, and 10 and 11 give decorations from the second floor Loggia. The examples in this book are well drawn, and beautifully printed in colours. It will be found useful by a large class of our readers, and we cordially recommend it to them.

## Correspondence.

### DESTRUCTION OF CITY CHURCHES.

Mr. Editor,—I observe in your columns of to-day, a short paragraph referring to the possible removal of St. Benet's Church, Gracechurch-street. In your love for the antique, you lose sight of the practical use of a church.

Now, as a churchman, I always feel that the dissenter has a case against me with the city churches: their number, compared with the absolute need of the present day; the miserably thin attendance; the want of cordial feeling between minister and people; and, the almost necessary consequence, the want of well-organized parochial institutions.

I do not imagine there can be much difference of opinion as to the cause of these evils. First, the non-residence of a large portion of the householders; secondly, the diminutive size of the parishes. To the first point, it might be argued the fashion of the present day *may* pass away, and the citizens of London *may* return to the practice of their forefathers;—I do not think, however, we live in a day to defer improvements because of such remote contingencies. To the second point, there can be no answer,—the parishes are as they were when every house was peopled.

Now, much as I admire the works of Wren and his contemporaries, still I cannot follow you in the mawkish sentiment of declaiming against their removal, without considering the arguments for and against, and whether a present and ultimate good could not be carried out by a judicious picking out of some 8 or 10 of the city churches. I have always been pleased with the vigilance of the present bishop of London, in checking the ruthless hand of the utilitarians and calculators of our day, who would knock down a church with as little compunction as they would a *warehouse*. I believe I am correct, in saying the bishop has always dictated his own terms in giving his consent to remove any ecclesiastical edifice or place of sepulture, and that he has administered the funds arising from any removal for the benefit of some destitute district of the metropolis.

If I wanted to add proof upon proof of the present evil state of things, I would refer you to the last census, and divide each parish in the city of London and suburbs by its church or churches, and the result would bear out my argument, that a great public good would arise from the amalgamation of several of the smaller city parishes into one. Take one illustration as conclusive: St. Margaret, Lothbury, at the last census, was reputed to have a population of 189; St. Mary Pattens, 167; St. Sepulchre, 13,325; St. Giles, Cripplegate, 13,255; each of these parishes has *one church*. I commend this subject to you, and shall feel glad if you consider these lines worthy of admission into your journal, which I feel assured would be open to receive correspondence, although it may differ in opinion with you.—I am, Sir, &c.,

Bishopsgate-street, March 27, 1847. An Architect.

*** Our correspondent has not made out a sufficient case. His argument carried out would justify the destruction of all the unused naves of all our magnificent cathedrals. We sincerely hope that the public voice will protest loudly against the removal of any of the City churches.

### STATE OF LONDON—GRAVE-YARDS AND CESSPOOLS.

Sir,—On passing down Snow-hill yesterday, about one o'clock, I witnessed a grave-yard scene: a church, with its grave-yard, standing at the corner of a street leading to a market. The grave-yard workpeople had opened a vault, I suppose, for the admission of a corpse; there appeared a vast quantity of water in the sanctum, which they were busily engaged in emptying by pails into the street, and it was flowing down the gutter in a wide stream until it arrived at the sewer grating, a good many feet from the spot. Should such a thing as this be done in the broad day light? or could it have been done in the night? Will such water as this be beneficial to health or injurious?

As I am upon nuisances, allow me to take one or two more. I will take the cesspools first. A house, situated in Basing-lane has a large cesspool in the basement, the stench from which upon the ground floor is suffocating; yet respectable people rent this floor for business, and are in it many hours in the day, and for the sake of a few pounds will not lay out money to alter this annoyance and breeder of fevers.

Another existing evil is one I think you would scarcely believe to exist in London: that in eight houses, which I surveyed some time since, occupied by poor Irish, the women and children earning from fivepence to sixpence a day (the houses let out in floors, none of which possessed a sufficiency of furniture, and one in particular had not one vestige of furniture in the apartment); the outbuildings for natural convenience were gone, and all filth was to be seen, and common decency done away with; in short, the houses were unfit for habitation.

Allow me to ask a few questions, which others can think of and answer.

What are the duties of a district surveyor, the parish, and police authorities?

Is Ireland in London, or is it not?

If Ireland wants soup kitchens, does not London?

If the poor of Ireland, existing in Ireland, require cultivating and bettering their condition, do not the poor of Ireland, existing in London, require the same?

From your old Subscriber,

City Road, March 30. Argus.

### THE KENSINGTON RESERVOIR, LIVERPOOL.

Sir,—Permit me to set you right as to the nature of the leak referred to in The Builder, of Saturday last. The Kensington reservoir, in connection with the Green-lane Waterworks, had been filled for the first time on the morning of Thursday, and up to one o'clock on Friday no sign of leakage appeared. The cause of the leak was a slight subsidence of the puddle under the overflow-pipe which passes through the embankment about 6 feet below the top water-line, which pipe rests on masonry in the overflow tank. The water found its way between the pipe and puddle, the pipe having remained rigid whilst the puddle sank slightly; the depth of the cutting to the bed of the drain-pipe at that point being 26 feet below the top of the embankment, by much the deepest cutting under any portion of the works. The whole cost of making every thing good did not amount to 5*l.*, and the time occupied in stopping the leak was under half a day, and that too with four feet of water over it in the reservoir. If it had been of the character described by your informant, i. e. issuing from fifty places, this could not have been effected. The above account is the truth, and you will oblige by giving it a place in your next.

Fenwick Chambers, Liverpool, 6th April, 1847. I am, Sir, &c., T. Duncan.

### LEICESTER SQUARE AND TRAFALGAR SQUARE.

Sir,—My attention has been particularly drawn in your journal of the 27th, to the fitness of your remarks, and the very judicious suggestions offered as to the required alterations in Leicester-square. The throwing open the inclosures, and placing architectural objects of taste within various squares in London, would, I think, be generally an improvement.

As I hope the public will be attracted to an appropriation of your very valuable suggestions, and, as an amateur and subscriber to your valuable journal, will you permit me to ask whether, if the fountain square, or place, in Trafalgar-square had a flight of steps, or what the French style a *perron*, opposite the too much abused National Gallery, whether it would not improve the confined appearance which the dead wall now possesses, and give height and grandeur to the portico and façade of the Gallery? The *perron* might be made an object not only of taste, by offering pedestals for figures or statues of public characters, but it would also be useful and convenient.—I am, Sir, &c., A Mason.

Rochester, March 30, 1847.

## Miscellanea.

Matter of Opinion.—Where London becomes more interesting is Charing-cross. Look to Northumberland-house, and turning your back upon Trafalgar-square, the Strand is perhaps the finest street in Europe, blending the architecture of many periods; and its river-ways are a peculiar feature, and rich with associations. Fleet-street, with its Temple, is not unworthy of being contiguous to the Strand. The fire of London has deprived us of the delight of a real old quarter of the city, but some bits remain, and everywhere there is a stirring multitude, and a great crush and crash of carts and wains. The Inns of Court, and the quarters in the vicinity of the port, Thames-street, Tower-hill, Billingsgate, Wapping, Rotherhithe, are *the best parts of London;* they are full of character: the buildings bear a nearer relation to what the people are doing than in the more polished quarters. The old merchants of the times of the first Georges were a fine race. They knew their position, and built up to it. While the territorial aristocracy, pulling down their family hotels, were raising vulgar streets and squares upon their site, and occupying themselves one of the new tenements, the old merchants filled the straggling lanes, which connected the Royal Exchange with the port of London, with mansions which, if not exactly equal to the palaces of stately Venice, might at least vie with many of the hotels of old Paris. Some of these, though the great majority have been broken up into chambers and counting-houses, still remain intact. —*D'Israeli.*

Cost of Carriage ways in Cambridge. —The Improvement Commissioners received the following, in terms of advertisements for paving tenders:—Pratt and Sewell, Gray's-inn Lane, London, 9d. per yard, if grouted, 10d.; Joseph Popjoy, 8d. per yard, if grouted, 9½d.; Jeremiah Hurley, Cambridge, 8d. per yard, if grouted, 9d. For the footways:—James Stevens, 13d. per yard, for setting the curbs, 1d. per foot; Thomas Jeffs, 14d. per yard, for setting the curbs, 2d. per foot; William Clee, 14d. per yard, for setting the curbs, 2d. per foot; James Palmer, 14d. per yard, for setting the curbs, 4d. per foot; R. S. Naylor, 16d. per yard, for setting the curbs, 2d. per foot; Thomas Powell, 16d. per yard, for setting the curbs, 2d. per foot; Joseph Popjoy, 13d. per yard, for setting the curbs, 2d. per foot; Pratt and Sewell, 18d. per yard, for setting the curbs, 2d. per foot.

British Museum. — No less than 19,170 persons passed on Easter Monday through the collections of this institution. As an instance of the increasing interest which the public takes in this national collection, we may state that on Easter Monday, 1845, the number of visitors was 15,316; whereas yesterday there were 19,170.

PROPOSED NEW GAS COMPANY IN SOUTHAMPTON. — The surveying officers, Messrs. Ellison and Lowe, appointed to inquire into the expediency of passing the Southampton Consumers' Gas Light and Coke Company's Bill, have reported *against* the bill. The surveyors say, at the conclusion of their report: "It was impossible for us, in arriving at our decision, not to consider the known evils arising from competition between gas companies; in addition to which we may observe—that whenever a sharp contest between rival gas companies has for a time existed, the breaking up of pavements by the laying down of the principal mains is the least evil; the most serious one is the continued changing backward and forward of the service-pipes from one set of mains to that of the rival company; every such opening of the ground rendering it unsafe for weeks, and sometimes months, to the passage of carriages and horses. The ground so loosened admits of any gas escaping from fractured mains more directly to the cellars and kitchens of the houses adjacent. That a continuous and excessive escape of gas is going on in those streets where numerous gas-pipes are laid is evident to any one looking at the colour of the earth surrounding such pipes as are constantly to be seen in the streets of London. We need not refer more particularly to the evils of competition in price, or their usual ending in the amalgamation of the rival companies, except to remark, that the promoters have pledged themselves not to amalgamate in any case with the present company, the only consequence of which, we conceive, would be the prolongation of the contest, and the closing up of one way of escaping from mutual insolvency. We cannot but state that, although we are unable to decide in favour of the scheme of the promoters, we are fully conscious that the formation of the company has been of service to the town of Southampton, in rendering the present company more anxious to meet the wishes of the consumers, more particularly as respects the diminution of price." The price charged in Southampton for public lights is 4*l. per annum* each; which is at the rate of 2*s.* 6*d.* per 1000 cubic feet, including cleansing, lighting, wear and tear, &c.

CONSUMPTION OF SMOKE.—A patent has been obtained by Mr. Lord, of Allerton, Chester, for an ingenious application of two furnaces or sets of fire-bars to one boiler, for steam engine or other purposes, whereby the gases from the fuel freshly applied to one grate pass over the incandescent coke on the other, and the entire carbonaceous matters are thereby consumed. The application of these is directed in such manner, that the entire heat is applied to the whole of the boiler, although but one furnace is at a glowing heat. To effect this, the boiler is provided with a water space about the centre, extending across the upper half of the flue, and forming a bridge to direct the course of the smoke. The grates are moveable on rails, and when the fires are first about to be lighted, they are both brought towards the furnace doors, by which means all the dampers are open; when a clear red heat is obtained, one is pushed backwards to a certain point, and one set of dampers only kept open; a fresh supply of fuel, is then supplied to the other fire grate—the unconsumed carbon therefrom, passing under and through the clear fire of the first, is thoroughly decomposed and the gases produced pass up the chimney. As soon as a bright red heat is obtained in the last fed fire, the same process is repeated with the other set of bars, and the operation has the same effect as before.

TRIGONOMETRICAL SURVEYS.—A return, moved for by Mr. J. Hume, shews that since 1791, up to the present time, an aggregate amount has been paid in England, Ireland, and Scotland, on account of the survey of counties and the trigonometrical surveys, of 1,462,522*l.*; viz., 608,687*l.* in England, 817,512*l.* in Ireland, and 36,322*l.* in Scotland.

ROYAL ACADEMY PORTERS.—Complaints have been made to us that the porters at the Royal Academy ask parties who bring works for exhibition, for beer-money, and that, in the event of refusal, it is just possible the Council never see the picture at all! We hope this is not correct. If it be, Mr. Knight ought to look to it.

TRUE GLORY.—Sir Walter Scott once nobly said, that a humble Scot who supplied his country with a bridge had done more for it than many a conqueror had done.

SLATES.—At the present time, says the *Mining Journal*, when all our slate quarries cannot supply the demand, and when the price, during the past year, has advanced 30 per cent., a general description of the several qualities will be interesting. The old Delabole, and, indeed, the greatest quantity found in Cornwall, is the "grey green;" this slate is laminated sufficiently fine to admit of being cleft into roofing slates, of all sizes, in common use, and is exceedingly strong. When used for roofing, and style is a consideration, it is best adapted for ecclesiastical edifices, and rusticated stone villas. In slabs it is, from its great strength, the very best, particularly for pavements, floors, railway stations, lintels, cantilevers, and other work where great resistance is required. The "light blue green" is best adapted for entrance halls, staircases, and other works; when the slate is exposed, as being of a light colour, it has a more pleasing appearance, and does not shew the condensed vapours, like the darker. The "speckled" is not so finely laminated as the former-named kinds, but being excessively hard, and containing veins of iron and nodules of mundic, is best suited for street paving, where it is capable of withstanding a greater amount of friction than any other kind, and consequently wears a much longer time; but it should on no account be used in a thin form, as for roofing, as its susceptibility to oxidise causes its rapid decomposition. The "dull blue red:" this, the sooner it is given to the spoil heap the better, as it is totally unfit for any permanent purpose. The "white," or "yellow emerald-green," is of great use in ornamental purposes; and in none does it show itself off to greater advantage than in tesselated pavements, where, when mixed with black and light blue, it possesses a most pleasing appearance, and, in point of architectural style, a positive original effect.

RESTORATION OF MARNHAM CHURCH, NOTTS.—The parish church of Marnham, twelve miles from Newark, has been restored at the cost of about 1,000*l.*, under the direction of Mr. Browning, of Stamford. It consists of a nave, with north and south aisles, a well-developed chancel, along the northern side of which the aisle of the nave is extended, a southern porch and a tower at the western extremity. The external character of the structure is that of the perpendicular period; but upon examining internally the pillars and arches of the northern aisle, it would seem that the original nave and chancel were erected in the early English style; but that they have been repaired, with considerable alterations and additions, during the time when the perpendicular style was prevalent. With the exception of the tower and the porch, the whole of the church has been substantially repaired and restored. The *Nottingham Journal* says, the roof is entirely new, and the timbers are stained of a dark brown colour. The floor of the nave and part of the chancel have been paved with black and red tiles from Messrs. Minton's manufactory. The ancient font, which is very simple, has been placed on a new base, cleaned and furnished with a water drain. The chancel (the roof of which has elaborately carved beams, &c.), is fitted with stalls and returns, and the nave with open seats of oak. The reading desk on the southern side of the chancel arch is of oak, with open panels, and the pulpit is of Ancaster stone, carved in a style to correspond with the general features of the building. Mr. J. E. Hall, of Nottingham, was the builder employed.

THATCH, AND SOME OF ITS EFFECTS AND CAUSES.—A "Traveller," in the *Hampshire Independent*, says that at Andover, where there are many "squalid-looking houses covered with straw," although it is an ascertained fact that fevers prevail in these malarious receptacles, there is "no encouragement to build better houses for the labourer; for if slate was substituted for thatch, and the houses made tidy and comfortable, they would be assessed to the rates." This is a lamentable state of things. Lord Morpeth ought to have such cases as this in his eye ere the clauses of his new bill are ultimately disposed of.

ADVERSE POSSESSION OF HOUSES.—By the New County Courts Act, section 122, a summary remedy by warrant notice, within seven and ten days, is provided against the adverse possession of houses and land by tenants where the rent does not exceed 50*l.* a year.

THE ARTESIAN WELL AT SOUTHAMPTON.—This unfortunate and endless bore has again stuck in the mud. The Chinese jumper, so far as we can judge, has jumped well enough towards the profound conclusion so devoutly to be wished for; but the grass or hempen rope in use in stagnant China was too primitive for aspiring Britons, and the consequence has been, that the "improved iron rope" gave way, and left the jumper at the bottom of the bore, which had reached to a depth of 750 feet, or 60 feet beyond the bottom of the shaft. The committee were pozed, and an expense of 150*l.* was talked of, when the "Chinese puzzle," as the *Hampshire Advertiser* terms it, — somewhat libellously towards the ingenious Chinese, we think,—was happily unravelled by the engineer, who intimated to them that he had got hold of the jumper, with the help of one man and no boy, and without the assistance of the long sum hanging in terrorem over their puzzled heads. "The happy event being communicated, the committee were as much puzzled, however, as ever, as to the course they should pursue. Mr. Doewra, whom they had sent for from London, meantime arrived, and they entered into consultation with him; the result" being, that the good old Chinese mode, which has already done such good service, will probably be discarded, in consequence of the mishaps of which its luckless associate, the new-fangled British rope, appears to have been guilty.

EXTINCTION OF FIRES.—Further experiments have been successfully made at Liverpool on the practicability of raising water from the mains without the aid of fire-engines. The streams of water rose to an elevation of 80 to 90 feet, and occasionally even higher; indeed, to a height far beyond the chimneys of the Bank and buildings in the vicinity, carrying the body of water upwards with a force, it is said, almost equal to that of fire-brigades, according to the *Mail*, are to be forthwith regularly trained to the use of the mains for the extinction of fires.—We may here notice that, according to the *Glasgow Reformers' Gazette*, an engine, patented by Mr. John White, of Manchester, after twenty years' application and improvements, has been successfully tried at Glasgow. The full complement of men required to work this engine is twenty-four; but it can be wrought, in a lesser degree, with two men, there being twelve separate pumps; and, with two men only to each pump, a considerable force of water is thrown out. With the twenty-four men, the water overtopped the cock at the summit of the steeple, 140 feet high. The power of this engine is said to be greater than any other hitherto invented.

GLASS DEVOTED TO A NEW PURPOSE.—Glass, of a rich ruby colour, has been used instead of the old ebony for the sharp or flat keys of the organ of All Saints, Northampton. The *Bedford Times* suggests that the idea may be happily applied to the whole key-board of the pianoforte with a tasteful diversity of iridescence of colours. If not too smooth for the friction of the gentle cushions usually applied to such electrifiers, and if not as cold in winter to the touch as the ebony-and-ivory-contrast certainly is at all times to the sight, we should not wonder if the idea may find favour in bright eyes, and add a new grace where so much of the graceful is already so often concentered.

PUBLIC PARK AT SHEFFIELD.—The *Sheffield Times*, of 27th ult., gives an account of a new park in course of formation by the Duke of Norfolk for the last seven years, at a cost of many thousand pounds, for behoof of the public, though, strange to say, almost totally unknown as yet to the public themselves, or at least, as alleged, without the people taking any interest in it, though they are likely, the *Times* thinks, to make amends for this apathy. It consists of about 50 acres close to the town, appropriated by the late Duke, and named Norfolk Park. A very well-executed engraving of the entrance and lodge is given, in illustration of the account from which we have extracted these few particulars.

PATENT IRON COACH.—Mr. Aitken, of Aberdeen, has taken out a patent for the manufacture of iron coaches. His trial-omnibus, carrying nineteen persons, besides driver and cad, weighs only 11 cwt., and can be drawn by two ordinary horses at the rate of ten miles an hour.

PROJECTED WORKS, &c.—Advertisements have been issued through the past week's papers for contract-tenders for the erection of baths and laundries in Orange-street, Leicester-square; a lodge and entrance gates for the Hull General Cemetery; a floating dock and entrance locks at Limerick; and for the execution of the earthwork, tunnels, bridges, viaducts, and other works of the Direct London and Portsmouth line of railway, between Epsom and Dorking, and the ballasting and laying of the permanent way, exclusive of rails, chairs, and sleepers; also for a supply of 1,000 tons of best, broken, blue, Guernsey granite, at Christ Church, Surrey; and of gravel, for the Essex turnpike-roads.

WITHDRAWAL FROM THE IRISH WORKS.—The dismissal of labourers in Ireland is being carried out. In the first notice of such dismissals, in Limerick and Clare Counties, the relief committees themselves "were apprehensive of acting on the Government order," and eventually a gang of the dismissed labourers assembled and rifled the bakers' shops in Bruff.——A correspondent of the *Evening Mail* writes from Clonmel in the following alarming strain:—"All the public officers, and those who have attended the relief committees, are quite satisfied that the food system cannot be worked out. Government have been duly informed that the population (armed) will rise and plunder every thing; they are resolved to do so, and tell us openly that the dragoons may as well, and better, shoot them at once. This is a fact. In ten days, when the works stop, you will see dreadful scenes."——The Rev. Mr. Townsend, rector of Ashada, who wrote against the demoralizing effects of the public-work system, now assures the *Cork Reporter* that he is hopeless even of the consequent employment on the land.——At Tipperary, the *Vindicator* declares that "matters are assuming an awful aspect here, in consequence of the suspension of most of our public works, many of the roads being left in a disgraceful and impassable state. The relief committee here," it adds, "refused to carry out the Government order to dismiss 20 per cent. of the people from the public works, as the striking off a percentage of the men here would be like the casting of lots to determine who shall be the first victims of starvation."

IMPORTANT SALE OF BOOKS, PICTURES, AND PRINTS.—The fine collection of pictures, drawings, prints, and books, made by our esteemed friend, the late Mr. Morant, will be brought to the hammer by Messrs. Christie and Manson, on Tuesday next, and many following days. It is worth attention.

## TENDERS.

Delivered for the new Collegiate School at St. John's Wood, Mr. Thos. Little, Architect. March 31st.

| | |
|---|---|
| Hugo and Young | £6,327 |
| Haques | 5,240 |
| Burton | 5,146 |
| Barr | 5,074 |
| Pollock and McLennan | 4,990 |
| Holland | 4,989 |
| Jay | 4,753 |
| Patrick | 4,395 |

*** Some of these gentlemen are evidently much in need of good advice.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, April 12: Institute of British Architects, 56, Grosvenor-street, 8 P.M.

TUESDAY, 13th: Institution of Civil Engineers, 25, Great George-street, 8 P.M.; Syro Egyptian Society, 74, Mortimer-street, Cavendish-square, 7 P.M.; Freemasons of the Church, 3, Great Newport-street, 8 P.M.

WEDNESDAY, 14th: Graphic Society, Thatched House Tavern, 8 P.M.

THURSDAY, 15th: Royal Society, Somerset House, 8; P.M.; Society of Antiquaries, S., Pall Mall, 8 P.M.

## TO CORRESPONDENTS.

"W. W."—We shall be happy to hear more when further advanced.

"H."—We know of no such work.

"G. A."—Thanks.

*Received.*—"H. H." "A. M. B." "J. J." "A Creditor." "S. N." "By token Gallery of Arts." Part XXVII, containing C Knight's "Urban Burial," by J. D. Parry (Strange, Paternoster-row): "Wyld's Popular Atlas of all World's, and one of detail of Maps of different Parts of the Globe," No. 2: Rules of "The Builders' Benevolent Institution:" "People's Journal" for April, edited by John Saunders (Bennett, 65, Fleet-street): *an excellent cheap publication.* "Josephus," translated by Dr. Traill, illustrated. Part III. (Houlston and Stoneman).

*Books, Prints, and Drawings.*—We have not time to point out books at all hard addresses.

## NOTICE.

THE next and following numbers of THE BUILDER will contain a series of correct and beautiful illustrations of the New House of Lords and adjoining Hall.


## ADVERTISEMENTS.

ARTESIAN WELLS.

PURE SOFT WATER, by means of Boring.—S. WORSENCROFT, Well-Borer, of Hammersmith, undertakes Boring and Sinking of Wells on the most improved principle, in town or country. Respectable and numerous references given where S. W. has executed borings which produce an immense and inexhaustible supply of pure water. Terms very reasonable. Address Queen-street, Hammersmith.

FRENCH PAPER HANGINGS.—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 59, Princes Street, Leicester Square, established 1813, where the Trade may be supplied from an immense stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

PAPER-HANGINGS to the TRADE.—French Papers superseded. - Messrs. HENNELL and CROSBY, Paper Stainers, Queen street, Southwark bridge road, beg to inform the Trade that they can enable them to sell Satin Papers, Elegant Designs, at 2s. 6d. per French piece, Retail.—Cheap stock for Panel Decorations and Chamber Papers.

PAPER HANGINGS, painted by hand, in imitation of Sienna and other Marble, Wood, &c., to the Trade, in a cheap and superior manner, for staircases, halls, &c. The largest made as the grand staircase of the New Opera House, Covent Garden, executed by C. BAINBRIDGE, Imitator of Woods and Marbles, 12, Crown-street, Soho, who has been Gainer to the Trade for fourteen years.

LONDON PAPER-HANGING COMPANY, 42 and 43, Poultry (corner of Old Jewry).

Builders and the Trade are respectfully informed that the new Spring Patterns of Paper Hangings are now ready, comprising many hundred varieties, adapted to every class and style of rooms, halls, staircases, &c., which they trust will be found of a highly satisfactory character for originality of design, brilliancy of colour, superiority of workmanship, and at prices, for Ready Money, which will not fail to give satisfaction; for, notwithstanding their former low prices, they have by avoiding the expenses of collecting, as well as all other expenses attending credit business, effected still further reductions. A set of patterns will be forwarded on payment of 5s., which will be allowed back at the rate of 5 per cent. on orders received. GORDON and TOMBS, Manufacturers.

BUILDERS AND IRONMONGERS are requested, when writing for JENNING'S SHOP SHUTTER SHOT AND FASTENER, to send the finished thickness of the shutter, and also at which end of the sheet they commence putting up the Shutters (RIGHT OR LEFT), as they face the front.

JENNINGS'S SHUTTER FASTENER.

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Its ugly projecting end taken out and troublesome when in use. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the obstructive bar, and takes up the portion also of a shutter stile. The shoot and fastener being formed of brass, afford greater protection to the edge of the shutter as it comes so much deeper in the shutter-board in comparison with the wood-stile, and has been severely tried in temperature of both extremes of heat and cold, and can only be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shot and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters who introduce it to the notice of persons whose shops they decorate. To be had of the Inventor, 2, Charlotte-street, Blackfriars-road, or of any respectable Ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 20, Berners-street, and 14b, Chancery-lane

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction as to stability, security, and economy, he now begs to state that the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be supplied with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently rust, bulging, or getting out of order, and may be fixed. Persons desirous of with the patent rising gear now used in iron shutters can have it removed, and the shutters made to draw up in the place of the present method, without machinery, at a trifling expense. Price and testimonials of use on application.

REVOLVING SAFETY SHUTTERS, WITH PATENT CONVEX IRON LATHS.

PATENT CURRIED WOOD BLINDS, &c.

The attention of Window Blind makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and respectfully invited to an early inspection. The great superiority of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, in affording increased security to obvious, and to easy access, and the great facility of fixing, render these convex laths more than double the ordinary flat laths, to insure their general adoption.

The patentee directs attention to his greatly improved gearing for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw and wheel geared, to any weight, is simple, effective, and entirely free from the necessity of using the ratchet-wheel; and is at once simple and thoroughly effective, and is SAFER and MORE DURABLE than any plan yet adopted. For these and other reasons the inventor has his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. Convex shutters are built to project in the form of bow-windows, and are fixed in recesses, or when required the greatly increased strength of the convex lath enables the patentee to make shutters of any projection, and entirely to do away with the ugly projecting shutter-bar. In large shutters it is of great importance to have the shutters made in lengths not exceeding 3 feet, as by this means the shutters are secured by the length of the lath, and thereby rendered more effective and durable.

Sash Blinds.—The inventor is the sole manufacturer of REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Regardless of imitations, he begs to caution purchasers against the use of the term CONVEX, as applied to flat laths, which is calculated to deceive the public. The convex laths are protected by Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. Their simple and perfect motion for raising and lowering renders them shutters secured by the Patent the safest and best made of meeting that object. In large shutters it is of great importance to have the shutters made in lengths not exceeding 3 feet, as by this means the shutters are secured by the length of the lath, and thereby rendered more effective and durable.

Sash Blinds.—Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every useful improvement enables the Patentees to challenge comparison with any others. They will guarantee all shutters put up by them to keep in order, and last twice as long as any with flat convex laths.

Blind & Shutter Manufactory REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with three polished steel gear, and fit per metallic hinges, without which no other can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS OR IRON, FOR SHOP FRONTS, BOW WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop fronts fitted with Iron Shutters, Patent Brass or Zinc Sash Bars, Plate Glass, Ornamental Leaded and Enamelled, Moulded, Small Board Plate, Best Plate Glass, and Internal Brass Fittings for all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country

Metal Drawing and Stamping for the Trade

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

PREPARED FLOORING BOARDS.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¾ inch to 1¼ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, well-seasoned stock of all kinds of Prepared Flooring and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately worked.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Dockyard, Deptford, has ASSUMED FLOORING, MOULDING, PANELLING, and GENERAL PURPOSE and MOULDINGS, repaired by machinery. Cut Deals and Scantling of every dimension. Mahogany, Oak, Rosewood, Rosewood, Elm, Beech, Deals, &c., in Planks, boards, scants, and logs; Mantle, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense, except timber. Sawing charged at usual prices. Very extensive Drying Sheds.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Tongued, and Grooved by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the Docks or carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.
N.B. Estimates given for Sawing and Planing.

SILCOCK and Co.'s PATENT PLANES may be had of the following Houses:—

Archer, 43, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cock, 1, Oxford-street; Dean, 16, King William-street; Dunn, 106, Newgate-street; Hollingsbee and Co., 64, Charing-cross; and of all ironmongers and tool dealers in the United Kingdom.

DRUCE'S, No 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities at Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

WORCESTER ENCAUSTIC TILES, Specimens of these beautiful Tiles in all their Varieties, may be seen and ordered at the Manufactory, Hanbury Arcade, Messrs. GREVE and CHELLER, Brade wharf, Belvedere-road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR and C. W. Wedge.

TO ARCHITECTS, BUILDERS, AND OTHERS.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be had at MINTON and Co.'s Warehouse, 5, Alfred-place, Bedford-square, and manufactory, Stoke-upon-Trent. Plans and Estimates forwarded free of charge. Ornamental Door Furniture, Statuary Tablets, Fire places, &c.

WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended as the best and cheapest mode of covering the ridges and hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and neat in its appearance, and at one-quarter the cost of the old system. Sold wholesale and retail by the Inventor, Mr. RICHARD COOPER, Slate Merchants, Belvedere road, Lambeth, London. May be had also of all County Slate dealers.

TO BRICK AND TILE MAKERS

THE AINSLIE BRICK and TILE MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman), invite attention to their improved Brick and Tile Machines, which have been in operation for some months past at the Company's Offices, Bow, Middlesex, from 10 to 4, to Five per Mr. ROBERT SCRIVENER, who has been appointed Manager in the room of Mr. JOHN PRESTON, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway. Also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the Office of the Company, Audley House, North Audley-street, Grosvenor-square.

These Machines may also be seen at Mr. Shutt's, Leith-walk, Edinburgh; Mr. Lawrence's, 109, Bothwell-street, Glasgow; Mr. Robert Charles, Millfield, Leeds; Messrs. Pinch and Cope, Perkeridge, Staffordshire, and Messrs. Drummond and Son, Dublin.

WESTMINSTER FRIENDLY BENEFIT SOCIETY of CARPENTERS and JOINERS, held at the Artillery Arms, Bunhill-row, Moorfields. Established January 5th, 1832, and enrolled pursuant to Act of Parliament.

The attention of the trade is called to the great advantages presented by this Society to those who may become members of it, as the general purposes of sickness and death equal to that of any benefit society, the great and ultimate object is to collect permanent residences wherein to indemnify aged and infirm members and their wives, as well as the provision of fire and casualty, and an allowance of 8s. per week.

Monthly Contribution, as at present—Entrance Fee, 5s. Sick Allowance, 10s. per week. Age, under 38.

Meeting night, first Wednesday in every month.—Articles to be seen at the hall.

WEST LONDON and GENERAL BUILDING and INVESTMENT SOCIETY. Established pursuant to Act of Parliament, 6 & 7 William 4, c. 32. Shares, 100l. Monthly subscription, as per Share, Entrance Fee, 2s. 6d. per share. Half shares may be taken. No Entrance Fee.

PATRONS.

Right Honourable Lord Robert Grosvenor, M.P.
W. B. Prance, Esq., Cadogan place, Chelsea, Magistrate for the County of Middlesex.
Rev. John Morris, B.A., LL.D., Walton-place, Brompton.
Rev. William Rann, Incumbent of St. Saviour's, Upper Chelsea.
Rev. J. M. Soule, St. John's Hill Battersea.

TRUSTEES.

Thomas S. Batteock, Esq., Ivegate Walk, Chelsea.
John Fielder, Esq., Nelson Lodge, Trafalgar-square, John Isaac Pantin, Esq., North End House, Fulham.

For last Tuesday, and other particulars, see prospectus, which may be obtained of the Manager or Secretary, by remitting a postage stamp for reply. The first subscription will be payable on Monday evening, April 26th, 1847, from Seven till half-past Eight o'clock, at the Commercial Hall, Radnor-street, Chelsea. Persons joining the Institution after the present Entrance Fee of 2s. 6d. will be required to pay the first monthly subscription of 1s. per share, which may be paid by Post-office order on the Holborn Post office, to Mr. Jas. Scrivener, Cobble-row, Manager, Mr. JAMES SEARS, 16, Trafalgar-street, Walworth, or by Post Office Order on the Chelsea Post Office, to the Secretary, Mr. HENRY MARTIN, Oakterrace, Battersea, or to any of the Directors.

The Manager or Secretary will attend at the above Hall on Monday evenings, from Seven till Eight, until further notice, to enrol Shareholders and answer enquiries.

# THE BUILDER.


TO BUILDERS AND CARPENTERS.

**A Considerable saving will be effected in the** purchase of IRONMONGERY, by applying at F. B. WILLIAMSON'S Wholesale Warehouse, No. 50, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
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| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.
Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
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| 4s. 9d. | 6s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 5½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 2 ft., £3 5s. | 3 ft. 6 in., £3 19s. 6d. | 4 ft., £4 |
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Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 109, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 8s. | £3 13s. | £3 19s. | £4 5s. | £4 10s. |

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven:—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5 15s. | £6 5s. | £6 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do. at 3½d., and 4d. do.
Manufacturer of WOLLASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

CAST-IRON SOCKET-PIPES, RAIN-PIPES, AND EAVES GUTTERS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl-** street, Blackfriars, keeps a stock of Socket-Pipes, Rain-Pipes, Half-round, and O. G. Gutters, &c. &c. &c. Contracts taken to any extent.

IRON WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash pit, Doors and Frames, Boilers and Frames, Lamps &c., &c., all of the best description, at very moderate prices.—CAST-IRON UPSETS.

**PORTER'S CORRUGATED and PA-** TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge road (the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in the application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

**HOT WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and green houses, manufactories, and warehouses. Kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brick-work, may be seen in action upon the premises. BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

IRONFOUNDRY.

168, Drury-lane, and Charles-street, London.

JOSEPH GLOVER,
(Late HENDRY and GLOVER),

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**E. PARK'S, 140, Fleet-street, Wholesale** Ironmonger, Brass Founder, and General Factor, Agent for



Lee's Patent Double Action Bolt, combining cheapness and facility of action with the greatest possible security, particularly adapted for French casements, meeting the various and peculiar difficulties with which they are frequently accompanied, at the same time equally applicable for the strongest folding doors as well as the most elegant cheffonier, wardrobe, &c. &c.

| Best Patent Cut Clasp. | 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. |
|---|---|---|---|---|---|---|
| | 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
| Best Patent Sash Line. | 4s. 9d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. |
| | 1 | 2 | 3 | 4 | 5 | 6 |

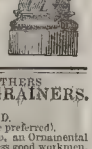
Every description of ironmongery equally low

SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The Trade supplied with them at the Manufactory,

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only,
62, WATERLOO BRIDGE-ROAD.

An Apprentice wanted a country lad would be preferred).
N.B. Wanted, a good Grainer and Writer; also, an Ornamental Painter or Pencil Hand. None need apply unless good workmen, and have good references.

**GAS.—The Introduction of Gas into pri-** vate dwellings is rapidly increasing; it is therefore of the greatest importance not only to the consumer but to the gas company and the fitter that the most secure and simple means of regulating it be applied. The patentees of CARTER'S SAFETY GAS VALVE, can from many years' experience and the high testimonials they are daily receiving, confidently recommend it to all persons interested in gas lighting, as being more secure, more durable, and not so liable to get out of order, and in every respect superior to the old plug cock, so frequently leaky or set fast by corrosion. It has the advantage of being inexpensive, and easily adapted to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, 39, New-cut, near the Blackfriars-road.

CLARIDGE'S  PATENT.

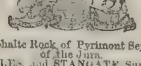
**PATENT ASPHALTE ROOFING FELT,** as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The North Wilts and other Railways,
And the Corporation of the City of Edinburgh.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound
THOS JNO CROGGON, 8, Laurence Pountney Hill, Cannon-street, London, and Bull's Head Yard, Manchester.

SEYSSEL ASPHALTE COMPANY.

By Her Majesty's  Royal Letters Patent.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

**THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the** following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Coach houses and Stabling. | Piggeries, &c. &c. | which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Kitchen Floors particularly where it is essential to keep damps from rising. | Dog-kennels. | Covering of Railroad and other Arches. | |
| Garden Walks and Terraces. | Barn Floors. | The only effectual mode to prevent the percolation of water. | |
| Carriage Drives. | Granaries. | | |
| | Tun-room Floors. | | |
| | Malt-house Floors. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage, to be derived from the application of SEYSSEL ASPHALTE.

The great results of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company, and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior
GLAZED STONE WARE,
Price 7s. 6d each.

They are of the most durable ware, and are recommended in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

**THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.**
87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
|---|---|
| Foreign Sheet, in 100 feet Boxes .. | 2½d. |
| Do. do. Super 300 „ „ .. | 3d. |

Crown Squares, 100 feet Boxes:—

| | |
|---|---|
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. .. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. .. | 1½d. |
| 6 in. by 3 in. and under..... | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSE TOP LIGHTS
6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d per foot.

VARNISH.

| | per Imp. Gal. s. |
|---|---|
| Super Body Copal, for the bodies of Carriages ..... | 30 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours | |
| Super Copal Varnish ..... | 10 |
| A fine pale Varnish for the lighter imitation woods.—Dries in about eight hours. | |
| Super Carriage Varnish ..... | 12 |
| Very durable, and well adapted for Coachmakers, except for hot bodies.—Elastic tick, Wainscot, or Mahogany Varnish ..... | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods ..... | |
| Paper or Crystal, quite transparent Gold Size for Gilders ..... | 10 |
| Also as a dryer in ground Colours, which much improves their appearance | 10 |
| Black Japan ..... | 12 |
| A splendid Jet Black, for Coachbuilders' use. | |
| Brunswick Black ..... | 6 |
| A Black Varnish for Iron-work, Stoves, &c.—It dries immediately ..... | 6 |
| Furniture Varnish for Japanners..... | 14 |
| Dries in two hours. | |
| White Hard Spirit Varnish, for Cabinet Work ..... | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods .. | 20 |
| Rather longer drying than the above. | |
| Mastic Varnish, pale, for Pictures.... | 24 |
| Turpentine Varnish..... | 5 |
| French Polish ..... | 16 |
| Naphtha..... | 10 |
| Patent Liquid Wood Knotting ..... | 16 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £. s. d. |
|---|---|
| 2½ inch Lift Pump on Plank ..... | 1 0 0 |
| 3 „ do. do. ..... | 1 5 0 |
| 3½ „ do. do. ..... | 1 9 0 |
| 4 „ do. do. ..... | 1 15 0 |

Well Pumps on Square Tails, with Iron Bow, equally low.

| | |
|---|---|
| ½ inch Bib, Ball, or Stop Cocks, | 0 7 6 |
| ¾ do. do. | 0 9 6 |
| 1 do. do. | 0 12 6 |

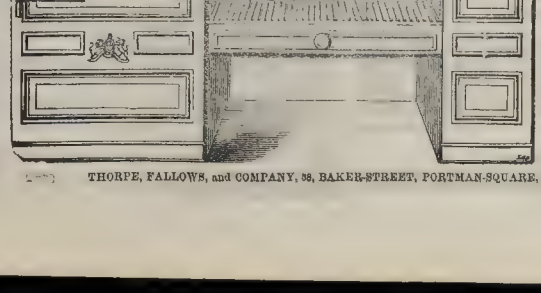
Pan Water-closet, complete, with Wrought-iron Trap, Valve, Plate, Ball, Lever, and Copper Wire ..... 1 10 0
Blue Basin, extra..... 0 4 0
Ditto, with Sunk Handle, extra .. 0 4 6
Sinking Valve Closet, on Bramah's principle, complete ..... 3 10 0
Best Mastiques, from one to six motions, in handsome cases.

Strong 4-in. Metal Steam Cocks, with Unions, and every article in the Trade made to order

PAINTS AND COLOURS.

Best White Lead, 27s.; Seconds, 25s
Thirds, 23s.
Refined Linseed Oil and Paper, 3s
Linseed Oil, 2s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 2s. 10d. per gallon.
Brunswick and Ivory Greens, Cromes
Blacks, Blues, Reds, Patent Dryers.
Red Lead, Chrome, 28s. per cwt.
Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

THE PANKLIBANON IRON WORKS,
WHOLESALE AND RETAIL, 58, BAKER STREET, PORTMAN-SQUARE.



**ARCHITECTS,** BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE-GRATES, Fenders, and Fire Irons, ever offered to the Public, at prices considerably below the usual charges. The Proprietors beg the gentlemen to invite attention to their extensive stock of Burnished Ironmongery, Tinned Copper, Tinned Iron Cooking Vessels, Block Tin Dish Covers, Japanned Waiters, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article made for the table, comprising Dish and Plate Covers, Liquor Frames, Dispensers, &c. The plan adopted by the Proprietors of affixing the price to each article for cash, enables and purchasers to have the same advantage

The Potsdam Thermic Stove is in daily operation. Also DUNDY'S IMPROVED HOT AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

# THE BUILDER.

EXTENSIVE PREMISES at BAYSWATER, held on lease, nearly 31 years unexpired, including a capital dwelling-house, warehouses, workshops, stabling, yards, &c., the whole covering above three-quarters of an acre. The premises are highly square to the high road, adjoining Kensington Garden-terrace, and the lease may be either purchased or the premises occupied at a rental. Plans and all further particulars may be obtained on the premises; of MESSRS. LANGHAM, Solicitors, Bartlett's buildings, Holborn; or Messrs. LESLIE and SON, Market-street, Lincoln's-inn-fields.

ST. JOHN'S WOOD PARK!!! IMMEDIATE POSSESSION WITH ELEGANT FURNITURE.

BUILDING PLOTS TO BE LET in the most desirable and salubrious situation! commanding extensive views of the NEW ROAD, NORTH BEAUTIFUL AUGUSTA BOURWOOD, and elevated within a few feet of the summit of the Mount, with the best approaches of any suburban district near the metropolis, and, from its most fashionable west end, the fashionable terraces and pleasure-grounds of the West End and the City. For particulars and plans apply to W. H. TWENTYMAN, Esq., 15, Regent-villas, Avenue-road, Regent's park.

FOR SALE, 100 Feet, super. of 2½-inch dark Walnut tree Plank, with fourth board edges. Also a quantity of Ash Timber, and some wide inch plank. Inquire at the office of "The Builder."

IRON COLUMNS

TO BE SOLD, a Quantity of Cast-Iron Columns and Gresh beds, from 8 to 9 feet long. May be seen at Mr. PROCTER'S, 16, Wharf, Paddington. Enquire of Messrs. BRUCE and Co., Baker-street.

A BARGAIN.

TO BE SOLD, near Guildford, Surrey, and close to three new lines of railway, about 10 acres of Freehold Land. It is situate on and has a fine river view and a frontage to the high road. Considerable depth of brick earth. There are extensive rights of pasturage belong to the property. Price, including the same, only £400. Apply to BEDWITH and SALMON, Estate and Land Agents, &c., Basket-lane.

STONE BLOCKS FOR SALE.

THE Committee of the Surrey Iron Railway Company Hereby Give Notice, that they are now remaining the stone blocks on which the iron plates are to be laid, and are ready to receive offers for the purchase of the same. The blocks number 8,000 of one kind, and 1,000 of another. The coped blocks are long set up in the Company's wharf at Wandsworth, and may be seen upon application to the superintendent there, and the remainder will be seen on the line of the railway, which passes between and in the several parishes of Lambeth, Camberwell, Newington, Clapham, Battersea, Wandsworth, and Putney, and terminates on the river Thames, free of lockage. These blocks are about 16 inches wide, and 8 inches deep, and are applicable for forming over and alongside embankments and foundations, &c., and are easily to be worked to a good face. There are also about 2,000 yards of old stone track. Tenders to be left at Rose's Hall Coffee-house, Borough, addressed to the Committee of the Surrey Iron Railway Company, and endorsed "Tender for Stone Blocks," on or before the 24th day of March next. By order of the Committee,

H. C. LITTLE, Clerk to the Company.

Wandsworth, 17th March, 1847.

SALES BY AUCTION.

FOR SALE Valuable Lock Basin Wharfage, and River-side Property, commanding with the River Thames.

THE Committee of the Surrey Iron Railway Company Hereby Give Notice, that they will OFFER FOR SALE by PUBLIC AUCTION, in the month of April next, when further particulars and terms of sale will be declared, the valuable Lock Basin, Wharf, and River-side Property, situate on the north bank of the river Thames at Wandsworth, and which will comprise a commodious and convenient lock basin, communicating with the river Thames, free of lockage, and with the Surrey Iron Railway, which passes between and in the several parishes of Lambeth, Camberwell, Newington, Clapham, Battersea, Wandsworth, and Putney, and terminates on the river Thames, free of lockage. The basin is about 300 feet long, and 70 feet wide, and has a depth of water sufficient for vessels of 200 tons burden to float at all times of the tide. The property also includes a commodious and convenient wharf, with a crane and weighing machine thereon, and a brick built counting-house, a timber built warehouse with the requisite offices, and a dwelling-house, with a garden and other premises thereto belonging, and which are now in the occupation of Messrs. Hall and Co., as tenants thereof, at the annual rent of £100. The property is situate in a populous neighbourhood, and has a frontage to the high road of about 100 feet, and is also within a few minutes' walk of the Wandsworth station of the Surrey Iron Railway. Further particulars may be had of the superintendent upon the wharf, or of the Company's solicitors, Messrs. HALL and FAITHFULL, of No. 1, Little South-street, Westminster.

By Order of the Committee,

H. C. LITTLE, Clerk to the Company.

Wandsworth, 17th March, 1847.

BRIXTON, SURREY.—Villa Residences, Building Ground, Dwelling-houses and Shops, the greater portion held for a long term at a pepper-corn and a well-secured ground-rent.

MESSRS. BROWN and ROBERTS beg to notify that they have received instructions from the mortgagees to SELL by AUCTION, at the MART, on TUESDAY, April 13th, in one lot, the following valuable properties, viz.—Four handsome Swiss Villa Residences, and plot of Building ground, in Sutherland-terrace, Cole Harbour-road; a convenient Residence, and plot of Building ground, in Carlton-terrace, Loughborough road; also a well-secured Ground-rent; likewise Eighteen Cottage Residences, Three Dwelling-houses and Shops, with a large plot of Building land, compactly built upon, at the east side of Stockwell Park Harbour-road; the greater portion in the occupation of respectable tenants, and of the value of upwards of £60 per annum; presenting a desirable opportunity to purchasers either for occupation or investment. The large frontage to the thoroughfare renders the property equally valuable for building purposes. Further particulars in the interim may be obtained of Messrs. HENRY BROWN and S. A. ROBERTS, 25, Throgmorton-street.

BUILDING MATERIALS, MITCHAM, SURREY

MESSRS. EVERSFIELD and HORNE will SELL by AUCTION on the Premises on MONDAY, April 12th, and the following days, at 11 o'clock precisely, the valuable Materials of the Mansion lately pulled down, consisting of outbuildings, comprising a large quantity of lead and copper, in cisterns, pipes, gutters, dormers, ridges and dials, slated and tiled roofs; an unfinished range of stabling, forming a handsome building, partitioning, twelve Portland stone columns; plate glass, and other sashes; the wainscot fittings of library, handsome statuary and other marble chimney pieces; the erection of greenhouses, fittings of brewhouse, laundry and kitchens; large coppers, metal cocks, brass barrel force pumps; a handsome Gothic hall stove, &c., together with the entire brick, tile, and timber, and other building materials, and fixtures in other lots. May be viewed two days previous, and Catalogues, Sixpence each, had on the premises; at the Bull, Holborn; Greyhound, Croydon; White Hart, Mitcham; Wheatsheaf, Tooting; George, Balham Hill; and of the Auctioneers, Coal Exchange, or No. 1, Little South-street, Westminster.

ISLE OF WIGHT.—To Builders, Capitalists, and Others.—The Eligible Freehold Building Estate of the Royal Domain of Osborne for Sale by Auction, in lots.

MR. FRANCIS PITTIS begs to announce his instructions from the proprietor to submit this unequalled, beautiful Estate to SALE BY AUCTION, in lots at the Mermaid Hotel, Cowes, on Tuesday, April 13th, at one for two o'clock. The desirable Estate lately in the occupation of, and resided on by the late celebrated architect, John Nash, Esq., is of considerable extent, having a Marine Villa and numerous outbuildings, comprising a large quantity of lead and copper, in cisterns, pipes, gutters, dormers, ridges and dials, slated and tiled roofs; an unfinished range of stabling, forming a handsome building, partitioning, twelve Portland stone columns; plate glass, and other sashes; the wainscot fittings of library, handsome statuary and other marble chimney pieces; the erection of greenhouses, fittings of brewhouse, laundry and kitchens; large coppers, metal cocks, brass barrel force pumps; a handsome Gothic hall stove, &c., together with the entire brick, tile, and timber, and other building materials, and fixtures in other lots. May be viewed two days previous, and Catalogues, Sixpence each, had on the premises; at the Bull, Holborn; Greyhound, Croydon; White Hart, Mitcham; Wheatsheaf, Tooting; George, Balham Hill; and of the Auctioneers, Coal Exchange, or No. 1, Little South-street, Westminster.

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SALES BY AUCTION.

TO BUILDERS, DECORATORS, PAPERHANGERS, AND OTHERS. By

MR. ROBERTS, at his Rooms, 7, Old Jewry, Cheapside, on Monday, April 12, at Twelve o'clock, the valuable Stock of Paperhangings; consisting of splendid drawing room satins, rich patent flocks, best bed room, marble hall and a great variety of other papers; in all about 4,000 pieces. To be viewed on Saturday and morning of sale. Catalogues had at the Rooms.

BY MR. BRAY, at his Rooms, 259, High Holborn on Thursday, April 15th, at Twelve o'clock, Paperhangings of the best manufacture, the newest patterns; comprising upwards of sixty pieces in bijou and rich chintz and Gothic flocks, rich stone, blue and grey, marble, best bed room, carriage, and library papers. May be viewed one day prior and morning of sale, and catalogues had at the Rooms, as above.

PUBLICATIONS.

GAS MONOPOLY

Shortly will be Published by HARRY FITZGERALD, a Work on GAS MONOPOLY.

THE LIGHT OF FUTURE DAYS, or a Gleam of Sunshine, for the benefit of Shareholders and the Country, showing enormous profits each Company holds in hand after payment to shareholders and all other expenses. Flows the will be published by subscription, and when the subscribers amount to 200, at 2s. 6d. each, the work will be commenced.

TO ARCHITECTS, BUILDERS, &c.

Just published, price 7s. 6d.

A SERIES of EIGHT DESIGNS for SHOP FRONTS, in the Elizabethan, French, and Italian Styles. By CHARLES WILKINSON.

Papier Mache Works, 42 and 43, Rathbone-place, London.

G. J. and Sons solicit the attention of Builders and the Trade in general to their extensive assortment of Papier Mache, executed in the highest style of art, and with the strictest integrity to the beautiful characteristics of each period. The quality of their works they trust will be found unsurpassed, either for pleasure or comfort, for now nearly half a century. Uniformity with the times, they extend operations and by the use of machinery are able then to state as a fact of large quantities removed from the advantage of detailed works.

Designs furnished for general interior fittings. Nos. 1 and 2 of their goods, suitable for the upholsterer and gilder, are ready for sale.

SECOND EDITION

THE BUILDER'S FRIEND, Price ONE SHILLING.

By HENRY FITZGERALD.

Sold at the Office of "The Builder," York-street, Covent-garden; MEAD and POWELL, 23, Whitechapel; and Mrs. HARVEY, Romford; Mrs. CUMBERFORD, 24, High-street, Portsmouth; Mr. KING, 6, North-street, and 44, East-street, Brighton; Mr. PURDAY, Gould-street, Yarmouth; and all respectable Booksellers.

The Builder, Nov. 21, 1846.

THE BUILDER'S FRIEND.—Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the solidity of brick, deals, battens, and timber, bear to each other, from one hundred to one hundred and twenty-four at a glance, and will save much calculation. The whole is published at a shilling, and is the cheapest form in which the information is given, in a compact form, so as to fit the pocket-book.

"Herapath's Journal," Nov. 28th, 1846.

THE BUILDER'S FRIEND.—We have received a copy of a useful little Manual, under this title, that ought to be in the hands of every one in the building business. It shews at one view the relative prices plank, deals, battens, and timber bear to each other, and will save considerable calculation. It shillings is the cheapest form to buy. The information is given in a compact form, so as to fit the pocket-book.

Sunday Times, Dec. 6th, 1846.

This is a very concise but useful work; it shews in one line the relative prices of plank, deals, battens, and timber. The author has certainly contrived to put the greatest amount of information in the smallest space.

CARPENTRY.—It is intended to Publish in Monthly Parts, a most Comprehensive, Elementary, and Practical Work on Carpentry, containing all the Principles; Ancient and Modern, Foreign and English, Descriptive and Ecclesiastical: to contain 100 Engravings, with a Practically described Text, and it consists of

1. The well known work of PETER NICHOLSON'S CARPENTER'S NEW GUIDE, being a complete Book of Lines for Carpenters and Joinery; 84 Plates with Additions and Improvements to the present time.

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Architects and Builders are respectfully informed, that Carving in Wood, Stone, and Marble, by Machinery, is carried on at the above premises. Plans for Carving in wood and stone, Moulding, Veneer Sawing, Dovetailing, and Planing by steam, and other Building Machinery, can be supplied to order, and delivered in any part of the kingdom. Architects and Builders are invited to call and inspect the Machinery in operation, and the other Machinery in Lieu for the reception of their orders.

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TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of Architects, Builders, and the Trade in general to the peculiarities of their Machinery and the proofs of its efficiency, which they have lately had the pleasure of exhibiting at the New Houses of Parliament and the interior decorations of the New Palace at Westminster, and in the Palaces of the Public Press, at the Royal Exchange, and the Museum of Art.

The Adoption of Marble, in speaking of the specimens of Carving produced at Jordan Patent Steps. These were really astonishing. A bunch of Grapes and a Grace of Partridges were worthy to hang by the side of Grinling Gibbons's Works. A portion of the Corinth Elevation Gates were also very successful. The Machinery employed accomplishes precisely the task assigned to the superintendent. It clears away all the superfluities and prepares the block for the touches of the Artist. No matter how high the relief, whether flat or prominent, and however difficult to handle, the Machinery will do it.

The Proprietors limit their Contract themselves and to the Public to the Statues they at present have on Establishment which is their Machine Carving Works at Belvedere Road, Lambeth, formerly Coade and Seeli's Terra Cotta Works, where specimens may be seen and estimates for large works obtained.

CONTRACTS.

TO BUILDERS AND OTHERS.

NOTICE IS HEREBY GIVEN, that TENDERS, for a Specific Sum, for Erecting 5 LARGE MAGAZINES, with sundry Storehouses, Workshops, Landing-shed, &c. and Enclosure Walls, also for constructing a Basin and Pier to reach below low water mark), Wharf, Tanks, &c. &c. at Bull Point, on the river Tamar, about 3 miles from Plymouth, and in the neighbourhood of the existing Powder Works at St. Budeaux; will be received at the Ordnance Office, Pall Mall, London, on or before 23rd April, 1847.

Specifications and detailed Plans of the proposed Buildings and Works may be seen and forms of Tender obtained after the 18th inst. daily at the Commanding Royal Engineer's office, Devonport, between the hours of 9 and 4 o'clock for contracting a Basin and Pier at the same place, and at the office below, between Eleven and Four o'clock.

By order of the Commissioners,

JOHN WOOD, Clerk and Surveyor,

30, Gordon-street, Gordon-square.

TO BUILDERS

BATHS AND LAUNDRIES ST. MARTIN-IN-THE-FIELDS

THE Commissioners of Baths, &c., for this Parish HEREBY GIVE NOTICE, that they are ready to receive TENDERS for the erection of the Building in Orange-street, Leicester-square. The plans and specification may be seen at the office of F. PRICHARD BALY, Esq., Engineer to the Commissioners, at No. 13, Buckingham-street, Adelphi, from Monday, the 12th day of April next, until the following Thursday, both days inclusive, between the hours of Ten and Four. The Contractor will be required to enter into contracts, to the amount of the Tenders, with sufficient sureties for the due performance of the works, to be approved by the Commissioners. The Tenders are to be sent in under cover, addressed "To the Commissioners of Baths, &c., St. Martin-in-the-Fields," by Twelve o'clock at noon of Monday, the 3rd day of May next, at their office, Castle-street, Leicester-square, at which time and place the parties tendering are to be in attendance. The Commissioners do not bind themselves to accept the lowest or any tender.

PHILIP LE BRETON, Clerk to the Commissioners.

6th April, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.—COURT OF SEWERS, TOWER HAMLETS.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on Wednesday, the 14th day of April, at two o'clock in the afternoon precisely, at the Office of Sewers, No. 10, Great Alie-street, Goodman's-yard, will be ready to receive TENDERS (sealed from any persons or person willing to enter into contract for the works necessary in extending the sewer from White-horse-lane along Milend-road, to the Parish Church, being a length of 2,230 feet in the hamlet of Mile-end Old-town; and in arching over 1,053 feet of sewer at the back of Southampton-street, Teal street, Ann's-place, and Albert-street, in the parish of Saint Matthew, Bethnal-green; at the back of Ratcliff highway, in the parish of Saint Paul, Shadwell, and between Little Pearl-street and Grey Eagle-street, in the parish of Christ Church; and 73 feet at the back of Cannon-street, in the parish of Saint John of Wapping.

Plans and specifications of the said several works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of eleven and three o'clock. Separate contracts will be required for each of the said works respectively. The contractors will be required to sign a contract under seal, with some person duly authorized, attend on his behalf to answer when called upon.

Dated this 31st day of March, 1847.

JOHN WILLIAM UNWIN,

Clerk to the Commissioners.

N.B.—The Commissioners do not pledge themselves to accept the lowest Tender.

ST. MARK'S CHURCH AND SCHOOLS, DUKINFIELD, CHESHIRE.

BUILDERS or other parties desirous of Tendering for the whole, or the trades separately, may see the drawings and specifications at Mr. ROBERT HALL'S, the Queen's Arms Inn, opposite the Church, Dukinfield, from Thursday, the 8th April. The Tenders, endorsed as the corner, to be forwarded post paid, on or before the 20th of April, addressed to JOSEPH CLARKE, Esq., Dukinfield, Cheshire, London. The several parties to take out their own quantities; and the Incumbent will not hold himself bound to accept the lowest tender, if not satisfactory. There is very ready conveyance by canal or railway.

BOROUGH OF BIRMINGHAM. Lunatic Asylum. Notice to Builders and Contractors.

PERSONS desirous of Contracting for the Erection of the Pauper Lunatic Asylum for the said borough, are hereby informed that the drawings and specifications of the intended buildings may be seen from the 29th day of April inst. to the 17th day of May next, at the office of the Architect, Mr. D. R. HILL, in Christchurch-buildings, Waterhouse-street, Birmingham; and that copies of the conditions for the contracts may be had on application to Mr. HILL, personally or by letter. Tenders for the erection of the whole of the buildings, or for any portion thereof, endorsed "Tender for the Erection of the Birmingham Lunatic Asylum," to be sent, sealed, under cover to the Town Clerk, post-paid, on or before the 18th day of May next.

N.B. Each successful contract will be required to appoint two respectable and competent persons to take out the quantities of the various works, on which persons to be approved of by the Architect; and such parties are requested to send their names to the architect on or before Saturday, the 1st of May next.

Birmingham, April 7th, 1847.

THE ASSOCIATION TO PROMOTE THE FREE EXHIBITION OF WORKS OF ART AND THE ENCOURAGEMENT OF ARTISTS.—The Committee inform the Public, that the First Exhibition of the Society will take place at the Egyptian Hall, Piccadilly, early in May, and all applications for space for works intended to be exhibited must be made before the 30th instant, by letter, addressed, post-paid, to the Secretary, J. F. MARTIN, 58, Charlotte-street, Portland-place.

EGYPT, CITY OF CAIRO.

JUST OPENED, at the Panorama Royal, Leicester-square, a VIEW of the magnificent CITY OF CAIRO, from drawings taken by David Roberts, Esq., R.A., with its splendid Mosques, Minarets, Palaces, the River Nile, the Pyramids, and the gorgeous assembly preparatory to a pilgrimage to Mecca. The VIEWS of the great BATTLE OF SOBRAON, and VICTORY OVER THE SIKHS, and the classical CITY OF ATHENS, are also now open.

ROYAL POLYTECHNIC INSTITUTION.—LECTURES in illustration of ANIMAL MECHANISM by T. Bonner Smith, Esq., F.R.S., Professor of Comparative Anatomy at King's College Daily at Half past Three and on Tuesdays, Thursdays, Wednesday and Friday, at Nine. The Diving Bell, and Diver's Dress, exhibited in a Transparent Vessel. Lectures on Armstrong's Hydro-electric Machine, by Dr. Bachhoffner. The Working Models and Machinery nearly worthy of Inspection. Optical Effects to illustrate a New Series of Dissolving Views. Experiments with the Diving bell and Diver, &c., &c.—Admission, 1s.; Schools Half price.

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# The Builder,

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TO BUILDERS, PAINTERS, and others, who may be desirous to contract for finishing Two Villas situate Tollington-place, Tollington park, may see the specification at the office of Mr JOHN MORRIS, 38, Fenchurch street, between the hours of Ten and Four o'clock. Tenders to be delivered, as above, on Tuesday, the 20th inst., at Eleven o'clock, sureties will be required for the due performance of the work. The parties tendering are required to be in attendance.

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T. J. BUCKTON, Secretary.

London Bridge Terminus, 14th April, 1847.

LONDON, BRIGHTON, AND SOUTH-COAST RAILWAY.—TO BUILDERS.

THE Directors are prepared to receive TENDERS for the erection and construction of the following works at the New Cross Station:—A Shed, for spare carriages, to be built of timber, and 600 feet in length, and a Warehouse for carriers, including the alteration and rebuilding of a portion of the present workshops. Plans, and specifications may be seen at the engineer's office at Brighton on and after MONDAY, the 19th instant, and sealed Tenders must be delivered to the secretary, at the London Bridge Station, before Ten o'clock on the morning of MONDAY, the 26th instant.—By order,

T. J. BUCKTON, Secretary.

London Bridge Terminus, 13th April, 1847.

TO BUILDERS

THE Committee of the General Infirmary, Bedford, are desirous of receiving TENDERS for the erection of a Fever Hospital, plans and specifications for which may be seen at the Infirmary, from Wednesday, the 21st inst., to Wednesday, May the 3rd, 1847, on which last named day, and before ten o'clock in the morning, the Tenders are to be delivered, addressed to Mr. YATES, Secretary, Infirmary, Bedford, and endorsed Tender for Fever Hospital.—Further particulars may be obtained by applying at the office of the architect, Mr. HORSFORD, Well-street, Bedford. The Committee do not bind themselves to accept the lowest tender.

Bedford, April 14, 1847.

TO BUILDERS

PERSONS desirous of Contracting for the Erection of a New Church at Greenwich, Kent, are invited to send in Tenders for the same, addressed to the Rev. WILLIAM ALDWIN SOAMES, the Vicar, on or before Thursday, the 13th May next. The plans and specifications may be seen at the office of the Architect, Mr JOHN BROWN, Chancfield-square, Norwich, and also at the office of Mr CHAS AUGUSTIN SMITH, Croom's-hill, Greenwich, from the 26th inst. to the 12th May next, both inclusive, between the hours of Ten and Four.

N.B.—Two approved sureties will be required for the due performance of the contract.

Greenwich, April, 1847.

BOROUGH OF BIRMINGHAM.—Lunatic Asylum.—Notice to Builders and Contractors.

PERSONS desirous of Contracting for the Erection of the Pauper Lunatic Asylum for the said borough, are hereby informed that the drawings and specifications of the intended works may be inspected from the 26th day of April inst. to the 17th day of May next, at the office of the Architect, Mr. D. R. HILL, in Christchurch-buildings, Waterloo-street, Birmingham; and that copies of the conditions for the contracts may be had on application to Mr HILL, personally or by letter. Tenders for the erection of the whole of the buildings, or for any portion thereof, endorsed, "Tender for the Erection of the Birmingham Lunatic Asylum," to be sent, under cover to the Town Clerk (post paid), on or before the 24th day of May next.

N.B.—Parties wishing to contract will be required to appoint two respectable and competent persons to take out the quantities of the various works, one of such persons to be approved of by the architect; and such parties are also requested to send their names to the architect on or before Saturday, the 1st of May next.

Birmingham, April 7th, 1847.

NOTICE IS HEREBY GIVEN, that a GENERAL QUARTERLY MEETING of Members of the INSTITUTION OF BUILDERS' FOREMEN will take place on WEDNESDAY Evening next, April 21st, at the Salisbury Arms Tavern, Durham-street, Strand, to elect officers for the ensuing six months, and other general business. W. ALLARD, Secretary.

DECORATIVE ART SOCIETY, 49, Great Marlborough-street, on Wednesday, April 28th, Mr. Dwyer, V.P., will read the second portion of a paper "On the Scenery and Stage-decorations of Theatres." Drawings relative to Design, Perspective, Machinery, &c., for Scenery, Costume, and Stage Properties, Visitors' Tickets may be obtained from E. C. LAUGHER, Hon. Sec., 17, Sussex-place, Kensington

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**JONES'S PATENT MORTICE-**MACHINES are now offered For Sale, that will cut a mortice any depth or width in less than one minute through hard or soft wood without the trouble of gauging. Warranted to cut a true mortice; it requires only one man to work it. Price Five Guineas. To be seen in operation daily at JONES'S, 127, Goswell-street, between the hours of 10 A.M. and 4 P.M.

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**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public may secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

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By Her Majesty's Royal Letters Patent.

**MOREWOOD and ROGER'S PATENT** GALVANIZED TINNED METAL.—This article was at first sold under the name of Galvanised Tin Plate, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal is thereby sustaining injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanized Iron has a plain, zinc-like appearance, while M. and R.'s Patent Galvanized Tinned Iron has a smooth crystalline surface.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON, Patronized by the Admiralty, and the Honourable Board of Ordnance, being extensively used in Her Majesty's Dockyards, at the Tower, and elsewhere, for every variety of Roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron combined with perfect immunity from rust; whilst it is free from the very serious [illegible] to zinc, viz. its constant action and expansion, [illegible] temperature, and from which [illegible] result.

[illegible] by fire, as is the case with zinc and lead, which melt [illegible] down [illegible] admitting fresh air to the fire, and causing it to burn more fiercely. It is [illegible] well adapted for all the [illegible] fire. It is also peculiarly suitable for chimney tops, gutters, spouting [illegible]

This mode of [illegible] metal from rust does not only apply to sheet iron, but [illegible] in any form, as bolts, [illegible], hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.

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MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY LANE.

**PERSONS requiring LOANS by way of** MORTGAGE, or otherwise upon any available security, [illegible] at the offices as above.

N.B. [illegible] personal application at the office [illegible], the party bringing with them the abstract of title, [illegible], &c.

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TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS.** and WRITERS to the Trade only.
6., WATERLOO BRIDGE ROAD.

An Apprentice wanted (a country lad would be preferred).

N.B. Wanted, a good Grainer and Writer; also, an Ornamental Painter or Pencil Hand. None need apply unless good workmen, and have [illegible].

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**ARCHITECTURAL CARVING WORKS** (IRVING'S PATENT), late Sir Francis Chantry's Foundry, Eccleston-place, Pimlico, leading out of Belgrave-square.

Architects and Builders are respectfully informed that Carving in Wood, Stone, and Marble, by Patent Machinery [illegible] at the above premises. Tracery for Churches, in wood and stone, beautifully executed, in pieces which will [illegible] out the plans in having decorated churches, and other buildings, at comparatively small expense. Machines [illegible] the country, to work on the spot [illegible]. Fonts, chimney-pieces, [illegible] stones, are likewise beautifully executed, and ready for fixing or fixed. Mouldings, wood and stone, made to any pattern; scagliola and inlaid work executed in all their branches. For the beauty of their workmanship, the public are respectfully informed that a show room has lately been fitted up on the premises [illegible] other establishment in London, for the inspection of [illegible].

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**CARVING BY MACHINERY.**
JORDAN'S PATENT.

TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decorations, to the peculiarities of their Machines, and the [illegible] of its efficiency, which are to be found in the fact of its [illegible] at the Government Workshops for the interior decorations of the New Palace at Westminster, and in the [illegible] of the Public Press [illegible] the Exhibition of the Society of Arts.

*The Athenæum* of March [illegible], in speaking of the Specimens of Carvings produced by Jordan's Patent [illegible]:—"These were really astonishing. A bunch of Hops and brace of Partridges were worthy to hang by the side of Grinling Gibbons's Works. A portion of the celebrated Florentine Gates [illegible]. The Machinery employed [illegible] task [illegible] the Sculptor [illegible] and prepares the object for the final touches of the Artist. No matter [illegible] difficulties baffle this Machinery."

The Proprietors [illegible] to the Public [illegible] their Machine Carving Works at [illegible] formerly [illegible] where specimens may be seen and estimates [illegible].

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**BUILDERS AND IRONMONGERS are** requested, when writing for JENNINGS' SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters (RIGHT OR LEFT), as they face the front.

---

**JENNINGS'S SHUTTER FASTENER.**

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause [illegible] take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the use of the Bar, and answers the purpose also of a shutter shoe. The shoes [illegible] damp weather. Hundreds of shops have been [illegible] inventor, and testimonials of their efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters [illegible]. To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

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SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability [illegible] the greatest possible ease [illegible] stiffness, being without metal hinges [illegible] shutters and have it removed [illegible] any part of the premises with the [illegible] thereby avoiding the unpleasant use of oil.

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**REVOLVING SAFETY SHUTTERS,** WITH PATENT CONVEX IRON LATHS.
PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders and [illegible] is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great importance of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, [illegible] and it is only necessary to point out the fact, that the patent convex laths are [illegible] to insure their general adoption.

The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters [illegible] all the advantages of the [illegible] SAFER and MORE DURABLE [illegible] his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE [illegible] THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS WITH CONVEX IRON LATHS. Engravings [illegible] with IMPROVED DRAWN METALLIC SASH BARS, ASTRAGALS, MOULDINGS, STALL BOARD PLATES, &c.

Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 115, Old-street, London.

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INJUNCTION.

**BUNNETT and CORPE'S Patent RE-**VOLVING IRON SHUTTERS. [illegible] perpetual Injunction for restraining all infringements of this Patent [illegible] the same.

THE PRICES ARE GREATLY REDUCED and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. [illegible]

[illegible] put up, without a single complaint of their want of strength or [illegible]

B. and C. also manufacture REVOLVING WOOD SHUTTERS [illegible]

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND ALL OTHER PURPOSES.

Shop fronts [illegible] Iron Shutters, Patent Brass or Zinc Sash Bars [illegible]

Metal Drawing and Stamping for the Trade.

Offices at No. [illegible], London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

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TO BUILDERS AND CARPENTERS.

**A Considerable saving will be effected in the** purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| | | | | | |
|---|---|---|---|---|---|
| 3d. | 4d. | 6d. | 8d. | 10d. | 2d. |
| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue [illegible] per cwt. Do. Scotch, 72s. per cwt.
Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 6d. | 5s. | 6s. | 7s. | [illegible] | 12s. per gross. |

Elliptic Stoves, 3½d. per inch. Register, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges with Oven and Back Boiler
Wrought Bars and Bright Fittings
3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

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TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Superior Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 6s. | £3 15s. | £4 15s. | £4. | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven.

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 1s. | £6. 5s. | £6. 1s. | £7. |

Best Register Stoves at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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CAST-IRON SOCKET PIPES, RAIN PIPES, AND EAVES GUTTERS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl-**street, Blackfriars, keeps a stock of Socket-Pipes, Rain-Pipes, Heads, and O. G. Gutters, &c. [illegible]. Contracts taken to any extent.

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IRON WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney [illegible], Inside Oven [illegible], Doors and Frames, Boilers and Frames, Lamps, &c. &c.; all of the best description, at very moderate prices. CAST IRON UPSETS.

---

TO BUILDERS, CARPENTERS, &c.

**THE following are the present Prices, for** Cash, of Ironmongery at W. YOUNG and Co.'s, 191, Oxford-street. [illegible] per cwt.; Sash Lines, [illegible] Doz.; [illegible] Mortice Lock [illegible] Doz.

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IRON FOUNDRY.

10, Drury-lane, and Charles-street, London.

JOSEPH GLOVER,
Late HENDRY and GLOVER,

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business will [illegible] in consequence of which, he has been enabled to [illegible] arrangements [illegible] quality. The stock of patterns has [illegible] every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

---

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

**PUMPS of Superior CONSTRUCTION,** [illegible] in various [illegible] Market Places, Roads, Gardens, [illegible] Mines. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

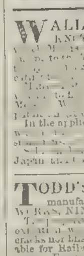
BENJ. FOWLER, 63, Dorset-street, Fleet-street.

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TO ARCHITECTS AND BUILDERS.

**DOOR SPRINGS AND HINGES.—** GERISH'S PATENT DOOR SPRINGS, for CLOSING [illegible] and DOUBLE-ACTION LIFT HINGES, [illegible] of a combination of power unequalled by any made at present.— Manufactured by F. W. GERISH, East-road, City-road; and sold by all [illegible] United Kingdom.

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SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT,

For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot be made or get out of order, and can be effectually swept by the sweeps machine.

[illegible] manufactured of artificial Stone [illegible]

The Trade supplied with them at the Manufactory.

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

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**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly discovered Composition, [illegible] preventing [illegible]

In the application, skill is not required; it is put on to the work [illegible] used in all climates and [illegible]

[illegible] Messrs. G. and T. Wallis, Varnish, Japan and Colour Manufacturers, No. 64, Long Acre.

---

**TODD'S PATENT PROTOXIDE PAINT,** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

[illegible] preventing iron [illegible] from [illegible] from damp, it neither [illegible] cracks nor blisters [illegible] able for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it [illegible] is not affected by [illegible]

[illegible] PAINT [illegible] compared with white-lead, its property of concealing is as 7 to [illegible] that one hundred weight is equal to one and a half of [illegible] softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

The Builder.

No. CCXIX.

*SATURDAY, APRIL* 17, 1847.

ONE portion of the most important building now going on in Europe is completed, with the exception of some intended frescoes, and the stained glass in the windows; and before the present number of our journal reaches the public, will have been occupied by that branch of the legislature for whose use it is intended. As an example of what the whole structure, or rather pile of structures will be when finished, it is most satisfactory, and may be appealed to with confidence as an evidence of the constructive and artistic ability existing in England. There is nothing like it amongst us. It stands by itself; and cannot fail to have a great effect on the arts of the country.

The extent of the new "Palace of Westminster," is not understood by those who, passing on their way, gaze on the elaborately carved façade presented to the river, nor fully appreciated by the majority of visitors, even, who penetrate the inclosure, and pass with sight-seeing eyes around its length and breadth. It needs a longer acquaintance, a careful examination of it part by part, an ascent of scaffoldings, inspection of the means in operation, and comparison with other buildings, before the greatness of the work can be perfectly understood. When a knowledge of this is fully acquired, the absurdity of complaints made by those who ought to know better, against the slow progress of the building, and reflected in the doggrels of burlesque, where "Barry" was made to rhyme with "tarry," at once becomes apparent; and every intelligent mind must feel astonished that so *much* has been done so well, in the time that has elapsed since the commencement of the works. The delay that was caused in respect of the ventilation, and the difference between working for an individual and working for Government, from whom decisions are sometimes not to be obtained for weeks, must also be remembered, and the surprize will be still further increased.* Remember, the building covers *nine acres*, and has a frontage of nine hundred feet; that there are eleven open courts, and that the highest tower, to which we must refer again hereafter, will be 346 feet high.

As to an architect's own power of production, that seems never to enter the mind of the public. As we said in an article written in the middle of 1845 (when some of the peers were pressing forward the works unduly), and which, as we were informed at the time, had a beneficial effect,—"Some persons think, if we may use the word where no thought is really given, that when an architect has produced the design for a building his work is over, and that it may, without further thought, be forthwith carried out. Nothing is more erroneous, especially as regards Gothic architecture; it is then that the architect's labour commences, and his skill is proved. In such a work as the Houses of Parliament, every superficial yard demands the closest thought, and requires as many detailed drawings, in some cases, as for the whole of an ordinary dwelling-house. Every ornament, every moulding, every line, must be produced and delineated; and over all these does Mr. Barry's pencil pass. An architect careless of his reputation may get through any amount of work, by deputy; but if determined to execute it to the best of his power, strive as he may, he can only produce a certain quantity; and we will venture to say, that the architect of the new Houses of Parliament finds little time for other occupations or for recreation, from early on Monday morning till late on Saturday night. The wear and tear must be immense.

The life of an architect, even under favourable circumstances, is one of toil and anxiety; and he needs to have no extraneous circumstances to harass and perplex him. We have heard a member of the lower House declare his ability to write poetry by the mile; we may probably find one of the upper House profess the power to design Gothic details by the acre, and laugh at the idea of limits to a man's power in so simple a matter. They would be equally entitled to credence; we should merely say they were exceptions from the general rule."

Our present immediate business is with that part of the new Houses of Parliament which is finished,—namely, the House of Lords; a view of which, taken from the north end of the House, below the "bar," will be found in our present number;* but we think it desirable to let this article treat of the building generally, and record briefly, for future reference, the progress of the works.

The *foundation* of the building next the river was commenced in 1839, by Messrs. Lee, of Chiswell-street. Messrs. Grissell and Peto undertook the first contract for the *superstructure* of the new Houses in 1840. It comprised the range of buildings *fronting the river*, with the returns next Westminster-bridge and at the south end towards Abingdon-street. This building includes the residence for the Speaker at the north end, the corresponding terminal towards the south being the residence for the Usher of the Black Rod. Between the two extremes, and comprising what are called the curtain portions, are the libraries for the House of Peers and the libraries for the House of Commons: in the immediate *centre* is the conference-room for the two Houses. All this is on the principal floor, which is some 15 feet above the terrace, or high-water mark. The whole of the floor above the libraries, and overlooking the river, is appropriated to committee-rooms for the purposes of Parliament, the Peers occupying about one-third towards the south, and the Commons two-thirds towards the north. The House of Peers and House of Commons are situated in the rear of the front building, or that next the river, and will, when completed, be inclosed also towards the west, so as to be entirely surrounded by Parliamentary offices.

The second contract, also undertaken by Messrs. Grissell and Peto, comprised the House of Peers, the House of Commons, the Victoria Hall, the great Central Hall, the Royal Gallery and Commons Offices, next Palace-yard, and the Clock Tower, next Bridge-street. This was the second contract undertaken by Messrs. Grissell and Peto, but in Parliamentary votes, (we may mention it, in case our readers should hereafter refer to them), it is called contract No. 5. The third contract was St. Stephen's Hall and Porch, extending from the Central Hall at right angles, and communicating with the south end of Westminster Hall, and having a principal entrance also, opposite St. Margaret's Church and Poet's corner. This contract which is now in progress is called No. 6.

Contract No. 7 comprises the fittings of the entire building, and has been undertaken by Mr. Grissell alone, Mr. Peto, who was concerned jointly with Mr. Grissell in the previous contracts, having retired from the building business.

Contract No. 5 is expected to be completed in the course of the present summer. No. 6 will be completed by the end of the present year, as far as the carcase is concerned, and the contract No. 7, for the fitting and finishing of the whole building, can scarcely fail to occupy the next four or five years. It will be seen from this, that with the exception of a portion of the foundation, the whole of the contract works have been undertaken by Messrs. Grissell and Peto, and are now in the hands of Mr. Grissell.

Confining ourselves for the present to generalities,—the plan of the building is exceedingly simple and beautiful. From the Central Hall, an octagon of 70 feet, a corridor to the north (to your right, if you stand with your back to the Thames), leads to the Commons' Lobby and Commons' House; and a corridor to the south, to the Peers' Lobby, one of the chambers completed, and the House of Peers. Opposite to the spectator (still standing as before) is St. Stephen's Hall and Porch, communicating, by noble flights of steps, with Westminster Hall, and forming an approach of unequalled magnificence. It is worthy of remark, that when the floor of St. Stephen's Hall is reached, there is no one step throughout the whole extent,—all is of one level. In a line with the House of Lords, still further to the south, are the Victoria Hall (now finished), the Royal Gallery (a noble apartment, 108 feet long, 45 feet wide, and 45 feet high, to be filled with paintings and sculptures), and the Queen's Robing Room, communicating with the Royal Staircase and Tower at the south-west corner of the pile, now rearing itself in Abingdon-street.

The construction of the building throughout is externally of magnesian limestone from North Anstone, in Yorkshire, near Worksop, Notts. It is a beautiful close grained stone, of a texture considerably harder than Portland, and somewhat warmer in colour. The interior parts of the walls are of hard burnt Cowley stocks, exclusively from the fields of Mr. Westbrook, of Heston, which are admitted to be the best manufactured of any that are made for the London market. The bearers of the floors are of cast-iron, with brick arches turned from girder to girder; the entire roofs are of wrought-iron covered with cast-iron plates galvanized; the gutters are also of cast-iron galvanized; so that the carcases of the entire buildings are fire-proof, not any timber having been used in their construction. Wrought-iron bond, in courses of brickwork in cement, is used throughout all the walls.

* A writer in the last number of the *Athenæum* says on this head, "Take the records of cathedral building in general. Take Cologne itself, with the wealth of the empire and the contributions of Christendom: and when you find that the choir alone, begun in 1248 (as Sulpice Boisserée tells us) was not ready for consecration till 1823, and contrast it with the few years which have sufficed to erect this pile of building, your surprize will change into admiration of that union of system and science with ingenuity and skill which have placed before us in a few short years what seems work for at least half a century. Of this I think we may now say what Petrarch said of Cologne, nine years after the choir only was finished,—*Vidi completa alia in hac gente opera, quæcunque mortalium quondam fuerunt stupenda cuncta.*

Permit me here just to notice, that there is one thing very remarkable in the organization which has been made to construct this great work. Every element of modern science, every material and process of modern manufacture and invention, that could facilitate the execution or secure the stability of the edifice, have been diligently used. We have zinc roofing, iron rafters, cast-iron beams, plate glass—all new—introduced into the work as materials; and railroads, railroad carriages and travelling cranes, and rectangular combinations of parallel framing, all contributing to the perfection of a work—so different from use and wont, yet so congruous to the effect intended. I may say that I do not think it would have been possible, without all the refinements and modern improvements introduced so unsparingly by Mr. Barry, and without the systematic organization in the mere building department which the contractors, Messrs. Grissell and Peto, seem to have employed, and which arrangements have resulted, I may remark, very much from the practice and methods invented by civil engineers (architects) in recent times for their great modern undertakings.—I say, I do not think that without the modern system of extreme subdivision of labour, and the improved machinery of modern times, it would have been possible, even with an innumerable army of slaves and an absolute monarchy to set them in motion, to have done so much work in so short a period of time. And this inevitably suggests that it may just be possible, by the aids of modern machinery, to erect in modern times buildings that may not only rival, but far outvie, in grandeur and magnificence, the productions of ancient times."

* See page 183.

The interior stone-work is from Caen. The whole building, we should say, stands on a bed of concrete twelve feet thick.

The libraries and committee-rooms will be generally lined with Riga wainscot, and have wood panelled ceilings.

The interior of the House of Lords, which we now approach specially, is entirely of Riga wainscot of the finest quality, richly and elaborately carved throughout. The throne and the other parts, which are now almost obscured by gilding, are also entirely of carved oak,—no composition ornaments being used in any part. The arms at the back of the throne are also of carved oak, gilded. The roof over the House of Peers, of wrought and cast-iron, as already mentioned, is of vast dimensions (perhaps 30 feet high from the ceiling to the ridge), and is divided into compartments for hot and cold air, with reference to the ventilation of the house.* The whole of the interior of the House of Lords, including the ceiling, is composed of the most elaborate joiners' work, by Mr. Grissell, and has been subsequently decorated and gilded, in the ablest manner, by Messrs. Crace and Son, of Wigmore-street.

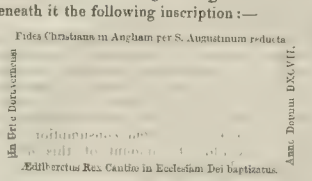
Not long ago, we alluded briefly to the decorations of the House,—the elaborate carvings, the blaze of gilding; and our present engraving, with those which will follow, will give a further idea of their nature and effect. Nevertheless, a more detailed account of them will probably be acceptable to our readers.

The ceiling is divided into eighteen main compartments by massive moulded beams (projecting as much as 3 feet). Each of these are intersected by mouldings into four compartments, containing a centre, with four surrounding panels. The general ground of the ceiling is rich blue, bordered with red and gold, and blazoned with the royal badges of the United Kingdom, radiating from centres in which are the emblems of royalty, carved and gilt. The beams and mouldings are painted a deep gold colour, the enrichments and projections being all gilt, including the inscription, "*Dieu et mon droit*," variously repeated on the main beams.

Six traceried windows range on each side of the east and west walls; and three corresponding arched openings are formed at the north and south ends of the chamber. The piers between the windows are occupied by canopied niches, eighteen in all, intended for bronze statues of the principal barons who were instrumental in obtaining Magna Charta. Two models in plaster, one of Archbishop Langton and the other of Fitzwalter, bronzed and gilt to shew the effect, have been put up at the Throne end; and arrangements, as previously mentioned, are being made with artists for the whole series, to be cast in bronze.

From the ceiling to the cill of the windows the walls are of a brown stone colour. Around the jambs of the windows is painted the inscription, "*Vivat Regina*," many times repeated, intersected by roses on coloured grounds in quatrefoils. The niches, rather lighter in colour than the piers, are relieved with gilding and partly with colour, the backgrounds being painted a diapered pattern in chocolate brown and gold. Under the niches are gilt angels holding shields, blazoned with the arms of the barons intended to be placed above. The windows will be ultimately filled with stained glass, but only one on the west side is yet completed. This is the work of Mr. Hardman, of Birmingham, by whom also the ornamental iron-work and brass-work have been executed. The remainder of the windows, too, will be confided to him. The endeavour of the architect was to obtain, with the character of the period, as much white light as possible. Success was not obtained till after many efforts.

The walls at the back of the arches will eventually be painted in fresco, to accord with one over the throne, already most successfully completed by Mr. Dyce, which appears in our engraving, — the subject, as most of our readers know, being the baptism of Ethelbert, the first Christian king of England. It has beneath it the following inscription:—




Below the windows, on each side of the chamber, down to the gallery, the walls are lined with panelling, elaborately carved. The railing to this gallery is brass, of characteristic design and very highly finished, ornamented at the bosses with enamelled grounds of red and blue. Below the gallery the wall is also lined with panelling, containing most delicate carving, surmounted by an enriched frieze containing the carved inscription,—"Fear God, Honour the Queen,"—and intersected by slender shafts terminating in carved busts of the kings and princes. Springing from this panelling is a traceried cove forming the support to the gallery, and on the compartments of the cove are emblazoned on gilt grounds, the arms of the succession of sovereigns and their chancellors from the period of Edward the Third, when the peers first met as a separate House, to the present time, with the proper crests, helmets, and mantlings, and labels containing names and dates of appointments.

The wood carvings, generally, require special notice. A few years ago it would not have been possible to obtain such an amount of carving in England, of equal excellence, at any cost. By collecting a large number of the best examples of the 15th century (as many as two or three thousand) for the constant inspection of the operatives, they have been imbued with the true feeling pervading these works, and enabled satisfactorily to carry out the architect's wishes. The carvings were all first bosted by Jordan's machine (a most important invention), and then finished by hand. Like the whole of the enrichments, it will be observed, they are all heraldic or symbolic. The drawings for the fittings and decorations, we must not omit to mention here, were made by Mr. Pugin, under the supervision of Mr. Barry. There is, perhaps, no one living so well qualified for such a task.

The throne, situated at the south end of the chamber, and raised on a dais of three steps, is shewn in the engraving. Both in design and workmanship it is truly beautiful. But one almost regrets the amount of gilding upon it, which hides the fact that it is carved in solid oak. It is a canopy in three parts, 18 feet 6 inches wide. The centre, rising much above the sides, is for the chair of the Queen; on the back of this part are carved, gilt, and blazoned the royal arms, with the appropriate badges, emblems, &c. The ceiling is divided into small panels, on which are painted the red rose, with white rays on a gilt ground. On the upper part of this centre canopy are introduced figures, illustrating the orders of knighthood, in rich canopied niches surmounted by open tracery. The lower canopy, on the right of the throne, is for the chair of the Prince of Wales, and that on the left for the chair of the Prince Consort. On the back of these canopies are also blazoned the respective coats of arms, and appropriate heraldic distinctions.

The Queen's chair is of beautiful design and execution, carved and gilt, richly studded with enamels and chrystals; the back and arms are covered with velvet, embroidered with the royal arms, &c. The two side chairs are in the same style, though of smaller dimensions. These chairs were manufactured by Webb, of Bond-street.*

The floor of the throne is covered with a velvet pile carpet of deep red ground, powdered with lions and roses, supplied, with the other furniture, by Crace.

Fronting the throne is the reporters' gallery, very commodiously placed and approached, and above that the gallery for strangers. The front of the former is richly ornamented with panelling, containing the royal badges painted on gilt grounds, surrounded by diaper ornaments. In the cove under this gallery are blazoned the arms of the different royal lines—the Saxon, the Norman, Plantagenet, Tudor, Stuart, and Brunswick; and on either side are illustrated the archiepiscopal and episcopal arms, interspersed with mitres, pastoral staffs, sceptres, &c.

The principal entrance is at this end of the House, from the Peers' Lobby, through a pair of brass gates 11 feet high and 6 feet wide, filled with open tracery work of beautiful workmanship, in a material not used in England for such a purpose for nearly 400 years. The shrine and gates in Henry VII.'s Chapel are amongst the best examples of such work remaining to us.

The floor of the chamber is covered with a carpet of a royal blue colour, dotted with gold. The seats for the peers, five rows on either side, accommodating 235 persons, are covered with red morocco leather, and the woolsacks with red cloth.

The chamber is lighted by thirty-two branch lights, springing from the sides of the niches, burning gas on Faraday's ventilating principle, and by four splendid brass candelabra, two of them at the throne end, holding each twenty-five lights, and two at the bar end, holding each thirteen lights. Of these and other details we shall give illustrations hereafter, until which time we reserve a description of the Victoria Hall, at the south end of the House, and the Peers' Lobby, at the north end, both of which are fitted up in a style of corresponding magnificence.

We shall then also make some remarks on the works now in progress, the Royal Porch (an enormous construction), the Central Hall, and St. Stephen's Hall and porch, and supply deficiences in our present notice.

If we have succeeded in conveying to our readers a commensurate idea of the elaborate and admirable manner in which the House of Lords has been completed, and of its gorgeous effect, their astonishment will be little less than their admiration when we tell them, that all this has been done in less than eighteen months.

Mr. Barry is raising an honourable trophy for his country, and an enduring monument for himself.

The following dimensions will be found useful. The length of the House of Lords in

* For description of the mode of ventilation adopted, see p 156. *ante*.

* A fuller description of these chairs will be found on page 153, *ante*.

the clear is 91 feet, the breadth 45 feet, and the height 45 feet,—so that it is a double cube. From the north wall to the bar is 21 feet. The height from the floor to the spring of soffit of side galleries (or coves) is 11 feet; from the floor to the cill of the windows it is 21 feet. The side galleries are 3 feet wide, having only one row of seats. The thickness of the walls of the House is 3 feet 1 inch, with recesses at intervals.

The materials already used include from eight to nine hundred thousand tons of stone, twenty-four millions of bricks, and five thousand tons of iron !*

## SHOULD PROPER VENTILATION BE ENFORCED?

ROYAL INSTITUTE OF ARCHITECTS.

At a meeting of the Institute on Monday evening last, Mr. C. Fowler in the chair, Col. Leake was elected an honorary member, and Mr. J. D. Hopkins was elected a fellow.

Mr. Toynbee, F.R.S., read a paper on ventilation, and how far it may be rendered compulsory by legislative enactments.

The author of the paper commenced by stating, that the result of the extended investigations so long conducted by the medical profession into the nature and treatment of disease, demonstrated that the great duty of every man was to carry out preventive measures. English people seemed to be but little aware of the large amount of disease by which man at the present time is afflicted; and yet the details in Lord Morpeth's recent speech, the returns of the registrar-general, and statistics from various sources, shewed that among them disease was the rule, and health was the exception. Let it be continually repeated, and never forgotten, that one-fourth of the children born in England die before they reach the fifth year, and out of 49,089 people who died in London in the year 1846, 22,275 died before they reached their *fifteenth* year, and only 2,241 of *old age*, which Boerhaave stated to be the only disease natural to man. In addition to this, it must be known, that as a general rule, when the body is examined after death, whether of a child or adult, one or more organs is found in a state of disease, a fact which induced a physician to state, that he looked upon every adult he met in the streets of London as a walking museum of morbid anatomy. If the causes of the 49,089 deaths in 1846 be examined, it will be found that the enormous proportion of 14,368 were from diseases of the organs of respiration. Now, it has been shewn that the great source of these diseases was the respiration of impure air. To suggest measures for the removal of this great evil, and to prevent some of the most distressing diseases to which mankind is subject, was his object in responding to the request of the society, that he would deliver the present address. Mr. Toynbee then proceeded to consider the subject of ventilation in its various bearings. In proof of the *necessity for ventilation*, he stated that it was of great importance that air should be continually in motion, for, like water, when stagnant it became offensive and injurious. This was accounted for by the fact that the air always contained a large quantity of animal and vegetable matter in the form of the ova of infusoria, and the seeds of the lower vegetable organisms. But the act of respiration was the great cause of the deterioration of the air. The air in the lungs was exposed to 170,000,000 of cells, having a surface equal to thirty times that of the body; that during respiration the air was deprived of oxygen, and became loaded with deadly carbonic acid gas, and was rendered totally unfit for a second respiration, being in reality no longer atmospheric air, but a poisonous gas.

*A second cause* of the deterioration of the air is the combustion of lamps, gas-lights, candles, &c. A single candle is nearly as injurious to the air as a human being. Two fourteen-hole argand burners consumed as much air as eleven men. *A third source* of atmospheric impurity is the vapour loaded with animal matter, given off from the lungs and the skin; each of these parts pours out an ounce of fluid every hour, so that in a church containing 500 people, twelve gallons of noxious fluid are given off in two hours. *A fourth source* of bad air in towns is the large quantity of decomposing animal and vegetable matter, left to give off its effluvia, and the difficulty there is in the renewal of the air in towns by means of the winds, on account of the vicious mode of their construction and their large size. In reference to the impurity of the air of London, Dr. Mantell states, that various classes of infusoria, which he was in the habit of keeping alive in his house at Clapham, all died in London; and it is well known, that scarcely any plants will live in London.

It was then stated, that certain diseases were distinctly traceable to the *absence of ventilation;* viz., fever, consumption, scrofula, deafness, and that most fertile origin of numerous diseases, the common "cold." It was shewn, that 120,000 people in England and Wales are always slowly dying from consumption; that there is double the amount of this disease among in-door than there is among out-door labourers; that this disease was more frequent among women than among men; that in 1839, out of thirty-three milliners who died in London, twenty-eight died of consumption. Mr. Toynbee then shewed, that up to the present time the subject of ventilation had been entirely neglected in the construction of rooms, houses, towns, and cities; that the greatest injury had been inflicted upon mankind by this neglect; and as the population increased and towns became larger, the evil must become greater, unless remedies were at once carried into effect. Under these circumstances, until society should be sufficiently informed voluntarily to secure its well being, it was the bounden duty of Government, the enlightened guide of its people, to suggest measures and see them carried out, to prevent the large amount of misery that the absence of ventilation was producing. The important question then was, how far could Government interfere with advantage in enforcing plans of ventilation by legislative enactments? Mr. Toynbee then submitted the following propositions for the adoption of Government, to the consideration of the Institute:—

1. That no living, sleeping, or work room shall contain less than 144 superficial feet, or shall be less than 8 feet high.

2. That such room shall have one window at least, opening at the top.

3. Also an open fire-place.

4. That in every living, sleeping, or work-room, erected in future, some method shall be adopted of allowing the foul air to escape from the upper part of the room. He then pointed out the practicability of carrying out this provision, either by the introduction of Arnott's valve into the chimney—thousands of which were at this time in operation, and which might also be adapted to existing chimneys without fear of smoke, by the addition of a simple contrivance, which he described,—or a distinct channel might be made for the purpose. As a proof that ventilation must largely conduce to the prevention of disease, he stated, that during the past year there was a diminution of nearly 300 in the number of sick applying for admission to the St. George's and St. James's Dispensary; and it was believed that this, in part at least, was due to the improvement made by the Samaritan fund attached to the dispensary in ventilating the abodes of the poor in the district.

5. That every such room, erected in future, shall have some means of continually admitting fresh air.

6. In every public building in which gas is used, to insist upon the use of plans to carry off the products of combustion, and not to allow them to escape in a room. Various plans having this object, are in operation in hundreds of shops, and may be seen in many shops in Regent-street. By their use, not only are the goods in the shop saved from injury, but the health of the people is improved. He was happy to hear that in Covent Garden Theatre not a particle of the products of combustion from the gas was allowed to enter the theatre.

7. That all churches, schools, theatres, workshops, workhouses, and other public buildings, shall adopt such methods of ventilation as are approved by the Medical Officer of Health.

Mr. Toynbee pointed out how these desirable objects were to be carried out, and shewed that every house and room must be so arranged that it can be supplied with fresh air to replace the vitiated air which has been removed. Professor Hosking had carried out these plans in every part of his house; and until they were general, the diseases dependent upon the want of ventilation must be a scourge to society. He observed, that in all the stables now erecting, admirable plans of ventilation were adopted. Having given this subject deliberate consideration, he had arrived at the above conclusions, in which, among many others, he was supported by Dr. Sutherland, of Liverpool, and Dr. Guy, of London, two of his many fellow-labourers in the public health cause, whose enlightened intelligence was only equalled by their benevolence.

In conclusion, he stated that the various Health of Towns' Associations were at work heart and soul, instructing the masses of the people as to the best means of promoting their physical welfare, a labour in which every enlightened man should join; and he felt that if Government would lend all the aid in its power towards carrying out sanatory measures, not only would an enormous amount of misery be saved, but an extent of happiness would be gained of which we had at present only a faint idea.

The chairman having alluded generally to the importance of the subject, and invited discussion,—

Mr. Godwin said he was anxious to know if any gentleman present had examined Mr. Leslie's patent ventilating stove, wherein was a series of valves from the chimney-piece to the ceiling. He had given it some consideration himself, and it seemed to him greatly deserving attention. The fire burnt but few coals, and ventilation seemed insured by it. As a smaller flue was used for it than the Buildings Act allowed, the patentee was precluded from introducing the stoves, excepting in the country; he had little doubt, however, they would force their way into town in spite of the Act. It seemed somewhat curious that an Act purporting to be for the health and safety of the inhabitants of the metropolis, should serve as a bar to improvements in ventilation.

Mr. Toynbee said, he was perfectly well acquainted with Mr. Leslie's patent, approved it highly, and thought it much to be deplored that its use should be prevented by so unwise a clause in the Act. Smaller flues than were generally used were much to be desired.

Mr. Pocock thought small flues would soon choke and would not be found advantageous.

The chairman remarked, that he had found 6-inch flues for the thermometer-stove a considerable improvement over larger flues; and Mr. Mocatta said, in Lancashire and its neighbourhood, 9-inch pipes were greatly used, and answered perfectly well.

Dr. Guy said, he had seen Mr. Leslie's stove in operation on a very unfavourable day, and that it appeared to act most perfectly. It burnt very little coal, produced little ash, and afforded great facilities for the escape of vitiated air; he wished it might come into general use.

He then addressed the meeting at some length on the evils of impure air, to which he said, 5,000 persons were sacrificed every year in England. Attending at an hospital, he had found that a large number of letter-press printers came there with chest affections, and he was led in consequence to visit and examine several large establishments. The result of the facts he collected shewed, that in proportion to the quantity of pure air the men had to breathe so was the freedom from illness in the establishment. He thought Government should lay down the rule, that every workman should have 500 cubic feet to breathe in.*

Inconvenience from Defective Pugging.—Much annoyance was found in the red drawing-room at Windsor Castle, when private balls were given, from dust. On taking up the floor, we are told, it was seen to proceed from the pugging being defective.

* On Wednesday, her Majesty and Prince Albert, inspected the New House of Lords preparatory to its being opened on Thursday. Her Majesty was received at the old royal entrance by Lord John Russell, the Lord Great Chamberlain, Mr. Barry, and Mr. Grissell, and spent nearly an hour and a-half in the inspection. The House will be opened to the public shortly.

* A small work, recently published by Sherwood and Co., "On the Remediable Evils attending the Life of the People," by Dr. Riadore, appears to contain much useful information on the subject of ventilation.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Building of a Stone Bridge over the Rhine at Maynz.*—The exertions which France has made, of late, to develope her system of communication, be it by the way of roads or canals, are leading to a proportionate exertion on the other side of the Rhine; and the necessity of a west-easterly communication, uniting Paris with the interior of Germany, is every day more felt. For this purpose, a permanent bridge over the Rhine (be it at Mannheim or Maynz) is of absolute necessity; and the plan lately laid before the common council of the latter city by Mr. Becker, painter to the court of Darmstadt, seems to be one corresponding with, and adequate to, its purpose. It is to be of stone. The arches to be of a height permitting the passing of steam and even sailing boats. Another difficulty is the necessary passing of the railway over it. This, Mr. Becker intends to accomplish by *suspending* a wooden framework on the upper part of the stone pillars (of which there will be *twenty-eight*), while the upper arching of the bridge would serve for the general traffic. The bridge would lead from the Weisenau-Lager, one mile above the city, to the left corner of the Mayn embouchure. By this position, several advantages would be accomplished. The arches, being nearly on a level with the hill near the Weisenau-Lager, would not impede either navigation or raftage (*Flösserey*); they would, moreover, not be subject to the drifting of the Maynz ice in the spring season. If the foundations of the pillars were to be laid in the same way, as has been done in the Lagune-bridge at Venice, each pillar, with the vaulting, could be made at about 50,000 fl. (5,000*l.*) If the wooden structure of the railway and the suspending apparatus (*Hängewerk*) be estimated at 300,000 fl., the whole bridge, with its twenty-eight pillars, would cause an expense of about two millions of florins. But as the tolls and other dues of the present *pontoon* bridge at Maynz even, yield 80,000 fl., which is the 4 per cent. interest of the above sum, the advantages of a stone bridge would much increase this revenue, in which calculation the increase of traffic by this centre of the East-Western rail line is not to be lost sight of. The costs are proposed to be divided in equal parts, between the Hesse Darmstadt government, the municipality of Maynz, the German League at Frankfort, and the West-Eastern Railway Company.

*The two Holbeins.*—The late exhibition of the Munich Art-Union has been graced by the marble bust of H. Holbein, jun., made by Lossow. It has been modelled after an original design which exists at Basel, and exhibits a great degree of care and fineness of execution. Holbein is represented in the garb of his times, the head covered with the mediæval German *Barret*. It represents the artist quite as a juvenile—and this with perfect consistency, as no one (if we except Lukas of Leyden, as a copper-plate engraver), has earned so early, at the age of *fourteen*, the laurels of a complete mastership in art. The bust is destined for the picture gallery of Augsburg, where the finest specimens of his art are preserved.—It is the same city also, which intends to erect a bronze statue to Hans Holbein, the father.

*Monument to Rembrandt.*—A colossal statue of this great painter, modelled by T. Roijer, is to be erected at Amsterdam. For the sake of facilitating the raising of funds, an art-album is to be published, to which the first Netherland and Belgian artists are contributing, amongst them Keyzer, Gudin, Lapito, Calomme, and others.

*The New Pinakotheca of Munich.*—It is known to most readers, that H. M. the King—besides *the* Pinakotheca, destined for works of the old masters, has resolved on one for those of Young Europe, as it may be now termed. The following pictures belonging to this new institution were exhibited by the Art-Union during last month:—"The Blind *Singer*," by F. de Braekeleer—a *pendant*, probably, to our blind fiddler, is much praised. The picture of the "Pontine Swamps," by Achenbach, of Düsseldorf, is painted with forcible colours, and a vivid seizing of Italian scenery. Here we see the luxuriant herbage and forests of the Campagna di Roma, the distant sea, while two wild buffaloes break brushing through the wild scenery. A landscape of Hildebrandt, of Berlin, deserves equal praise—exhibiting a view of distant countries, a rocky sea-shore, on which a host of sturdy penguins have congregated. *La Vigna d'Olivano*, of the late talented Koch, may conclude *our list—although pictures of Jacquard*, P. von Schendel, Venneman, and other *Dutch* masters are a striking proof, that foreign talent is also fostered by the Munich art-world. There is also an architectural picture by Leo Von Klenze to be adverted to. It shews the Acropolis of Athens, represented at the period when Paul preached the Gospel there. The archæological detail, which Mr. K. has infused in his work, deserves every praise. The prospects of the Munich Pantheon of modern art are encouraging.

## BUILDERS ON THEIR OWN LAND LIABLE TO THE BANKRUPT LAWS.

Mr. Editor,—On reading the notice in your paper, April 3rd, under the head of "Building and Bankruptcy," I think the case is not so clearly stated as it might have been for the benefit of most of your readers.

The meeting was held under a fiat sued out by Mr. Sloper, a painter and decorator, against Mr. Stewart, the builder of the Royal Crescent, Shepherd's-bush Market, and other streets at Notting-hill, and was for the purpose of opposing a previous adjudication. Mr. Lawrence argued that any gentleman was at full liberty to build on his own estate without being liable to the bankrupt laws, and if he, Mr. Stewart, was liable to the bankrupt laws, the Marquis of Westminster, the Marquis of Bute and others were equally liable.

Mr. Duncan, who appeared in support of the fiat, stated these noblemen and Mr. Stewart's case were very different; as they built on land inherited from their forefathers and their own freehold, and Mr. Stewart's land was taken on building leases, with the view of building houses with intent to make a living by selling or letting, as is the usual custom of all speculating builders.

His honour stated he could not at once decide, and must take time to consider before he could withdraw the fiat.

It may perhaps be for the benefit of your readers, to here state the law on this point. It is this: any person has a right to build on his own freehold for the purpose of improving the property. If any one shall take land on building leases, and erect houses thereon *with intent* to sell or let for hire, the party is liable to the bankrupt laws: this then is Mr. Stewart's case.

Now, Mr. Editor, as this is a matter of very great consequence to most of your readers, I beg to say, that if Mr. Stewart is not amenable to the bankrupt laws, I consider the laws very defective, and it is high time to alter them, as it would appear to any reasonable man that they hold out a premium for any species of improper dealing. Any one who is inclined may give up his profession or trade, take a piece of land at a ground rent, get some unfortunate man to build piece-work, or he may employ journeymen to labour, or do the whole by contract, and get as far in debt for materials as creditors will allow him; and when his plans are ripe he can mortgage the property to his friends and go out of the way of his creditors and call himself a gentleman, whom the bankrupt laws cannot touch, and enjoy the produce of the creditors' labour and money.

I am, Sir, &c.,

A Constant Reader and a Creditor.

April 5th, 1847.

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This case having excited considerable interest, and indeed, turning on a question of much importance, we give Mr. Commissioner Fonblanque's judgment as reported in the *Morning Advertiser*. His honour said, "that the question in this case was, as to whether a person who bought land, or took it on lease, and himself built houses upon it, and sold or let the same, came under the denomination of a builder, and was subject to the bankrupt laws? As the law formerly stood it was quite clear that, for a man to build on his own land and sell, in any form, it would be necessary to prove that he did not come within the meaning of the bankruptcy laws, the persons so intended being those who dealt in commodities, and buying and selling. It was afterwards extended to a dealer in money, and there it rested for a long period, until a question arose in the case of 'Parker and Wells' a brickmaker; and the Court of Common Pleas decided that such a person making bricks upon his own land was not a trader. This was reversed by Lord Mansfield in the Court of Queen's Bench, and afterwards sent to the House of Lords. The legislature had considered the bankrupt laws, and a number of denominations which would not come under a general description were introduced *ex nomine*, and amongst the number builders were introduced, but not brickmakers. His honour then referred to a very lengthened judgment, in the case of Sutton and Whealy, 7 East; upon the concluding remarks of which it must be considered that the *rationale* of the bankrupt laws rested. Though the statute of the 6th Geo. 4, did not include brickmakers, yet the words 'workmanship of goods and commodities,' were considered to involve brickmakers. The question was mooted before Lord Lyndhurst, and again it was held that a brickmaker on his own land was not a trader subject to the bankrupt law, but there was a passage in his reasoning, bearing very strongly upon the present case. Speculation, continued his honour, increased, and the question of speculative builders had been raised, and it was known that they went on upon leases, getting credit on mortgage, selling the lease as soon as the house was covered, and then with that money going into the market again. He was of opinion that Mr. Stewart came within the denomination of a person against whom the bankrupt law was intended to prevail, and he (the commissioner), could find no cases to the contrary. In the cases of the Duke of Northumberland, the Marquis of Westminster, or a Duke of Bedford, if building speculation were intended, Mr. Cubitt or Mr. Peto would be employed, and against them the timber-dealer, the brick-maker, or the ironmonger, would have their remedy; but not so in the present case; and if in the present case it was required, he (the commissioner) would draw the distinction between a letting for hire and a letting for rent. He was of opinion that Stewart was a bankrupt within the meaning of the Act of Parliament."

At a subsequent meeting, the proof of the act of bankruptcy was proceeded with, and it was shewn that Mr. Stewart had been denied from his place of residence, and that he had gone abroad and remained there, being in a state of pecuniary embarrassment.

The commissioner said that he should consider this an act of bankruptcy, unless Mr. Lawrence shewed that Mr. Stewart went there in consequence of the ill-health of his wife, or any such state of things.

Mr. Stewart was then declared bankrupt.

## EXHIBITION OF MODERN WORKS OF ART IN THE LOUVRE.

Once more the noble works of the old masters gathered together in the Louvre, at Paris, are covered over with the productions of the modern school, and so of course become closed to all visitors for a considerable period of time. If this were done in England, our art-loving neighbours would shrug their shoulders, look contemptuous, and whisper "shopkeepers."

The works exhibited consist of 2,321, being little more than half of those sent in, the number of which exceeded 4,500. They are divided as follows:—Paintings, miniatures, water-coloured drawings, &c., 2,010; sculpture, 168; architecture, 20; engravings, 95; and lithographic prints, 21. We find the names of Horace Vernet, Delacroix, Roqueplan, and others of eminence, in the list; but Ary Scheffer, Decamps, Meissonnier, and some others, have determined not to submit their productions to the decision of the jury appointed to decide the question of their admission or rejection.

"A Roman Orgie," by *Couture*; "A Trait from the life of St. Lawrence," by *Brisset*; "The Favourite of the Harem," by *E. Delacroix*; "Four o'clock, or Turn Out at the Saloon," by *Biard*; are amongst the pictures well spoken of.

*Robert Fleury* has a masterly work, representing a scene in the life of Galileo, and *Horace Vernet* a "Judith."

## MEMORIAL WINDOW IN ST. MARY'S, LEICESTER.

In lieu of erecting an ordinary monument to the Rev. John Brown, a respected minister of Leicester, as proposed at a public meeting, it has been determined to restore the east window of St. Mary's, and in stained glass to place his effigies. The east window of Ripon Minster has been taken for a model, and the work is now in progress. The window itself is upwards of 30 feet high, its character the early decorated; the tracery of the arch is geometrical, and the shaft is divided by mullions into seven lights. A design for stained glass by Mr. Forrest, of Liverpool, has been approved. In the upper part of the arch is represented the Wise Men's Offering, the Transfiguration, and the Crucifixion; below are the emblems of the Evangelists. In the centre light is a full-length figure of Mr. Brown, robed as a minister. The remaining six lights are filled with diaper work, relieved by thirty ornamented compartments or medallions; eighteen of these are composed of angels bearing scrolls, on which will be inscribed appropriate texts and passages, while the remaining twelve represent the *practices* of a Christian life. The cost of the stone-work will be 160*l.*, and of the glass 250*l.*

## A BILL OF HEALTH.

Lord Morpeth's bill for Improving the Health of Towns has been distributed. It consists of 52 clauses.

Clause 1 empowers her Majesty to appoint four commissioners (the head of the Woods and Forests being the first commissioner) of health and works. 2. Entitles two to act. 3 and 4. Enable them to have a seal, and to appoint inspectors and officers. The clauses following empower commissioners to inquire into state of towns, "especially with regard to the supply of water and drainage thereof, and the best means of improving the same, the prevalent causes of disease therein," &c.; empower also inspectors to report on "levels of the land, course of streams and water-courses, drains and sewers, the situation of the springs and wells of water, the situation of the buildings," boundaries, &c.; giving to towns fourteen days' notice of their intention to visit, previous to report. Inspectors to have power to summon witnesses, on penalty not exceeding 5*l.* for refusal. 11. Obliges inspectors' report to be published in the town one month before it is presented to her Majesty. 12 and 13. Provide for order in council to be issued to enforce the act. 14. Relates to costs of preliminary inquiry. 15. Makes mayor and aldermen town commissioners under the act in corporate towns. 16. Provides for extension of boroughs on inspectors' recommendation or report. 17. Orders council to be enlarged by two aldermen and six councillors, where a ward is added. 18. Regulates town commissioners in non-corporate towns. They are not to be more than twenty-seven in number, each possessed of 1,000*l.*, or rated to the poor on a property of 30*l.* annually, two-thirds of them to be elected by the rate-payers, one-third appointed by the crown. 19. Relates to the metropolis (exclusive of the city of London), divides it into districts, and appoints the same mode of forming the commissioners or council to be observed, except that the elected must have 5,000*l.* property, or be rated upon an annual value of 50*l.* 20. Commissioners' clauses' act of 1847 incorporated with the present. 21. Boundaries of increasing towns may be extended. 22. Commission of sewers may be granted to town councils or commissioners, although not "qualified by estate, as is required" by Act of 4th Vict. "for amending the laws relating to sewers." 23. Existing commissioners of sewers, in lower levels, may be required by the Commissioners of Health and Public Works to construct or enlarge sewers, and discharge the sewage of towns, to their satisfaction. By the 24th, Town Improvement Act of 1847 is incorporated with the present. 25. Orders appointment of physicians or surgeons as officers of health, removable at pleasure of Commissioners of Health and Public Works. 26. Ordains the appointment of one or more engineers "as local surveyors of the drainage and other works authorized by this act; and the provisions of the Town Improvement Clauses Act, 1847, with respect to the local surveyor thereby authorized to be appointed, shall apply to every surveyor so appointed," except that the Commissioners of Health, &c., alone may remove him at pleasure. 27 and 28. Relate to the auditing of accounts; 29 to attendance of meetings. 30. Appoints the inspectors to visit towns, and make reports on "all things done or omitted to be done" by councils, &c., and on all complaints nuisances, &c. 31. Authorizes inspectors, with assistance of surveyors, &c., to prepare "plans of any new works, additions, or alterations that may be needed for effectual drainage . . . removal of all waste water, filth, and refuse from the houses and closes, and from the streets and thoroughfares of the town; and also to set out the most advantageous lines for main sewers, and the best outfalls for most effectually draining the whole town or district; and also to shew the best plan that in his judgment can be made for obtaining supplies of water," &c.; and 33 authorizes the preparation of estimates of such new works, &c., with the assistance of the surveyors and other officers; 33 giving power, while so employed, to enter lands and tenements. 34. Ordains council or commissioners to give public notice of application for approval of works; and 35 authorizes objections to be heard and considered. 36. Enacts that the power of commissioners under local acts may be taken away. 37—40. Relate to necessary repeal of certain provisions of other acts; transfer of powers and trust property; and provision for outstanding liabilities. By 41, existing contracts are to stand good; by 42, powers of other acts not inconsistent with this remain in force. 43. Ordains compensation to be given to officers under trusts transferred. 44. Empowers the levying of sewer rates and improvement rates. 45. Gives power to councils or commissioners "to construct gas-works and manufacture gas, and make and levy rates," &c.; 46, to construct water-works, and to supply their town with water, the Waterworks Clauses Act, 1847, being incorporated with this Act; and the councils, &c., "required to furnish water to every house in their town within such limits as" the Health Commissioners shall approve of; rates being levyable, &c., according to Act of 1847. 47. Provides for town commissioners purchasing shares of water companies at seven years' purchase of dividend. 48. Authorizes the mortgage of water-rates to effect such purchases; 49 and 50 relating to prices and redemption of mortages. By 51, water-works are vested in councils or commissioners; and by 52, this Act may be amended or repealed.

The Health of Towns Association held a meeting on the 7th instant, Lord Ashley in the chair, for the purpose of taking the Bill of Health into consideration, when fifteen resolutions were unanimously passed, recounting the main arguments for the enactment of provisions such as those embodied in it, and concluding, that the contemplated measure is calculated to remove from the lower classes, and through them, from the middle and higher classes themselves, the most prevalent and powerful of the physical causes of disease and mortality, and to bring the very lowest of the people within the influence of that physical and moral, intellectual and religious, improvement which is the necessary consequence of advancing civilization, and the inestimable benefits of which the higher and middle classes have long participated.——A report on the bill has been brought up to the court of common council in the city, from their Commissioners of Sewers. The commissioners, after remarking that for all practical purposes nearly all the power under this bill will be lodged in the hands of a central commission, or board, of five members, comprising two members of the Government, and presided over, *ex officio*, by the Chief Commissioner of Woods and Forests; and that her Majesty in council may at any time, after the passing of the Act, issue an order applying provisions of the Act to the city of London, thereby annulling their power; —report to council their resolution, to request Government to exempt the city from its operation; and proceed to shew that they have not neglected their duties. A discussion followed, in course of which Dr. Lynch and others stoutly insisted on the advantage of making the improvement of the city part and parcel of the great general improvement, which the Government seemed determined to effect for the advantage of the humble classes, as well as of all others. Dr. Lynch declared that, if time permitted, he could refute every statement in the report, as the city of London, above all places, required the purification which the Government measure was calculated to give; and yet it was a melancholy defect in the corporation, that the moment the Government shewed a disposition to sanction a sanitary reform, the court of common council disapproved of its interposition. The motion, that the report be agreed to, however, and entered on the journals, was carried.——The Marylebone vestry have had a meeting on the subject, and recommend that the most strenuous and unqualified opposition be offered, and that the other metropolitan parishes be immediately communicated with, with the view of organizing and strengthening an opposition which may be effectual in defeating the proposed measure, at least as far as the metropolis is concerned. —— The Westminster Commissioners of Sewers, as will be seen in another page, will oppose the measure.

## THE NEW LANDING STAGE AT GEORGE'S PIER, LIVERPOOL.

This enormous stage, constructed from the designs of Mr. Cubitt, the engineer, under the superintendence of Mr. Hartley, is nearly completed, and will not cost less than 40,000*l.* We take the following particulars from the local papers:—

The figure of the upper surface of the landing stage is as near as possible that of a ship's deck with a bow at each end. The length of the stage is 507 feet, and its width 80 feet 9 in. The flooring consists of five-inch planks of the best pitch pine, is secured with patent compressed treenails, such as are used in the royal navy, and all is made perfectly tight by caulking. Inconvenience or injury from the lodgment of water on the stage is further prevented by the surface being made to slope gently towards the edges. From the edge inwards, for for a breadth of 16 feet, the planks are laid longitudinally, or in lines parallel with the sides of the stage; after that, for a breadth of 18 feet, they are laid diagonally; down the centre they again run longitudinally, and the same order is repeated between the centre and the opposite side.

Massive oaken stanchions, a foot square at the base, and secured on the inside by strong iron knees, encircle the deck at intervals of 10 feet, with low mooring posts in the intermediate spaces, well strapped to the deck. Near each bow are four longitudinal timbers, 35 feet in length, to serve as mooring bits, and bearing evidence of a capacity for sustaining the utmost strain to which the mooring chains may be subjected.

The flooring rests upon a double tier of balks firmly strapped together, making the entire depth of the woodwork 3½ feet. Underneath, running tranversely with this substantial platform, are thirty-nine iron pontoons, flat on the upper surface, on which the timbers rest, and cylindrical on the lower, so as to offer the smallest amount of obstruction to the flow of the tide beneath. The length of the pontoons corresponds, of course, with the breadth of the flooring, except where the latter tapers off towards the ends; they are 80 feet long by 10 feet in width, and 6 feet in depth. These pontoons are connected with the woodwork by iron straps, and they can be entered by man-holes from the deck, for the purpose of being examined and repaired.

The connection between the landing-stage and the pier will be by means of two iron bridges, the length of which will be 150 feet, and the width 17 feet. Some idea may be formed of the strength and solidity of this part of the structure when we state, that the pressure of the ends of the bridges upon the deck of the stage will be equal to a weight of about 100 tons. The bridges will be about 300 feet apart; and the distances between the pontoons are so arranged, as to concentrate the greatest buoyancy between those parts of the platform upon which they will immediately rest.

Use of Architectural Schools.—Mr. Joseph Hume declares that since the abolition of the School of Naval Architecture, 20,000,000*l.* have been expended in the construction of ships, not one of whose floatage was ever correct!

## CAPITALS OF THE RENAISSANCE PERIOD.



*Fig.* 1.



*Fig.* 2.



*Fig.* 3.

### CAPITALS OF THE RENAISSANCE PERIOD.

THE capitals of columns and pilasters, during the sixteenth century, when the Italian taste usurped the position of the pointed architecture of the middle ages, were not simple repetitions of those which were universally employed during the classic periods, but became objects for the skill and imagination of the sculptor. Of this fact the columns of the tomb of Louis XII., in the abbey church of St. Denis, are a beautiful example; for in the whole of them the same general outline is retained, but the ornament is in the most graceful and fanciful manner diversified. The three specimens here given are from Rouen.

Fig. 1 is from the *Abbaye Saint Amand*. It is placed above a circular shaft, and supports a polygonal turret, which, with some other parts of this magnificent and ancient edifice, was built by Thomas Daniel, whose arms still display themselves upon a chimney-piece in the interior. Fig. 2 and fig. 3, are from the front of the *Bureau des Finances*, a fine stone building opposite the cathedral. It was erected in 1509, and was appropriated as the Palace of the Cour des Aides. Its external decorations are among the most beautiful of the renaissance period in France.

### PROPOSED REMOVAL OF WINDSOR AND ETON.

A PROPOSED plan for building new towns at Windsor and Eton, in order to improve the Castle, printed, for private circulation only, by Messrs. Kyle and Kerl, has been raised into undue importance by unnecessarily loud laughter and abuse in two or three quarters. We have nothing to urge in its favour: it would involve a wasteful and uncalled for expenditure of money,—still we are disposed to give the projectors' scheme in their own words:—

"It is proposed that a road, dividing the parks from the new town, should commence at the river, and run a quarter of a mile west of the castle, across the intersection of Peascod-street and the New-road, over Spital-hill, and along the valley east of the cavalry barracks to the great park; that the portion of the present town, eastward of this, would be cleared for the parks; and that the Spital-road, Clarence-crescent, and Clewer-lane would be converted into a portion of the new town, which would occupy the fields between these and Clewer village. From a square in the centre of it, a leading street would cross the river by a bridge west of the Brocas-clump, forming the main street of the new town of Eton, and thence joining the Slough and Datchet roads. Its continuation on the south side of the square would terminate the present new road at the Gravel-pits, and form an approach to the railway. The streets running east through the town, and ending in the New Park-road, would communicate with the Staines road, crossing the Long Walk, and south of Shaw and Clayhall farms. The railway, from the South-western at Staines, would run almost straight from the Bells of Ousely, tunnelling nearly under the present double gates, through the whole extent of the new park, about the distance of a mile, and thence under the Spital-road, near the Stag and Hounds public-house, and west of the cavalry barracks to its terminus in the new town, on a level with the streets, and without crossing a single thoroughfare. The alterations on the east side of the parks would be almost identical with those already intended; their boundary being formed by a road passing by Clayhall farm and the Nelson public-house, over the river near the latter; thence, up the Buckinghamshire bank to Datchet, and from that village along the present road, north of the Playing-fields, to meet the new leading street of Eton. The towing-path crossing from the river bank, near Black Potts, would run up Romney island to the Cobbler's Nose, and thence over a bridge to the Windsor side.

"The new town of Eton, erected on the opposite bank to Windsor, would be separated from the grounds of the college by a road continued in a line with the Windsor Park road, with or without a foot-bridge; and all the present town would thus be removed, with the exception of a few houses adjoining the college. A street on the west side would limit the extension of the new town, so far as to leave the whole tract of country in that direction open, as at present, to the collegians.

"The hill on which the castle stands would thus be cleared to its base. The parks would be extended, and the only public road across would be at such a distance from the castle as not to offer any inconvenience. The railway tunnel, a mile and a half distant from the castle also, would have its ventilation in the park concealed by trees, and any other ill effects obviated."

The number of houses in Windsor to be removed is calculated at 1,300, and in Eton about one-fifth of that number. A railway company would have them all down and rebuilt in less than no time, and without comment, provided the owners and occupiers were first duly compensated. In the present case, however, it seems quite uncalled for; the less so, because arrangements are in progress, as we understand, for getting as much increased privacy as the Queen desires, at comparatively trifling expense.

### METROPOLITAN.

THE Piccadilly improvements, according to "One of the Injured," who complains of them in the *Times*, are giving great annoyance and "serious detriment to all tradesmen and owners of property in the neighbourhood." The workmen on the new museum are said to have been of late altogether dismissed, with "no prospect of a speedy completion of the proposed building," while the boarding which has so long projected nearly half-way across the street is still allowed to remain, to the great obstruction of vehicles and foot passengers. The Woods and Forests are accordingly beseeched to "take back the boarding to the level of the fronts of the houses in the street," if they do not intend carrying on the building at present.——The Duke of Bedford is reported to have contributed the sum of 10,000*l.* towards the formation of a new street from the West-end to Covent-Garden.——Tables and writing materials have been stationed in all the principal thoroughfares for the signature of petitions to Parliament praying the abolition of that abominable nuisance Smithfield-market.——Guildhall has had a narrow escape of destruction by fire, in the coal vault, under the lobby leading from the courts of law to the hall under the library. The brigade-engines, too, were nearly half an hour in reaching the spot, and even then only one could be brought into use. The engine kept on the premises, however, was put to work, and with assistance the fire gave way before its aqueous master. The origin of the

## INTERIOR OF THE NEW HOUSE OF LORDS.*

MR. CHARLES BARRY, R.A., ARCHITECT.



* See page 177 in present number. With the view of giving full effect to our engraving of this national work (at the suggestion of several correspondents), we have avoided printing on the back of it.

accident is still unknown, but some thousands of fagots and several tons of coals were burnt, and the stone covering of the hall-flooring alone saved the whole edifice.——Victoria Park is now becoming a popular place of resort at the east end, and on and since Easter Sunday has attracted a large number of visitors. On Sunday and Monday, says the *Morning Herald*, it was estimated that upwards of 20,000 persons passed through the gates at the leading entrance in Bishop Bonner's-fields. Since February great progress has been made in the plantations, and the lake is nearly completed, and partly filled with water. The sites for two cricket-grounds have also been marked out, and every thing in connection with it presents a more forward appearance. Building speculation is going on very actively in the vicinity.——The extension of a line of railway through "the rookeries" of Lambeth to the very centre of the metropolis, through a densely-populated neighbourhood, is an undertaking so immense, that, as the *Morning Post* observes, the wealthiest corporations, and even sovereigns themselves, in the earlier periods of our national history, would have shrunk from it in dismay. But now, such is the spirit of railway enterprise, that entire streets are swept away, and every interest indemnified, with the same ease as our ancestors would have cleared away the furze and brushwood of any heath or common which they were preparing to bring into cultivation. The prospectus of such a scheme is advertised, the shares are taken, the legislative act is obtained, and away go the filthy "rookeries" and polluted dens of human misery. A free passage, like a grand arterial line, is made through the stench-exhaling courts, alleys, and purlieus, where the squalid sons of indigence and toil have long taken up their abodes—where the foot of gentility has rarely trod, and where the voice of civilised man is scarcely ever heard.

## NOTES IN THE PROVINCES.

The Public Club-chambers, proposed to be erected at Cambridge, are not likely, it appears, to fall to the ground before they are built, as many a magnificent scheme is doomed to do. The inhabitants of this distinguished city are taking a 'pride' in their resolution to erect an edifice 'worthy' of both city and citizens. "The plan has now assumed a definite shape," emphatically speaking at least, if not literally; and accommodation is designed to be afforded, says the *Cambridge Advertiser*, "for a sessions court, a council chamber, and besides a variety of other apartments for municipal and other public purposes, a police station and police court, a spacious assembly room, excise office, post office, savings bank, stamp office, and rooms for scientific and literary societies." For the information of other towns who may be meditating a move in the like direction, we may add that the requisite funds, in this instance, are to be raised on bonds repayable by instalments, in thirty years, out of the rents, &c.; and on charges, for the general benefit, on the borough funds. Leases on the borough commons are proposed too, if requisite, in aid of the needful. For carrying out comprehensive schemes such as this, the sanction of Parliament as well as the co-operation of the borough council will be necessary; and, accordingly, a meeting of the corporate body of Cambridge was appointed to be held on Thursday for the latter purpose.——The reredos or carved stone screen contributed to St. Mary's Church, Bury St. Edmund's, by a generous but anonymous lady, is now finished, and the painted window, a family memorial of the Bishops of London and others, is in course of fixture over it. Mr. Cottingham's design for the completion of the chancel, however, according to the *Bury Herald*, is still *in statu quo*, together with the "mean slab" which records the interment of one of the mighty blood royals of old England, Mary Tudor, some time Queen of France.——The gas movement has begun to ferment in Needham Market, where the propriety of lighting the town with gas was clearly and unanimously seen at a recent public meeting, when preparations were made for the self-infliction of the requisite rate.——The walls of the Ipswich museum are now rising upwards of ten feet from the ground. There will be various rooms besides a spacious lobby, with a library and apartment for specimens, which last are in course of collection.——The old morass, called the Denes, at Yarmouth, is said to be springing up into quite an extensive town. The drainage deposit, on the value and necessity of saving which, in other cases, so much has been said of late, is here quietly used up already on the very system so strongly recommended. An immense drain conveys all to the river level, where a steam-engine raises it for sale to the farmers, who exchange for it an annual revenue of 6,000*l*.——The Surrey magistrates have agreed to lay out 110,000*l*. on the erection of a new prison.——At Deal some improvements are in progress, amongst which a building opposite the railway entrance, erected by Mr. Marable, builder, as a public refectory, is spoken of as one of the most prominent.——The new steam basin in the dockyard, at Portsmouth, in course of formation by Mr. Peter Rolt, the contractor, is progressing rapidly, and when completed, it is thought, will be the largest in the empire, the dam being in length 3,000 feet. On these works 1,200 workmen are at present employed.——The new building at Cowes, lately dedicated to the Medina lodge of Freemasons, No. 41, is a Doric structure, designed and erected by brother Frederick Wyatt, the "provincial superintendent of works."——The erection of the Birmingham Licensed Victualler's Asylum, designed by Mr. D. R. Hill, is about to be commenced. The building, which is in the Elizabethan style, will consist of a centre, with a porch, and two wings, of two stories, with 70 yards of frontage, approached by a centre gate, and separated from the road by an iron railing and shrubbery. It will afford an asylum for ten families. The site is in the Bristol road.——The foundation-stone of the new church at the Church of England Cemetery, at Birmingham, was laid on Tuesday week. Messrs. Hamilton and Medland are the architects, and Mr. F. Burton the builder.——The chief stone of a new church was laid at Whitworth, in the parish of Rochdale, on Thursday week. Mr. Joseph Clarke, of London, is the architect, and Mr. Joseph Bass, clerk of the works.——The new park at Birkenhead, the opening of which formed part of the ceremonial at the opening of the docks, has been formed at a cost of 127,775*l*. The new market, also opened, cost 26,000*l*. The new warehouses on the day of opening were fitted up as reception, banquet, and ball rooms. In the reception-room, 80 feet by 45 feet, was a cascade of water falling into a large artificial basin, surrounded by flowers. On the right of the reception-room was the ball-room, 137 feet long by 45 feet wide. This apartment was shaped in the form of a spacious tent by means of fluted drapery, alternately pink and white. Pier and chimney glasses were ranged along the sides, and at either end of the apartment was a raised dais for the spectators. To the left there was an ante-room, in which were stationed the band of the 1st Royals. The banquet room, 136 feet by 45 feet, and seated to accommodate 800 ladies and gentlemen, was fitted up, in a style corresponding with the reception and ball rooms, with seventeen tables, &c.——The price of gas at Doncaster is to be reduced 10d. per 1,000 cubic feet, and the street lamps 10s. each, from 1st July next. The price of gas will then be 5s. 10d. per 1,000 cubic feet.——By the way, we feel it to be a duty to ourselves, no less than to the gas companies at Leeds, here to state, that, from evidence forwarded to us, it appears that the old establishment there not only 'accompanied' the new in the reduction of price, noticed in our last impression, but preceded it, the new company having two days afterwards followed the example of the old in issuing circulars to that effect.——North Ferriby Church is in rapid progress, the walls being now about ten feet high. They are of grey rubble stone in random courses, with dressed masonry at all the quoins and jambs. The architect is Mr. J. L. Pearson, of Kepple-street, Russell-square, and Messrs. Kirby and Co., of Swanland, the contractors; the latter of whom have just completed a small church at Wandby, in the East Riding. We are glad, by the way to perceive some symptoms of the beneficial operation of our repeated remarks on the injustice done to architects, builders, &c., in the neglect of all allusion to them in public notices of new buildings. There are considerably more than the average of such notices in the past week's newspapers.——The keep of the ancient castle at Newcastle-upon-Tyne is about to be restored, under the direction of the Society of Antiquaries there, who have obtained permission from the corporation to proceed in the work.——The Roman Catholics of Edinburgh have concluded the purchase of a large space of ground on the Lothian road, for the erection of a magnificent cathedral. At present they have two chapels, neither of them possessing much architectural attraction.——Government has granted 3,000*l*. for the completion of the buildings connected with the University of St. Andrews.——According to the *Glasgow Reformers' Gazette*, an additional infirmary is much wanted for that city. The directors it is thought have gone on too long on the patching system, and the Gazette thinks, that "if there was philanthropy in Glasgow sufficient during the last century to build the *old* infirmary, and during these last seven years to build a new Lunatic Asylum, more resembling a palace than any thing else" it cannot be doubted that the like necessities will still continue to urge the public feeling on towards the establishment of this much needed addition to the accommodation for the infirm poor.——Government, says the *Times's* Dublin correspondent, "appear, by dear-bought experience, to be thoroughly convinced of the total failure and ruinous effects of the public works system as a mode of alleviating the great national calamity, and, evidently impressed with that conviction, have resolved, let the consequences be what they may, to retrace their steps with all possible speed, and push the new relief measure into general operation." The public works labour roll for the four weeks ending 3rd April, is as follows:—March 6th, 734,792; March 20th, 664,442: March 27th, 558,047; April 3rd, 525,518.

## PUBLIC WORKS AND BUILDINGS' ESTIMATES.

The miscellaneous services estimates under this head for 1847-8 amount to 575,734*l*., or larger by 112,804*l*. than those for last year. The chief items of increase are for Buckingham Palace, 30,000*l*.; New Houses of Parliament, 77,600*l*. On Harbours of Refuge, 110,000*l*.; there is a decrease of 81,252*l*. on Holyhead Harbour, works, roads, &c. The estimates proposed are: royal buildings and royal palaces, 117,989*l*.; Buckingham Palace, 50,000*l*.; Palm House at Kew, 5,500*l*.; Houses of Parliament (temporary), 17,709; New Houses of Parliament, 150,000*l*.; Home Office, Board of Trade, &c., 11,435*l*.; Holyhead Harbour, roads, &c., 4,429*l*.; Harbours of Refuge, 140,000*l*.: Caledonian Canal, 50,000*l*.; public buildings, &c., in Ireland, 20,476*l*.; Kingstown Harbour, 8,200*l*.—total, 575,738*l*. The "cost of the several works required for enlarging and improving Buckingham Palace," which is estimated at 150,000*l*., is said to be for "new east front to the Palace; clearing out and re-arranging rooms in south wing; alterations in the north wing; new kitchens and other offices, with ball-room over; decorations and painting; taking down the marble arch; alteration of drains, &c." The Palm House at Kew is reported to have so far advanced that the great outer scaffolding is nearly removed. The vast central framework is complete, and the side walls and ventilators are nearly finished. The gallery, balustrade, and spiral staircase are also nearly all completed, and the two wings are begun, their concrete foundation and several granite blocks laid, and the surrounding terrace in progress.

The Royal Academy Porters.—We have received a letter from Mr. Knight, the deputy secretary, denying in strong terms the statement made in last week's Builder. We can assure Mr. Knight, notwithstanding, that its truth, so far as relates to asking for beer-money, is re-asserted by three correspondents of undoubted respectability. To the inference that was drawn we attach no weight, and have no desire, indeed, to say more on the subject. Enough has been said, probably, to prevent a repetition of the practice, which all must admit is open to the strongest objection.

## AWARDS OF THE OFFICIAL REFEREES.

USE OF IMPROPER MATERIALS.

Mr. William Bell having commenced to build eleven houses in Eccleston-place, in the district of St. George, Hanover-square, the district-surveyor, in pursuance of what he considered his duty, gave him notice that the materials of which the walls were being constructed were not "wholly built of sound bricks or stone, or of such bricks and stone together, laid in and with mortar or cement, in such manner as to produce solid work." At the request of the builder, the matter was allowed to stand over for a fortnight to test the materials; but on again visiting the houses, the surveyor was of opinion that the sand brought in afterwards was no better than the sand or loam previously used, and the builder maintaining to the contrary, referred the matter to the official referees. The referees, after a survey, determined "that the materials referred to in the said requisition, and objected to by the district surveyor, viz., the silt, used as sand in making mortar, and the old bats used as bricks, will not, when laid together, form solid work within the meaning of the first-mentioned Act; but we are of opinion that the surveyor of the district would be justified in allowing mortar made with the material used as sand, to be used with sound whole bricks of the full size, or in allowing the bricks by him objected to, to be used with mortar of good quality in the said buildings, so that a sufficient number of whole bricks be employed with the bats to admit of proper bonding, and also by the insertion of hoop-iron bond, to secure safe structure without timber laid continuously as bond plates or otherwise."

## WESTMINSTER COURT OF SEWERS.

A General Court of Sewers for the city and liberty of Westminster was held on Friday, the 9th inst., Capt. Bague, R. N., in the chair. The solicitor to the commission reported to the court, that a bill of considerable importance had been introduced into the House of Commons by Lord Morpeth, Chief Commissioner of Woods and Forests, having for its object the improvement of the health of towns and the sanatory condition of the people. This bill at the same time aimed at the existence of the whole of the Commissions of Sewers. Mr. Smith then pointed out the intended operation of the various clauses.

The subject led to a long conversation, in which most of the members present took part, and it was eventually resolved, "That a committee of this court be appointed to take into consideration the bill for the improvement of the health of towns, and that they do report to a future court; and that the following commissioners be appointed members of the committee:—Capt. Bague, Messrs. E. Willoughby, J. Le Breton, Thos. Donaldson, T. Harrison, Alderman Johnson, and — Alsop.

A communication was read by the clerk from the City of London Commission of Sewers, asking the co-operation of this commission with them in giving the strongest opposition to the measure.

The court then proceeded to open the tenders sent in for making 1,155 feet of sewer in the Fulham-road, near the Consumption Hospital, which were as under:—

| | | |
|---|---|---|
| Messrs. Stukie | £1,050 | 0 |
| Mr. W. Harding | 1,018 | 0 |
| Mr. W. Dethick | 872 | 0 |
| Mr. Yeoman | 835 | 0 |
| Messrs. J. and S. Williams | 765 | 0 |
| Messrs. Hill and Son | 757 | 0 |
| Messrs. Humphries and Thirsk | 687 | 0 |
| Mr. Hobbs | 613 | 10 |

Several questions were put to Mr. Hobbs by the court as to what work he had performed, and whether he was aware of what would be required of him. Mr. Hobbs replied, that he was quite prepared to execute the work according to the terms of their specification. His tender was accordingly received.

The surveyor to the court handed in a very voluminous report, accompanied by numerous plans and drawings, recommending the entire re-arrangement and re-construction of the sewers in the district of All Souls, situate in the parish of Marylebone, eastward of Portland-place, involving an expenditure of 20,140*l.*, which report was ordered to be taken into consideration at the next meeting of the court. This report has engaged the surveyor nearly twelve months in its preparation.

*The Westminster Improvement Commissioners.*—Mr. Abrahams, the architect to the Westminster Improvement Commissioners, attended the court this day, and said that he was authorised by the commissioners to accede to the terms proposed for covering over the Kings' Scholars' Pond Sewer, excepting that it was their opinion that they should not be called upon to contribute towards the expense of covering 200 feet at one end, not necessarily included in their plan of improvement, but that it should be postponed, and perhaps the owners of the property would pay a portion of the expense. Rather, however, than the whole plan should be abandoned, they (the commissioners) would pay the amount required.

The clerk then read several letters from owners of the property intersected by this open sewer, and amongst them one from the Marquis of Westminster, *refusing to pay anything whatever*, to the proposed improvement. In answer to a commissioner, the clerk said, that the property belonging to the Marquis of Westminster comprised a considerable portion of the district, and that his quotum of the expense of the proposed improvement would be something less than 10*l.* It was finally arranged that the whole of the work should be done at the joint expense of the Westminster Improvement Commissioners, and of the Westminster Commission of Sewers.

The surveyor reported that no attention had been paid to the orders of the last court, as to the improper construction of a sewer with pit-sand mortar in Hereford square, Brompton. It was then ordered that the owner and builder be summoned to appear before the next court.*

## PRODUCTS OF COMBUSTION.

Mr. Morrill Wyman, an American chemist, gives the following facts relating to combustion, in a recent treatise on ventilation:—

A pint of oil when burned produces a pint and a quarter of water; a pound of gas, more than two and a half pounds of water.

An argand gas burner, in a shop window, will produce in four hours two and a half pints of water, which may be condensed upon the goods, the window, or any other cold substances.

The argand burner of the Boston Gas Company, with twenty-two holes, will produce in four hours, when burning at the rate of four feet per hour, twenty-two ounces, or a pint and six ounces of water, and four feet of carbonic acid, which will render *four hundred* cubic feet of atmospheric air unfit for respiration.

A pound of oil produces 2·86 pounds of carbonic acid, and consumes the oxygen contained in 13·26 cubic feet of atmospheric air.

A pound of coal-gas produces 2·56 pounds of carbonic acid, and consumes 4·25 cubic feet of oxygen, which is equivalent to that contained in 21·35 cubic feet of atmospheric air. For every cubic foot of gas burned, an equal quantity of carbonic acid is produced, and renders, according to Leblanc, 100 cubic feet of air unfit for respiration.

As an illustration of the demand for air to produce efficient lighting, we may mention the following:—In the vestry of a meeting-house in Boston, some years since, great complaint was made of the impurity of the oil used; it burned well for a time, when the lamps grew dim, and continued to grow more so through the evening. The sexton was directed to procure better; he tried many kinds, but all to no purpose. He had noticed, however, that the longer he was compelled to remain after the services, and listen to the complaints of the aggrieved, the better his lamps burned, which was soon interpreted to mean the improvement of the air consequent upon the opening of the doors and the departure of the audience.

## GOVERNMENT INTERFERENCE WITH MINES.

INSTITUTION OF CIVIL ENGINEERS.

At the meetings on March 30th and April 13th, the discussion upon Mr. Richardson's paper on the ventilation of mines, was continued to the exclusion of any other subjects. In the course of it, the interference of Government was strongly insisted upon by some, and as decidedly objected to by others. It was stated, that the foreign mines which were under the constant superintendence of Government engineers, far from being exempt from accident, were not only more liable to the effects of deficient ventilation, but that the actual loss of human life was greater than in England; and that if our mines were subject to the same trammels, the price of fuel must be unduly raised without an immunity from danger. There could be no objection on the part of the coal owners to the formation of an association for regularly inspecting and reporting upon the state of the various mines, and the communication between the various districts, of the methods found to succeed best under the attendant peculiar circumstances; but there were good reasons, it was said, why such a power should never be placed in the hands of any Government officers.

## BLIND BUILDERS.

A correspondent calls our attention to the following tenders, delivered at the office of Mr. C. Foster, on the 12th inst., for certain alterations in a house at Islington:—

| | |
|---|---|
| Pickford | £410 |
| Bugg | 404 |
| Craber | 346 |
| Lloyd | 338 |
| Dove | 295 |
| Brake | 265 |
| Hill | 195 |

The following list of tenders, sent in for the Newport Water Works, which have just been let (the lowest tender being accepted), may come under the same head.

| | |
|---|---|
| Rennie and Cochrane | £30,400 |
| B. James, junr. | 27,896 |
| Dd. Jones | 18,000 |

Burial in Towns.—Death, like life, propagates itself (says Mr. G. A. Walker, in his third lecture on this subject, just now published). He exacts from the multitudinous population of this vast city his thousand victims weekly. In his turn he knocks at every man's door,—"the bright, the brave, the beautiful," the infant and the old man,—the young, the full of promise, the buoyant with expectation—the outcast and the miserable, must one day change for eternity. A wise Providence has ordained that any habitual disregard of morality is soon followed by bodily suffering. Crime is invariably the parent of disease; and "such is the harmony always existing between religion and sound policy, that what is acknowledged as decorous and useful by the one, is also commanded and prescribed by the other." Our moral instincts, our religious sentiments, tell us that the sanctuary of the dead should remain inviolate; daily experience teaches that process which resolves the animal body into its elements is attended by the disengagement of matters highly injurious to the health of the living. Morality, religion, and the imperative demands of the public health, all point out the necessity of removing the so-called resting-places of the dead from the habitations of man.

* At a Court of Sewers held for the Holborn and Finsbury Division on the 6th the following tenders were received for a sewer in the Hampstead-road, from Tottenham-court-road to Albany-street:

| | £ |
|---|---|
| Flood | 1,100 |
| Hill and Son | 1,090 |
| Wood | 1,085 |
| Yeoman | 1,080 |
| Seal | 1,078 |
| Dethick | 1,060 |
| Johnson | 1,050 |
| Chesterton | 1,000 |
| John Hill | 760 |
| Batterbury | 699 |

For the Hampstead-road sewer, Mr. Jay's tender was accepted, although not the lowest; for the Holmes-street and Liverpool-street sewers, Mr. Batterbury's tenders were accepted.

At a Court of Sewers held for the Tower Hamlets Division, on the 13th, the following tenders were received for a sewer in the Mile End-road, commencing at the Regent's Canal Bridge, viz.:—

| | £ |
|---|---|
| Bitchburn | 1,700 |
| Stewart | 1,598 |
| Murray | 1,605 |
| Crook | 1,549 |
| Curtis | 1,544 |
| Livermore | 1,537 |
| Yeoman | 1,490 |
| Shoulder | 1,420 |
| Ward | 1,374 |
| Dethick | 1,343 |
| Hill | 1,276 |
| Jay | 1,203 |
| Hobbs | 1,141 |
| Foot | 1,133 |
| Welch | 1,093 |

Mr. Jay's tender was accepted.

## Correspondence.

Sir,—Can you inform me of any cheap material which I can introduce between a stone wall and the plaster of a room, to absorb the moisture caused by the condensation of the atmosphere on the former? Batteuing and brick lining will both effect this, and I have employed both in my own residence, but for cottages and outbuildings I wish to find a somewhat cheaper process, as bricks here come to no less than 4*l.* 7*s.* 6*d.* per 1,000, laid down. The native stone is of a remarkably close texture, and, from the cause above stated, plaster applied directly to the wall is ruined in no time.

I am, Sir, &c.,
Hafod. H. H.

## Miscellanea.

The Effect of Making a Window too Narrow.—Miss Pardoe, in her "Louis XIV." gives the following anecdote. On one occasion, the king went to examine into the progress of the palace, accompanied by Louvois, when he remarked that a particular window was out of proportion, and did not harmonize with the rest; the minister, however, jealous of his dignity as comptroller of the works, would not admit the objection, but maintained that it was perfectly similar to the others. The king made no reply; but on the following day he returned to Trianon, and desired Le Nôtre to declare his opinion as to the size of the disputed window. Le Nôtre, fearful of offending either the monarch or his minister, endeavoured to give an evasive answer, upon which Louis commanded him to measure it carefully, and he was reluctantly compelled to obey. Louvois, meanwhile, murmuring at the pertinacity of the king, and Louis himself walking to and fro in great irritation. The result of the trial proved that the window was too small; and the monarch had no sooner ascertained the fact, than he turned angrily to his minister, declaring that he was becoming weary of his obstinacy, and that it was fortunate he had superintended the work himself, or the building would have been crooked. As this scene had taken place in the presence of both courtiers and workmen, Louvois was deeply stung; and on entering his own house, he exclaimed furiously, "I am lost if I do not find some occupation for a man who can interest himself in such trifles. There is nothing but a war which can divert him from his buildings, and war he shall have. I will soon make him abandon his trowel." He kept his word, and Europe was once more plunged into a general war, because a window had been made a few inches too narrow, and that a king had convicted a minister of error.

Smelting by Electricity.—The lately patented process of smelting copper by means of electricity, says the *Morning Herald*, is likely to effect a change that will be quite prodigious. It produces in less than two days, what the old process required three weeks to effect. And the saving of fuel is so vast, that in Swansea alone, the smelters estimate their annual saving in coals at no less than five hundred thousand pounds. Hence it is clear that the price of copper must be so enormously reduced, as to bring it into use for a variety of purposes, from which its cost at present excludes it. The facility and cheapness of the process, too, will enable the ore to be largely smelted on the spot. The Cornish mine proprietors are anxiously expecting the moment when they can bring the ore which lay in the mine yesterday, into a state to be sent to market to-morrow; and this at the very mouth of the mine. In Australia, also, the operation of this discovery will be of the utmost importance. Ten thousand tons of copper ore were sent from Australia to England last year, to be smelted at Swansea, and the result was only 1,600 tons of copper. But Australia in future will smelt her own copper, by a thirty-six hours' process; saving all this useless freight of the 8,400 tons of refuse; and saving also the cost of the old and expensive process. In a very few years, Australia will send to market more copper than is now produced by all the rest of the world. But if our future penny-pieces are to bear any proportion to the reduced cost and value of the metal, they must be made of the size of dinner-plates.

Projected Works.—In the newspapers of the past week, advertisements have been issued for contract-tenders for the erection of a fever hospital at Bedford; a new church at Greenwich; shop and offices at Bradford; a pauper lunatic asylum at Birmingham; a warehouse and other buildings, and alteration of premises at Hales Owen; also for fronting east end of Haxley church with stone, and putting in a new east window; for finishing two villas at Tollington-park; repairing shingle, timber-work, and spire of All-Saints' church, Maldon; 280 square yards of tooled Yorkshire flagging and laying down at East Retford; for laying down York paving with granite kerb, also granite channelling and paved crossings, and for broken Guernsey and other granite, for parish of St. Pancras; a supply of gravel at Maldon; also for the whole works required in the extension of workshops and stores, premises, &c., and for a coke-shed and large water-tank, on the Manchester and Leeds Railway, near Miles Platting, Manchester; the works on 2¼ miles of the Glasgow, Ayr, &c., Railway, in two contracts; the formation of portions of the Newcastle and Carlisle Railway; and for 700 tons malleable iron rails, 250 tons metal chairs, 12,300 Baltic sleepers, 24,600 oak keys, 49,000 oak pins, and 6 miles of fence railing for same line.

Glasgow Cathedral.—The Government works in renovation of this favourite edifice of the citizens of Glasgow, are said to be now in constant progress. The north transept has been rebuilt, and the great window with that of the south transept, renewed. The upper part of the east gable has also been rebuilt. The north parapet walls have been rebuilt the whole length, both of the nave and the choir, and all the walls outside repaired and pointed. The south-east corner, near the great western door, where formerly stood the Consistory Court, has also been completely rebuilt, and the south parapet to the nave restored. The great western door is to be entirely renewed, as well as the modern window above it. The south-east door, which has been used, perhaps, since the reformation, and by which entrance was got to the outer and inner high churches, is being converted into a window, in its original form. In the interior, the walls have been cleaned and repaired, and the ceiling of the nave renewed, while a new floor of concrete has been laid down over the arches to the side aisles. The whole of the roof has likewise been repaired, and strengthened by diagonal braces. The groined ceiling of the great tower is under repair. In the Lady Chapel the stone-work and pillars have been cleaned and repaired, and new steps and pavement laid down. In the Chapter House, the walls have undergone a similar treatment, and new pavement and new steps leading to it completed. The main crypt, and crypt under the Chapter House, have likewise been renewed.

Improvement of Levelling-Staves.—Sir: I beg leave to inform you of an improvement which is applicable to the mode of levelling with the staves now in use, which suggestion it may not be inappropriate to introduce in your journal. It simply consists in affixing to every foot on the staves a distinct colour, in order more readily to make the observation without the necessity of frequently being obliged to raise them up, and thereby often causing an error. The plan I propose is to use the following colours, viz., for the one foot, green; two feet, red; three feet, blue; four feet, yellow; and five feet white or not coloured. There will be no necessity for any other colours than a repetition of those mentioned for the other compartments, as the difference in width of the pieces will easily be remembered, as well as the colours themselves. —I am, Sir, &c., A. M. Ross, land surveyor, &c., Stamford-street.

American News.—The following alarming intimation has appeared in the *New York Sun*: —"London has been sinking gradually for some years. The Thames is rising in the same ratio." Our observant contributor who doubtless originated this alarming report, will perceive that our American brethren have sent it back to him with compound interest. The Thames is rising, ergo London is sinking. The sequence is inevitable, and indeed alarming!

Muntz's Metal for Sheathing Ships. —The Admiralty have afforded Mr. Muntz, M.P., an opportunity of testing his patent sheathing metal on a man-of-war at Portsmouth.

Analysis of Vapour from Chalk-fuel. —A correspondent of the *Hampshire Advertiser*, Mr. Henry Osborn, who appears to have taken an interest in the subject of the original paragraph from The Builder, so extensively circulated through the newspaper press, has analyzed the atmospheric product of the combustion of chalk-fuel, and fully disproved the supposition of Mr. Murray, of Hull, that chalk would be dangerous in ordinary use for fuel. The combustion of 8 lbs. of chalk with an equal portion of coal produced "an increase of one cubic inch (within a trifling fraction) in 10,000, which is not sufficient to render the air deleterious. The carbonic acid which escapes during the conversion of chalk into lime is carried up the chimney. It is probable, however," he adds, "that a chalk fire might prove injurious when made in a large old-fashioned open fireplace, allowing room for persons to sit under the chimney; the carbonic acid having space to disperse itself might affect those sitting near, but I do not believe it would impregnate the air in the room to any extent." We hear that a considerable quantity is already used by the poor at Winchester.

Western Literary Institution.—At this institution, on Monday evening, an interesting paper was read by Mr. W. Smith, C.E., "On the best means of protecting Buildings, &c., from the effects of discharges of Atmospheric Electricity." These meetings are a new feature in this institution, and will, no doubt, prove attractive. The first of these meetings was on the 5th April, when a paper by M. Claudet, "On the recent Improvement in the Daguerreotype Process," was read. On the previous Thursday evening, Mr. W. Higgs delivered a lecture on iron and its manufactures, in which the lecturer gave a description of all the various processes of that important branch of our manufacturing art. We are glad to perceive that the committee of this institution are making a move in advance, and that they are endeavouring to promote its interests by the only legitimate means which should be adopted, viz. by keeping pace with the scientific and literary spirit of the age, and laying before its members the fullest available information upon every new subject of interest.

Sewage Manure.—The present mode of cleansing and draining our large towns, and disposing of their refuse, will doubtless be regarded by the next generation with the same feelings of surprise with which we view the strange customs of barbarous people. It is a striking example, on the grandest scale, of inefficiency and extravagance. We shall search in vain for any similar instance of wholesale waste of resources. Not content with polluting our rivers, and heaping upon their banks masses of offensive matter most injurious to health, we are constantly pouring into them treasures which cannot be estimated at; a less sum than several millions a year. In the metropolis alone the value of the liquid refuse annually carried into the Thames, and lost to agriculture, amounts, accordingto the very lowest estimate, to half a million pounds, and according to the highest to little short of four millions.—*Analysis of Evidence on Metropolitan Sewage Manure.*

Honest Building.—We have received a letter from Mr. Edward Banks, architect of the Staffordshire Hospital, containing the following, with reference to the letter signed "Strength," in our last:—"I think it due to the builders of the South Staffordshire Hospital, to state, that the works at that building are all being done *to the specification* and *to my satisfaction*; and those who *know* me will be perfectly satisfied, after this statement, that the whole of the works are of the most substantial kind." If the description of the mode pursued given by our correspondent, "Strength," be correct, and it is so in more buildings than one, as we well know, or we should not have inserted the letter, we cannot too loudly protest against it. Messrs. Higham and Sons, who state they are the builders employed, have requested the name and address of the writer. It can scarcely be necessary to say, that it would be quite contrary to custom to comply with their desire.

The Marine Glue for caulking ships, was stated by Captain Pechell, the other day, in the Commons, to have been found to be an effectual substitute for pitch, especially under the influence of a strong sun. A saving, too, of 20,000*l.* a year is anticipated from its use.

## TENDERS.

For the erection of two warehouses and countinghouses, with Gothic river front, for the Ebbw Vale Company, at Dowgate Wharf, Upper Thames-street, tendered for last month; Mr. John Young, architect.

| | |
|---|---|
| Mr. Ashby | £5,776 |
| Mr. Harrison | 5,590 |
| Mr. Jay | 5,168 |
| Messrs. Piper | 5,130 |
| Messrs. Curtis | 5,085 |
| Mr. Grimsdell | 4,975 |

For repairs and alterations to Nos. 28 and 29, Brook-street, Holborn; Mr. H. C. Colton, surveyor. No quantities furnished.

| | |
|---|---|
| Brass and Son | £1,097 |
| Hambroke | 994 |
| Sinnote and Parke | 955 |
| Bodger | 878 |
| Patrick | 860 |

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, April 19. Statistical, 12, St. James's square, 8 P.M.

TUESDAY, 20.—Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 21. Association of Architectural Draughtsmen, 5.0 Southampton-street, Strand.

THURSDAY, 22.—Royal Society, Somerset House, 81 P.M.; Society of Egypt, 53, 71, Mortimer-street, Cavendish square, 4 P.M. anniversary.

FRIDAY, 23.—Society of Antiquaries, Somerset House, 8 P.M. (anniversary); Archæological Association, 8½ P.M.

## TO CORRESPONDENTS.

"*Comes*"—should send his name in confidence.

"T. W."—Wenlc, Holborn, has a work on the subject.

"*An Architect.*"—We shall be happy to see the communication, but cannot promise to insert it.

"*J. L. C.*"—Shall appear.

*Chronicler of Contemporary Art.*—The concluding papers on this important subject will appear forthwith.

*Books.*—Access of several hundred on available shelves.

"*Reader.*"—"S. C." "Architectural Student," "F. B. C." (Great Marlboro'-street), "Londoner," "Nihil Utile nil Pulchrum," "S. C.," "T. S.," "Justice," "J. G. H.," "T. C.," "Remarks on Western Gas Light Company," "A Constant Reader," "N. R.," "Joculpiane"—Railways in India," by an Engineer: Williams, 163, Strand, 1867.

## NOTICE.

"The Westminster Palace." Succeeding numbers of THE BUILDER will contain correct and beautiful illustrations of the New Houses of Parliament, with accurate plans, sections, and details. Early Numbers will contain the Inner Hall, Staircase, and Principal Entrance. Each Number will be illustrated with a large Engraving, containing a view and description of the New Opera House, Covent Garden for a time, if not permanently, to be had.

## ADVERTISEMENTS.


**ROYAL POLYTECHNIC INSTITUTION.** LECTURES on all subjects of ANIMAL MECHANISM by T. Rymer Jones, F.R.S., &c., every morning at Twelve and Three o'clock, and every Evening at Eight o'clock, illustrated by Diagrams, Models, Experiments, &c. Lectures on Electricity, Magnetism, Hydro-electricity, Electro-plating, Electro-gilding, Electro-metallurgy, Hydro-electric Machine, Voltaic Battery, Wonderful Experiments in Electricity, &c., &c. The Diving Bell, with Deane's Improvements, to include a New Series of Dissolving Views, the Oxy-Hydrogen Microscope, Experiments with the Diver and Diving-bell, &c. &c.—Admission, 1s.; Schools, Half-price.

**ARMY and NAVY CLUB.**—An Extraordinary General Meeting of the Members of the Army and Navy Club will be held on TUESDAY, the 21st instant, at Two o'clock precisely, for the purpose of considering a Requisition addressed to the Committee, signed by more than Twenty Members, requesting that a Special General Meeting be convened for the purpose of considering the following Resolution, viz.:—"That the Rule passed at the Special General Meeting held on Tuesday, the 19th instant, by which the Club House is to be closed on Sundays, be rescinded." The Chair will be taken at the above-mentioned hour, and it will continue daily to the day of the general meeting, unless sooner adjourned by the Committee.

THOMAS WALCOT, Secretary.

No. 13, St. James's-square, April 15th, 1867.

PLASTERERS' HAIR.—T. Baddeley, Hair-dresser, &c. **JEREMIAH LORDAN,** Hair and Glue Merchant, 7, Butlers-buildings, Bermondsey-street, begs to call the attention of the Trade to his large stock of excellent Plasterers' Hair, which he has always on hand at the following very low prices. Coloured, 2s. per stone; Grey, 2s. 6d. per stone; Glue, 36s. and 38s. per cwt. Cash on delivery, at his Warehouse.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Pavements, Market-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the shortest notice, by the Original and Only Practical PATENTEES, KINGSTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 18, WHARF-ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best Bitumen for covering Iron and Timber.

**PHOTOGRAPHIC PORTRAITS,** at HALF PRICE, COLOURED to LIFE. The Public are invited to inspect the specimens of Photographic Art, which have obtained the highest Prize Medals at the Photographic Establishment, 163, Strand (adjoining Wellington-street), opposite St. Clement's Church. Portraits, in Oil, Water Colours, Crayons, or Miniature, executed. Life-size Portraits of deceased friends copied from old daguerreotypes, &c., with the greatest fidelity. Specimens can be seen at the Establishment, and Catalogues, containing full particulars of the Terms, may be had on application. Hours from 10 to 4 or 5 to 8. Open on Sundays from 12 to 4. Portraits taken by the Instantaneous Process, in all weathers, from 10 to 4. Specimens of these Portraits may be seen at the Establishment, and Catalogues, containing full particulars of the Terms, may be had on application. Hours from 10 to 4 or 5 to 8. Open on Sundays from 12 to 4. Portraits taken by the Instantaneous Process, in all weathers, from 10 to 4. Specimens of these Portraits may be seen at the Establishment, and Catalogues, containing full particulars of the Terms, may be had on application. Hours from 10 to Four.



**H. MORRELL'S FINE PREPARED** DRAWING PENCILS.—Under the patronage of her Majesty's Stationer's Office, the Honourable Board of Ordnance, and the Honourable East-India Company.

The attention of Artists and the Public is respectfully solicited to these BLACK LEAD PENCILS, which are prepared persistently from the finest Cumberland Lead, and possess all the requisites for the most highly-finished drawings.

Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

**PAPER-HANGINGS to the TRADE.**—French Papers superseded.—Messrs. HENNELL and CROSBY, Paper-stainers, Queen-street, Southwark-bridge-road, first on the left, Table-t, at their new castle them to 250 Satin Papers, Elegant Designs at 2s. 6d. per French piece. Retail.—Cheapest house for Panel Decorations and Clouded Papers.

**FRENCH PAPER HANGINGS.**—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest Patterns (all the Unsaturated Novelties) now at Messrs. WARE, Cousin, & Co.'s, 27, Jermyn-street, Regent-street, S.W., where all trade can be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

TO PAPERHANGERS, HOUSE DECORATORS, BUILDERS, SHIPPERS, &c.

**MERRICK, WILKINSON, and Co.,** 451, New Oxford-street, solicit the inspection of the trade to their NEW STOCK of CHRISTMAS PAPERS, comprising every variety from the cheapest to the most costly English and French. M., W., and Co. beg to call attention to their complete assortment of Panelled Decorations, suitable for every description of room, to shew the effect of which they have fitted up a number of rooms in their premises in all their different styles. Having both their Manufactory and Warehouse on the premises, M., W., and Co. are enabled, from the many improvements in arrangement, and consequent economy in manufacture, to produce at such prices as to defy competition. They will be found fully to understand and enter into the requirements of the situation, and guarantee the execution of them in the first style.

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Public that he can now supply Ornamental Glass from 1s. 2d. per foot superficial and having considerably enlarged his Premises, and built a number of Large Kilns in London, is enabled to execute extensive orders with unparalleled dispatch.—1, King-street, Portman-square.—Terms, Cash only.

**THE UNION PLATE GLASS Company** beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality, and having considerably enlarged their Manufactory, are now enabled to execute orders to an extent with the greatest despatch.

N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three-quarters thick.

H. CHRISTIE, Agent, 20, Hatton garden, Holborn.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Helen's and St. Quentin and Cirey Companies, Per. The attention of Architects, Builders, and the Trade generally is requested to this article, which stands unrivalled for BRILLIANCY OF COLOUR, especially of substance, purity and possessing almost faultless quality. The Plate is shown to perfection in the Show-rooms, where all the sizes and thicknesses are kept in stock, all further particulars to be obtained at the Warehouse, 28, Soho-square.

TO PLUMBERS, PAINTERS, AND GLAZIERS

**CROWN GLASS,** in Crates of Eighteen Tables, at the following low prices, for ready money:—

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Crown Glass cut to size of one foot superficial, at 2d. per foot. | Thirds | 4 4 0 | Squares of Small Crown Glass, at 1d., 1½d., 2d. and 2½d. per foot. |
| | Fourths | 3 10 0 | |
| | CC. | 2 10 0 | |
| | C.C.C. | 2 2 0 | |

SHEET GLASS of all descriptions of quality. White Lead, Oil, Tints, Colours, and VARNISHES at WILLIAM FREDERICK PENTON'S Wholesale Glass, Lead, Oil, and Colour Warehouse, 20, West Smithfield, London.

SASHES PRIMED, GLAZED, and sent to any part of London at 9s. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the lowest terms.

ENGLISH SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES
CUT to Lengths and Sizes. Hand Crown and Sheet Putty.
Colours, Oils, Turpentine, and Varnishes. Diamonds.
Large Stock of cheap Glass in Lengths, for HOTHOUSE PURPOSES.
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VARNISHES, OXIDISED WHITE LEADS, MILLED LEAD IN SHEETS, 22s. per cwt.; Lead Pipe, 22s. per cwt.
Orders by Post punctually attended to, and all packages carefully packed.
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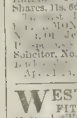
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MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Orders by Post promptly executed for the country. Steam-struck Mouldings of every quality.—N.B. This Establishment is entirely distinct from any of the name in business.



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Beg to call the attention of the Trade and One Building Public in general, that they have REMOVED to more extensive premises, where they have a large stock of Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joinery work, ready for immediate delivery. Estimates given for Shop Fronts, Sashes and Frames, Doors, &c., and all other kinds of Joinery work, on the most reasonable terms. Prices moderate, and extreme punctuality in the execution of all orders may be depended on.



**THE PEOPLES BENEFIT BUILDING SOCIETY,** 376, City Road, Shoreditch, established 1848. Entrance Fee, 6d. Monthly Subscriptions, 5s. On Application Shares, 11s. 6d.

Monthly Subscriptions, 5s. On Application Shares, 11s. 6d.
Money to lend on Mortgage of Freehold and Leasehold Property, repayable by Instalments, or the Loan may remain on Interest.
Next Meeting for the Receipt of Subscriptions and Entrance Fees, and for the Transfer of Shares, on Monday next, at 8 o'clock, P.M. Applications for Shares, Loans, &c., to be made to the Secretary, at the Office, 376, City Road.
Solicitor, No. 1, Bedford-row. Bankers, Messrs. Barnard, Sons, and Barnard, 17, Bishopsgate-street Within.
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**WESTMINSTER FRIENDLY BENEFIT SOCIETY** of CARPENTERS and JOINERS, held at the Eagle Tavern, Chester Row, Westminster.—Established 1838.
Next Meeting of the Trade Section, Monday, April 22nd, at 8 o'clock precisely. Business—Election of Members, Transfers, Contributions, Payments, Reports, &c. Next Meeting of the General Committee, Tuesday, April 23rd, at 8 o'clock precisely. Business—Election of Members, Transfers, Contributions, Payments, Reports, &c. Next Meeting of the Trade Section, Monday, April 29th, at 8 o'clock precisely. Business—Election of Members, Transfers, Contributions, Payments, Reports, &c. Next Meeting of the General Committee, Tuesday, April 30th, at 8 o'clock precisely. Business—Election of Members, Transfers, Contributions, Payments, Reports, &c. Next Meeting of the Trade Section, Monday, May 6th, at 8 o'clock precisely. Business—Election of Members, Transfers, Contributions, Payments, Reports, &c. Next Meeting of the General Committee, Tuesday, May 7th, at 8 o'clock precisely. Business—Election of Members, Transfers, Contributions, Payments, Reports, &c. 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DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**FIRE BRICKS.—WARD & HART,** Hondurus Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shipping, and all inland trade, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Moulds made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

TO PLASTERERS

**LIME FOR PLASTERING,** that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at 9*l*. per load, delivered, at 10*l*. per last, at BEST'S WHARF, Earl-street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks and ballast, &c.

**ARCHITECTS, BUILDERS, and the** Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, sofites, bed mouldings, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 43, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 33 per cent. cheaper than paper mache.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT. — WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**PORTLAND CEMENT.—The peculiar** property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in rendering or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank-street, Westminster

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland cement or stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it checks the progress of Fire and the attacks of Vermin

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Seel-street, Liverpool

**GREAVES'S BLUE LIAS LIME and** CEMENT.—Engineers, Architects, Contractors, &c., are respectfully informed, that the above articles can be supplied by the following agents, viz.—Messrs. Rothy and Meyer, No. 3, Scotia Wharf, Paddington; Mr. J. Thompson, back King-street, Manchester; Mr. T. Wylie, 26, Gloucester-street, Liverpool; Mr. J. Harrison, Linen Hall street, Chester; Mr. J. Brunton, Broad street, Birmingham; Mr. P. Crews, Canal Wharf, Oxford; or by Mr. GREAVES'S boats, direct from the Works, at Southam, Warwickshire.

N.B. Ground Lias Lime for Concrete. Office, Stratford-on-Avon

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. Sufficient proof of themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound is not only fire-proof, but entirely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other natural cements, its hardness is uniform throughout to its entire thickness.

3. Its surface to which may be made equal to that of the finest marble. NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone boards at the same time, much more economical. For the manufactory, references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 26, Cumming-place Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and sound in all seasons, and climates, for any number of years. It is the only Cement that can be depended upon for exposure. It is the only Cement that can be used with equal safety by the Sea-side. It may be used in the hottest or coldest climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other compounds seem to perish. It may be worked, though not Winter, as well as to effect upon it. It may be used on the Inner Walls of new Houses, which may be papered or painted in a few days after being pointed with this Cement will remain undamaged by the severest storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all its unbounded advantages, and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of the Builder, 1 and 2 MANN and CO., SOLE AGENTS for the Patentees, 3, Martin's-lane, Queenhithe, Cheapside, London; of whom also may be had

JOHN'S and CO.'S PATENT STONE COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for stucco, combines with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

**W. GREENWOOD, SASH MAKER and JOINER to the TRADE, 6, Wickam-street,** Pool-street, New North-road, begs most respectfully to submit the following list of reduced prices for Sashes, Frames Doors, &c., with best workmanship and materials, for ready money only:—

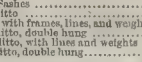
| In. SASHES, at per Foot Super. | s. d. |
|---|---|
| 1¼ Ovolo | 3 4 |
| 1½ Shop Fronts | 0 4½ |
| 1½ Ovolo Sashes and Frames | 0 5 |
| 1¼ Ditto, double hung | 0 9 |
| 2 Ovolo Sashes and Frame | 0 10½ |
| 2 Ditto, prepared to Lang double | 1 0 |

| In. | s. d. |
|---|---|
| 1¼ Ovolo Sashes | 0 8 |
| 2 Ditto ditto | 0 9½ |
| 1½ Do. do., with frames, lines, and weights | 1 3 |
| 1½ Ditto ditto, double hung | 1 3 |
| 2 Ditto ditto, with lines and weights | 1 3 |
| 2 Ditto ditto, double hung | 1 4 |

| In.. DOORS, at per Foot Superficial. | s. d. |
|---|---|
| 1¼ 4-panel square | 0 7½ |
| 1¼ Ditto, moulded one side | 0 8½ |
| 1½ Ditto ditto, both sides | 0 10½ |
| 1½ Ditto, bead, butt, and square back | 0 9 |
| 1½ Ditto, bead, flush, and square back | 0 10 |
| 1¼ 6-panel square | 0 8½ |

FANCY SASHES, SHUTTERS, AND DOORS, TO ANY DESIGN.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F. McNEILL and Co.** of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of

**THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.**

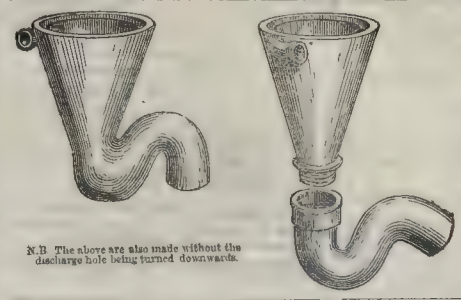
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HER MAJESTY'S WOODS AND FORESTS,
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HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under sin tes at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its use, and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in boiler fuel is effected. The TRADE are respectfully requested to send their orders DIRECT to the FACTORY, as the sun of money saved with the genuine article, as in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

**DOULTON AND WATTS,**
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

**THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.**
57, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| Foreign Sheet, in 100 feet Boxes | per ft. 3d. |
|---|---|
| Do. do. Super 200 " " | 3d. |

Crown Squares, 100 feet Boxes:—

10 in. by 8 in. and 9 in. by 7 in.
8 in. by 6 in. and 7 in. by 5 in. .. 2d.
6½ in. by 4½ in. and 6 in. by 4 in .. 1½d.
6 in. by 3 in. and under 2d.

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,

of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES, 6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the

NEW BOURSE AT HAMBURG,

and will shortly have completed the

LONDON ROYAL EXCHANGE,

NEW HOUSES OF PARLIAMENT,

and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH.

| | per Imp. Gal. s. |
|---|---|
| Super Body Copal, for the bodies of Carriages | 30 |
| This Varnish will not crack, by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish | 15 |
| A fine pale Varnish for the lighter imitation woods.—Dries in about eight hours. | |
| Super Carriage Varnish | 12 |
| Very durable, and well adapted for Coachmakers' use for Body bodies | |
| Elastic Oak, Walnut, or Mahogany Varnish | 10 |
| Brilliant and durable for House painters' use, and for all imitation woods | |
| Pewer or Crystal, quite transparent | 10 |
| Gold Size for Gilders | 12 |
| Also as a dryer in ground colours, which much improves their appearance | |
| Black Japan | 12 |
| A splendid Jet Black, for Coachmakers use | 6 |
| Painter's Black | 6 |
| A Black Varnish for Iron-work, Stoves, &c.—It dries immediately | 6 |
| Furniture Varnish for Japanners.... Dries in two hours. | 14 |
| White Hard Spirit Varnish, for Cabinet Work | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods | 20 |
| Rather longer drying than the above. | |
| Mastic Varnish, pale, for Pictures | 24 |
| Turpentine Varnish | 5 |
| French Polish | 10 |
| Naphtha | 10 |
| Patent Liquid Wood Knotting | 20 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £. s. d. |
|---|---|
| 2½ inch Lift Pump on Plank | 4 0 0 |
| 3 " do. do. | 5 16 0 |
| 3½ " do. do. | 6 0 0 |
| 4 " do. do. | 8 10 0 |

Well Pumps on Square Tails, with Iron Bow, equally low.

| | |
|---|---|
| 4 inch Bib, Ball, or Stop Cocks. | 0 1 8 |
| ¾-Bib do. do. | 0 2 1 |
| ¾ do. do. | 0 2 6 |

Pan Water-Closet, complete, with Whirling Basin, Brass Cocks, Ball, Lever, and Copper Wire | 1 10 0
Blue Basin, extra | 0 4 0
Ditto, with Soak Hand Basin, extra | 0 4 6
Spring Valve Closet, on Bramah's principle, complete | 3 10 0

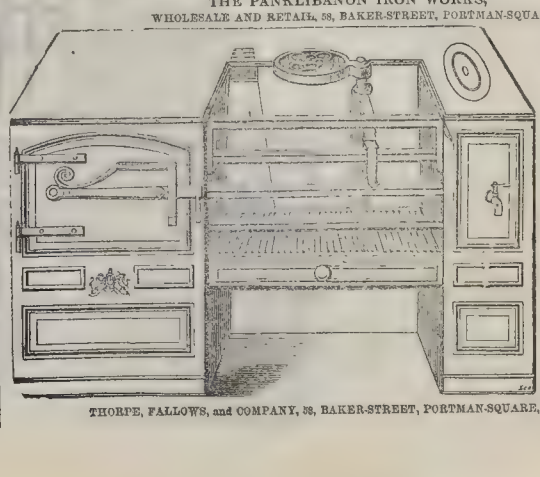
Lead Machines, from one to six inches in head-screw caps.

Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order

PAINTS AND COLOURS.

Best White Lead, 27*l*.; Seconds, 23*l*.
Thick, 23*l*.
Milled Sheet Lead and Lead Pipe, 20*l*.
Linseed Oil, 2s. 6d. per gallon; Turpentine, 4s. 6d. per gallon; Boiled Oil, 3s. per gallon.
Brunswick and Navy Greens, Cromes Blacks, Reds, Patent Dryers.
Best Town Glue, 2s. per cwt.
Brushes, and Brushes and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

**THE PANKLIBANON IRON WORKS,**
WHOLESALE AND RETAIL, 58, BAKER-STREET, PORTMAN-SQUARE.



**ARCHITECTS,** BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of Stove Grates, Fenders, and Chimney Irons, ever offered to the Public, at prices considerably below the usual rates. The Proprietor at the same time begs to invite attention to their extensive stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Waiters, Table Cutlery, and especially their sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Cheese Covers, Liquor Frames, Epergnes, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermio Stove is in daily operation. Also

CUNDY'S IMPROVED HOT-AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

# THE BUILDER.

IMPORTANT TO BUILDERS AND OTHERS, HAVING HOUSE AND LANDED PROPERTY FOR SALE.

**PROPERTY Surveyed, Registered, and** most extensively [illegible] by means the most efficient and [illegible] charge whatever made until a sale is effected, and then only our previously agreed and moderate commission. Our [illegible] they know we have the largest and most [illegible] property upon our books of any house in the kingdom, and hence it is that such extensive sales take place through our agency.—BECKWITH and SALMON, Estate and Land Agents, Auctioneers and Valuers, 25, [illegible]

N.B. Those who desire their [illegible] Auction can do so through us, at [illegible] bought in.

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**BUILDING GROUND, the most Eligible** near London — Ravenscourt Park, Hammersmith — for detached Villas; long term of years, moderate ground-rent; being a safe and profitable investment for builders.—Apply to Mr. G. E. GORDON, Architect, Ravenscourt Park.

ST. JOHN'S WOOD PARK, IN IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET in this** most desirable and [illegible] situation, commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City!—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's villas, Avenue-road, Regent's park.

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TO ARCHITECTS, ARTISTS, SOLICITORS, AND OTHERS.

**THREE OFFICES, near Chancery-lane,** TO BE LET, furnished, for 30*l.* per annum. Also two light offices, furnished, within five minutes walk of Westminster-bridge, at 2*l.* per year. Both are fitted out and [illegible] to either of the above [illegible] Address [illegible] letter only, post paid, to A. A. M., at the office of "The Builder," 2, York street, Covent-garden.

WHARF AND WATERSIDE PREMISES TO LET.

**A DRY ARCHED WAREHOUSE, 70** feet long by 15 feet wide, with Yard, Office, and use of Wharf, adjoining Southwark-bridge, Surrey side. The lease will be Let on Lease, or by the Year, or to Contractors, at a rate per ton for Landing Building Materials, for which it is very suitable, as three waggons can stand and load without obstruction to the public road. The Arch has been used for Stabling. Apply to Mr. JOHN PORTER, Southwark-bride Iron Works.

---

TO BUILDERS.

**VALUABLE FREEHOLD BUILDING** GROUND TO BE LET on Building Leases, upon favourable terms, [illegible] advanced, situate in the New North-road, at Paddington, Rotherhithe, Islington, Nottinghill, Tottenham, Hyde Park, St. John's-wood, Norwood, Homerton, Stoke Newington-road, Peckham, Kent-road, Hackney, Folkestone, in Kent, &c. &c.

Also some well-built Carcases, to be sold a bargain, at St. John's-wood, Newington, Homerton, Islington, Dalston, Poplar, Paddington, and Kingsland. Apply to Messrs. BECKWITH and SALMON, Estate and Land Agents, Auctioneers and Valuers, 25, Bucklersbury.

**WHARF TO BE LET OR SOLD, well** situated 2½ miles on the Western-road. The premises are extensive, including small dwelling-house, substantial sheds or stores, stabling, [illegible] new, double water frontage, [illegible] with double gate entrances. The property is extremely eligible for a lime, coal, or timber merchant, a large business having previously been carried on in the [illegible] a West End depot, these premises offer an opening rarely to be met with. They will [illegible] sold at a [illegible]—Apply to Mr. NEWTON, [illegible]

---

BUILDING GROUND.

**TO LET, some Excellent Building Ground,** [illegible] money advanced as the work proceeds.—For further particulars apply to Mr. F. E. H. FOWLER and Mr. G. A. [illegible], Architects [illegible]

STAMFORD HILL.

**TO LET, the ONLY PORTION now** remaining of this first-rate frontage (sufficient for from eight to twelve houses, [illegible] more lots, [illegible] rise of the Hill. Lease direct from the freeholder. Plans may be seen, and all particulars had at the office of Mr. ARTHUR ASHPITEL, Architect, 5, Crown-court, Old Broad-street.

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WITH PECULIAR ADVANTAGES TO BUILDERS.

**TO LET, in a most respectable and picturesque** situation about a quarter of a mile from Highbury, and within three miles of the New Post Office, several most desirable Plots of Ground. Land tax redeemed.—Plans and all particulars may be had at the office of Mr. ARTHUR ASHPITEL, Architect, 5, Crown-court, Old Broad-street.

---

WELLINGTON STREET, ISLINGTON.—To Builders.—Materials and Money advanced if required.

**TO BE LET, on Building Leases, for a** long term, several very eligible Plots of Building Ground, land tax redeemed, for Third-rate Houses, [illegible] already made respectable [illegible] This class of houses are greatly called for [illegible] most respectable neighbourhood [illegible] can be let directly they are finished [illegible] apply at the office, on the ground, Wellington street, near Islington Church.

---

TO BANKING OR OTHER PUBLIC COMPANIES, First Class Commercialists, or Traders requiring great space, extensive premises, and first-rate situation at the West-end of London.

**TO LET on LEASE, for any Term beyond** Twenty-one years parties may desire, those extensive premises, No. 100, New Bond-street, [illegible] on the ground floor, an entrance hall [illegible] extensive [illegible] to a magnificent banquetting hall [illegible] several minor rooms, comprehending an area of about [illegible] feet. Stabling for [illegible] carriages. The house is replete with [illegible] excellent bath room [illegible] proportioned rooms.—For cards to view apply to Mr. LESLIE, at the offices and manufactory of his new Patent Ethereal Gas-Burner, 9, Conduit-street, Hanover-square.

---

MANOR PARK ESTATE, STREATHAM.

**TO BE LET, on Building Leases, for a** long term, on the above estate, close to the parish church, 65 plots of ground for villas, 56 plots for terraces, sites for 35 shops, and 16 plots for stabling, &c. The whole forming a belt round the ornamental interior of the Manor park, which is unrivalled for beauty. For plans and particulars, apply to Messrs. RANKEN, FORD, LONGBOURNE, and VICKERMAN, No. 4, South-square, Gray's-inn; Messrs. GOUGH and ROUMIEU, architects, 10, Lancaster-place; or Mr. WILKINS, at the Manor-park Office, Streatham.

N.B.—Facing bricks, both white and red, stocks and others, of excellent quality, in any quantity, may be had at a very moderate price on the estate. Gravel and sharp sand of a very superior description is found in abundance on the ground, and water is also laid on.

---

**TO BE SOLD, Cheap, Two Square Shop-**fronts, 7 feet 9 inches by 7 feet 3 inches wide, with a return to each 3 feet 3 inches wide, squares 24 by 21 inches, nearly half the glass best plate; also another front with circular ends, projecting 10 inches with entrance, shutters, &c., at 54, Jermyn-street, [illegible]

---

**TO BE SOLD, Freehold Building Ground,** near Guildford, Surrey, and at Bayswater. About [illegible] acres, situate two miles from Guildford, Surrey, and close to three new lines of railway. There is an extensive frontage to the high-road, and houses are in great demand. Brick earth to a considerable depth. Extensive rights of pasturage. Price, including the oak and ash timber, only 700*l.*

Also 14 acres of valuable Building Ground at Bayswater, having a frontage of about 1000 feet. Price, 25 years purchase. Apply to Messrs. BECKWITH and SALMON, Estate and Land Agents, Auctioneers, and Valuers, 25, Bucklersbury.

## SALES BY AUCTION.

BUILDING MATERIALS. TO CARPENTERS, BUILDERS, AND OTHERS.

**MESSRS. BARTON and SON will SELL** by AUCTION, directly opposite the Stag Inn, Wandsworth-road, on WEDNESDAY, April 21st, 1847, a Builder's Stock, comprising excellent oak, pine, and fir timber, panelled doors, cupboard fronts, wainscotting, sashes, partitions, stone paving, and a large quantity of Dutch clinkers, with other useful materials.—Catalogues on the Premises, at the Stag Inn, and of the Auctioneers, Westminster-road.

---

BUSINESS PREMISES, CITY OF LONDON.

**MR. THOS. LEWIS will SELL by** AUCTION, on TUESDAY next, the 20th day of April, 1847, at One o'clock, on the premises, No. 2, [illegible]-street, Ludgate-hill, the valuable lease of the above premises, with dwelling-house, front and back entrances, held at an exceeding low rent, and in good repair. Particulars and conditions of sale to be had of M. HUGHES, Solicitor, 10, Chapel-street, Bedford-row; on the premises, and of the Auctioneer, 21, Yardley-street, Wilmington-square.

---

PALL-MALL.—Capital Building Materials of Five large Houses, to clear the ground for the Army and Navy Club.

**PULLEN and SON respectfully announce** that they will SELL by AUCTION, on the premises, on MONDAY, April 26, at Twelve, in lots, by order of the Committee of the Army and Navy Club, all the excellent Building Materials of five large houses, 36, 37, and 38, Pall-mall, and 2 and 3, George-street, St. James's-square; comprising 300,000 sound bricks, oak and fir timber in roofs, floors, and quartering, plain and pan tiles, lead flats, gutters, and pipes, modern sashes, doors, partitions, plate-glass shop front, the royal arms in composition, iron railing and balconies, stoves, and various useful fixtures and fittings. May be viewed on Saturday previous. Catalogues had of G. B. LEFROY, Esq., solicitor, 217, Piccadilly, and of PULLEN and SON, 60, [illegible]

---

FREEHOLD BUILDING GROUND, STROUD-GREEN, HORNSEY.

**MR. PRICKETT will SELL by AUC-**TION, at the Mart, on WEDNESDAY, April 21, at Twelve, in one lot, a valuable FREEHOLD PROPERTY, consisting of 13 acres of building ground, which from its peculiarly happy position on an eminence, its gentle inclination to a southern aspect, its proximity to the metropolis [illegible] must shortly embrace this spot, presents to the capitalist a generative and sure income for many years by the manufacture of bricks and other profitable productions; by this means the surface will be beneficially lowered in preparation for finally [illegible] the tasteful architect and builder by the formation of a park with ornamental villas. [illegible] obtained at the Mart, of Messrs. LATHAM, JOHNSON, [illegible] and of Mr. PRICKETT, Auctioneer and Estate Agent, [illegible] in buildings at [illegible] Highgate.

---

TO TIMBER MERCHANTS, CABINET MAKERS, CARPENTERS, BUILDERS, &c.

**MESSRS. SKEEN and LEARY will** SELL by AUCTION without reserve, on the premises, No. [illegible] Wells-street, Oxford-street, on TUESDAY, April [illegible] by order of the proprietor [illegible] of Mr. CHARLES ROWED. Mahogany and Timber Merchant [illegible] of Spanish, Honduras, and Cuba Mahogany in [illegible] and veneer [illegible] wood, walnut and maple planks, and veneers [illegible] veneers, some dry wainscot, cut deals, and birch; pit and frame saws, screws and crow bars; and all utensils in Trade, &c. &c.—To [illegible] of SKEEN and LEARY, [illegible] Old Broad street.

---

BRIXTON, SURREY.—Villa Residences, Building Ground, Dwelling-houses and Shops, the greater portion held for a long term at a pepper-corn and a well-secured ground-rent.

**MESSRS. BROWN and ROBERTS beg** [illegible] THURSDAY, April [illegible] Swiss Villa Residences, and plot of Building [illegible] Cole Harbour road; a convenient Residence, and plot of Building-ground, in Carlton-terrace, Loughborough road; also a well-secured Ground rent; likewise Eighteen Cottage Residences, Three Dwelling houses and Shops, with a large plot of Building-land, [illegible] Cole Harbour-road; the greater portion in the occupation of respectable tenants, and of the value of upwards of 500*l.* per annum; presenting a desirable opportunity to purchasers either for occupation or [illegible] free from ground rent, [illegible] tion obtained in the interim by a personal application to Messrs. HENRY BROWN and S. A. ROBERTS, [illegible]

---

ISLE OF WIGHT.—To Builders, Capitalists, and Others.—The East Cowes Castle Estate, adjoining the Royal Domain of Osborne for Sale by Auction, in 177 lots.

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As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour similar to Portland stone; does not operate or crack; hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not open to the objections upon that score existing with what it may come in contact but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties it uniformly possesses:

1. It rapidly acquires the hardness of stone
2. Under all external cements, its hardness is uniform throughout its entire thickness.
3. Its surface which may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint in four days' peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaisterers of Paris, and Cement Manufacturers, 20, DUFFRY LANE.

Agent for Liverpool and Manchester, Mr R PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—

It will effectually resist Damp. It will never whiten, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone coating to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, or in whatever quantity a number of years. It is the only Cement that can be safely kept in for any length of time. It is the only Cement that can be used with a Brush on the Stone side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, viz., to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked after set by the Water as frost has no effect upon it. It may be used on the Inner Walls of new Houses, and will supersede paper or painted walls. Roofs laid in it with Tin Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and simple. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all these recommendatory and valuable advantages, nothing is opposed to it on point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Pamphlet containing fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the Office and Store of the Company, 5, Adam-street, Adelphi, SOLE AGENTS for the Patentees 5, Maiden-lane, Queen street, Cheapside, London; of whom also may be had,

JOHN'S and CO.'S PATENT NON-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT, having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in it application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

TO PLASTERERS.

**LIME FOR PLASTERING,** that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORTNUM'S Wharf, Upper Thames-street, Builders' Goods Landing and Warehouse Plant. A consignment for loading and landing this season at half cost, &c.

**ARCHITECTURAL CARVING WORKS** (IRVING'S PATENT), late Sir Francis Chantrey's Foundry, Eccleston Place, Pimlico (leading out of Chester square).

Architects and Builders are respectfully informed, that Carving in Wood, Stone and Marble, by Patent Machinery, is carried on at the above premises. Tracery for Churches, in wood or stone, beautifully executed, at prices which will, in all cases, carry out their plans in having decorated churches and other buildings, at comparatively small expense. Machines are sent into the country, to work on the spot, at a great saving in price. Fonts, chimney-pieces, to the wind we, fluted columns, pannelling, and landscape, are likewise beautifully executed, and ready for fixing, or fixed. Mouldings, wood and stone, made to any pattern; scagliola and imitation work executed in all their branches. From the length of their workmanship, the public are respectfully informed that a show room has lately been fitted up on the premises not having any other establishment in London, for the inspection of their merits.

**CARVING BY MACHINERY,** JORDAN'S PATENT.

TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decorations, to the peculiarities of their Machinery and the proofs of its efficiency, which are to be found in the fact of its being employed at the Government Works, and in the splendid decorations of the New Palace at Westminster, and in the houses of the Public Press erected in the Exhibition of the Society of Arts.

*The Athenæum* of March 8th, in speaking of the Specimens of Carvings produced from Jordan's Patent, says, "These were really astonishing. A bunch of Hops and bunch of Partridges were worthy to hang by the side of Grinling Gibbons's Works. A portion of the Gilberti Florentine Gates were also very successful. The Machinery employed accomplishes precisely the task assigned to the Sculptors against Weeks—that is clear and the perfectness and promptness the object for the final touches of the Artist. No matter how high the relief or how low or intricate the undercutting, no difficulties baffle this Machinery."

The Proprietors find it to be due to themselves and to the Public to state that they have at present only one Establishment which is their Carving Works, at Pelter-ne Road, Lambeth, formerly Cradle and Scully's Term Cott. Works, where specimens may be seen and estimates for large works obtained.

**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it, nearly the cost each two years; abolish all danger to life and limb, clean ing and repairing. It is in full operation four different ways, forms a complete ventilator and sunblind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London

**SASHES and FRAMES, DOORS, MA-** HOGANY SHOP FRONTS, &c., made for the Trade.—J. RUDDERS, 161 a Waterloo's, begs to give notice to the Trade and the Public, that he has removed from Lisson-grove to 4, MARY the trade at 24 Oxy-Road, and 144 Tabernacle Walk, Finsbury. All Orders for the Country, &c., punctually executed. Workmanship at the lowest prices.



**CHAS. WM. WATERLOW,**

MANUFACTURER

of Sashes and Frames in Deal Joiner to the Trade, 12, Bunhill-row, Finsbury square.—Well-seasoned materials, superior workmanship, lowest prices. Upwards of 400 DOORS, and a large variety of Sash and Frames always in sale. Good goods country packed for free entry. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.



DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 2d. per foot superficial; and borders from 9d. per foot, running; and having established the largest Kiln in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman square.—Terms, cash only.

**THE UNION PLATE GLASS** Company beg to call the attention of Architects, Builders, and the Trade generally, to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.

N.B. Rough Plate Glass supplied, one-fourth, three-eighths, one-half, and three quarter inch thick.

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**SOHO PLATE GLASS WAREHOUSE,** 98, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the Soho Plate Glass and Crown Glass Companies, Parys. The attention of Architects, Builders, and the Trade generally, is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 98, Soho-square.

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**CROWN GLASS,** in Crates of Eighteen Tables, at the following low prices, for ready money:—

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| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ..... | 4 4 0 | Squares of Small Crown Glass, at 1d. 2d. and 3½d. per foot. |
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SHEET GLASS of all descriptions equally low.—White Lead, Oil, Paints, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Wholesale Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

SASHES PRIMED, GLAZED, and sent to any part of London at 6d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Colour and Ornamental Glass, Fluted Crown, and Sheet Plate, for Shop Fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES

Dry and good Colours of the finest manufacture.

VARNISHES and GENUINE WHITE LEAD, MILLED LEAD IN SHEETS, 22s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water closets, Baths, Brass-work, and all materials used by Plumbers.

For complete Lists, priced—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 9, Princes-street, Leicester square, London.

**PATENT URINAL BASON,** to be supplied by a self-acting or other apparatus, complete and perfect in itself, without requiring any other fitting than the basin itself. Wholesale and retail of Messrs BURTON and DENTS, Wholesale Plumbers and Lead Merchants, 21, Newcastle-street, Strand. Builders and the Trade supplied with Cast and Milled Sheet Lead Pipe, cut to any dimensions at Wholesale Prices.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only, 62, WATERLOO BRIDGE-ROAD.

An Apprentice wanted a country lad would be preferred.

N.B. Wanted, a good Grainer and Writer; also, an Ornamental Painter or Pencil Hand. None need apply unless good workmen, and have good references.

By Her Majesty's  Royal Letters Patent.

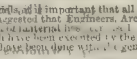
**PATENT ASPHALTE ROOFING FELT,** as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Newfolk and other Railways,
And the Corporation of the City of Edinbro'.

PRICE ONE PENNY PER SQUARE FOOT

Also the "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound. THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London and Bull's Head Yard, Manchester

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

**THE ASPHALTE of SEYSSEL** has been extensively used since March, 1838, for the following useful purposes:—

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|---|---|---|---|
| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | which also renders it very appropriate for the, |
| Kitchen Floors (particularly where it is essential to keep damps from rising). | Dog kennels | Covering of Railroad and other Arches. | Lining of Tanks, Fish-ponds, &c. &c. |
| Gutters, Walks and Terraces. | Dairy Floors. | The only effectual remedy to prevent the incrustation of Steam Boilers. | |
| Carriage Drives. | Granaries | | |
| | Malt Lofts. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage, to be derived from the application of SEYSSEL ASPHALTE.

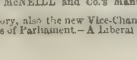
The Arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Assignees of the Company, of the quantity of Asphalte purchased.

Information may be obtained as to the Works which have been executed by the Company since its establishment in 1838, which will prove that the failures, where they have occurred, have been done with the genuine material, has resulted from the substitution of a spurious one.

Seyssel Asphalte Company, Stangate, London.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F. McNEILL and Co.** of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of

**THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.**

Patronised by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF WORKS,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great nation al shows it has been extolled, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing, also used for under slates at the Royal Agricultural Society's House, in Hanover square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 24 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its use and the manner of applying it, will, TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen who have extensively used it, sent free to any part of the town or country. A Dry hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully emplored to send their orders DIRECT to the FACTORY, as the surest means of having supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only Works in Great Britain where the above roofing is made are F. McNELL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the new Houses of Parliament.—A Liberal Discount allowed to the Trade.

The Builder.

No. CCXX.

SATURDAY, APRIL 24, 1847.

LAST week we endeavoured, it is hoped not unsuccessfully, to give such of our readers as had not seen the new Palace of Parliament, at Westminster, a general idea of its plan and arrangement, as well as an engraved view, and more especial description of the House of Lords, now occupied. In our present number we illustrate the PEERS' LOBBY, at the north end of the House, shewing the brass gates, which separate it from the latter, and the carved stone-work around them more, in detail than we were able to give the work within the House.*

In order to get at our subject conveniently, let us enter the building to-day by the Royal Tower, in Abingdon-street, that enormous structure, into the lower part of which the Queen's state carriage and eight horses will be driven, to place her Majesty at the foot of the staircase on the north side of it, which leads first to a chamber to be called the "Norman Porch," and then to Her Robing Room.

This tower is 80 feet square, and, to the top of the octagon turret with which each of its four angles will be furnished, will be 346 feet high,—or little less than the height of the top of the cross which surmounts St. Paul's Cathedral! The boldness of the idea, and the effect that will be produced by this erection, may not be judged of by comparing it with the lofty spires of our cathedrals, because here the whole structure is taken up of the same dimensions, or nearly so, to the top, while in those the mass is rapidly diminished towards the summit. The faces of the tower will be elaborately panelled and ornamented, and will include two ranges of triple windows.

Standing within the porch formed by the lower part of the tower, and looking up, a rough boarded ceiling meets the eye at a considerable elevation from the ground, to which access is obtained by flights of wooden stairs. Venture up, if you may. The scene is extraordinary: that which looked so blank and quiet below, is here all bustle and startling activity. Twenty carvers are at work by the light of gas, fashioning enormous bosses at the intersections of a star-shaped web of groins,—the net-work of the ponderous stone vault which is suspended over the whole area of the porch, and will carry the floor of the upper chamber.

In excellence of workmanship and the science of shaping stones, the moderns are pre-eminent. Once imbue our operatives with the artistic feeling and skill of the old masons, and architectural works may be carried out to surpass any thing the world has yet seen. Very much has been done towards this at the building of which we are speaking.

The piers of the tower will be adorned within the porch with gigantic statues on bracket pedestals.

The royal staircase, the ascent to which, as we have already said, is on the north side of the porch, is very picturesque in effect, and would afford some capital subjects for illustration, even without the statues of sovereigns, which are to be placed there ultimately.

For the present we hurry up it, and through the Norman Porch, into the Queen's Robing Room, which will have an elaborate ceiling, similar in character to that of the Chapel Royal at St. James's Palace.

This apartment, which we may call roughly 60 feet long and 35 feet wide, opens into the Royal Gallery (already spoken of as a noble hall, 108 feet in length), along which the Queen will proceed when robed, towards the House of Lords, from which the Royal Gallery is separated only by the Victoria Hall, one of the apartments finished. This part of the building will be the next completed.

The Royal Gallery, besides frescoes on the walls, will contain the continuation of a series of statues of sovereigns, commenced on the staircase, and so will the Victoria Hall. In fact, throughout the structure, every yard of wall will receive a picture, and every convenient space, or niche, a statue.

Of the fittings of the Victoria Hall we shall not now speak, reserving our description to accompany a view of it, which we propose to give,—but passing along a corridor which runs on either side of the House of Lords (8 feet 3 inches wide, exclusive of recesses, and panelled, both walls and ceilings, with wainscot), we gain admittance to the Peers', or Public, Lobby,—the subject of our present illustration.

Here, as in the House of Lords, the whole glitters with colours and gilding,—carvings in stone, stained glass, encaustic tiles, and fine work in metal, all offer themselves for examination.

We will call this apartment 35 feet square. The ceiling is divided into compartments, in which are blazoned the rose, shamrock, and thistle, alternately, in circles, surrounded by coloured ornaments on a vellum-coloured ground; the moulded ribs are painted a deep neutral brown, with stencilled enrichments in red, blue, and white. Pendants, terminating in gilt crowns, intersect the ribs at their junction, and the corbels are angels holding shields, with the royal initials surrounded by the garter.

The main entrance to the House of Peers is through a grand archway, closed by the elaborate brass gates already alluded to, and represented by our engraving, surmounted by the royal arms and supporters on a panelled ground. There are three corresponding archways, also surmounted by shields; the whole of these are painted and gilt in their proper colours. In the side panels corresponding to the windows, are painted the arms of the peers called to the first Parliament, blazoned with mantlings and scrolls on a diapered gold ground. On an upper range of panels over the archways are likewise blazoned the arms of the six royal lines.

The lobby is lighted by four large gothic candelabra, bronzed and gilt. Some of the windows are filled with stained glass, continuing the illustrations of the arms of the peers called to the first Parliament. The remainder will be completed shortly. These windows were executed, like the one window in the House of Lords, by Mr. Hardman.* The pavement of the floor consists of encaustic tiles by Minton, of lions, on a red ground, and initials on a blue ground, alternately, formed in squares by black marble margins; and in the centre is a red and white rose in coloured marbles on a blue ground (reflecting a centre rose in the ceiling), surrounded by a margin of twining roses in *brass* on an enamelled blue ground. The marble work was executed by Milnes, of Bakewell, in Derbyshire.

The door-handles, escutcheons, and plates are of iron, tinned.

To pass once more from the decorative to the structural, we will take our readers from this lobby to the Central Hall (a corridor 60 feet long, will connect them when finished), and, on ascending the scaffold, they will get a further idea of the strength and solidity of the carcase over which such delicate and diverse adornments are to be spread. The effect there is very striking. The hall, our readers will remember, is an octagon 70 feet square. In each of the eight sides, above the level of the adjoining parts of the building is an arch, 14 feet in span; and from the spring of these is about to be commenced the groined vault,—a ponderous mass to be carried masonically. The height from the floor to the key-stone will be 75 feet; one of the bosses, lying there already prepared, measured 4 feet in diameter, and will supply a scale in the mind for the whole.

The thrust of the vault will, of course, be great, and due preparation is being made to withstand it; a turret is carried up against each of four of the sides to serve as an abutment, a strong wrought-iron tie passes round the whole at the springing, embracing also the turrets; and all the stones of the vault are keyed one into the other.

St. Stephen's Hall, which opens out of the Central Hall, is ready for the groining, and the addition to the length of Westminster Hall, to be called St. Stephen's porch, and by means of which, as already said, entrance is to be given from the noble old hall, is being rapidly proceeded with. We will simply say further, that statues of Marlborough and Nelson* will be placed in the porch, and that in St. Stephen's Hall, will be statues of men who have played important parts in the history of the Commons;† and then, as we have once more reached the outside, make our escape from the attractions of Mr. Barry's noble pile for the present.

Mr. Grissell's workmen are now actively occupied in preparing the fittings of the House of Commons, with the view possibly of completing the House in time for the new parliament. Much of the wood-carving is already executed.

In our last number we alluded to Jordan's patent carving machinery as a most important invention which had tended greatly to facilitate the execution of the carved decorations of the New Palace of Westminster, and having recently visited the works in the Belvedere-road, Lambeth, where we saw the machines in operation, we can confidently recommend them to the notice of all who are seeking real carving at a moderate price.

The machines are extremely simple, consisting of few parts, and being entirely free from jointed movements. The lower or horizontal part is a double railway: one carriage or frame travels on a rail to and from the workman, and a second carriage or table travels on this frame at right angles to the first movement, so that by combining these two movements, the workman can readily work the table in any direction he pleases. On this table is fixed the pattern and as many pieces of work as can be carved

* See p. 184 in present number.

* We were wrong, it seems, in saying that the remainder of the windows in the House of Lords would be intrusted to the same artist. The contract for the whole of these windows is undertaken by Messrs. Ballantyne and Allan, of Edinburgh, under the sanction of the Fine Arts' Commissioners. The window in question was executed under the direction of Mr. Barry for a latter to work by, as to colours and general treatment.

* One of the Commissioners of Fine Arts told us a few days ago, that Marlborough and Wellington were to be placed there. In the fourth report, however, the names stand as we have given them. The Honourable Commissioner's mind was probably running on the monstrosity at Hyde Park Corner.

† Selden, Hampden, Lord Falkland, Lord Clarendon, Lord Somers, Sir Robert Walpole, Lord Chatham, Lord Mansfield, Burke, Fox, Pitt, and Grattan.

We may mention here, that a commission has been given for two of the statues of Barons, to fill the niches in the House of Lords, to Mr. John Evan Thomas, of Pimlico; and to Mr. Ritchie, of Edinburgh, for two others.

at one time, the number being limited only by the relative size of the work and the table.

The second or vertical part of the machine is totally unconnected with the first, and is composed of a strong bridge or girder fixed between columns and across the centre of the lower railway. It carries a vertical slide, having a bottom-bar, to which any required number of cutter-mandrils may be attached: one of the mandrils is fixed exactly over the centre of each piece of work, and a tracer or feeler is similarly fixed over the pattern. The slightest pressure from the workman's foot on a treadle lifts this system of cutters and their tracers off the work, and by a pair of hand-wheels attached to the horizontal or "floating-table," he can move this about in any direction, so as to bring every part of the pattern under the tracer in succession, and by the time he has done this, the cutters which have necessarily been passing over similar forms, and which have been spinning round all the time, at an enormous rate, by the power of steam, have each cut away all the superfluities of its own block, and each produced its own copy of the original pattern.

In this way, from four to six copies are produced simultaneously, and they are all so closely "bosted" as scarcely to require after-finishing, if fixed at ten or twelve feet from the eye. Of course, any amount of finish can be given to the work afterwards by hand, with comparatively small labour; the time of the skilful artist is thus economized, and the beauty of the work may therefore be increased, while both the time and cost of production is greatly reduced. Several of these machines have been in use at the Government works, Thames bank, for the last eighteen months, and their efficiency cannot be better proved than by the splendid work which they have so greatly assisted in executing.

## LEAVES FROM AN ARCHITECT'S DIARY.

### No. V.

IMPROVEMENT OF ARCHITECTURE—PROFESSORS OF ARCHITECTURE NOT CONSULTED—LONDON STREETS—BRIGHTON.

It would tend much to the improvement of architecture, if, where positive excellence could not be obtained, the desire for decoration could be altogether prevented. By such excellence is meant, not necessarily a character of design, that might be described as ornamental, nor perfection—which is impossible—but merely that arrangement of forms, simple or otherwise, which in the hands of the master, is alone capable of elevating the subject to the rank of a work of art. Critics may differ on points, which nevertheless, if they are honest, they must say, at least admit of being matter of argument; and there is one architect, whose variations on details become the subject of discussion, whenever the opportunity is afforded, whilst they are evidence to all, of the cultivated taste, universally allowed to their author. That,—

> "A perfect judge will read each work of wit
> With the same spirit that its author writ:
> Survey the whole, nor seek slight faults to find,"

is worth preserving in the recollection of critics of the works of architecture.

> "Thus, when we view some well-proportioned dome,
> * * * * *
> No single parts unequally surprise,—
> All comes united to the admiring eyes;
> No monstrous height, or breadth, or length, appear;
> The whole at once is bold and regular."

The treatment of the design may be debateable, but the perfect success of the effort must be exacted. The opportunity, or the means may be slight;—details, however open to comment, may be admitted, if they have the shew of reason.

> "In every work regard the writer's end,
> Since none can compass more than they intend;
> And if the means be just, the conduct true,
> Applause, in spite of trivial faults, is due.

but the evidence of a *failure* is intolerable in all art.

But, it is this very principle, clearly present to the lovers of every other art, which is not applied in what pass with the public as works of architecture—from the greater part of which, as we have already shewn, the world, let it be recollected by architects, forms its opinion of the value of professional attainments and labours,—it being singularly unfortunate, that the profession is constantly brought before notice, when works are under consideration over which it has been allowed no influence, yet forgotten in whatever could be traced to the cultivated judgment of the artist.

The author of "Tancred," the proposer of a new penal code for the better regulation of metropolitan buildings, if just, would find his culprit in the ranks of the professors of architecture, with some difficulty, but might take, say his own intimate friend, without fear of punishing the innocent. If scarcely one street in London is creditable to the nation, clearly those are to blame who projected the streets, and designed the buildings, not ARCHITECTS, whose opinion is generally not attended to, and is, in only about one case in a thousand, asked. The degradation of architecture would have its parallel, in any branch of ingenuity, that had its practice in the hands of any, rather than its professors, which is the case in this art. People don't go to have a surgical operation performed by a lawyer, or even a druggist; but the mere fact of having turned over a few plates of the orders is supposed to confer education, taste,—in fact, a capability for practising, and advising in, the art, even though the man call himself a plasterer. But, Mr. D'Israeli is far ahead of the world in general; he knows there is an art called architecture; he knows also that there are architects; his two next steps will be important ones, and powerfully aid the object he contemplates; first he may tell the world to make some use of architects; afterwards he may do something to aid it in discriminating between the true and the false. Meanwhile, if he would "hang" any body who draws inferences without knowing facts, the world and architecture would be gainers. People would apply to those whose lives are devoted to the art, and any accidental lapses might then be laid to their charge with justice.

But returning to the course of argument before opened, this necessity in the existence of real art, namely, perfect success according to the effort, something that, be the opportunities what they may, suggests no idea of failure—has far too little influence in architecture. Far from anything like that perfection, which the merely momentary touches of an accomplished painter would exhibit, there are few buildings, from which the first impression is not that of a deficiency. It is the great error of the ignorant in art, to attempt every thing, and not estimate the means. Where stone cannot be had, they publish the deficiency by means of ill-executed stucco; where careful design and proportion are found troublesome, they

> "hide with ornaments their want of art;"

in fine, where cultivated taste and the architect is wanting, they merely make the deficiency more observable, by courting all the difficulties of the art. Baker-street and Harley-street may be plain, and not worthy of a metropolis, but they are at least not failures; they attempt very little, but succeed better than a hundred other streets, assumed to possess more architectural character; they do no injury to the art, and at least do not shock the eye of the artist. If, therefore, the world will not apply to the properly qualified person, by all means let them adhere to the model of Baker-street, as on the whole likely to do less injury.

—The terraces at Brighton are most remarkable instances of what has been above stated. With a world of trouble, make-believe, and extravagant outlay, there is but one small house which can be justly entitled a meritorious work of architecture. Here is one of those "fine sites," which we are constantly—not even contenting ourselves with *throwing away*, —using so as to disgust every lover and qualified judge of good architecture. Would it not have been far better for the art, had mere brick or stone, pierced with holes for doors and windows, been raised in façades of houses, than that all this cement and sand should have been heaped up, without one feature on which the eye can find delight. It cannot be possible, that more than two of these designs at most, have emanated from architects. Obvious treatment, and coincidence, are alike against such a notion. Now, what fact could tell like this for the inexplicable system, which appears to rule in the design of buildings. Here is one instance of what is to be noticed in every watering-place, to which the world of London "most do congregate," and is seen in every town in England, the capital not excepted. Here and there, at long distances, we find some good specimen of architecture, but the mass of structures, are discreditable to every body, and the more so from their attempted claim to rank as high works of art. Whilst the love of art is extending, so that scarcely any house does not contain some meritorious work of painting or sculpture, men of education and reputed taste will directly contribute to the hindrance of architectural improvement, and this by nourishing a system directly opposed to reason, and ordinary sense. Surely, if the "educated" and the ignorant, are thus alike, would it not be in the power of architects to remove this deficiency, to educate the public in what is alike for the interest, and the delight of all.

## ERECTIONS ON ROOFS IN THE METROPOLIS.

### CURIOUS CASE.

Mr. Godwin, architect, on the part of an employer, submitted the following requisition to the referees, March 2nd, 1847:—

"With regard to a certain dwelling-house, situate and being No. 122, Regent-street, in the district of St. James, Westminster. Whereas it is proposed to set up on the flat or roof of the said house, a glass inclosure for plants, or for taking portraits in the photographic way,—such erection being of incombustible materials, and as shewn by the annexed drawings.* And whereas, on the matter above described being made known to Mr. Charles Mayhew, the surveyor to the district, he, the said Charles Mayhew, has objected to the inclosure in question, on the ground that as the attics of the said dwelling-house are in the roof, and schedule K provides that 'with regard to rooms in the roof of any building hereafter built or rebuilt, in reference to the number of floors of rooms in the roofs,' there must not be more than one floor of such rooms,—it will be contrary to the said Act to put up the inclosure in question.

Now I, the said Geo. Godwin, do hereby refer the matter to the said official referees, and request them by their award to determine whether it will be contrary to the rules and directions of the said Act to set up the inclosure shewn by the said drawings, and to give such directions thereon as to them the matter shall seem to require; and I beg leave to make the following remarks in reply to the objection raised by the district surveyor, which objection I consider to be groundless.

The schedule cited by the district surveyor applies only to buildings 'hereafter built or rebuilt.' Even, however, if this could be made to apply to the 'already built' house in question—no alteration is proposed to be made in the number of floors of rooms in the roof of the said house—the proposed glass inclosure is to be set up on the flat, quite independent of it, —and as I respectfully maintain, is an erection in no way referred to in the schedule in question.

Schedule G provides, with regard to roof coverings, that if the external parts 'of any turret, dormer, lanthorn light, and other erection on the roof or flat of any building, be hereafter built or rebuilt, stripped, ripped, or uncovered, then every such part (except the door-frames and doors, window-frames and sashes of such turrets, dormers, lanthorn lights, or other erections), must be covered with slates, tiles, metal, glass, artificial stone or cement, and such excepted parts may be made of such wood as shall be necessary,'— thus

* The drawing shewed an inclosure of zinc and glass, 12 feet by 10 feet, placed 4 inches from the north party-wall and 6 feet from the south wall, but it was stated in words on the drawing, that it would "be placed nearer midway between the walls than is shewn."

evidently contemplating such an erection as is proposed to be made on the flat of the house in question. The Act even contemplates the setting up of, on the flat or roof of a building, a turret, dormer, or other erection, formed of combustible materials (schedule D, part 3), because it provides that if in that case the erection be within five feet of a party-wall, then such party-wall must be carried up, and 'extend one foot six inches higher, and one foot six inches wider than any such erection.'

In conclusion, I beg leave to observe, that Mr. Pennethorne having formally surveyed the premises on the part of the Office of Woods and Forests, has given permission for the inclosure in question to be erected, and, further, I deem it necessary to state that I do not make this requisition because I have the slightest doubt of my right to proceed, but solely to prevent delay, which might be caused by ulterior steps on the part of the district surveyor, and would be greatly injurious to the the owner. I do not desire to be heard on the same. Begging an early decision,—I have the honour to subscribe myself, gentlemen, your very obedient servant. GEO. GODWIN."

In this the district surveyor concurred. On the 15th, a letter was received from the registrar, stating, "that the present impression of the official referees is, that the erection shewn in the drawing would be contrary to the Metropolitan Buildings Act, unless the chimneys and party-wall within 5 feet therefrom be raised; but that, before making their award therein, they wish to give the parties an opportunity to be heard, if they should desire it."

At the hearing, which accordingly took place, the district surveyor "stated the grounds on which he considered the erection in question to be a room or story, and not a mere erection on a roof, to be,—that there was to be a floor therein above the ceiling of the present attic story, and that the erection was of a more important character than a dormer or turret, or such like erection, referred to in schedule G of the Metropolitan Buildings Act; and the said George Godwin contended, that as door-frames and window-frames were mentioned in the said schedule G in connection with erections on roofs or flats, it went to prove that the Metropolitan Buildings Act contemplated erections as important as the one in question being set up on a roof or flat of a building, and that, as it appeared to be there and then generally admitted that the erection in question was not a room forming part of a second story in the roof, it must of consequence be held to be an erection on the roof; and that such erection, being to be built of fire-proof materials, the said Act did not touch it, and that they were not required by schedule D, part 3, or any other rule of the said Act, to raise the party-wall against a fire-proof erection on a roof, especially if such erection be fixed clear and independently of such party-wall."

On the 25th of March, two of the Referees agreed in an award (the third dissenting from it), to the effect that it would be contrary to the act to set up the inclosure as shewn by the drawing, but that it would *not* be contrary to set it up if turned lengthwise and placed midway between the walls, so that no injury be done to the adjoining owner on either side in forming such inclosure. By which arrangement it would stand about 4 feet from each wall. Costs of office, 2*l.* 4*s.* 8*d.* and 1*l.* 1*s.* to the district surveyor, to be paid by the requisitionist.

To this decision, Mr. Symonds, the registrar, agreeing with the requisitionist, that the Referees had no power to prevent the erection from being set up as described in the drawing, refused to attach the seal, and referred the question to the "Woods and Forests," with his reasons for refusing.

The Woods and Forests it seems have not yet determined the question, and in the meantime the erection has been put up in accordance with the views of the two Referees.

THE LATE MR. HOLTZAPFFEL.—The death of this gentleman, whose valuable work on "Turning and Mechanical Manipulation," we recently mentioned, must be esteemed a real loss. He was distinguished by great inventive ingenuity and scientific acquirements.

## ON THE SCENERY AND STAGE DECORATIONS OF THEATRES.

At a meeting of the Decorative Art Society, April 14th,* a paper "On the Scenery and stage Decorations of Theatres" was read by Mr. John Dwyer. He observed, that in resuming his observations on theatres,† he felt supported by the public interest excited by his former papers, and more especially by the consideration which the laws of acoustics had received from other societies, who had, in a great measure, sustained the views he then introduced, without, however, throwing much additional light on that important subject; nevertheless, he believed that from this fact alone some public benefit might reasonably be hoped for. The opinions he had expressed upon construction and form had, in the Théâtre Historique,‡ recently opened in Paris, been in many respects exemplified, which he attributed to the fact of persons of practical experience and acquaintance with the circumstances and requirements of theatres having been consulted. The criticisms upon this theatre state, as a striking result, that every person obtaining a seat is enabled to see the whole of the stage. With reference to the proscenium, he had become more forcibly impressed with the advantages arising from the form he had then suggested; and he stated, that Mr. Frederick Chatterton had since informed him, that his instrument (the harp) was more favourably heard in Covent Garden than in any other of the metropolitan theatres. In an ornamental and artistic view, the form he proposed combined some very essential properties. The proscenium should, he considered, form a frame to the animated picture on the stage; and the broad equal surface offered through his suggestion, afforded an example and suitable field on which to display rich and fanciful embellishments. The Surrey Theatre has an example of this frame-like character, and, together with the drop-scene, exhibits, thus far, a satisfactory effect; and also in the Théâtre Historique this has been attended to with success. The usual arrangements within the proscenium, of crimson draperies, frequently exhibit most marvellous compositions, but of that common-place nature which he would gladly assist in exterminating. A drop-scene, he said, certainly required consummate skill. The pause in the excitement from the stage effects leads to the contemplation of the house in its *tout ensemble*, thus demanding a twofold consideration,—a subject of appropriate and interesting character, together with a proper regard to the general interior of the theatre.

The reader then noticed several devices which have been applied for drop scenes; such as the looking-glass curtain at the Coburg some years ago, which he termed a costly absurdity, although at that time thought a great hit; but a drop scene painted by Stanfield for the opera of Acis and Galatea, produced at Drury Lane some years ago, he considered to be a fine work. It displayed in vignettes ideal scenes by the artist from the opera, and thus offered to the mind's eye congenial art during the pauses between the acts; nevertheless these pictures were placed within elaborate frames, contrasting strongly with the decorative expression of the theatre. A drop scene painted by P. Phillips for Astley's, was mentioned as a proper application of art to this purpose; it was intended to harmonize with the general *business* of the theatre, and was an excellent illustration of it. The subject being "Victoria's return from Olympian Games with a procession to the Sacrifice," the groups thus brought together had direct relation to the features in the performances on the stage. Mr. Dwyer considered that the composition always ought to have relation to the action on the stage, and observed, that this principle has been regarded in some degree, in the present drop scene at Her Majesty's Theatre, where the design embodies abstract ideas of opera and ballet, but in connection with a massive architectural representation quite distinct from the general character of the interior, of which it occupies so large a portion. He contended that more unity in this particular ought to be attempted, and stated that he would treat the drop scene as a picture, to which the proscenium should be an outer frame-work, but he would have an inner frame appearing on the scene itself and partaking of the style of ornament adopted in other parts of the theatre; as approximating illustrations of his meaning, he mentioned those of the Princess's and the Adelphi, both of which however, are defective in some minor qualities. This manner has also the advantage of *contrasting with stage scenery*. Mr. Dwyer next directed attention to light; and he observed, that the reflectors to the footlights in our theatres present an objectionable appearance, and he shewed a sketch of ornamental screen-work for concealing them, he also suggested that they admit of a very different arrangement on the bude principle with modifying reflectors, and that it would be advantageous to carry off the noxious result of combustion. He advocated the use of stronger side-lights, having their intensity regulated in accordance with the shadowing on the scenery; and he mentioned with approval, the effects thus occasionally produced in moonlight scenes.

He then referred to the records of the English drama, and alluded to those eminent men who have been employed to express "a righte merrie play most properlie;" to Master Inigo Jones's having, as it is stated, "fashioned and contrived in a most artful manner, the scenes required;" to Hogarth and Watson, who assisted with their talents in elevating the stage; and to Philip de Loutherbourg, who, under the tutelage of Garrick, introduced changes, and so far developed the magic power of stage effect, as to earn for himself the designation of the prince of scene-painters. It was singular, he observed, to reflect upon the fact, that notwithstanding the exalted dignity imparted by the efforts of superior painters, the importance of scenery is insufficiently recognized by managers, the artist to a theatre being frequently required to be a more useful personage than a "filler up of backgrounds;" he must also be an actor, although as the painter of talent he would awake more pleasurable emotions in the audience than probably all the other performances taken together. Newspaper criticisms have rarely noticed his merits or mentioned his name, although his difficulties are of no common order when giving to the dreamy fancies of an author a "local habitation,"—such as the Caverns of Despair, a Palace in Fairyland, the Hall of Desolation, Gardens of Pleasure, the Abode of Darkness, or the Bower of Happiness, to which are sometimes added inventive and imitative qualifications, embracing the whole range of animate creation, and frequently required to illustrate Butterflies' Ballroom, and similar extravaganzas.

Mr. Dwyer then explained the management of colours for artificial light,—the exaggeration necessary to scenery, the vigorous lights and shadows, broad and dashing touches, which enter into the scene-painter's art. A slight knowledge of the stage, he observed, would be sufficient to prove that at the present time, with one or two exceptions, the imitation of outward things is very imperfect—they are but half-represented. The banqueting-hall is resplendent with gold and silver and gorgeous magnificence everywhere *but on the floor*, or, a forest, luxuriant with foliage and intricate with beauties in form and colour, is robbed of half its fair proportion of effect by the poverty on which it stands. Mr. Dwyer stated that success had usually attended the careful "getting up" of plays, and that taste applied to the merest trifles had generally been appreciated by the public.

A description was then given of the management of "wings, flats, and fly-boards," and the ludicrous *contretemps* of the scene-shifters, in their working dresses, appearing on the stage to remove refractory scenes, together with other casualties incidental to change of scenery during the act, were adduced as sufficient reasons for advocating a less frequent resort to that practice.

Mr. Dwyer here concluded this portion of his paper, but a second portion was announced

* February 28th and March 10th. Papers "On the Chemical Properties of Timber Trees" were read by Mr. Vizard. March 31st, "A discussion upon the influence of light and colours" took place. With reference to the power which colours possess of absorbing and imparting heat, several practical remarks were offered; among others, the lime washing of pipes which conveys heat within conservatories, was condemned. The theory of three primary colours was questioned; it being assumed, that yellow, red, and blue are indeterminate gradations of intensity between light and its absence. In support of this argument, the red appearance of the sun, when viewed through a fog, and the varying changes of colour according to the medium seen through, with other results of a like nature, were adduced. The phenomenon of the object which is placed within the range of two lights, proceeding from the moon and a street gas-lamp, producing thereby two shadows of different colours, red and blue, was mentioned as worthy of consideration.

† See page 684, *ante*.

‡ Called in our description of it some time ago, *Theatre Montpensier*.

for reading at the next meeting, which will contain his opinions on the design and perspective in scenery, with remarks on costume and stage properties.

## BUILDING NEAR DANGEROUS MANUFACTORIES.

### INFORMATION UNDER THE METROPOLITAN BUILDINGS' ACT.

A short time since an information was promoted by Mr. Boulanger, a Frenchman, for many years carrying on the business of a japanner, and the inventor of the Angola hats, in some isolated premises at the rear of the Bermondsey New-road, against Mr. Sugden, builder, under the provisions of the Metropolitan Buildings' Act.

A Court of Official Referees was appointed, when it appeared that Mr. Sugden had thought fit to form a new street in the vicinity of Mr. Boulanger's premises, leaving but 10 feet space between the new houses and the japanning premises, the Act requiring that no alley shall be constructed less than 20 feet wide, no street less than 40, or if near any premises where danger is to be apprehended, not to be less than 50 feet wide. The builder on the 31st of December, 1844 (the day before the Metropolitan Buildings Act came into operation) completed the foundations of the four houses at the extreme corners of the proposed street, thereby thinking he had secured himself against its provision, the intermediate space being perfectly clear, but afterwards finding that if he continued the houses in this line he should nearly build up to Mr. Boulanger's premises, leaving him scarcely any space whatever, he felt himself compelled to take up the foundations laid on the 31st of December, and remove them further back, so that a small passage might be left between the new houses and Mr. Boulanger's premises. In this manner sixteen houses were built, the builder pulling down part of Mr. Boulanger's fence, where it interrupted his progress, and raising the roadway three feet, so that all the surface water drained into Mr. Boulanger's ground, and converted his garden into a laystall. These facts were sworn to in evidence, the builder setting up as a defence, that the land was private property. The Official Referees said they would consider their award, and the Court was then adjourned. They have now returned the same, which is in effect as follows:—

That the approach to the houses and buildings of Mr. C. T. Boulanger can be used as a footway only, and that such place is an alley within the meaning of the Act; that such alley is of a less width than 20 feet, and is not in conformity with the provisions of the Metropolitan Buildings Act, and that seven houses have been commenced since January 1, 1845. That the business of a japan hat-manufacturer is of a dangerous nature, from the inflammability of the materials used, and their liability to sudden explosion; and as Mr. Sugden has since the Act came into operation erected certain houses within the distance of 50 feet from the said buildings of Mr. Boulanger, all and every such houses within the distance aforesaid, are built contrary to the provisions of the said Act.

In consequence of the above decision, Mr. Boulanger sought to give it effect under the 55th clause of the Act, by which a magistrate is empowered, on hearing the facts, to impose penalties not exceeding 50*l.* for every day during which such building shall so remain near to such dangerous building.

On Thursday the 15th the case was taken before Mr. Secker, the presiding magistrate at Southwark Police Office, Mr. Ballantine appearing for Mr. Boulanger; and Mr. Ogle for Mr. Sugden. Mr. Ballantine stated the above facts, and put in the award of the official referees on the question. He then called in support of the same Mr. Hudson, surveyor to the West of England Insurance; Mr. H. Hobbs, a manufacturing chemist; and Mr. Wilson, foreman to Mr. Boulanger, who deposed to the dangerous nature of Mr. Boulanger's business.

Mr. Ogle, at great length, contended Mr. Sugden did not come under the operation of the Act in the present case, and also cross-examined the witnesses.

The magistrate (Mr. Secker) was of opinion that Mr. Sugden did come within the operation of the Act, and that the business of Mr. Boulanger was of the dangerous nature provided for by the 55th section. He would reserve his opinion on the question of penalties for a week, to give the parties an opportunity to come to any arrangement they might think fit in the meantime.

## NOTES IN THE PROVINCES.

The new Guildhall at Bristol has narrowly escaped the fate that so recently impended over its metropolitan associate. Though regarded as fire-proof, it is said to have narrowly escaped destruction by fire on Tuesday week, when a fire in an open grate was found to have so overheated the bricks, forming the back of the chimney, that some woodwork behind these was fired, and the new county court-room was filled with smoke, the smell of which revealed the danger just in time to prevent the flooring, which was partly burnt, from blazing into the means of destroying the whole building. The overheating of a flue beneath one of the floors some time ago occasioned serious alarm, though fortunately observed just in time to prevent a like fatal result. —— The Bristol Council Committee on Baths and Washhouses, have been conferring with Mr. Baly, who, as observed by the *Bristol Times*, has had considerable experience "in this department of engineering," having already erected two sets of the metropolitan public baths and washhouses, and being now engaged on one of large extent in Worcester. It is proposed to have forty or fifty enamelled cast-iron baths, to be let at 2d. to 6d. each. The washing apartments will be worked at the rate of 1d. an hour. The cost is estimated at 6,000*l.*, to be raised by loan, repayable by instalments. The Rope-walk near the Weir is proposed as a site for the new buildings. —— St. John's Hospital, Winchester, is about to be enlarged. St. Thomas's Church there, the construction and management of which has been much objected to by the local papers, on account of that common "crying evil," injustice to architects, and on account of other alleged "misconduct," in circumstances, with the merits or demerits of which we are unacquainted, was consecrated on Friday last. No spire, however, has been yet erected. —— Trinity Church, Southampton, after being enlarged and altered from the Græco Egyptian to the Anglo-Norman style, was reconsecrated on Thursday week. The church of St. Lawrence, at present under repair, is to be reopened on the 25th instant. The new Customhouse is to be finished, according to contract, from the designs of Mr. Giles, the architect, by the 15th of June next. Mr. Docwra, it seems, has strongly recommended the continuance of the boring—on the Chinese plan, as at first, we presume—but "with new rods of greater strength" than the "improved British;" and, if possible, to be henceforth worked by a small steam-engine. Mr. Mainwaring, however, has been "requested to prepare a report on the Chinese system of boring, and whether he would advise its continuance [or rather resumption] at the artesian well, or the boring with rods [which lately gave way while used as a substitute for the hempen Chinese ropes]; and whether he was prepared to undertake the superintendence by either mode." Mr. Docwra had offered his services gratuitously, under payment of his travelling and other expenses, until the successful completion of the work, when the commissioners might award him such remuneration as they pleased. The surveying officers, having reported in some respects, it is thought, unjustly towards the new "Consumers Gas Company," the promoters of that company have printed a statement in reply, from which, it appears, that without hearing both sides of the question, they had formed an opinion that the basis of the estimates on which the increased consumption of gas had been contemplated was erroneous; whereas instead of Southampton being in a state of stagnation, as the surveyors seem to have implied or believed, it has been proved that the rate of progression in the demand for gas has increased upwards of 66 per cent. in three years in the face of the check of high cost which more especially prevailed until the new project began to exert its justifying influence on the old; and the continuance of the progression in a still more accelerated ratio, demonstrates the wrong that would be done to the interests of the town were a monopoly allowed on calculations scarcely made before they are outstripped and cease to be applicable. The fact of two-thirds of the gas consumers having petitioned in favour of the new company too, was passed over in silence by the surveyors, who are thought to have thus and otherwise greatly impaired the authority of their report. —— Sandown church, recently rebuilt, was to be consecrated on Saturday last. —— The Cambridge Improvement Commissioners are to be applied to by Mr. H. S. Foster, on the subject of a map of the city drains. —— The demand for granite at Cambridge, is said to be now so great, in consequence of taking up the wood pavement in London, that its present price is 30*s.* a ton instead of 18*s.* —— In consequence of the neglect of the gas rate collector at Halstead, in one instance, to affix the proper notice to the doors of *all* the churches and chapels, as required by the Act, the rate has been resisted by some of the 'illuminati,' whose love of the darkness rather than the light appears to have blazed out afresh, so soon as the combustible material of their pockets was touched by the rate collectors; and the rate has been held to be invalid, and the summons to enforce payment therefore dismissed. —— The Queen Dowager has contributed towards the fund for restoring the interior of the parish church of St. Neots. —— A suite of papier mâché boudoir furniture, of great splendour and elegance, it is said, has just been completed by Messrs. Jenners and Bettridge, of Birmingham, for the young Queen of Spain. It consists of eighteen reclining chairs, a sofa, the largest ever made in this material, sofa-table, light ornamented tables, conversation chairs, and ottomans. The ornaments are chiefly of burnished gold and mother of pearl, in the ornate style of Louis the Fourteenth, with groups of birds, fountains, and festoons. —— The foundation-stone of the Leamington Proprietary College was laid on Wednesday week, by Dr. Jephson. —— A drawing of the proposed new corn exchange, to be erected in the present Corn market, at Worcester, is described in the local *Journal*. The perspective view presents a frontage of about 56 feet, having an open arcade, with gallery above, the same depth as the present covered foot pavement. The front is divided into two stories, each having seven semi-circular-headed arched openings, the lower decorated by the Doric, and the upper by the Ionic order of Italian architecture, and each surmounted by a balustrade. The interior dimensions are 50 feet wide, 76 feet long, and 40 feet high. The irregular shape of the ground is counteracted by disposing iron columns, to form with the walls a regular polygon of twelve sides; the roof also following the same outline. The building is intended to be lighted by a central lantern and twelve skylights. The design is by Mr. Henry Day, architect, of Worcester. —— The new school house at Martley, Worcestershire, founded by Lady Ward in March 1846, is now complete. It is in the Pointed style; cost 1,300*l.* —— Amongst the numerous buildings now or lately in progress in Dudley, are the national schools built from designs by Mr. Bourne, of Dudley, the architect; the Free-bodies school now in progress; the large Scottish church also in course of erection; the new jail, now nearly complete; and the new town-hall adjoining the jail, to be ready for use in a few months. Two cemetries are also in course of enclosure, and, altogether, says the Worcester *Journal*, the 'town is being wonderfully improved.' The Middle-row, High-street, is to be pulled down (a spirited example to High Holborn), opening up to the eye, through a much-improved street, the view of a very spacious market-place. —— A lunatic asylum is about to be built for the counties of Monmouth and Hereford —— The parish church of Marnham, twelve miles from Newark, has been restored at the cost of about 1,000*l.*, under the direction of Mr. Browning, of Stamford. —— A brickmaker at Wolverhampton, has been fined in the mitigated penalty of 42*l.* for having removed some bricks for the purpose of defrauding the revenue. —— The Sheffield Museum of Art Committee have reported to the Council their recommendation to select a site, and obtain the requisite plans and estimates, under the

powers of the recent act, for the establishment of the proposed Museum of Art; advising also a consideration of the question of accommodation for the council in the same building, with the additional cost, &c.——An improvement Act is much wanted at Gainsbro', and one firm there, it is said, has agreed to give 100*l.* towards procuring one. Some improvement, however, is about to be made in the paving of the streets.——At Liverpool, we understand that the Sanatory Committee have the state of the sewerage of the town under consideration. The whole of the existing system has been examined, and found to be in many respects defective. The great error appears to have arisen from forming the public sewers according to the direction of particular streets, instead of according to the level of the ground on which the town stands, considered as a whole. The result is, that many streets and districts are very imperfectly drained. We believe that a survey has been made of the existing sewers of the town, with a view to supplying defects, and causing all the different parts of the system to work to the same end.——The tender of Messrs. C. Lister and Son, for the erection of the church at Balby, is said to have been accepted. The works are to be proceeded with immediately.——The stone-masons at Rochdale and its vicinity, who are members of the trades' union, turned out on Monday week for an advance of 6d. per day. They have had 4s. per day during the winter, and their demand now is 4s. 6d. The masters contend, that under the depressed state of trade they are not able to give the advance required.——The proposal to establish an athenæum in Bolton has been abandoned, and the subscriptions already paid are to be returned.——Several liberal donations have been received towards the erection of the new church, so much needed at Clayton, and Mr. John Hirst having liberally given a site in the centre of the village, there is every prospect, says the *Bradford Observer*, of the building being speedily commenced.——A grant of 6,000*l.* for a washhouse, brewhouse, bakehouse, &c., to the West Riding Lunatic Asylum, at Wakefield, has been granted at the Spring Sessions, with 2,000*l.* "for certain apparatus therein."——Considerable improvements are about to be effected at Hull, in the vicinity of St. Paul's Church, now in course of erection, and a bridge is then to be thrown over the Cottingham drain, so that a good road will be opened up direct from Jarrett-street, Bond-street, &c., to the church. Other minor improvements are also talked of, and several streets will then be constructed leading to the new church.——Such is the briskness of the building trade in Kendal, and neighbourhood, says a contemporary, that masons and wallers are almost as hard to get as seed potatoes.——It has been proposed to build a new gaol and court-houses at Glasgow, and convert the present building into an additional infirmary.

## MANCHESTER LUNATIC HOSPITAL COMPETITION.

Sir,—As it appears to be one of your objects to expose the abuses attendant upon competition designs, and if possible, to effect a reformation in this department of the profession, I beg leave to bring under your notice, a late competition for a Lunatic Hospital for the trustees of the Royal Infirmary of Manchester.

The terms of competition were, that the author of the best design should be engaged to erect the building at the usual commission, and the second best should receive 100*l.*, his drawings becoming the property of the trustees. The cost not to exceed 10,000*l.*, and a summary of a few general requirements, number of inmates, &c., was given.

The designs were delivered on the 1st February last, and on the 19th, a circular was sent to the authors of the non-selected designs, informing them, that their designs were not placed on the list, either as the architect to be employed or the one to receive the premium. In this circular no award is given, no allusion is made to the successful candidate nor to the second premium of 100*l.* From a letter published in one of the Manchester papers (*The Examiner*), it appears, that 52 designs were sent in, comprising upwards of 500 drawings, at an expense somewhere betwixt 2,000*l.* and 3,000*l.*; also that the committee who were the adjudicators upon the designs, did not meet until ten days after they were sent in.

You and your professional readers will be able to judge of the value of a decision made by a few non-professional persons upon the merits of such a number of designs, each of which, from the extent and variety of accommodation required, must have formed a study of considerable time, even to the most experienced professional man.

So much for the *committee*. Now what has been the conduct of the architects themselves (I should say those of Manchester)? While they complain of the discourtesy with which they have been treated, they quite agree that the conduct of the committee is exactly what they expected (for it now comes out that one of their own number is the appointed architect), and that they are quite certain it was pre-determined to employ the architect into whose hands the work is now placed. If this be the case, then their own simplicity has met with its proper reward.

With the possession of this knowledge or well-grounded suspicion, had they had the interest or honour of their profession sufficiently at heart, they would not only have refrained themselves from entering into competition, but they would have made the facts or suspicions public, as a warning to their professional brethren at a distance, who might thereby have saved themselves from a laborious and fruitless expenditure of time. As one of the latter, I have reason to complain of this. May I inquire of your numerous readers whether any of them can answer this question,—*Who has received the second premium of 100l. in this competition?*

The discourtesy manifested in this case on the part of the trustees of the Royal Infirmary of Manchester, and the apathy on the part of the architects there, give little hope of assistance from that quarter, in stifling an abuse against which all England cries aloud—or in elevating to its proper level, a profession shorn of its dignity, lowered in its importance, and treated with disrespect by those incompetent to judge either of its requirements, its usefulness, or its beauties.—I am, Sir, &c.,

April, 9, 1847. Comes.

## FOUL AIR FROM SEWERS.

Sir,—To ensure a perfect system of sewage according to the present most approved method, ventilating shafts (to carry the noxious gases above the houses) are necessary appendages; yet they are rarely applied in consequence of the expense or their supposed awkward appearance. Without them, however, the most objectionable part of sewering still remains.

The foul air emitted from the sewers, through gratings or defective traps (which must occur at certain changes of the weather), still flouts down the streets and into the houses. Were it possible to render visible this floating miasma, we should see our streets occupied with snakes and scorpions, and other nondescript reptiles, deadly to the human race, instead of pure air fit for the respiration of man.

It is, however, acknowledged, that the system of sewering in the present day, when properly carried out, has reached a high state of perfection; but as the most necessary appendages (ventilating shafts) are often omitted, it appears to me not improbable that, with the aid of chemical and other sciences, the system of sewering might be rendered still more efficient in a sanatory and general point of view than it has yet attained. If you will allow me, through the medium of your journal, to suggest the subject to the consideration of sister professions, it might lead to beneficial results. With that view (however visionary it may appear to some), I beg to express my own ideas on the subject, and I will do so, by simply stating, that it may be possible, by some chemical or other process, to render the foul air, generated within sewers or drains, perfectly innocuous, or, which would be equally effectual for the intended object, that the air may be rendered innocuous by some chemical, or it may be galvanic, or other process, in its passage out, before it mixes with the atmosphere. If this can be accomplished by any simple or inexpensive means, it would be a great boon to society. The wonderful purifying process constantly going on in nature, seems to suggest the hint; and the effect of lightning as an occasional purifier of an over-charged atmosphere, affords another instructive lesson. There is undoubtedly a remedy, but we are ignorant of its practical application. Guillaume.

Southampton.

## LORD MORPETH'S BILL.

The special committee of the Westminster Commissioners of Sewers, appointed to consider the "Health of Towns Bill," have made a report. With reference to the new body proposed to be created, and its functions, they remark,—

"The functions of the commissioners have hitherto been chiefly connected with drainage, *i. e.* drainage of surface, and the preservation of property from inroads of the sea, rivers, and water-courses, and the conducting waters into their proper channels. Undoubtedly Acts of Parliament have extended the powers of commissioners of sewers, but still they have never contemplated the law of sewers having immediate reference to sanatory considerations. That such a consideration is most important your committee feel most strongly; and your committee are glad to observe that the chief provisions which are contained in the bill for the improvement of the health of towns as to sewerage, or rather in the Towns Improvement clauses bill, in substance correspond with those contained in the bill presented to Parliament on behalf of this commission in the present session.

Your committee think it right to remind the court that this bill for the health of towns is a general measure for the whole country; and your committee cannot hesitate to express their conviction that some measure, having for its object the improving the sanatory condition of all classes, would recommend itself to the attention of the country."

In respect of Westminster, however, they think there are reasons why it should not be included by the Bill, but are not disposed to offer opposition.

"Your committee have already remarked that the Health of Towns Bill, or rather the Towns Improvement Clauses Bill, contains most valuable provisions as to drainage, and although your committee think that the court will probably be little disposed otherwise to interfere, yet they feel that the public duty of the court will require them to make such suggestions to her Majesty's Government, as their knowledge of the subject and the interest of the commissioners in the public welfare may dictate."

They think the new commissioners would have a great deal too much to do, to be able to attend to the sewage of the metropolis.

"Your committee, from long experience of the necessity, in such a metropolis, of great attention being given to the drainage, and from having so often desired to obtain clearer powers from Parliament, with this view, beg to suggest, that the earnest attention of her Majesty's Government should be respectfully invited to consider whether their own most excellent object and desire of improving the sewerage may not be put in peril by an attempt in the metropolis to mix up this subject with so many others. In smaller towns, and under different circumstances, this bill could probably be efficiently executed, and no doubt it would then confer great benefit; but, in the metropolis, would it not be better to leave it to one body, with amended and more defined powers, to attend to sewers, making their acts subject to the supervision of some department of her Majesty's Government, as above suggested? It must be borne in mind that any inadequacy of the operations of commissioners has arisen from the want of due powers, a consequence of the general laws of sewers being originally calculated for rural, and not for metropolitan districts. The same objection arises in the present measure, that what is necessary and proper for country towns is impracticable in the metropolis."

The New Water Colour Society.—The exhibition of the new Society of Painters in Water Colours, now open, is a very interesting one; we are compelled, however, to postpone any notice of it for the present.

ENTRANCE FROM THE PEERS' LOBBY TO THE HOUSE OF LORDS.



## THE ARMY AND NAVY CLUB COMPETITION.

The committee, after much deliberation, selected two designs from the sixty-nine submitted to them, as best entitled in their opinion to the first and second premiums; but the decision is to rest with the whole club. The designs are suspended, as we hear, in the order in which they were received by Mr. Walcot, the secretary, and a box is kept open two hours each day under the eye of the committee, to receive the votes. Each member receives a card, on which he writes the motto of the design for which he votes, and the two designs which have most votes will be entitled to receive the premiums.

We must confess we have much fear as to the result. Many of the members will doubtless be guided by the opinion of the committee, considering probably that they have given much thought to the subject and taken proper advice. But if any undue influence has been exerted by candidates on the general body of members,—and that the *endeavour*, at all events, has been made, we have complete evidence,—the result may be most unsatisfactory and disastrous, even though the committee's selection was correct. In any case, the members at large must be perfectly incompetent to make a proper selection, and if this result be arrived at, which we sincerely hope will be the case, it must be the result of accident, or a determination on the part of the members to support the views of the committee.

The cards of more than one candidate who has degraded himself and his profession by canvassing the committee, and making known his motto, are in our hands. Should the design of either of them be selected, we shall publish them, and probably obtain such an investigation as will make them hesitate, on another occasion, before they so far commit themselves. The result will be arrived at on Tuesday next.

## PATENT GALVANIZED IRON COMPANY.

At the half-yearly meeting, it appeared that the balance of profit was 6,913*l.* 13*s.* 10*d.*, out of which the directors recommended a dividend of 2 per cent. for the half-year, clear of income tax;—that the produce of pig iron at the works in Wales had doubled, and the average produce of coal was about 300 tons per week. They had from thirty to forty steam-engines at work, and from 2,000 to 3,000 men employed in Wales and Staffordshire. Up to the 5th of March they had been producing about 600 tons of pig-iron per week, and when their additional furnaces were complete it would average 1,000 tons per week.

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Competition.—A bonus of 60*l.* is offered for the best plan, with estimate specification, and workings-drawings, of a general hospital at Cheltenham, as advertized on another page.

## CARVED BENCH ENDS.



*Fig.* 1.

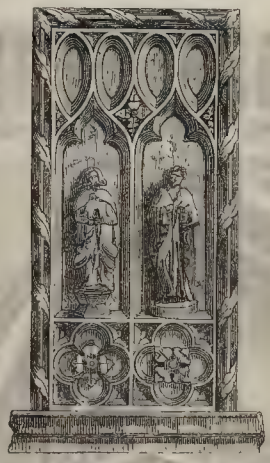


*Fig.* 2.



*Fig.* 3.

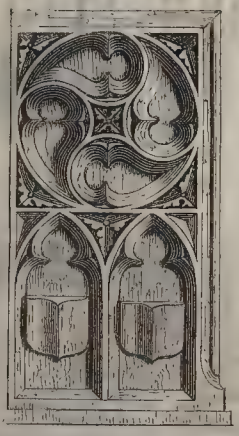


*Fig.* 4.



*Fig.* 5.

### CARVED BENCH ENDS.

The above examples of ancient bench ends may be useful to some of the readers of The Builder.

Nos. 1, 2, 3, are from the Church of St. Brannock, of Braunton, a small town in the north of Devon. 4 is from the church of Holy Trinity, at Ilfracombe, a port on the north coast of Devon. 5 is from Combe Martin Church. Combe Martin is a port on the same coast, and has long been celebrated for its mines of silver, copper, and lead.

T. G. H.

### FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Botta Antiquities of Nineveh, at Paris.*—The sculptures of Chorsabad are now safely located in the Louvre, at whose north-east corner they occupy three large halls—not yet open to the public. There are two colossal bulls with men's heads, which stood at the entrance of the Assyrian palace; two Colossi, who stifle lions in their arms—and about thirty basso-relievos, most of large size. The material is a sort of alabaster, yet so soft, that it can be impressed with the nail, and on some of the sculptures, which formed the exterior parts of the palace, places are quite eroded by the flow of rain-water. Notwithstanding these circumstances, the sculptures are perfectly preserved, and as sharply defined, as on the day they were completed. The style is, in the main, *grand*; the execution smacks a little of the unhandy and *naïve*, but, in parts, is very fine. First glance even removes the idea of Egyptian prototypes—they are the monuments of art inchoated in Mesopotamia, of which those of Persia are only faint imitations, far behind in thought and execution. Some of the horses on the basso-relievos are exceedingly fine, reminding one of those of the frieze of the Parthenon. In the first room of the Louvre are the colossal monuments; in the second, those taken from the exterior of the Nineveh Palace; in the third, the remnants of the interior—which latter are, unfortunately, much injured, and some even split, as the conflagration had converted the marble into lime. Some of the great blocks have fissures from top to bottom—which must have existed at a very remote period, as leaden cramps had been applied to prevent further disurption. The basso-relievos represent religious processions, people carrying offers to the gods; the besieging of a sea-port (Tyre?); of a fortress on the main land; winged mythological figures with men's or vultures' heads—but no trace of Hebraic mythology is to be met with. It cannot be doubted, that for a long time to come, these saloons (when opened) will be the chief attraction of the French Musée — especially when once the most extensive row of inscriptions (cuneiform) will have told their tale.

*Naples.*—H. M. the King retires often to the palace of Caserta, to devote himself to the affairs of railroads and other improvements. It is intended to push the lines from Caserta, or Capua, north, to the foot of the Matese mountains, and to lead them thence (perhaps from Piedimonte) towards Rome, Abruzzo, and Apulia.—The draining and cultivation of the barren places on the sea coast, occupy also much of the thoughts of government; and Mr. D'Urso has been appointed chief commissioner of that department, with great powers and means.—Amongst the embellishments of the capital, the new Custom House, on the harbour; the splendid church, Madonna delle Grazie, in the Toledo-street; the tasteful new palace gardens, where two huge palms have been planted in the open air,

deserve first to be mentioned. The bronze horses, presented to the king by the Emperor Nicholas, will also soon be placed, and a bronze railing and gates, the extensive structures in the *Foria*, &c., will add to the charms of the modern Parthenope. The Emperor of Russia has given orders to several Neapolitan artists; amongst which, the marble bust of the king, made by T. Angelini, is the most important. For the commemoration of the opening of the Caserta railway, a very fine medal has been struck, presenting, on one side, the portrait of the king, on the other, the terminus near the royal palace. The number of art publications and journals is increasing every day.

*The late Art-Exhibition at the Louvre.*—One of the first art-critics of France (Mr. Délecluse) has put forth some remarks on this subject, from which we gather the following:—"A cursory glance at this—nay any other art-exhibition, shews, that a notable modification and change take place in the taste and art-tendencies of the times. In the composition of painters and statuaries, even of first rank, in execution and style, we still find a desire to *exaggerate* the graceful, to offer incentives to sensual thought—to rivet, in fine, the attention and interest of the beholder, by scenes and attitudes which appeal to the most inferior propensities of the human *mind*. (?) We first began to joke at the *Rococo*, and similar absurdities, but now have fallen into them heels over head, without any prospect even of speedy recovery.

But there *is* for aspiring artists a great part to perform in such times of art-perturbation and perversion—of which the *pendant* was the period preceding the downfall of the Roman empire. The artist thus disposed and really inspired from above, would have to make one first resolve—to *renounce riches;* which, after all, is one of the main conditions for keeping the mind riveted on the beautiful, the honest, and the true. If, further, led by a pure taste, he would abhor the *mannerism* in sentiment and form, and persevere on this path—he would finally succeed. But a more or less long life of hardship (*vie dure*) would be the consequence of such heroic resolve—no white gloves, no glazed shoes, which, perhaps, do not exactly shew want of talent, but are despised by the aspiring. Such would remain long on the stools of museums and galleries—would study every hour of the day, ripen his mind, cultivate imagination, master his hand.

It was thus, that out of the last and feeble array of pupils of the Caracci started, with much labour, but also great fame,—the Poussins and the immortal Lesueur. It was subsequent to the art-Saturnalia of 1780, that Louis David astonished France, in shewing his stern and simple images like ghosts—apparitions amongst a gewgaw of tinsel and other frippery. For the last five or six years, I have attentively followed the career of artists who were intent on discovering some new system or method of art. Some attempt it by drowning themselves in the gulf of *Gothicism;* but the impossibility for the artist and beholder to familiarize themselves with allegories and forms nearly exploded, has merely produced some pastry-cook specimens—but no real art-work. After all, the pithy saying of Voltaire (somewhat changed), may also be applied to art: "Tout le genre est bon—hors le *vulgaire.*"

*Madrid.*—The Casa de Correos, which has hitherto been occupied by the Minister of the Interior, is destined for the newly created department of commerce, instruction, and public works; the former to occupy a new palace in the Calle de Torija. The Secretary of Public Works has just issued a document, in which (perhaps for the first time in Spain) this important branch of the public service is put in due relief. The ancient steeples of Santa Cruz and del Carmen threaten destruction, and will be examined by a commission of architects, and probably be taken down. *El Heraldo* says, that no one can pass them without running, and a *Credo* on his lips.

*Schwerin.*—Amongst the different officers who acted at a festival meeting of the Lodge Harpocrates and Aurora, we find also the superior—orders—Architect de Selasinsky, lieutenant-general in the Prussian service.

*"Inverted" Patriotism.*—PrinceLichtenstein, of Vienna, has just taken possession of his new palace in the Schneckenstrasse (Crab-street), at whose restoration and adornment four millions of florins (600,000*l.*) have been spent during a period of eight years. His grace plumes himself on the ambiguous merit of not having employed therein any thing of national industry, but brought every article of furniture or ornament from France and England.

*Franklin's Grave.*—The place where the mortal remains of this great man rest now, is merely designated by a simple rough stone in the cemetery of Arch-street, Philadelphia. The compositors of Rochester, U.S., have lately decided on erecting a monument to their great proto*type*. As, however, the cemetery of Arch-street belongs to the Society of Friends, it is apprehended, that they will not agree to the erection of any thing showy or ornamental within its precincts.

## ON THE PROTECTION OF BUILDINGS FROM LIGHTNING.*

It would be a labour of much time to recite the records of the serious effects of disrupted discharges of electricity upon unprotected buildings, &c., that are collected; we need only go back to the occurrences of the last few years, such as those of the partial destruction of St. Martin's and St. Michael's Churches, Liverpool; St. Michael's, Blackrock, Ireland; and nearer to this, Brixton Church, early in 1842; and our own church, St. Martin's in-the-Fields, later in the same year, to illustrate the awful and dangerous nature of a discharge of this element upon buildings unprotected from its fury.

The results of experimental inquiry and practical application have shewn that in the consideration of conductors they should (1) be composed of the best conducting metal (commercially considered); (2) they should possess a perfect continuity in all their parts; (3) they should have the greatest electrical capacity, and (4) in form should have the greatest amount of surface for a given quantity of material. Where these conditions are fulfilled, their application to buildings require the first consideration—their superior terminals should be securely fixed above the highest immediately surrounding object, and be continued in the shortest and most direct line to the earth, being in their course downward fixed closely and securely to the external walls of the building, terminating at their inferior extremity, below the surface of the ground, from the wall dipping downwards. Where practicable, they should be continued into some well, drain, or damp place away from the building. Another and important point, about which there has until lately been much cavil, is, that not only should the conductor be fixed close to the wall, but be connected also with all the principal metallic surfaces in the building. To fulfil the first condition, copper, as a material for the construction of conductors, has been found the best in a commercial point of view; for the second and third conditions, copper-rods, copper-chain, copper tube, flat copper strips, and copper-wire rope, have been severally proposed, recommended, applied, and tested. To fulfil the fourth condition, copper strips, copper tubes, and copper-wire ropes have been also proposed and tried.

We will proceed to consider the relative merits, advantages, and disadvantages of the several forms in the order as recited in connection with the second consideration, beginning with the copper rod. This form has been applied the most extensively; the mean diameter of those erected is half an inch, or an inch; they have been applied to churches, towers, monumental pillars, chimney-shafts, and high buildings of every kind, with success. The objections to this form, since the introduction of others, are, that for plain and straight buildings, such as the gable end of houses, for chimney-shafts, &c.; 1st, the number of joints render the perfect continuity dependant upon the care and skill of the workmen employed; 2nd, the expense of making these joints; 3rd, the greater cost for a given surface, &c. For other forms of buildings, as spires, towers, &c., where the conductors require to be bent, set, and fitted in various positions, the waste of material in cutting, and the time required in applying and connecting the lengths of rod, and the expense attendant thereon, are amongst the principal objections. The chain possesses no advantage over the rod conductor for buildings.

The next form is that of the tube. When intended for buildings, this form, if of sufficient size, possesses equal advantages with the rod; but in addition to having the disadvantages of that form in a much greater degree, is besides more easily injured, and after a time broken. For marine purposes, the same reasons for its inapplicability exist as in the copper rod.

Flat copper strips, or ribands, for building purposes, possess no advantages over the rod, and are as difficult of application, and considerably more expensive.

The next and last form of conductor to which we have to draw attention is the patent copper wire-rope. This form completely fulfils the several conditions recited in a former paper, viz., it is composed of the best conducting metal (commercially considered), it possesses the most perfect continuity of its parts, it has ample electrical capacity, and its form gives the greatest amount of surface for the quantity of material employed. It meets the objections urged against copper rods, as regards the shortness of the lengths in which that material can be obtained, and the consequent number of pieces and joints necessary in the formation of a conductor for a high building, as the rope can be produced in extremely long lengths; it is applied much more readily, and with greater facility adapted to angles and other forms and surfaces; it is easier fixed and in much less time, at a considerably less cost. It possesses all the enumerated conditions of a perfect and sufficient electric conductor, with the advantage of the method of applying chains, without the objections which attend that form of conductor.

It is necessary to give some idea of the relative capacities and powers of the metals which stand first on the list as the best conductors of electricity; for it was observed by Dr. Priestly and others that an electrical explosion which scarcely heated a copper wire of a given diameter, entirely dissipated an iron rod, of more than twice its diameter. Now of the common metals of commerce, if lead be taken as unity (= 1)—tin is = 2—iron = 2·5—zinc = 4, and copper = 12. Thus, copper is twelve times a better conductor than lead, and five times better than iron. Of gold, silver, platinum, &c., which are superior to copper, it is unnecessary here to give the relative powers, their commercial value precludes their use for the practical purpose of conductors, but they possess an advantage in another respect over copper, &c., viz., that they are less acted upon by the atmosphere, resist oxydation (especially the latter metal), and preserve their conducting power unchanged; in consequence of which platina in particular, is applied to the fine points of the finial or superior termini of copper conductors, as copper, when worked under the hammer and drawn down to a fine point, after the lapse of two or three years, gradually moulders away and rots off.

* From a paper by Mr. W. Smith, engineer, referred to last week.

CAMBRIDGE.—The Public Club-Chamber scheme formed the subject of a special meeting, on Thursday week, when the report of the committee of citizens who had undertaken the preliminary arrangements was presented and read. This report merely represented the purposes to which such an edifice as that proposed might be most advantageously devoted, the sources whence the requisite funds might be derived, &c., as already more particularly noticed in THE BUILDER. Although no precise estimate of cost had been obtained, Mr. Ekin spoke of an estimate of 11,000*l.* for 'the original plan,' not so extended as the present one, which, according to Mr. Bradwell, would not cost more than 15,000*l.*, although the monstrous sum of 70,000*l.* had been hinted at, probably by some one adverse to the proposal. Cambridge, he thought, could surely grapple with the more moderate sum required. The corporation appointed a committee to consider the whole subject. King's College Chapel has of late had a painted window added to it. The subject represents the scene of 'the Brazen Serpent.' Four of the old windows on either side have now been cleaned, and the next will be taken down immediately after the installation of H.R.H. the Prince Consort.

## RAILWAY JOTTINGS.

An average verdict, if we may so call it, affording a precedent of rather a novel order, lately resulted from the laying of twelve sagacious heads together in a jury-box at the Maidstone assizes. One of the twelve, during a dispute among the corps as to the precise amount of damages to which the plaintiff was entitled in the case of Gardener, of the Globe tavern, Mile End-road, near Bow, against the directors of the North Woolwich Railway Company, for trespass, suggested that they should take the average of the aggregate of the amount of damages to which each thought the plaintiff entitled, by dividing it by twelve, which was accordingly done, and the average result, 137*l.*, was actually given in and recorded as their [unanimous?] verdict! If the immaculate twelve could only estimate the precise amount of guilt by taking the average of the aggregate amount of the twelve enlightened ideas on that score, much difficulty and involuntary fasting, at least, might be avoided by this new sort of unanimity in verdicts, and perhaps after all as sagacious a result be frequently arrived at, minus all the trouble, absurdity, and compulsion occasioned by the conflict between empty stomachs and stubborn scruples of conscience. —— In *Robertson's Monthly Railway Record* there is a rather curious account of the difficulties and dangers which the South-Western Company have had to encounter in threading their way towards the metropolitan terminus of their line amongst lookers-out for compensation. Thus, for instance, a draper in Westminster-road made the modest demand of 120,000*l.* for the plant and goodwill of his business, after causing much expense and delay. Rapacity, in this instance, however, overreached its own mark, for the liberal offers which had been pertinaciously refused were at length withdrawn, and 'a deviation of a few yards' at once dissolved the bright visions of Aladdin's lamp. Another worthy, a dealer in bacon and cheese, whose whole concern, 'good-will' and all, would not have realized 1,500*l.*, demanded nearly 5,000*l.*; but a jury awarded less than the Company offered, namely, half the sum; and the very next day after vacating the premises, the canny provision merchant made 'a deviation of a few yards' on his own account, and re-established himself at once into the well-disposed-of 'good-will' of his own business,—an article which he is probably, like the dog-dealer with his stock-cur, as ready to dispose of to advantage over again as ever. The Company have already expended 3,000,000*l.* of money on their line from the coast to Nine Elms, and after reducing their fares to a minimum, have engaged to expend 800,000*l.* more in extending it, through densely populated and noxious neighbourhoods, to the very centre of the metropolis. Owing to the opposition just instanced, however, the capital required will considerably exceed 1,000,000*l.* —— The express trains between Paddington and Exeter are to be accelerated in speed to the rate of 48¾ miles an hour, including stoppages, so as to complete the distance in 4 hours instead of 4¼ as heretofore. —— A contract for 1,000 houses has lately been entered into, to be built at Stratford, chiefly for the convenience of persons in the employment of the Eastern Counties Railway, who intend to remove their workshops and manufactories there, and to call it Stratford New Town. Preparations are also being made for the erection of a large number of houses on an eligible site near the next station on the line at Ilford, to which the name of Ilford-on-Railway will be given. —— The station at Ely is to be lengthened 60 feet. —— The Trent Valley line was traversed, first time, by Mr. Brassy, the chief contractor, on the 16th instant. Except a portion at Stafford, the line is said to be all sufficiently completed. The Tamworth station is a large building in the Elizabethan style. —— The bridge of the Sheffield and Great Grimsby, which is to cross the Trent about a mile above Gainsbro', has made considerable progress. A great number of piles have been driven, but orders were received a few days since that the works should be suspended. The bridge, according to the present plan, was to cross the river at an inclination of 40 degrees, but it seems that the Trent Company are desirous that it should cross it at right angles. To effect this, it is proposed to direct the course of the current into a new channel, and cut off a long curve in the river. A plan was some time ago proposed by Mr. Lister (late of Doncaster), the architect of the contractors, to change the curve of the line of railway itself, and to cross the river about 100 yards lower than at present proposed, which it would at right angles, as required. —— The viaduct of 300 yards at Leeds, on the Leeds, Dewsbury and Manchester, is to be put under contract. —— The works for widening the entrance of the Manchester and Liverpool into Liverpool are proceeding rapidly at Olive Mount and Broad Green. —— The Kendal and Windermere line was favourably inspected by Captain Symmons, on Wednesday week. The public opening was announced for the Monday following. As might be expected from the nature of the lake district, this line presents a quick succession of cuttings and embankments. The chief difficulties were those presented by the rock cuttings at Bowston, and on the brink of the descent into the vale of Windermere. The cutting at this summit amounts to more than 90,000 cubic yards. Another difficulty, by-the-bye, originated in the want of sufficient accommodation in so rural and solitary a district for those scarcely fashionable 'lake visitors,' the 'navvies.' The number of men employed on the line has, at times, amounted to above 1,100, and of horses to 95, but the horse-power has latterly been superseded by a locomotive. The contract has been executed by Messrs. John Stephenson and Co., under the direction of Mr. Harris, the company's engineer. It is alleged that one gentleman engaged in the direction of the Maryport and Carlisle line is partly solicitor to the company, and moreover auditor of their accounts, and that another took upon himself the supply of paper, while a third, with a very appropriate name, supplies it with wood or timber. We wonder whether the *auditor* taxes the *lawyer's* accounts for business which the *director* orders to be performed. These do not appear to be the first abuses alleged against parties connected with this surely somewhat loosely-conducted line; for lately a contractor was charged with improperly presenting a cask of wine, and a late confidential and leading official with receiving it. —— The carriages on the Caledonian line, it seems, are to be "a pattern worthy of imitation." They are to be so high as to admit of standing room, and to have double bottoms with felt stuffing, as a non-conductor of both noise and cold. The second class ones, too, are to be lined interiorly with polished mahogany, and have stuff-bottomed seats, plate-glass doors, side lights, and interior lamps, but without "arm chair" divisions, which number two will doubtless willingly resign to number one under such circumstances. Indeed, it is said that the difference of classes will consist in little else than the *prestige* appertaining to the fashion of the day, and of course in the difference of price. Even the third class carriages are to have plate-glass windows and interior lamps, though less decoration, but equally well secured from the weather. —— While perusing an intimation in the *Berwick Warder*, that the North British station at Castlegate, Berwick, was shewing unequivocal symptoms of instability or decay, and was to be partly taken down and rebuilt, we felt half persuaded that the station alluded to, though called a British station, was more probably some old Roman station, which had stood the battle and the breeze of centuries, but had at length succumbed to that mighty power which not even vitrified forts nor Roman cement can for ever withstand. But the less equivocal allusion to the same noble edifice as "the railway station-house" at once dispelled our illusion, and assured us of the melancholy fact that it was no rude structure reared by our barbarous old ancestors—British or Roman—but an edifice possessing all the accumulative advantages of their still more *old* and more *mature* posterity, which had thus been at length compelled to bend its noble head before the *breeze* at least, if not the *battle*, of the busy bustling nineteenth century. A "*temporary* office is to be erected till the *permanent* station shall have been restored." —— The excavations for the Lyons Railway have brought to light, not far from the gates of Melun, a number of tombs of great interest to the antiquary. At a depth of no more than two feet, eighteen stone sarcophagi have been discovered. The chaste and simple form and the large dimensions of these sarcophagi are said to give them a majestic and imposing appearance. They run from east to west. A number of medals, vases, arms, and other objects, have been discovered near them. —— —— The atmospheric line of rail from Paris to St. Germain, was inaugurated and opened for traffic on Wednesday week. —— King Louis Philippe, it is said, intends forming a short line at his own cost from Corbeil to Fontainebleau, for the holiday convenience of the Parisians who might thus run to or fro in a couple of hours. —— A Carlsruhe mechanic is said to have invented a new locomotive for steep gradients of 22 feet per mile, to facilitate the construction of the proposed line from Carlsruhe to Switzerland. —— The line from Warsaw to Moscow has been approved at St. Petersburg, and General Dehn, the builder of the Warsaw Citadel, has been instructed to undertake its formation. It is to join near Moscow with the St. Petersburg line, which is to be completed to Moscow in the autumn of next year. Besides the local peasants, 50,000 workmen are to be employed on this latter line. Another from Moscow to Odessa is contemplated. —— An American visitor to "the old country," while contrasting American with British lines of railway, in the *New York Tribune* remarks, that "the English railways are admirable. The roads are infinitely superior to ours. The country being old, the soil has got consistency, and is not afflicted with that pulpy sponginess that characterises the surface of a new country. You will find no corduroy post-roads here as in Georgia or Alabama, nor lines of rail over which milk may be churned to butter every five miles. Indeed, the roads ought to be good—a country small in extent, thickly, aye, densely, populated, with a thousand years of age and enormous wealth—besides being continually well taxed, should present some perfection in road-making, more than could be expected from a partial wilderness thirty times its size, and as yet hardly drained of a morass."

## THE THOUSAND POUNDS—PRIZE PAINTINGS.

In reply to the long advertised premium of 1,000*l.* for the best oil painting of the Baptism of Christ in the River Jordan, not less in size than 12 feet by 10 feet, eleven pictures have been submitted to the proposer of the prize, and are now being exhibited in the (late) Chinese Exhibition Room at Hyde-Park-corner. Some surprise has been expressed that the number is so small; but we do not participate in it; wondering rather that with so little assurance of a satisfactory result, any artists were led to respond to the offer. The artists (if we may venture so to term all the gentlemen who have submitted works), giving them in the order in which the paintings hang, are,—Messrs. Howard, Robertson, Sebbers, Fisk, D. Scott, Hutchings, John Wood, Aphugh, Ziegler, Browning, and Aglio. The majority of them are quite beyond criticism. Mr. Wood's picture would have our vote, were we obliged to give one, but what the decision will really be remains to be seen. The artists were themselves called on first to select the ten best, which they did; they have now to point out the best five, and then from those the giver of the prize will make the final selection. We look with mistrust on the whole proceeding.

A New Cathedral.—The Antigua papers report a discussion in the House of Assembly, on the motion to grant a further sum of 10,000*l.* for the completion of the cathedral of St. John's; the sum of 33,000*l.* sterling, previously granted, having been found insufficient to finish it. Mr. Ledeatt called it "an ill proportioned structure, requiring at least 10 feet additional height, surmounted by two ill-looking resemblances of pepper-boxes." The editor of the *Antigua Observer* says: "Mr. Ledeatt's comparison will doubtless provoke a smile, not so much for its singularity as from its real truthfulness; 33,000*l.* ought to produce a more comely and appropriate structure than the monstrous pile that seems to frown, like some barn-like citadel, upon the summit of our town." The vote, however, was passed.

## DESTRUCTION OF "CITY" CHURCHES.

"A Londoner" writing to us on this subject, proposes as follows:—Whenever it should be found requisite for the formation of a new street or for any other public improvement, to remove any of these sacred edifices (which may be justly termed the glory of our metropolis), that accurate plans and drawings of all the parts should be taken, and the building then carefully taken down stone by stone, and removed to other parts of London or the suburbs, where new churches would otherwise be built, there to be re-erected according to the original design.

There are plenty of opportunities for putting this idea in practice. Thus it was only a few weeks ago, that you mentioned that there were ten new churches about to be built in the parish of St. Pancras; now as we have *churches* enough and to spare (for the reasons enumerated by "An Architect") in the city; would it not be well to remove some of them to St. Pancras, and thus save them from the destroyer.

## WESTMINSTER COURT OF SEWERS.

### HEALTH OF MARYLEBONE.

A special Court of the Commissioners of Sewers for Westminster, was held on the 16th, Capt. Bague, R.N., in the chair.

The court was specially summoned for this day to take into consideration a report laid on the table at the last court by the surveyor, recommending the entire re-arrangement and reconstruction of the sewers in the district of All Souls, Marylebone, eastward of Portland-place, which report was accompanied by elaborate maps and plans.

The report was read by the clerk, which, in the outset, took a review of the sanatory requirements of the parish of All Souls, embracing a population of nearly 27,000 persons, residing in 3,000 tenements, chiefly of a third-rate description, making an average of nine persons to each house. That the average number of deaths in this district was as one in twenty-five; while in that of the adjoining district of Christ church, it only reached one in fifty-nine; and the average mortality in the entire of Marylebone, was something under one in forty four. The report described the district as not naturally unhealthy, but that there was a great want of proper sewage in the district of All Souls, as in many parts no regular sewers existed; in others, in consequence of being formed on no regular system, they were choked up with refuse matter, and were worse than useless, by the exhalation of the most fœtid vapours; while other evils were to be found in sewers with paved bottoms, having no adequate fall to the point of discharge. In addition to these remarks, some valuable suggestions of improvement were introduced. The report, in conclusion, stated that by adopting the plans proposed, when the new sewers were formed upon a uniform system of levels, a regular current of water would run entirely through them until it arrived at opposite points, when, coming in connection with other sewers, it would divide and subdivide, so as entirely to traverse and keep up a perpetual flow through them so far as the body of water would allow, and when the supply of water was regular and abundant, there was no doubt they would keep themselves thoroughly cleansed. In addition to the advantages from connecting sewers together, it would give facilities for keeping up a constant circulation of air throughout the whole of them. The estimated cost of the entire work was 21,000*l.*

The report was received with approbation throughout, and was unanimously adopted.

In furtherance of the plan, new sewers were ordered from Berwick-street, along Wells-street, to Foley-street; improvement of the main sewer from Foley-place, and a continuation of sewer to the end of Charles-street, by which the drainage of the Middlesex Hospital would be considerably improved; and a new sewer from Little Carter-street to Regent-street.

Plymouth Cemetery Competition.—Messrs. Hamilton and Medland's plan has been selected for the Plymouth cemetery, and the works are to be commenced immediately. Mr. Wightwick, of Plymouth, obtained the second premium.

## Correspondence.

### VENTILATION OF THE HOUSE OF LORDS.

Sir,—If Professor Faraday be correctly reported in The Builder of the 3rd of April, relative to Mr. Barry's plan for warming and ventilating the new House of Lords, I fear that Mr. Barry will be much disappointed in its practical application. Permit me, Sir, in your character of a public man, to take the liberty to inform you from what data I arrive at this conclusion.

Viz., because the pure warm air admitted at the cornice must be under all circumstances, at a much lower temperature than the ascending vitiated air; for if it is not two-thirds, of the former, from its greater buoyancy, being less surcharged with carbonic acid gas and moisture, it will float along the ceiling, and be drawn off at the place of egress for the vitiated air.

Because, although in a crowded house the ascending vitiated air may be at a temperature of from 65 to 70 degrees at breathing point (five feet from the floor), it may not in a thin House exceed the temperature of from 55 to 60 degrees, which will become lowered in temperature to from 45 to 50 degrees in its ascent to the ceiling, partly caused by its becoming partially mixed with the cooler descending current of pure warm air, and thereby negative in a greater or less degree the process of ventilation.

Because, for the before-mentioned reasons, the temperature of the pure warm air admitted at the cornice, must not in a thin House exceed 45 degrees, this air in its descent to the floor coming in contact with the windows and walls, will thereby be condensed or lowered in temperature, and descend upon the heads of the members sitting nearest the walls (breathing an atmosphere from 55 to 60 degrees), at a temperature varying from 35 to 40 degrees.

Because the exact adjustment of the temperature of the pure warm air to the temperature of the vitiated air, necessary to preserve the relative degree of temperature, to cause the pure warm air to descend, and the vitiated air to ascend, and be drawn off (the latter of which, especially, must necessarily fluctuate in temperature, at every considerable sudden change in the number of members in attendance during the night's debate), will be found in practice much too complicated to be safely delegated to the management of any person, however attentive and intelligent.

The experiments mentioned by Professor Faraday will prove a deceptive test of the merits of the plan; there can be no difficulty in warming and ventilating an empty room.

Professor Faraday justly observed that ventilation appears easy in theory, but proves difficult in practice. As a summer ventilation, Mr. Barry's plan will not be subject to all the difficulties attendant on the winter season.

I am, Sir, &c.,
Joseph Cundy.
Kensington, April 15th.

### EXHIBITION OF MANUFACTURES AT SOCIETY OF ARTS.

Sir,—I, in common with a great many others, being manufacturers, operatives, warehousemen, salesmen, and dealers in fancy goods, having experienced great pecuniary loss and inconvenience (the particulars of which I will offer you in detail shortly) from the want of schools of design in this country, feel much pleasure and gratification that an exhibition of British manufactures has been opened at the Society of Arts, Adelphi, Strand. To the council of that institution and the promoters of the exposition, our best thanks are tendered. We would, respectfully, solicit that you insert in your next, the following list of houses at which free admissions may be obtained, stating that the exhibition is open from eleven till four, daily, excepting Wednesday, and that it finally closes on Saturday, the 30th instant.

I am, Sir, &c.
April 19. H. B.

Mr. Pratt, 118, New Bond-street; Mr. Tennant, 149, Strand; Mr. Millington, 65, Strand; Mr. Greensill, 148, Strand; Mr. Mortlock, 250, Oxford-street; Mr. Phillips, 359, Oxford-street; Mr. White, 210, Regent-street; Mr. Graves, 6, Pall Mall; Mr. Colnaghi, 13, Pall Mall; Mr. Bell, 186, Fleet-street; Mr. Cundell, 12, Piccadilly; Mr. Pickering, 177, Piccadilly; Messrs. Grant and Griffith, corner of St. Paul's Church-yard, Ludgate-hill.

## Miscellanea.

Cost of Improvement Bills.—Mr. Hume has brought in a bill to establish a taxation of costs on private bills in the House of Commons. We have often alluded to the evil this is intended to lessen. Mr. Hume, in the course of his speech, said, that the Liverpool corporation, for local acts, spent from 1836 to 1844, 24,125*l.*; Liverpool Sewerage Commission, 1842 to 1843, 3,920*l.*; Liverpool and Ilmington Waterworks Company, 1822 to 1843, 3,618*l.*; Liverpool Docks, 1838 to the 31st of November, 1846, 31,242*l.*; Liverpool New Gas and Coke Company, 1823 to 1845, 7,698*l.*; Liverpool Gaslight Company, 58 George III., c. 66, and 4 Victoria, c. 28, and opposition, 5,885*l.*; Bootle Waterworks, Liverpool, 3,164*l.*; Toxteth-park local act, 1842 to 1846, 2,679*l.* Total, Liverpool, 82,331*l.* He found that the trustees of the river Clyde had, since 1836, spent, in applications to that house and in law expenses, 56,847*l.*,—as large a sum as was actually laid out in the improvement of the river, the Parliamentary expenses alone being 20,468*l.* The Coal Term Act of Newcastle expired the session before last; a bill was brought in to continue it; it consisted of only two clauses, a third being introduced in committee. He understood from the hon. member for Sunderland, who was on the committee, that not more than an hour was occupied before them, but the attorney's bill was 1,985*l.* Only that morning he had received from Bury an account of the expense of a bill that passed that house last session. It was entirely a sanatory bill; but the charge to the corporation was 3,676*l.* With reference to one railway, the London and York, that the preliminary expenses of the bill amounted to no less a sum than 432,620*l.* The preliminary expenses of passing the bill for the Direct Northern Railway were 123,414*l.*; the expenses of the London and York extension were 309,206; making in the whole, 432,620*l.*

The Wisdom of the Egyptians.—Philologists, astronomers, chemists, painters, architects, and physicians, must return to Egypt to learn the origin of writing—a knowledge of the calendar and solar motion—of the art of cutting granite with a copper chisel, and of giving elasticity to a copper sword—of making glass of the variegated hues of the rainbow—of moving single blocks of polished sienite, nine hundred tons in weight, for any distance by land or water—of building arches round and pointed, with masonic precision unsurpassed at the present day, and antecedent by 2,000 years to the Cloaca Magna of Rome—of sculpturing a Doric column, 1,000 years before the Dorians are known in history—of fresco painting in imperishable colours—and of practical knowledge in masonry. And it is no less clear that every craftsman can behold, in Egyptian monuments, the progress of his art 4,000 years ago, and whether it be a wheelwright building his chariot—a shoemaker drawing his twine—a leather-cutter, using that self same form of knife which is considered the best form now—a weaver throwing the same hand-shuttle—a whitesmith using that identical form of blow-pipe but lately recognised to be the most efficient—the seal-engraver cutting in hieroglyphics such names as Shoopo's 4,300 years ago—or even the poulterer removing the pip from geese—all these, and numerous other astounding evidences of Egyptian priority in every art and scheme, usage and custom of civilised life, now require but a glance at the plates of Wilkinson and Rosellini.—*Freemasons' Quarterly Review.*

Leakage of Gas Pipes.—With reference to the proposal referred to in The Builder (p. 172), to supply gas to places at a considerable distance from Newport and Cardiff, where it is to be manufactured, and the probable waste by leakage, a correspondent (N. R.), suggests that "glass pipes, fitting into each other as tightly as decanter stoppers into the necks, would, possibly, be found sufficient to prevent a considerable portion of the loss."

The Art-Union of London.—The annual meeting of subscribers to receive the report of the council, and distribute the amount subscribed, will take place on Tuesday next, in Drury Lane Theatre, the Duke of Cambridge in the chair. The total sum collected will exceed that of last year. We shall give the whole proceedings at length, including the report, and a correct list of all the prize-holders.

PROJECTED WORKS, &c.—Contract-tenders were advertized for in the past week's papers for altering and repairing the parish church of Stock; for making a sewer at Cambridge; extending and arching sewers in Tower Hamlets, several contracts; a supply of 200 tons of York paving at Bermondsey; and of paving-granite, flint, Kentish rag and gravel at St. Mary's Newington; for the erection of the Birmingham Pauper Lunatic Asylum; and of a warehouse and other buildings and alteration of premises at Hales Owen; for the erection of an Exchange at Lincoln; twelve houses for the Battersea Park Building Society; Almshouses at Dorking; works in additions and finishings of two second-rate houses at Haggerstone; erection of station-buildings at Queen's Ferry, Flint, Greenfield, Mostyn, Bangor, and five other places on the Chester and Holyhead Railway (extension of time); the whole works on the Harrowby and Bingham contracts of the Ambergate, Nottingham, and Boston Eastern Junction line; providing and fixing 1,300 feet of cast-iron fencing, and ornamental cast-iron barrier and other works of the Royal-terrace pier and gardens, Milton-on-Thames; a supply of 1,500 tons of cast-iron girders, &c. for the tubular bridges across the Menai straits and the river Conway; and for 3,600 tons of rails, 1,200 tons of chairs, and 50,000 larch sleepers for the Midland Railway.

BIRKENHEAD.—It was expected that an obstinate resistance would be made to Liverpool dues, when the 'Port' of Birkenhead was opened; but it appears that the first cargo, that of the Oregon, though entered without payment of town dues, was ultimately paid for unconditionally after a refusal to receive the dues 'under protest' had been intimated. The first determined attack on these dues, the *Mail* expects, will come from Runcorn. It is anticipated that when the large floating dock at Birkenhead is finished, it will be a great accommodation to the timber trade of Liverpool, hitherto without a timber pond. A commodious depôt for the official staff is about to be erected, on the scale of the Customs depôt at the Prince's Dock.——Two portions of land have been assessed to the Chester and Birkenhead Railway Company, one at an average value of 28s. 5d. per. yard, and 410*l.* for severance; and the other at the rate of 78s. per yard.—A correspondent of the *Liverpool Mail*, complains that the Birkenhead parish authorities have planted their fever hospital in Parkfield, the very centre and lowest point of the township, in a "jerry" built house of "horrid dampness within and without." This building, it is said, which has not yet been tenanted, belongs to one of the commissioners, and is let at a rental of 80*l.* It has no communication with the street sewer. Drs. Robertson and Stevenson, it is added, have reported strongly against it to the commissioners, but the parish surgeon has approved of it, so that it is thought to be high time that a competent professional man, with a salary a trifle more than 10*l.* a year, be appointed to take charge of the diseased poor.

THE BUILDINGS ACT.—On the 20th, Mr. T. Duncombe, in the House of Commons, in postponing the motion of which he had given notice for a select committee to inquire into the operation of the Metropolitan Buildings Act, and that the petition of John Todd Merrick, paper-stainer and manufacturer, New Oxford-street, which was presented on the 29th day of March last, be referred to the said committee, to report their opinion with the evidence to the House, observed that there never was any Act worked so ill as the Metropolitan Buildings Act. Lord Morpeth said, he hoped shortly to introduce a bill for the amendment of the Act, to which the hon. gentleman referred.

PREVENTION AND REMOVAL OF STEAM-BOILER INCRUSTATIONS.—A patent has been granted to Mr. Maximilian Francois Joseph Delfosse, late of Paris, but now of Regent-street, Middlesex, for an "anti-petrifying mixture," composed of dry tannic or gallic extract, hydrate of soda, muriate of soda, and subcarbonate of potash, in proportions varying with the greater or less impurity of the water, and according as the boiler is stationary or locomotive. The patentee also claims the like employment of any analogous mixture containing for its principle or essential ingredients fixed alkaline matter combined with tannic or gallic extract.

## TENDERS.

**Delivered on the 13th of April, 1847, for building a New Union Workhouse near Whitchurch, Hants. Mr. S. O. Foden, Architect; the quantities given**

| | |
|---|---|
| Neale and Co., Whitchurch | £4,115 |
| Pink, Hambledon | 3,989 |
| Brown, Winchester | 3,575 |
| Gover, Winchester | 3,490 |
| Nichols, Basingstoke | 3,476 |

**The lowest tender not accepted.**

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**For a new church to be built at Battersea, Surrey; architects, Messrs. Lee and Bury, Golden-square.**

| | |
|---|---|
| Mr. Nicholson, of Wandsworth | £6,770 |
| Messrs. Hicks | 6,480 |
| Messrs. Higgs and Son | 6,077 |
| Messrs. Kelk and Co. | 5,882 |
| Messrs. Lock and Nesham | 5,790 |
| Mr. Holland | 5,538 |
| Mr. Hawken | 5,446 |

**Mr. Hawken's tender was accepted. The tenders were opened in the presence of the builders.**

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**For general building repairs at Skinner's Hall, Dowgate Hill, April 15th, 1847,**

| | |
|---|---|
| Bridger | £3,897 |
| Grimsdell | 3,865 |
| Cubitt | 3,690 |
| Turnbull | 3,632 |
| Piper | 3,629 |
| Brown | 3,527 |

**For painters', paper-hangers', papier-mâché, and plasterers' works at the same place,**

| | |
|---|---|
| Henry Woolley | £1,773 16 |
| J. Le Cren | 1,588 |
| Battam & Craske | 1,284 |
| Benham & Co. | 1,219 |

## MEETINGS OF SCIENTIFIC BODIES

***During the ensuing Week.***

MONDAY, April 26.—Institute of British Architects, 16, Grosvenor-street, 8 P.M.

TUESDAY, 27.—Civil Engineers, 25, Great George street, 8 P.M.

THURSDAY, 29.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*South Staffordshire Hospital*."—We have received a letter from Messrs. Higham's solicitor, threatening an action in the event of our not giving up the name of the writer of the letter signed "Strength." We must decline doing so. Mr. Banks having entirely exonerated the contractors from blame, it becomes a question of judgment, and we may have something more to say about it before long.

"*Acoustic*."—A method of "isolating buildings as to sound, i.e., to prevent any exterior sound reaching the interior, and *vice versa*; for instance, in noisy thoroughfares, absolutely to cut off and prevent the sound of coaches, wagons, &c., from entering shops, &c." is such a desideratum, that we are disposed to think its introduction *would* repay the expense of patent and publicity; the cost being moderate and effect nearly absolute.

"*Intemperance*."—An allusion to the works of this great landbuilder has been already made.

"*C. H.*"—Notice should have been sent to the district surveyor.

"*W. P. P.*"—We would willingly leave our print and matter thus unbacked, but the majority of readers object to the loss of letter-press.

"*G. R. C.*"—Shall appear.

"*Vigil*."—We avoid giving insertion to charges against district surveyors which are not specific.

"*J. E.*"—On seeing the MS. we would immediately reply.

"*J. H.*"—We cannot give the information asked for, and advise him to think no more of so remote a possibility.

"*J. A.*" and "*H.*"—We will speak of the whole together.

*Received*.—"A Londoner" (April 21), "Suburban," "J. P." (Birmingham); "A Subscriber," "Ada"; "A Competitor" (Slough); "Lorando," "W. F. P." "H. H." (Dover-street), "T. De La H." "Archi" "J. H." (Islington), "W. W." "M. D." "W. A." "E. W. F." "Brickbat," "Strength," "R. S." "Mr. V." "Speed on Railways," by Samuel Sidney.


## ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.—LECTURES in illustration of ANIMAL MECHANISM by T. Rymer Jones, Esq. F.R.S. Professor of Comparative Anatomy at King's College, on Tuesday, Thursday, and Saturday, at half-past Three o'clock. LECTURES on ARTIFICIAL LIGHT, and the Agents employed in its production, by Dr. Bachhoffner. Experiments with ARMSTRONG'S HYDRO-ELECTRIC MACHINE. The WORKING MODELS and MACHINERY clearly explained. To be viewed OPTICAL EFFECTS include a New Series of DISSOLVING VIEWS, the OXY-HYDROGEN MICROSCOPE, &c. EXPERIMENTS with the DIVER, and DIVING-BELL, &c. &c.—Admission, 7s.; Schools, Half-Price.

TO BUILDERS.

PLASTERERS' HAIR.—JEREMIAH LORDAN, Hair and Glue Merchant, 2, Butler's-buildings, Bermondsey-street, begs to call the attention of the Trade to his large stock of excellent Plasterers' Hair, which he has always on hand at the following very low prices: Common 8½*d.*, Best 9*d.* per lot, Clue, 34*s.* and 38*s.* per cwt. Cash on delivery, at his Warehouse.

J. W. WILKINS'S PATENT SILENT WATER-CLOSET, Manufactured by CHAS. BOTTEN, Brass and Cock Founder, 10, Crawford passage, Clerkenwell, London. The peculiar advantage of this closet is, that it may be fixed in any part of the house without communicating the sound of a water-closet to any of the surrounding apartments. Prices, drawings, &c., may be had on application to the Manufacturer, where the closet may be seen in action.

ARTISTS, DESIGNERS, and Amateurs are informed that the General PRACTICAL SCHOOL OF DESIGN, 18*A*, Maddox-street, Hanover square (Master J. M. Leigh, Esq.), is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female—with Weekly Lectures on Art. Terms, One Guinea per Quarter. R. W. HERMAN, Hon. Sec.
24, Green-street, Grosvenor-square.

ARMY and NAVY CLUB.—An Extraordinary General Meeting of the Members of the Army and Navy Club will be held on TUESDAY, the 27th April instant, at Two o'clock precisely, to decide on the award of premiums for the designs sent in for the new club house. The designs will be on view (for members only) at No. 20, St. James's-square, on Tuesday, the 13th instant, until the 27th, between the hours of Twelve and Six o'clock. The ballot will be open on Tuesday, the 20th instant, at Lichfield House, and will continue daily to the day of the general meeting, inclusive, from Twelve to Two o'clock. By order of the Committee.

THOMAS WALCOT, Secretary.

No. 13, St. James's-square, 14th April, 1847.

## CONTRACTS.

TO BUILDERS.—BATTERSEA PARK BUILDING SOCIETY.

PERSONS desirous of Contracting for the erection of Twelve houses for the above Society, are invited to send in Tenders for the same, before the 11th of May, 1847, to Mr. CHARLES BURLS, jun., 26, New Bridge-street, Blackfriars, where the drawings and specifications may be seen on or after the 29th April, 1847.

TO BUILDERS.

PARTIES disposed to Contract with the Directors of the Lincoln Corn Exchange and Market Company, for the erection of the intended Exchange, Public Rooms, and Market-House, may inspect the plans and specifications of the same, on application at the office of Mr. W. A. NICHOLSON, Architect, in Lincoln, at any time between the 26th day of May, and the 1st day of June next, on or before which latter day the Tenders must be sent to my office, sealed and endorsed "Tender for the Lincoln Corn Exchange and Market." The Directors do not pledge themselves to accept the lowest Tender—By order, WM. ANDREW, Secretary to the Company.

TO BUILDERS.

THE Trustees of the Dorking Charities are desirous of receiving TENDERS for building Almshouses on Coltsundene, Dorking, from parties willing to contract for the same. The plans and specifications may be seen at the office of Mr MARK SMALLPIECE, Solicitor, Dorking, on and after MONDAY, the 26th April, instant. Sealed Tenders to be delivered at the office of the said MARK SMALLPIECE, before Ten o'clock, on WEDNESDAY, the 5th day of May next, addressed "To the Chairman of the Trustees of the Dorking Charities," and marked "Tender for Almshouses." The contractors will be required to execute a bond with two sufficient sureties for the due performance of the contract, and the Trustees do not bind themselves to accept the lowest or either of the Tenders.

MARK SMALLPIECE, Clerk to the said Trustees.

Dorking, 21st April, 1847.

TO IRON-FOUNDERS AND BUILDERS.—SAINT LUKE'S, MIDDLESEX.

THE Church-yard Committee of this Parish, hereby give notice that they are ready to receive TENDERS for the execution of certain works in enclosing the north burial ground of the parish church, with a dwarf wall, with iron curb and iron railing and gates. Also TENDERS for the execution of certain works in cleansing and repairing the District Church of Saint Barnabas, King-square, Goswell-road. The drawings and specifications may be seen at the offices of Messrs. W. SABINE and SON, architects and surveyors, Winchester House, Old Broad-street, and the TENDERS are to be sealed, under cover, addressed to the Church-yard Committee, at the Board room, Workhouse, City-road, at or before Five o'clock, on TUESDAY, the 4th day of May next. The Committee do not find themselves to accept the lowest TENDER JOHN PARSON, Vestry-clerk.

Board-room, Workhouse, Saint Luke's, Middlesex, 22nd April, 1847.

IMPROVED PAVEMENT GUTTER and SHOE. SAMUEL HOOD and Co., Cast-iron Warehouse, 67*A*, Upper Thames-street, respectfully call the attention of the city authorities and others, to their improved Pavement Gutter and Shoe, which from the peculiarity of the Joint and form of the Socket uniting the ram-water pipe with the shoe, effectually prevents the nuisance so much complained of in these localities. It is also admirably adapted for stabling, from its superior form, and the impossibility of the horses slipping upon it. A sample may be seen at the office of "The Builder."

BUILDERS AND IRONMONGERS are requested, when writing for JENNINGS' SHOP SHUTTER, SHOE AND FASTENER, to send the finished thickness of the Shutter, and also that which end of the Joint they prefer having putting up the Shutters RIGHT OR LEFT, as they face in front.

JENNINGS'S SHUTTER FASTENER. Shop Fronts are more damaged and disfigured by the Shutter Bar flap from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no ruinous part of the shell bound in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24*s.*, or a new front shod and secured for 40*s.* A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops require decorating.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 96, Bunhill-row, and 131*A*, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, as the shutters made to draw up in any part of the premises with the greatest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Bunnett has obtained a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

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TO MASTER TRADESMEN.

THE Trustees of Mrs. Ann Newton's Charity, for placing out every year on Boys belonging to the Parish of St. Margaret's, Westminster, Apprentice to some respectable Trade, will meet at the Vestry room, in the Churchyard, Piccadilly, on FRIDAY, the 30th day of April instant, at Ten o'clock in the Forenoon, to receive applications for such Apprentice, with a Premium of £34. 7s. 6d. Any further information required may be obtained daily, between Ten and Four o'clock, at the Parochial Office, Poland-street, of which Parish the Boy must be born. Every applicant for the Apprentice must attend the above meeting in person, and bring a card containing his name, address, and business. None but householders need apply. By order of the Trustees.

GEORGE BUZZARD, Clerk.

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Bundle Slate Merchants, Engineers and Surveyors, respectfully informed, that the Committee of Management have determined to allot shares during the present month, upon payment application at the present price, and that they solicit persons interested in the Slate Trade to call at the office and examine the plans and specifications, which are open for inspection daily. Where applications will be replied to, without a respectable reference being named in London. The Share-list be finally closed this present month. Applications, as aforesaid, to be made to Mr. J. LAND, 77, Old Broad-street, City, and at the Quarries, Delabole, Cornwall.

C. S. RICHARDSON, Secretary.

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TO ARCHITECTS, BUILDERS, AND OTHERS.

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Three Machines can also be seen at St. Silvan's, Leith walk, Edinburgh, Mr. James Bell, Engineer, Bonnington, Leith; Mr. Hunter, Brick and Tile Maker, Mains Farm, Dundee, Staffordshire; and Messrs. Drummond and Sons, Dublin.

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THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where and most of the several Surveyors may be personally applied to for Purchase or Rent Houses, Property, Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and at which they are empowered to attend Persons to apply for at the above office.

By the Court,

STABLE and LUSH, Clerks.

TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES.

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SEWERS, MIDDLESEX HOLBORN AND FINSBURY DIVISIONS

NOTICE IS HEREBY GIVEN, that a Court of Sewers for Holborn and Finsbury Divisions, in the County of Middlesex, will be held at the Sewers' Office, No. 7, Hatton-garden, on FRIDAY, the 30th day of April, 1847, at Two o'clock in the afternoon precisely.

JOSEPH UNWIN, Summoner and Cryer.

Sewers' Office, for Holborn and Finsbury Divisions, &c. No 7, Hatton Garden.

TO BUILDERS AND OTHERS.

Interested in buildings, or in ground for building upon, within the District of Hole-bourn and Finsbury Division of the Parish of St. Le-lard, Shoe-ditch, and the Liberty of North Faleate, in the County of Middlesex, and their borders and confines of the same.

THE Commissioners of Sewers for the above Limits, DO HEREBY GIVE NOTICE, that previous to [illegible] any new street, lane, or public way, or to any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer in the Finsbury division, within the limits aforesaid, application must be made by petition, the form of which may be had at their office; to which must be attached a plan of the intended line of street, and which must be strictly conformable with their regulations.

And, in order to prevent the serious evils and inconveniences that must arise from [illegible] being given as to the lowest depth at which the sewer is to be [illegible]

And the Commissioners do also give Notice, that whenever the lowest floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will, if [illegible] Sewers, [illegible] made for the service of such buildings: and further, that no buildings or erections [illegible] permitted to be made upon or over any sewer [illegible]

All communications made with any public sewer, without previous application, as aforesaid, will be stopped out; and the parties making the same will subject themselves to a fine.—By the Court,

STABLE and LUSH, Clerks.

*** The public is also informed, that all rates imposed by the said Commissioners are to be paid by the tenant, and allowed by the landlord out of the rent, unless where the tenant, by special covenant or agreement, is bound to defray the same.

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In the application, skill is not required; it is put on to the work with a brush, and will [illegible] all climates and situations, and does not require heat.

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STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is retained, but at the most successful imitates it has a sameness of appearance when compared with the natural wood, as the latter always [illegible] in their natural grain. This is [illegible] to the wood without obscuring the [illegible] which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks by the usual method, can be [illegible] in one week by the new process. Specimens may be had at the office of the Patentee, 18, Southampton-buildings, Chancery-lane, where [illegible] may be had of HENRY STEPHENS, Jun., Bridport, Dorset, in bottles of 1 pint, bottles of 2 and [illegible] bottles of 1 gallon each. The colour may be obtained in powders, put [illegible] and dissolved in water to form the [illegible] pint will make a gallon of stain.—N. B. The Trade supplied.

[illegible] the office of "The Builder," 2, York-street, Covent Garden, London.

GAS.—The National Economic Gas Burner [illegible] the most [illegible] Burners, Gallery Burners, Fish-tail Burners, and Gas-stoves of Gas [illegible] giving twenty-five per cent. more light, consuming twenty-five per cent. less gas, causing neither smoke nor smell, and preserving the brilliancy of light, essentially adapts it for public buildings, churches, shops, &c., likewise for private houses. May be seen and tested an experimental meter at the office of Mr. [illegible], Patentee, 12, Castle-street, Holborn. A few [illegible] Burners, Fish-tail Burners, and Gas-stoves of Gas [illegible] giving twenty-five per cent. more light, consuming twenty-five per cent. less gas, causing neither smoke nor smell, and preserving the brilliancy of light, essentially adapts it for public buildings, churches, shops, &c., likewise for private houses. May be seen and tested an experimental meter at the office of Mr. [illegible], Patentee, 12, Castle-street, Holborn. A few [illegible] Burners, Fish-tail Burners, and Gas-stoves of Gas [illegible] giving twenty-five per cent. more light, consuming twenty-five per cent. less gas, causing neither smoke nor smell, and preserving the brilliancy of light, essentially adapts it for public buildings, churches, shops, &c., likewise for private houses. May be seen and tested an experimental meter at the office of Mr. [illegible], Patentee, 12, Castle-street, Holborn. A few [illegible]

GAS.—The Introduction of Gas into private dwellings is rapidly increasing; it is therefore of the greatest importance, that the consumer should be put upon the gas company, and [illegible] the most simple means of registering the supply. The patentees of CARLISS'S SAFETY GAS METER, have recently received the highest testimonials, and can confidently recommend it to all persons interested in gas lighting, as being more secure, more durable, and not so liable to get out of order, and in every respect superior to the old plug cock, so frequently leaky or set fast by corrosion. It is the cheapest, being inexpensive, and easily fixed to any [illegible] and [illegible] Patent, recently granted by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Meter Works, Newcut, near the Blackfriars Road.

PAVING, 2s. 9d. PER SQUARE YARD. Basement, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, Stables, &c. Asphalte Pavement laid down at the above rate [illegible] guaranteed. Apply to JOHN PILKINGTON, Patentee; ASPHALTE PAVEMENT OFFICE, 103, Holland-street, Blackfriars, S.E. Sole Agents and Depôt, Limmer Asphalte Mine, Isle of Wight, where the best bitumen can be obtained.

PHOTOGRAPHIC PORTRAITS, at HALF PRICE, COLOURED or PLAIN. The Public are invited to [illegible] the specimens of the Daguerreotype Art, with new improvements, at the Establishment, 251, Strand, between Northumberland-house and Temple Bar. Portraits, in [illegible] case, from [illegible] shillings, warranted. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvas, combining the truth of the daguerreotype with artistic skill. Hours from Ten to Four.

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Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d | 20d. |
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| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 32s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
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| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 15s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 3 ft., £3. 2s. | 3 ft. 6 in., £3. 12s. 6d. | 4 ft., £4. |
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R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 190, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 8s. | £3. 12s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 10s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do. do.
Manufacturer of WOLFE'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

IRONFOUNDRY.
168, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER),

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be assured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

E. PARK'S, 140, Fleet-street, Wholesale Ironmonger, Brass Founder, and General Factor, Agent for

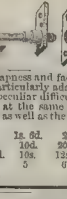


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| | 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
| Best Patent Sash Line. | 4s. 3d. | 5s. | 6s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. |
| | 1 | 2 | 3 | 4 | 5 | 6 |

Every description of Ironmongery equally low.

SMOKY CHIMNEYS EFFECTUALLY CURED.
WILSON AND CO.'S
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VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The Trade supplied with them at the Manufactory,
VALE PLACE, HAMMERSMITH GATE, MIDDDLESEX.
N.B. Licenses granted to Manufacturers.

THE PEOPLES BENEFIT BUILDING SOCIETY, City District—Shares 50l. each, advanced in full Entrance Fee, 2s. 6d. Monthly Subscriptions, 5s. On Advanced Shares, 11s. 8d.

The first Monthly Subscription Meeting of this Society will be held on MONDAY, the 3rd May, 1847, at the Office of the Society, No. 4, Old Jewry, at half-past Seven o'clock, P.M. Applications for Prospectuses and Shares, may be made to John Richards, Esq., Solicitor, No. 4, Old Jewry, Mr. John Bax Shepherd, Surveyor, 14, Bucklersbury, or at the office, to
April 17th, 1847. THOMAS SHERWOOD, Manager.

WESTMINSTER FRIENDLY BENEFIT SOCIETY of CARPENTERS and JOINERS, held at the Artillery Arms, Rochester Row, Westminster. Established January 8th, 1842, and enrolled pursuant to Act of Parliament.

The attention of the trade is called to the great advantages proposed by this Society, for while ample provision is made and secured for the general purposes of sickness and death equal to that of any benefit society, the great and ultimate object is to erect permanent residences wherein to lodge the aged and infirm members and their wives, coupled with the provision of fire and candle, and an allowance of 5s. per week.

Monthly Contribution, 2s 6d. Entrance Fee, 5s. Sick Allowance, 15s. per week. Age, under 38.

Meeting night, first Wednesday in every month,—Articles to be seen at the bar.

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AT REDUCED PRICES.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.
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Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

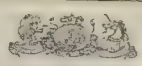
ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

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TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

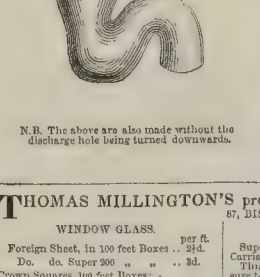
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N.B. Estimates given for Sawing and Planing.

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FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c

PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
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Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS.
87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
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| Foreign Sheet, in 100 feet Boxes | 2½d. |
| Do. do. Super 200 „ „ | 3d. |

Crown Squares, 100 feet Boxes:—

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| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. | 1½d. |
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Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,
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SPLENDID ENGRAVED ROSETTES,
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A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
and will shortly have completed the
LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,
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Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

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| Super Body Copal, for the bodies of Carriages | 20 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
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| A fine pale Varnish for the lighter imitation woods. Dries in about eight hours. | |
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| Very durable, and well adapted for Coachmakers, except for light bodies. | |
| Elastic Oak, Wainscot, or Mahogany Varnish | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods. | |
| Paper or Crystal, quite transparent | 10 |
| Gold size for gilders | |
| Also as a dryer in ground Colours, which much improves their appearance | 10 |
| Black Japan | 12 |
| A splendid Jet Black, for Coach-builders' use. | |
| Brunswick Black | 6 |
| A Black Varnish for Iron-work, Stoves, &c.—It dries immediately | 6 |
| Furnit re Varnish for Japanners. Dries in two hours. | 14 |
| White Hard Spirit Varnish, for Cabinet Work | 20 |
| Dries instantly. | |
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| Better Paper drying than the above. | |
| Mastic Varnish, pale, for Pictures | 24 |
| Turpentine Varnish | 6 |
| French Polish | 16 |
| Naphtha | 10 |
| Patent Liquid Wood Knotting | 16 |

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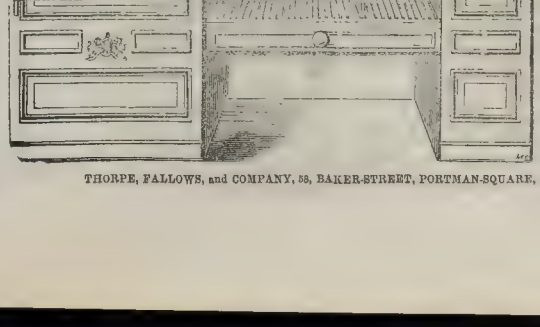
| | £ | s. | d. |
|---|---|---|---|
| 2½ inch Lift Pump on Plank | 4 | 0 | 0 |
| 3 „ do. do. | 4 | 16 | 0 |
| 3½ „ do. do. | 6 | 0 | 0 |
| 4 „ do. do. | 6 | 12 | 0 |
| Well Pumps on Square Tails, with Iron Bow, equally low. | | | |
| ¾ inch Bib, Ball, or Stop Cocks. | 0 | 1 | 8 |
| 5-8th „ do. do. | 0 | 2 | 1 |
| ½ „ do. do. | 0 | 2 | 6 |
| Pan Water-closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire | 1 | 10 | 0 |
| Blue Basin, extra | 0 | 4 | 0 |
| Ditto, with Sunk Handle, extra | 0 | 4 | 6 |
| Spring Valve Closet, on Brahma's principle, complete | 3 | 10 | 0 |
| Beer Machines, from one to six motions, in handsome cases. | | | |

Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

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Best White Lead, 27s; Seconds, 25s
Thirds, 23s
Milled Sheet Lead and Lead Pipe, 20s.
Linseed Oil, 3s. 6d. per gallon; Turpentine, 4s. 6d. per gallon, Boiled Oil, 3s. per gallon.
Brunswick and Navy Greens, Cromes Blacks, Blues, Reds, Patent Dryers.
Best Town Glue, 40s. per cwt.
Brushes, and Plumbers and Glaziers' Tools, Patent Diamonds, 12s. each, warranted.

THE PANKLIBANON IRON WORKS,
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ARCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE-GRATES, Fenders, and Fire-Irons, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive st ck of FURNISHING IRONMONGERY, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epergnes, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermio Stove is in daily operation. Also LUNDY'S IMPROVED HOT-AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 28, BAKER-STREET, PORTMAN-SQUARE, LONDON.

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Freehold and Leasehold Property to be Sold, to pay a large per centage THOMAS COMPTON recommends parties seeking secure and eligible investments to peruse his PRINTED LIST (No. 25), containing upwards of 100 good sorts of excellent freehold and leasehold property, which is just published, and may be had gratis on application, or by post, on forwarding two stamps Offices, 75, Coleman-street, and Enfield.

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**GRAVEL FOR SALE.**—About 300 yards of excellent quality and good colour.—Apply on the premises. Harewood place, Oxford-street.

**BRICKS FOR SALE.** — Capital Malm Seconds, Paviours, and Pickings for sale; also good Stock Bricks, &c., delivered to any part of the river Thames.—For particulars, apply by letter, to G. F. G., at the office of "The Builder."

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**TO BE SOLD, Eight Cast-iron Tuscan** Columns 11 feet long, with proper Caps and Bases; now standing in the Gateway from St. Martins-le-grand, to the Bull and Mouth Inn.—For particulars, apply to Mr. SANDERSON, in the Inn-yard.

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**TO LET, a Compact and Convenient** Wharf, between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of the above Trades, having excellent water and landing-stage warehouse. For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace-road, Lambeth.

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**TO LET, on a Building Lease of Ninety** years, three CARCASES of first-rate houses, with part of the materials for a fourth, and further advances to assist in their completion. As this property is connected with central improvements, and houses of this class much wanted, risk is out of the question. Plots of ground adjoining to let, with assistance to builders.—Apply by letter to A. X. B., at the office of "The Builder," 2, York-street, Covent-garden.

FREEHOLD BUILDING GROUND.
**TO BE LET, upon Leases for a Term of** Ninety-nine Years, in plots, averaging from three-quarters of an acre to an acre each, adjoining the Ewell station on the London and Epsom Railroad, and having frontage to good roads. The plans may be inspected and full particulars obtained at Messrs. CLUTTON'S office, No. 8, Whitehall place, London.

TO CARPENTERS AND BUILDERS.
**TO BE LET, a very snug Joiner's Busi-** ness, situate in the most business part of Camberwell, and commanding a very good connection of extensive Joiner Trade, comprising a house and premises with a shop that will work five benches, rent 23l. per annum, good-will and fixtures, 40l.—For further particulars, inquire of Mr. SMITH, Timber Merchant, Southampton street, Camberwell.

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**TO BE LET, for 99 Years, a Plot of** Freehold Building Ground, for Seven or Eight Third-rate Houses, with excellent Basement Areas and Forecourts. The sewers are built in front of the ground, and paving laid to the adjoining property, which is finished. It is within 100 yards of the Park, where a third of houses is to be erected.—Apply to Mr. G. RATHBONE, No. 38, Berner's street, Middlesex Hospital.

MANOR PARK ESTATE, STREATHAM
**TO BE LET, on Building Leases, for a** long term, on the above estate, close to the Church, 65 plots of ground of from 20 to 30 feet frontage to the road, and 110 feet deep, plots for terra. 30 shops, 16 plots for stabling, &c. The whole forming a belt round the ornamental interior of the Manor-park, which is unrivalled for beauty. For plans, apply to Messrs. CRACKNELL, BAKEN-FORD, LONGBOURNE, and VICKERMAN, No. 1 South-square, Gray's-inn; Messrs. GOUGH and ROUMIEU, architects, 10, Lancaster-place; or Mr. WILKINS, at the Manor-park Office, Streatham.

N.B.—Facing bricks, both white and red, stocks and others of excellent quality, and in large quantity, malt shovel, and very moderate price on the estate. Gravel and sharp sand of a very superior description is found in abundance on the ground, and water is also laid on.

CAMDEN TOWN To Manufacturers and others requiring Extensive Premises.
**TO BE LET, on Lease, or the Lease to be** SOLD, a substantial and convenient Stack of Building, erected for a Piano-Forte Manufactory at a very considerable cost, and suited to any business requiring extensive Wood Manufacturing Premises. The main building is five stories high, with an area of nearly 1,700 superficial feet on each story; excellent dry boarded basement and vaulted show rooms, counting-house, and workshops; a considerable yard in the rear, with carriage entrance from the adjoining streets, a substantial shed, open on two floors, inclosed on the upper, and on the lower part of which is a double saw-pit. The situation is common line, near to the carriving department of the North Western Railway, and public conveyances constantly passing to and from London. Full particulars may be had on application at the office of Messrs. DENT and SON, Surveyors, No. 38, High street, Camden Town.

**BUILDING GROUND TO LET** in front of King-street, Kingsland-road, about a mile from the City, for fourth-rate Houses, four rooms, a kitchen, and room over. A very eligible Plot of Ground for the erection of Ten Houses, admirably suited for Builders, as the houses will require to be built on the estate let and sell as fast as they are finished, and old bricks are allowed to be used.—Apply to the freeholder, Mr. KING, Stonebridge House, at the corner of Acton-street, Kingsland-road, the fourth turning from the canal bridge. There is a smaller Plot for Three Houses.

ST. JOHN'S WOOD PARK !!! IMMEDIATE CONNECTION WITH REGENT'S PARK
**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approved modern drainage, near to the metropolis, and great facilities of access to all the fashionable resorts and promenades of the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

**WHARF TO BE LET OR SOLD, well** situated 24 miles on the Westernroad. The premises are extensive, including house, substantial sheds for stores, stabling, cart-house, lofts, and counting-house, all nearly new, double water frontage, a large area of ground, with double gate entrances. The property is extremely eligible for a lime, coal, or timber merchant, a large business having previously been carried on in the lime, coal, and brick trade. To a person or firm requiring a West End depot, and wishing to open a country trade, very few can suit with. They will be let yearly, on lease, or the original lease will be sold at a ground rent. Immediate possession.—Apply to Mr. NEWTON, 41, Brewer street, Golden-square

TO BUILDERS AND TIMBER MERCHANTS.
**TO BE DISPOSED OF, a Business in the** above Trades in the County of Suffolk. Established upwards of Eight Years, and of best-paid Connection, comprising the various departments of Carpenter, Bricklayer, Mason, &c. It is nearly allied to Railway and Canal communication with all parts of the kingdom, and new railways are about to be made in its more immediate vicinity. The excellent residence, with all convenient Workshops and Timber Yards, may be treated for on Lease with the Business.—For further particulars, apply to Messrs. ISAACSON and SONS, Solicitors, Mildenhall, Suffolk, or to Mr. J. F. ISAACSON, Solicitor, 49, Norfolk-street, Strand.


## SALES BY AUCTION.

By Mr. BRAY, Jun., at his Rooms, 259, High Holborn, on THURSDAY, April 29th, at Twelve o'clock,

**PAPERHANGINGS** of the best Manufacture, and the new patterns, comprising upwards of 3000 pieces, including elegant crimson flock, stock flock, rich satins, blocked patterns, chintz, bedroom, staircase, and library paper. May be viewed one day prior and morning of sale, and catalogues had at the Rooms as above.

WESTMINSTER IMPROVEMENTS.—Third Sale. Steam Engine, Saw Mill, &c.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION, on the Premises, on WEDNESDAY, April 28th, at Twelve o'clock, by order of the Westminster Improvement Commissioners, the Materials of nineteen houses and extensive workshops, situate in Little Dean-street and Great Almonry, Westminster, together with a capital Steam Engine, by Bilton and Watts, Circular Saws, Horse Mill, Lathes, Grindstones and numerous other effects. May be viewed one day prior to the Sale, and Catalogues had of Mr. H. R. ABRAHAM, also of Mr. BILLINGS, Clerk to the Commissioners, Westminster Improvement Offices, Broad Sanctuary, on the Premises, and of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

BRITISH MUSEUM. To Builders and Others

**MESSRS. EVERSFIELD and HORNE,** will SELL by AUCTION, on the Premises, Great Russell-street, Bloomsbury, on FRIDAY, April 30th, at Twelve o'clock, by order of the Commissioners of Her Majesty's Woods, Forests Land Revenues, Works and Buildings, a portion of the lately erected galleries and approaches to the Museum, comprising capital timber in roofs, floors, and partitions, stout boarding and linings, flights of stairs, sashes and doors. The materials of a small house, lead and brickwork, also a large quantity of useful timber, framing and firewood, two wainscot bookcases, doors, sashes, slates, &c. May be viewed from the chief entrance, one day prior to the sale, and retal cues had at the office of Woods, &c., Whitehall-place, or of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

TO BUILDERS, CARPENTERS, COACH-MAKERS, WHEELWRIGHTS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION on the Premises, Creek Wharf, Hammersmith, on TUESDAY, May 4th, and following day, at Twelve for One, without reserve, by order of the proprietor, to clear the premises, the second portion of the valuable stock of timber, comprising yellow and white planks, scantlings and battens, dry square timber, sawn boards, paling, slating battens, quartering, &c.; a large quantity of dry, well-seasoned ash and beech planks, elm boards, oak quartering and posts, ash, fellocs, and elm stocks, spokes, beech quarters, birch posts, &c.; also an excellent spring van, light cart on springs, a new punt, the erection of sheds, and numerous other effects.—May be viewed three days prior to the Sale, and Catalogues had on the Premises, also of Messrs. WATSON and SON, Solicitors, 12, Bouverie-street, Fleet-street, and at Hammersmith; at the Three Pigeons, Brentford; the Rose and Crown, Kew; and of the Auctioneers, Coal Exchange; or 1, Little Smith-street, Westminster.

TO STONE-MASONS, BUILDERS, PAVIORS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION, on the Premises, 30, Commercial Road, Lambeth, on TUESDAY, May 11th, and following day, at Twelve for One precisely, by order of the Assignees of S. and G. Cook, their valuable and useful plant, comprising portable tackets and chimney pieces, hot air stove, &c., also a quantity of excellent scaffolding, crab engine and hoisting jack, hand and horse barrows and trucks, brass-mounted mahogany falls, set of shear legs, turning lathe carpenters' benches, drays and planks, an eight day clock, and numerous other effects.—also at the same time and place of the excellent premises. May be viewed one day previous, and Catalogues had on the Premises; of Messrs. DONNE & TAYLOR, Solicitors, 26, New Broad-street; of the Auctioneers; Coal Exchange; or 1, Little Smith-street, Westminster.

ECCLESTON-PLACE, PIMLICO.—TO PLUMBERS, BUILDERS, AND OTHERS

**MESSRS. FAREBROTHER, CLARK,** and LYE, have received instructions to SELL by AUCTION, on the Premises, No. 12, Eccleston-place, Pimlico, on TUESDAY, April 29th, at Twelve o'clock, in consequence of the proprietor going abroad,—the well Manufactured Stock of a Plumber, consisting of drawn lead piping; service, funnel, and waste pipe; 2 and 3 traps, close and screw pumps, 4 and 6 gall. pewter steel and brass work in union joints, T joints, brass cocks. A large quantity of solder, pig-lead, plumbers' tools, &c. &c. A large cast-iron table, smelting pans, ladles, &c.—To be viewed the day previous and morning of the sale, and catalogues had on the premises, and at the offices of Messrs. FAREBROTHER, CLARK, and LYE, Lancaster-place, Strand.

ECCLESTON-PLACE, PIMLICO. Lease of valuable Business Premises, with plant and stock in trade, together with the Manufactured Stock in Trade of a Plumber

**MESSRS. FAREBROTHER, CLARK,** and LYE will SELL by AUCTION, on the Premises, 12, Eccleston-place, on TUESDAY, April 29th, at Twelve, by direction of the Proprietor, going abroad, part of the LEASE of the capital BUSINESS PREMISES, held for about 40 years, at a ground rent of 2l. per annum. Also the extensive and valuable Manufactured Stock in Trade of a Plumber and Lead Merchant. The premises may be viewed till the sale, the stock one day prior. Particulars and catalogues to be had on the premises; of Messrs. F. and H. HARRISON, Solicitors, 5, Wardrobe-place, Carmelite-street; and at the offices of Messrs. FAREBROTHER, CLARK, and LYE, Lancaster-place, Strand

SURREY.—Dagnell's-park, between Norwood and Croydon.—Residences with about Twenty-two Acres of Park like Ground, forming an eligible estate for building.

**MESSRS. FAREBROTHER, CLARK,** and LYE will SELL by AUCTION, at Garraway's, on TUESDAY, May 11, at Twelve, by direction of the Legatees, in one or more lots unless an acceptable offer is previously made by private contract), a valuable FREEHOLD ESTATE, known as "Dagnell's-park," situate between Norwood and Croydon, and consisting of a capital Family Residence, with pleasure and kitchen gardens, and about Twenty-two Acres of Park like Grounds, pleasantly timbered, and commanding delightful views of the surrounding country. This estate is peculiarly adapted for building purposes, and has a frontage to the main road leading from Norwood to Croydon, and only five minutes' walk from the Dagnell Station at Croydon, which is distant within half an hour of the metropolis. The estate will be offered in one lot, when, if not sold, will be subdivided in several. To be viewed and particulars had twenty-one days prior to the sale, on the estate; at the Jolly Sailors, Norwood; at Greyhound, Croydon; of R. RAVEN, Esq., Solicitor, 3, King's Bench-walk, Temple, Garraway's; and at Messrs. FAREBROTHER, CLARK, and LYE'S offices, Lancaster-place, Strand.

WEST RIDING of YORKSHIRE.—Desirable Freehold Estate, near the Railway Station at Swinton.

**MESSRS. FAREBROTHER, CLARK,** and LYE will SELL by AUCTION, at the Prince of Wales Hotel, adjoining the Railway Station at Masborough (Rotherham), on FRIDAY, May 12th, at Two for Three precisely, in one lot, a valuable FREEHOLD ESTATE, land-tax redeemed, situate near the Railway Station at Swinton, in the high road to Rotherham; consisting of a stone-built Residence, with garden, and agricultural buildings, and several inclosures of productive land, containing about Forty-four acres, in the occupation of Messrs. Barlow and Dickenson, at a Freehold Inclosure of Pasture Land, in the parish of Swinton, and bounded by the road leading from Mexborough to Wath. The above lands, from their contiguity to the railway station and the village of Swinton, are presumed to be eligible for building purposes.—The estate may be viewed, and particulars with plans had, one month prior to the sale, of Mr. RAWLINSON, at Mexborough; of Messrs. SIMPSON, Land Surveyors, Conisborough; the Reindeer Hotel, Doncaster; Tontine Hotel, Sheffield; Adelphi Hotel, Leeds; Sheffield Arms, Wakefield; W. F. HOYLE, Esq., Solicitor, Rotherham; the place of sale; of Messrs. SETON and NICHOLSON, Solicitors, George-street, Adelphi; at Garraways; and at Messrs. FAREBROTHER, CLARK, and LYE'S Offices, Lancaster-place, Strand.

## SALES BY AUCTION.

TO BUILDERS, CARPENTERS, AND OTHERS.—SHEPHERD'S BUSH MARKET

**MR. J. HUMPHRRY** has received instructions to SELL without the least reserve a large quantity of new and seasoned building materials. Consisting of well-seasoned timber of all descriptions, and a number of slate cisterns; a quantity of ironwork, consisting of pumps and ballustrades, &c., of which further particulars will be given in "The Builder" more fully next week. Catalogues may be had of the Auctioneer, No. 7, Hope-terrace, Notting-hill, Bayswater.

TO TIMBER MERCHANTS, CABINET-MAKERS, CARPENTERS, BUILDERS, &c.

**MESSRS. SKEEN and LEARY** will SELL by AUCTION, without reserve, on the Premises, No. 74, Mortimer-street, Wells-street, Oxford-street, on TUESDAY, April 27th, inst., at Eleven o'clock precisely, by order of the proprietor, retiring from the retail trade, all the remaining stock in trade of Mr. CHARLES ROWE, Mahogany and Timber Merchant, consisting of Spanish, Honduras, and Cuba Mahogany, in logs, planks, boards, and veneers; Havana and pencil cedar; rosewood, walnut, maple, and oak planks and veneers; satin wood logs and veneers; sycamore veneers; Vinhatico wood, Swiss belly wood, plane tree wood and chestnut; prime dry wainscot, cut deals, birch and ash; hand and frame saws; screws and crow bars; light timber carriage and spring cart, and all utensils in trade, &c. &c.—To be viewed two days previous to and on the morning of sale.—Catalogues to be had on the premises, and of SKEEN and LEARY, brokers, 75, Old Broad-street.

BUILDING LAND, NORWOOD, SURREY.—BY

**MESSRS. BLAKE, at Garraway's Coffee** House, Change Alley, on TUESDAY, May 23th, at Twelve o'clock in lots, VALUABLE FREEHOLD BUILDING LAND, together with a detached Residence (land-tax redeemed), on the south-western summit of Beaulieu Hill, a situation which for salubrity of air and beauty of scenery is almost unrivalled, being in the immediate vicinity of the Beulah Spa, and about three-quarters of a mile from the Norwood Station of the London Railway, affording most eligible sites for the erection of moderate sized villas, and well worth the attention of Building Societies and small capitalists. Particulars, with plans, will be prepared twenty-one days before the sale, and may be had on the premises; at the Inns in the neighbourhood; at Garraway's Coffee House, Cornhill; Artichoke Tavern, Newington Causeway; of Messrs. DRUMMOND'S, ROBINSON, and TILL, Solicitors, Croydon; and of Messrs. BLAKE, Croydon.

BENEFICIAL LEASE of old-established Timber-yard, easily convertible into Manufacturing Premises, and with Dwelling-house adjoining, in Bankside.

**MR. T. TIMS** is instructed by the Assignees to SELL by AUCTION, at the Mart, Bartholomew-lane, on FRIDAY, May 7th, at Twelve, the beneficial Lease of the desirable premises long used as a Timber and Deal Yard, situate No. 7, Stoney-street, Tottenham-court-road. The premises have entrances in Stoney-street and Denes-mews, and extend 196 feet long by about 40 feet wide, possessing capital drying shed, saw pits, counting-house, and convenience for stacking large piles of timber, convertible at small cost into extensive workshops. The dwelling-house which adjoins the premises has ten good rooms, yard, and closets, and with a private entrance in Stoney-street. May be viewed, and particulars had at the Mart, at the offices of E. EDWARDS, Esq., Official Assignee, Frederick-place, Old Jewry; of FLORANCE, Esq., Solicitor, 13, Lindsey-street, and at Mr. TIMS'S, 63, Upper Charlotte-street, Fitzroy-square.

CAMDEN ROAD VILLAS.—Safe investments, or for occupation By consent of the Mortagee.

**MR. T. TIMS** will SELL by AUCTION, at the Mart, Bartholomew-lane, on FRIDAY, May 7th, at Twelve, TWO WELL-BUILT VILLAS, being Burleigh and Raleigh Cottages, Terrington-place, Camden-road Tea Gardens Town, commanding delightful views of Highgate, Hampstead, Harrow, &c. They are of modern elevation, and have verandahs and lofty open area-entrances, and contain, on the ground floor, leading to two elegantly decorated rooms, with marble chimney-pieces and French windows, and communicating by folding-doors below; a superior and comfortable kitchen, and the necessary offices. The upper stories comprise two best bed-rooms and dressing ditto, two good attics, with closets. The villas are well built, and decorated in a superior manner, and possessing large gardens. The situation is unexceptionable, being dry and healthy, and a well-known improving neighbourhood. Held direct from the Freeholder for a nineteen years' unexpired term. May be viewed and particulars had on the premises; at the Auction Mart; at the offices of Messrs. WILBERFORCE and MEADER, 31, Lincoln's-inn-fields, Bedford Row; and at Mr. TIMS'S Offices, 63, Upper Charlotte street, Fitzroy square

FREEHOLD TENEMENTS and Building Ground on Surbiton Hill and in the town of Kingston, giving votes for East Surrey. —By

**MR. JOHN DAWSON,** at the Mart, on FRIDAY, 30th April, at Twelve o'clock, a valuable Plot of Freehold Land, most eligibly situated for the erection of cottages. The land has a frontage of Also two tenements, producing about twelve pounds a year, situate in the Back-lane, near the river side, in the town of Kingston-upon-Thames. To be viewed.—Particulars, with conditions of sale, 4s. to be had at the Britannia public house, on Surbiton Hill; of Mr. BILLINGS, Solicitor, 23, King-street, Cheapside; at the Auction Mart; and at Mr. JOHN DAWSON'S Land Agency and Auction Offices, Kingston-on-Thames, and 31, Pall Mall.

FREEHOLD MARKET GARDEN GROUND in high perfection; Nursery Grounds, Meadows, and Building Land, contiguous to Railway Stations, and adjoining the town of Kingston-on-Thames, by order of the Executors of the late Mr. Alex. Mitchelson, deceased.—By

**MR. JOHN DAWSON,** at the Mart, on FRIDAY, May 7th, at Twelve o'clock, in one lot, Ten Acres of highly cultivated garden ground, fully stocked with the choicest fruit trees, now in such maturity; most healthfully situated at Norbiton, near "Combe Wood," a short distance only from the Railway Station; and well adapted for building purposes, as noticed further hereafter for nursery ground (having a dwelling-house, stabling, store-houses, and cottages upon it), or most peculiarly so for Building purposes, for the erection of residences of a moderate but respectable class increasing every season. A Four Acre Meadow on the road to Combe and Wimbledon, containing the finest Brick Earth, and a small tenement near the Market-place, in the town of Kingston.—Particulars with Plans and Conditions of Sale at the Principal Inns, Richmond, Brentford, Wimbledon, Epsom, &c., of Mr. CHILDS, Solicitor, Kingston; at the Mart; and of Mr. JOHN DAWSON'S, Auction and Land Agency Offices, Kingston, and 31, Pall Mall


**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS**, South-wark-bridge-road and the Grove, Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smithwork to Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

**PATENT OFFICE and DESIGNS REGISTRY**, 370, Strand.—Inventors are hereby informed that the OFFICIAL CIRCULAR of INFORMATION, detailing the economical and proper course for the protection of inventions and designs, or their registration, may be obtained gratis on application personally, or by letter, pre-paid, to F. W. CAMPIN and Co., 370, Strand, corner of Essex-street. Agent in Scotland, H. REMP, Esq., General Register House, and agents of the highest standing in Dublin, Paris, and the various capitals.



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# The Builder.

A JOURNAL FOR

The Architect, Engineer, Operative & Artist.

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## ADVERTISEMENTS.


**WANTED, immediately, a Competent Person**, as Clerk of Works, who has a good knowledge of working drawings. Apply to Mr. S. WORTH, Architect, Valuer, &c., at his offices, 46, High-street, Sheffield.—April 23nd, 1847.

TO MILLWRIGHTS AND ENGINEERS.

**WANTED, at an Extensive Paper Mill,** a thoroughly competent Resident Engineer.—Applications for the situation, with references as to character and ability to be addressed to J. M., 13, Cheapside, London.—29th April, 1847.

**WANTED, in an Architect and Builder's** Office, a Young Man, who understands drawing, making specifications, and the general routine of a country business.—Address, stating full particulars, to X., H. M. Custard, Library, Yeovil. Testimonials as to character will be required

TO CEMENT AND PLASTER MAKERS.

**WANTED, a Practical Manufacturer of** the Portland, Blue Lias, and Gypsum Cements, as Foreman or Manager in Works already established. Address, stating terms and references, to F. C., at TINKLER'S Coal Wharf, Doncaster, or at the office of "The Builder," York-street, Covent Garden.

TO ENGINEERS, ARCHITECTS, BUILDERS, AND OTHERS

**WANTED, a Situation as Superintendent** or Clerk of the Works, to act for or under the direction of the principal, by a party fully qualified. References to be given and required.—Address to C. D., 13, Bedford-terrace, Trinity-square, Borough, London, stating salary and other particulars.

ARCHITECTS' ASSISTANTS.

**WANTED, by an Architect and Surveyor,** an experienced Clerk. He must be well acquainted with measuring, taking out quantities, making working-drawings and specifications. Situation permanent, if the engagement be satisfactory.—Direct (post-paid), giving reference, to A. B., Mr. Heming, Stationer, Stourbridge.

TO BUILDERS' FOREMEN AND CLERKS OF WORKS

**WANTED by a Builder, an Active Expe-** rienced Person, who thoroughly understands his business, to take the management of some works in the country. Salary 40 shillings per week. The most satisfactory references will be required. Apply, prepaid, to D. N., office of the Builder, York Street, Covent Garden.

TO ARCHITECTS OR BUILDERS.

**WANTED by an Active and Practical** Person, a Situation as Clerk of Works, or Builder's general Foreman; has had much experience in laying out and superintending the construction of works, is an excellent draughtsman in both office or detail drawing, well understands specifications, surveying, and measuring of artificers' works; are 37; satisfactory reference to architects in London.—Address to I. T. H. W., Office of "The Builder," or to the Post Office, Great Malvern, Worcestershire.

BUILDERS' CLERK.

**THE Advertiser is now open to a fresh en-** gagement as Clerk. Having had upwards of twenty years' experience in the routine of the offices of respectable Builders, he trusts from such experience, combined with testimonials of character and ability, that they would merit the attention of any gentleman in want of a confidential and respectable individual.—Address C. D., at Mrs. Stroud's, Larkhall Lane, opposite the Larkhall Inn, Wandsworth Road, Surrey.

TO ARCHITECTS, CIVIL ENGINEERS, AND RAILWAY CONTRACTORS.

**AN Experienced and Respectable Man offers** his Services to fill the Situation of Clerk of the Works, or Superintendent in the Erection of Buildings, Railway Stations, or Formation of a Line of Railway, in which capacity he has been extensively engaged. Address A. C., care of Mr. J. Staion, No. 42, Berwick Street, Oxford Street, London.

**AN Architect and Surveyor has a Vacancy** in his office for an Articled pupil, who would have every advantage in acquiring a sound and thorough knowledge of all branches of his profession.—Address, pre-paid, A. B. C., 59, Pall Mall.

TO BUILDERS, PLUMBERS, &c.

**A STEADY, Active Young Man is desirous** of an Engagement as Plumber, Painter, and Glazier, accustomed to Fret-work, Ukraine Paperhanging. Respectable reference if required.—Address Mr. Barr, Mitcham, post paid, Surrey.

**AN Architect in Liverpool requires the** Assistance of a Competent Draughtsman, and also for a Clerk of the Works. Address, prepaid, with full particulars of last employment, and Terms to B. care of Mr. Marden, 29, Fly Place, Holborn, London.

TO ARCHITECTS, CONTRACTORS, AND OTHERS.

**A CLERK of WORKS, just returned** from an engagement at a Railway Station in Huntingdonshire, is desirous of re-engaging himself with a gentleman requiring his services in the above capacity. Satisfactory testimonials can be had from the parties with whom the advertiser has lately been engaged. Address (post paid) G. A., "Office of the Builder," York-street, Covent-garden, London.

**ROYAL ACADEMY OF ARTS.—Tra-** falgar Square.—NOTICE IS HEREBY GIVEN, that the EXHIBITION will open on MONDAY next, the 3rd instant, at Twelve o'clock. Admission One Shilling. Catalogue One Shilling.
JOHN PRESCOTT KNIGHT, R.A., Dep. Sec.

Exhibitors and Students may receive their Tickets and Catalogues on Monday, after Twelve


## CONTRACTS.

TO BUILDERS.—BATTERSEA PARK BUILDING SOCIETY.

**PERSONS desirous of Contracting for the** erection of Twelve houses for the above Society, are invited to send in Tenders for the same, before the 11th of May, 1847, to Mr CHARLES BURLS, jun., 20, New Bridge-street, Blackfriars, where the drawings and specifications may be seen on or after the 26th April, 1847.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.
TO BUILDERS AND OTHERS.

**THE Directors of this Company are pre-** pared to receive TENDERS for the Erection and alteration of a number of Coke Ovens at Kingston station, Shorcham, on the Portsmouth Branch. Plans and specifications may be seen, and other information obtained at the Locomotive Engineer's office, Brighton, on and after Wednesday, 5th May, 1847. Sealed Tenders to be sent to the Secretary at the London Bridge station, on or before Ten o'clock, on Wednesday morning, the 12th May, 1847.—
By order
T. J. BUCKTON, Secretary.
London, 26th April, 1847.

TO BUILDERS, EXCAVATORS, AND OTHERS.

**THE Directors of the Commercial Gas Light** and Coke Company are prepared to receive TENDERS for the Excavation and Erection of a Gasholder Tank, 81 feet in diameter. Plans and specifications may be seen, and particulars obtained of the Company's engineer at the Works, between the hours of Ten and Two. Tenders sealed and endorsed, "Tenders for Excavation of Tank," to be forwarded to the Secretary by Twelve o'clock on Wednesday, the 5th of May next. The Directors do not bind themselves to accept the lowest tender.—By order of the Board,
G. JAQUES, Secretary.
Commercial Gas Light and Coke Company's Offices,
Ben Jonson's Fields, Stepney, April 21st, 1847.

TO BOILER-MAKERS, IRON-FOUNDERS, AND OTHERS.

**THE Directors of the Commercial Gas Light** and Coke Company will meet at the works on WEDNESDAY, the 5th day of May next, to receive TENDERS for the Erection and Construction of a Gasholder of 80 feet diameter, with the columns, guide rods, &c. Plans and specifications may be seen, and particulars obtained on application to the Company's engineer at the Works, between the hours of Ten and Two. Tenders sealed and endorsed, "Tender for Gasholder," addressed to the Secretary, must be delivered before Twelve o'clock on the day above mentioned. The Directors do not bind themselves to accept the lowest tender.—By order of the Board,
G. JAQUES, Secretary.
Commercial Gas Light and Coke Company's Offices,
Ben Jonson's Fields, Stepney, April 21st, 1847.

TO BUILDERS.

**PERSONS desirous of Contracting for a** Rectory House, to be built in the Parish of Little Cornard, near Sudbury, in the county of Suffolk, may inspect the drawings and specifications by applying at the office of the Architect, Mr. R. C. CARPENTER, 96, Guilford-street, Russell-square, London, on and after Tuesday, the 4th of May. It is requested that all parties purposing to tender, will communicate their intention to do so by letter addressed to the Architect, on or before Saturday the 8th of May. Proper securities will be required for the due execution of the works, and it is to be understood that the lowest tender will not necessarily accepted.

TO BUILDERS.

**PERSONS desirous of Contracting for the** Erection of a New Church at Greenwich, Kent, are invited to send in Tenders for the same, addressed to the Rev. WILLIAM ALDWIN SQUARES, the Vicar, on or before Thursday, the 13th May next. The plans and specifications may be seen at the office of the Architect, Mr. JOHN BROWN, Chapelfield-grove, Norwich, and also at the office of Mr. CHAS. AUGUSTIN SMITH, Croom's-hill, Greenwich, from the 28th inst. to the 12th May next, both inclusive, between the hours of Ten and Four.

N.B.—Two approved sureties will be required for the due performance of the contract.
Greenwich, April, 1847.

TO CONTRACTORS.

**PARTIES willing to Contract for the Erec-** tion of a Concrete Sea Wall with Stone Coping, Steps, and other works, in front of the Britannia Terrace, to be built on the North Beach at Great Yarmouth, Norfolk, may inspect the Drawings and Specifications at the office of J. J. SCOLES, Esq., Architect, 11, Arundel-place, Regent-street, London, and at the office of Mr. BILLING, Town Surveyor, Regent-street, Great Yarmouth, from Monday next, the 3rd, to Tuesday, the 18th of May, on which day at Two o'clock, the Tenders are to be delivered at Mr. BILLING'S office. The acceptance of the Lowest Tender will be optional.

## CONTRACTS.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.—
COURT OF SEWERS, TOWER HAMLETS.

**NOTICE IS HEREBY GIVEN,** that the Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marshes), at their meeting, to be held on TUESDAY, the 4th day of May, at Two o'clock in the afternoon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS sealed up from any persons or person willing to enter into contract for the works necessary in extending the sewer from the north end of North-street to the Gas Works at Poplar, being a length of 2,253 feet, together with arching the sewer from the west end of Grundy-street across the East India road to High street, Poplar, being a length of 1548 feet, which is to be executed on the completion of the former work; and from the north end of the New Road eastward to Mile End Turnpike, being a length of 1,370 feet; and from the New Road along Baker's-row and Charles-street, being a length of 1,440 feet, and in arching the sewer at Rhodes Well, being a length of 150 feet. Plans and specifications of the said several works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. Tenders to be indorsed "Tender for Works."

Separate contracts and separate tenders will be required for each of the said several works respectively. The contractors will be required to sign provisional agreements to secure the due execution of the said contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners. No tender will be received after the hour of meeting, nor unless properly indorsed, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon. Dated this 30th day of April, 1847.
JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B.—The Commissioners do not pledge themselves to accept the lowest tender.

TENDERS.

**THE Proprietor of No. 71, Great Suffolk-** street, Southwark, and Nos. 1, 2, and 3, Gravel-lane, adjoining, is ready to receive TENDERS from persons willing to contract to Paint the same over in two coats of good oil colour, all the inside and outside of the said houses usually painted: the front doors and shutters to be grained oak, the whole being first properly prepared; and also to paper the rooms and passages neatly pasted with neat and proper patterns to the satisfaction of the said proprietor, the whole to be completed by the 25th day of May next. Tenders to be sent in by the 8th day of May, addressed to Mr. RAYNER, 29, Upper Stamford-street, Waterloo-bridge.

TO BUILDERS

**BUILDERS willing to deliver Tenders for** the erection by contract of a new street in the Town of Wamfret, Saint Mary, Lincolnshire, on the Bethlem Hospital Estate, will for the superintendence of Mr. JAMES PARKER, the hospital architect, can inspect the drawings and specification at the Manor House, Wamfret, any day except Sundays, from the date hereof, until Tuesday, the 25th day of June next, by which day the Tenders are to be delivered at the Clerk's Office, Bridewell Hospital, New Bridge-street, Blackfriars, London, sealed, endorsed "Tenders," and addressed to "The Committee of Governors of Bethlem Hospital."
B. WELTON, Clerk.
Dated May 1, 1847.

**MR. GRAYSON'S ARCHITECTURAL** SCHOOL of DESIGN, established above Fifty Years.—CIVIL ENGINEERS, MILLWRIGHTS, and others taught the principle of MACHINERY and PRACTICAL PERSPECTIVE. The selection of models and casts accompanying the diagrams which are introduced at this Academy will be found of great utility to the Student in elucidating the several Mechanical and Practical Sciences. Morning classes from 9 till 2; evening from 6 till 9, five nights in the week.—For terms, apply at 1, Bannerstreet, Finsbury-square, or at the office of "The Builder," 2, York-street, Covent-garden, by letter, post paid.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply at THE BITUMINOUS PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 18, WHARF-ROAD, CITY ROAD, N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

TO ENGINEERS AND ARCHITECTS, AND AS AN ELEGANT PRESENT TO A LADY, AS WELL AS A MOST CONVENIENT POCKET APPENDAGE.

**TO all those who find a Difficulty in the Use** of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS'S PERPETUAL PEN, made of Gold, with Points which never wear or alter, offers a most convenient substitute, as Ink, which corrodes and lingers in the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 15s. It may be used with a common holder. With an everpointed Silver Pencil Case, with Leads, 27s.

Sold by the proprietor, HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London. On application, by letter, this Pen will be sent, per post, to any part of the Kingdom.

**SOVEREIGN LIFE ASSURANCE** COMPANY, No. 3, St. James-street, London.

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Assurances on the lives of persons in every station of life and every part of the world, granted on a plan which combines the utmost amount of benefit to the families of those LAT DEATH, with every attainable advantage DURING LIFE, which the system of Life Assurance is capable of affording.

ANNUITIES, ENDOWMENTS, ADVANCES, and LOANS, on liberal terms.

Prospectuses, Forms of Proposal, and every information, may be had on application, either personally or by letter, at the Company's Offices.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

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| 3d. | 4d. | 5d. | 8d. | 1s. 1d. | 20d. |
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Best Sheet Floor Brads 15s. 6d. per cwt.
Best Town Glue 45s. per cwt. Do Scotch, 52s. per cwt.

Best Patent Sash Line.

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| 1 | 2 | 3 | 4 | 5 | 6 |
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

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TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars.—

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| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

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| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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CAST-IRON SOCKET-PIPES, RAIN-PIPES, AND EAVES GUTTERS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl-**street, Blackfriars, keeps a stock of Socket-Pipes, Rain-Pipes, Half-round, and O. G. Gutters, &c. &c. &c. Contracts taken to any extent.

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IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth pieces, Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney bars, Inside, Outside, and Ash pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c.: all of the best description, at very moderate prices.—CAST-IRON UPSETS.

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IRONFOUNDRY.

163, Drury-lane, and Charles-street, London.

JOSEPH GLOVER,

Late HENDRY and GLOVER),

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

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TO BUILDERS, CARPENTERS, &c.

**W. YOUNG and CO., 194, Oxford Street,** announce their present prices of IRONMONGERY for Cash:—2-inch Cast Butts, 1s. 1d. Doz.; 2½ Do., 1s. 6d. Doz.; 3-inch, 2s. 1d. Doz.; 1¾ Iron Sash Pullies, 11d. Doz.; 1¾ Do., 1s. 4d. Doz.; 1¾ Brass Do., 2s. 6d.; 1¾ Do., 3s.; Sash Weights, 8s. 6d. Cwt.; Sash Lines, 0s. 6d. Doz.; 2½ Rain Pipe, 1s. 7d. Yard; 3-Inch Do., 1s. 10d.; Mortice Locks, 38s. Doz.

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TO ARCHITECTS, BUILDERS, AND BRICK MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

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**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge and the Grove, Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

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**CHARLES SMITH and SON, 25, GREAT** CHARLES-STREET, BIRMINGHAM (late STANDLY and SMITH, formerly STANDLY and GALE, Bull-street), Locksmiths, Bell hangers, Brass founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS, and ENGINEERS to their inventions for prisons, lunatic asylums, &c.

C. S. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar locks, signals, inspection apparatus, chapel door fastenings, iron frames, hinges, &c., as supplied by them at the MODEL PRISON, LONDON, and TWENTY THREE SIMILAR GAOLS, where they have given entire satisfaction.

Among other testimonials can be shown that of Major Jebb, attesting the efficiency of the labels, &c., invented by them.

The contracts will be executed to the approval of the inspector-general of prisons, and the architects.

C. Smith and Son also are prepared to contract for the supply of the whole of the ironmongery requisites for the residences of the nobility and gentry, churches, banks, barracks, lunatic asylums, and workhouses, including locks, bells, hinges, grates, kitchen ranges, staircases, grates, park fencing, fireproof safes, hothouses, doors, metal sashes of all kinds, and every description of ornamental brass and iron work, light castings, &c.

C. S. and Son beg to refer to the extensive works performed by them at Windsor Castle, Northumberland and Sion House, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work, in confirmation of which numerous letters from noblemen and gentlemen can be shown.

N.B. C. SMITH and SON do not appropriate inventions or advertisements not labelled as "Patent, Warranted, Secure," that are neither the one nor the other.

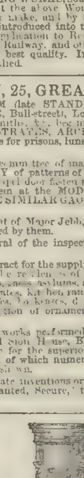
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SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT,



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The Trade supplied with them at the Manufactory,

YALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

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CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have ... Wharf, Rotherhithe, the whole of the Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne, ... at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH

**P. FOUCARD and W. TUCKWELL,** Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf (imported July last), exclusively from their quarries, at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 60, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

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KENTISH RAG STONE.

**WM. YATES, 5, Ponsonby-terrace, Mill-**bank, Westminster, begs to inform Architects, Builders, and others, that he can supply any orders for the above material, from Mr. Tompson's celebrated Quarry Loose, near Maidstone, a short distance from the waterside, he being the sole consignee for the same; the stone procured there, being of very superior quality; architects of high standing in London can be referred to on the subject. This stone can be got out of great length and size, free from bents, flaws, &c., adapted for Ashler, Jambs, Piers, Caps, Coping, Kerb, Cills, Window Heads, Quoins, Headers, &c.

N.B. Estimates for any of the before mentioned works can be given, worked in the quarry at the lowest price and on the shortest notice, by application as above.

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PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-**tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 25s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney pieces and FONTS.

Estimates given for building generally.

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**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c.—This beautiful material has been introduced into Buckingham Palace, the drawing-rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The colours produced in imitation of black and gold, sienna, jasper, verd antique, jet, black, &c., are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, washstand tops, &c. &c. Cisterns, dairy shelves, flooring and planed ... work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices. N.B. The trade supplied with ... cisterns, self-fixed, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

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**ARCHITECTURAL CARVING WORKS** (IRVING'S PATENT), late Sir Francis Chantry's Foundry, Eccleston place, Pimlico, leading out of Chester square.

Architects and Builders are respectfully informed, that Carving in Wood, Stone, and Marble, by Patent Machinery, is carried on at the above premises. Tracery for Churches, in wood and stone, beautifully executed at prices which will enable architects to carry out their plans in having decorated churches and other buildings, at comparatively small expense. Machines are sent into the country, to work on the spot, at a great saving in price. Fonts, chimney-pieces, Gothic windows, fluted columns, monuments, and head stones, are likewise beautifully executed and ready for fixing or fixed. Mouldings, wood and stone, made to any pattern; scagliola and inlaid work executed in all their branches. For the beauty of their workmanship the public are respectfully informed, that a show-room has lately been fitted up on the premises (not having any other establishment in London), for the inspection of their merits.

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**CARVING BY MACHINERY.**

JORDAN'S PATENT.

TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of carved decorations, to the peculiarities of their Machinery and the proofs of its efficiency, which are to be found in the fact of its being employed at the Government Workshop for the interior decorations of the New Palace at Westminster, and in the notices of the Palace Press elicited by the Exhibition of the Society of Arts.

The Athenæum of March 6th, in speaking of the Specimens of Carving produced from Jordan's Patent, says, "These were really astonishing. A bunch of Hops and brace of Partridges were worthy to rank by the side of Grinling Gibbons's Works. A portion of the Ghiberti Florentine Gates were also very successful. The Machinery employed accomplishes precisely the task assigned to the Sculptor's assistant. It clears away all the superfluities, and prepares the object for the final touches of the Artist. No matter how high the relief, nor how intricate the undercutting,—no difficulty is offered to this Machinery."

The Proprietors had not to deduct themselves and to the Public to state that they have at present only one Establishment which is their Machine Carving Works at Belvedere Road, Lambeth, formerly Coade and Sealy's terra cotta Works, where specimens may be seen and estimates for large works obtained.

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**THE PEOPLES BENEFIT BUILDING** SOCIETY, City District.—Shares 50*l.* each, advanced in full. Entrance Fee, 2s. 6d. Monthly Subscriptions, 5s. On Advanced Shares 11s.

The first Monthly Subscription Meeting of this Society will be held on MONDAY, the 3rd May, 1847, at the Office of the Society, No. 4, Old Jewry, at half past Seven o'clock, p.m. Applications for Prospectuses and Shares may be made to John Richards, Esq., Solicitor, No. 4, Old Jewry, Mr. John Bax Shepherd, Surveyor, 14, Bucklersbury, or at the Office, to

April 17th, 1847. THOMAS SHERWOOD, Manager.

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**WESTMINSTER FRIENDLY BENE-**FIT SOCIETY of CARPENTERS and JOINERS, held at the Artillery Arms, Rochester Row, Westminster. Established January 5th, 1842, and enrolled pursuant to Act of Parliament.

The attention of the trade is called to the great advantages proposed by this Society, for while ample provision is made and secured for the general purposes of such societies, equal to that of any benefit society, the great and ultimate object is to erect permanent residences which will be the aged and infirm members and their wives complete with the provision of care and comfort, and an allowance of 5s. per week.

Monthly Contribution, 2s. 6d. Entrance Fee, 5s.—Sick Allowance, 16s. per week.—Age, under 38.

Meeting night, first Wednesday in every month.—Articles to be seen at the bar.

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PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assort-**ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico late C. Moore and Sons, and Great Smith-street, Westminster.

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**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

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**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths, Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

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MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

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TIMBER AND DEAL SAWING AND PLANING MILLS,

Belvedere road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or grooving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

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TO BUILDERS AND CARPENTERS

**JONES'S PATENT MORTICE-**MACHINES are now offered For Sale, that will cut a mortice any depth or width in less than one minute, in rough hard or soft wood, without the trouble of gauging. Warranted to cut a true mortice and require only one man to work it. Price Five Guineas. To be seen in operation daily at JONES'S, 127, Goswell street, between the hours of 10 A.M. and 4 P.M.

J. J. begs to inform Builders and Carpenters that he has fitted up several machines for the express purpose of Morticing for the Trade at the reduced price of 3d. per dozen mortices, not exceeding seven inches deep, or extra charge will be made.

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**PATENT URINAL BASON, to be sup-**plied by a self-acting or other apparatus, complete and perfect in itself, without requiring any other fitting than the basin itself. May be seen and had only at Messrs. BURTON and DENT'S, Wholesale Plumbers and Lead Merchants, 21, Newcastle street, Strand. Builders and the Trade supplied with Cast and Milled Sheet Lead Pipe, cut to any dimensions at Wholesale Prices.

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**J. W. WILKINS'S PATENT SILENT** WATER-CLOSET, Manufactured by CHAS. BOTTEN, Brass and Cock Founder, 16, Crawford passage, Clerkenwell, London. The peculiar advantage of this closet is, that it may be fixed in any part of the house without communicating the sound of a water-closet to any of the surrounding apartments. Prices, drawings, &c., may be had on application to the Manufacturer, where the closet may be seen in action.

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**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

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**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The property of this Paint is peculiarly preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Bridges, Steam Boilers, and Water-pipes, Hot-houses, Forcing-houses, and for Shipping. It adheres so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of covering is as 7 to 5, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

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**WM. A. ROSE'S METALLIC ANTI-**OXIDE PAINT, for the Preservation of Iron from Corrosion.

This paint is the best preservative of iron from the action of air and water, and will be found to cover better, and last very much longer than any other paint yet invented for the purpose. When in direct contact with the iron, it incorporates itself with, and becomes part of the metal, preserving it from oxidation under every variety of circumstances. It is also very effective in the preservation of Stucco and Cement, and will be found much better adapted for painting the outsides of houses than white lead. The Metallic Anti-Oxide Paint is manufactured in stone colour and lead colour, but may be made any lighter or darker tint except pure white. It has also this advantage, that it may be applied by the commonest labourer, requiring only to be thinned by the prepared oil and kept stirred while being used. To be had of the manufacturer only, with the prepared oil, W. A. ROSE, 23, Queenhithe, London.

The Builder.

No. CCXXI.

SATURDAY, MAY 1, 1847.

THE importance we attach to the progress of the Art-Union of London induces us to devote a considerable space to an account of the proceedings of the Annual General Meeting, which was held in Drury Lane Theatre on Tuesday last. We believe it will be found the only complete account that has yet appeared, and will be read with interest by many of our readers. The good effects of the operations of this association on the public mind are becoming more apparent every day.

Very soon after the opening of the doors, the theatre was completely filled, with the exception of the gallery, and even this was nearly so before the termination of the proceedings. The one sunbeam which annually, on this occasion, has found its way in through a crevice in the shutters over the skylight at the back of the gallery, was not absent, and travelled round the house, as it has done for several years past, tipping with gold what it fell upon, and putting gas-light quite out of countenance.

Precisely at 12 o'clock, the Duke of Cambridge took the chair, and opened the business. His Royal Highness said—

Ladies and Gentlemen, when I last had the honour of presiding at your meeting I congratulated you on the progressive increase which had taken place in the number of subscribers to this association. Last year there were about 16,000 subscribers, and I have now very great pleasure in informing you that a further increase of 1,000 has taken place this year. When the condition of the country during the past twelve months, and the distress which has prevailed, are taken into consideration, I cannot help thinking this result most encouraging and satisfactory; and I am sure you will agree with me that it affords a proof of how much a taste for the fine arts is increasing among all classes of the people in this country. Having had the honour of presiding over and addressing you on so many similar occasions, I shall not trouble you by entering into any further details on the present occasion, but merely refer you to the report, which will be read by the Honorary Secretary. I have only one further remark to make, viz., that Mr. Bunn, who has with the greatest kindness granted us the use of his theatre to-day, expresses a hope that we shall be able to conclude our proceedings by three o'clock, by which time the house will be required for its ordinary purposes. I therefore hope that those gentlemen who are about to address you will make their speeches as short as possible. The Hon. Secretary will now read the report to the council.

Mr. Godwin, then read the following

REPORT.

When the council met the subscribers last year, the existence of the Art-Union of London was seriously threatened. Strong, however, in their opinion of the great value of the association, and determined to use every legitimate means in their power to ensure its continuance, they ventured, at the close of the report then read, to augur for it many years of increasing usefulness. This augury, it may now be confidently believed, will not prove false.

Immediately after the general meeting, a deputation from the council, headed by our illustrious president, attended Sir Robert Peel, then prime minister, with the view of removing the objections to Art-Unions entertained by some part of her Majesty's Government. Not succeeding in this, every effort was made to enable members of the legislature to arrive at a just conclusion on Mr. Wyse's bill for legalizing Art-Unions, which was then before the House of Commons, and, without entering further into detail, suffice it to say, that the bill ultimately passed both houses, and received the Royal Assent on the 13th of August, 1846.

This Act first setting-forth that associations for the purchase of works of art to be distributed by chance to the subscribers, or for raising sums of money by subscription to be afterwards allotted by chance amongst the contributors solely for the purchase of works of art, may be deemed to come within the provisions of the Acts of Parliament for the prevention of lotteries,—declares the same legal, so long as they are carried on in good faith for the encouragement of the Fine Arts, provided that a Royal Charter of incorporation shall have been obtained, or that the instrument constituting such association, and the rules governing it, shall have been approved of by a committee of her Majesty's Privy Council and deposited with them.

Your council therefore immediately took the necessary steps to comply with this provision of the Act, and on the 1st of December last, "The Art-Union of London" was incorporated by Royal Charter,—long it is hoped, to exercise a beneficial educational influence,—to open the enjoyments of art to thousands to whom they have been hitherto denied, to spread abroad a knowledge and love of art, to offer encouragement to artists beyond that afforded by private purchases, as well by forming a more appreciating public as by the provision of funds, and so to assist materially the progress and elevation of the fine arts in the United Kingdom. The Charter will be found to state the broad and disinterested principles which should guide the proceedings of all such societies.

To our illustrious president the warm thanks of every member of the society and of every friend to the diffusion of art are eminently due, for his Royal Highness's most important assistance in obtaining this successful issue. To the most noble the Marquis of Northampton, V.P., the Right Honourable Lord Monteagle, V.P., and Thomas Wyse, Esq., M.P., now a member of the council, similar thanks are also due; and having thus discharged the agreeable duty of acknowledging these important services, the council proceed to report to the subscribers, according to custom, the financial condition of the association, and the general proceedings during the past year.

This is the eleventh annual general meeting. At every preceding meeting the council have had to report a constant increase in the amount of the subscriptions, ranging from 489*l.*, the sum collected in the first year, to 16,979*l.* On the present occasion, notwithstanding a season of unexampled and lamentable scarcity in parts of the kingdom, and much financial embarrassment, the subscriptions amount to the sum of 17,871*l.*

The greatness of the amount may be attributed partly to the increased interest in the fine arts induced by the operations of the society, and partly to the increased exertions of the provincial and colonial secretaries, from whom a larger sum has been received than on any former occasion. The number of provincial secretaries is now 398. St. Lucia, Quebec, Australia, Sidney, and Jamaica, have been added to the list of places where the society has an honorary agent active in its behalf. The list before included parts of Germany, New York, Mexico, Montreal, New Brunswick, Ceylon, Singapore, Bombay, Dominica, Monte Video, and China.

258 works of art were selected by the prize-holders of last year, and were exhibited, as usual, for four weeks, including a certain number of evenings. This exhibition was visited by upwards of 200,000 persons.

The council are induced again to remark that the annual exhibition of works of fine art, thus opened gratuitously to the public, may be regarded as one of the most important results of the association. They would gladly see greater facilities for the enjoyment of works of art elsewhere afforded to the people generally than now exist.

For the premium of 500*l.* offered by the council last year for a group or single figure in marble, twenty models, as follows, sent in on the 1st of July last, were exhibited to the subscribers and their friends in the Princess's Concert Room.

1. A Girl persuading Cupid to Shoot at one she loves.
2. Iris ascending.
3. Tallesin pen Beirdd.
4. The contest between the Minstrel and Nightingale,—*from Strada.*
5. Maternal affection.
6. Sleep.—A Sister and Brother.
7. Charity.
8. Dancing girl reposing.
9. A Deer-stalker in Pursuit.
10. Innocence.
11. Hagar and Ishmael in the Desert.
12. Genius receiving the Reward of Merit.
13. Pastoral Apollo.
14. A Youth at a Stream.
15. Group of Adam and Eve lamenting the Death of Abel.
16. Narcissus.
17. The Meeting of Hero and Leander.
18. The Centaur Chiron instructing the youthful Æsculapius in the Medicinal properties of Herbs.
19. A Hunter returned Home.
20. L'Allegro.

After due consideration, the premium was awarded to the statue, "The Dancing Girl Reposing," which, on opening the letter accompanying it, was found to be the work of Mr. Calder Marshall, A.R.A. Mr. Marshall is now executing the model in marble, and it will form one of the prizes for an ensuing year,—to which year's subscription of course, the amount of the premium will be charged.

In order to express their high opinion of a second statue, "Innocence," the council awarded to the author of it, afterwards found to be Mr. J. H. Foley, the sum of 100*l.*, on condition of receiving from him a reduced copy of the figure, and the right of re-producing it in statuary porcelain. The reduced model is now on the table, and fifty copies of it, in the beautiful material mentioned, will be allotted to-day.

A third statue, submitted in competition, "Iris Ascending," found to be by Mr. Kirk, was considered by the council well adapted for working in bronze, and they accordingly arranged with the sculptor to furnish a model of the required size. A copy in bronze has been produced by Mr. Hatfield, and the right to twenty such will form part of the present distribution. Mr. H. C. Selous prize painting from the selected cartoon, "Queen Philippa interceding for the lives of the Burgesses of Calais," is finished, and will be exhibited with the prizes of the year. The mode of appropriating it is not yet determined on.

The Chantrey medals have been distributed to those subscribers who were entitled to them. The Wren medal, allotted last year, has been delayed by the indisposition of the engraver, Mr. Wilson, but may now be expected in a short time. The council are taking steps to obtain other medals,—commemorative of Hogarth, Inigo Jones, and Banks, the sculptor.

The council have now to speak of the engravings. "Jephtha's Daughter," and the illustrations of "Gertrude of Wyoming," due to the subscribers of last year, have been distributed.

The plate of "The Convalescent from Waterloo," due for the preceding year, and kept back by circumstances beyond control, is now in the printer's hands. Impressions from it will be distributed as soon as the required number can be obtained.

The prints for the current year, "The Last Embrace" and the "Neapolitan Wedding," engraved by Mr. C. Rolls and Mr. F. A. Heath, after Mr. Uwins, R.A., and the outlines from seven of the cartoons submitted in competition for the premium of 500*l.*, are in the same stage of forwardness.

The council, taking into consideration the importance of encouraging every branch of art, and of varying their plans, with a view to the pleasure of the members, propose to issue for the ensuing year a series of thirty illustrations of Milton's *L'Allegro* and *Il Penseroso*, engraved on wood in the best manner. The following artists have already undertaken to supply designs: J. Absolon, E. H. Corbould, M. Claxton, W. Dyce, E. Duncan, A. Elmore, J. Franklin, F. Goodall, J. Gilbert, J. P. Knight, R.A., W. L. Leitch, Kenny Meadows, H. O'Neil, F. Pickersgill, J. N. Paton, P. F. Poole, H. C. Selous, F. W. Topham, W. C. Thomas, J. Tenniel, E. H. Wehnert, H. Warren, E. M. Ward. Every subscriber will receive a copy of this work for each guinea subscribed.

For a future year, Mr. Frost's "Sabrina," engraved by Mr. Lightfoot, is in progress; and the council have arranged with Mr. William Finden to produce for the association an engraving of large size, and in his best manner, after Hilton's picture, "The Crucifixion," now in the possession of the corporation of Liverpool.

A statement of the engraving-account, still open, will be printed with this report.

The council alluded in the last report to their intention of producing some work of acknowledged excellence in *cast-iron*, with the view of farther promoting the connection between manufactures and art. In accordance with this desire they commissioned Mr. Nixon, sculptor, to make a reduced model of a figure of "Thalia," in the gallery of antiquities at the British Museum," which has been ably done, and is now ready for casting. The right to thirty copies of it will be allotted to-day.

Since the last meeting, the council have been deprived by death of the valued assistance of Mr. Morant, one of the earliest members of the society. Sir John Jervis, M.P., her Majesty's Attorney General, has been elected to fill the vacancy thus created.

Under a bye-law in a code recently made for the regulation of the society, as required by the Charter, four vacancies in the council will be declared annually, and four new members elected to fill them.

The reserved fund now amounts to the sum of 2,195*l.* 16s. 4d. With the view of increasing this fund more rapidly, for the purpose of obtaining a gallery and assisting in carrying out efficiently the great objects of the society, it is proposed that a reserve of 2½ per cent. of the amount of each annual subscription (or 6d. in the pound), shall be made.

The council consider this fund to be of the greatest importance to the permanent prosperity of the association, and they invite all who think with them, and are members of the association on other than selfish motives, to pay their subscription early in the year, by which means a considerable addition in the shape of interest would be made to it annually, without any personal sacrifice.

With this same end in view, and at the suggestion of subscribers who objected to the trouble of an annual payment, it is proposed to receive subscriptions *in advance;* and it is resolved that "each member who pays for ten or more years, shall receive one of the society's medals in silver at the time of payment, in addition to the advantage to which he may be annually entitled." In the event of the death of a member so subscribing, the amount will merge in the funds of the society.

The following is a statement of the receipts and disbursements:—

The cost of obtaining the charter was 407*l.* 17s.—but as this is an expenditure made for the advantage of future, as well as present members, the council propose to charge the present year's subscription with a portion of it only, and to charge the four succeeding years in like manner.

| | | | |
|---|---|---|---|
| Expenses as per general account .. | £2,491 | 1 | 7 |
| 2½ per cent. carried to the reserved fund ..... | 446 | 15 | 6 |
| Sums allotted for statuettes in bronze, porcelain, cast-iron, and plaster; also medals and lithographs .... | 1,090 | 0 | 0 |
| Estimated amount for engravings, paper, &c., of prints ..... | 1,813 | 2 | 11 |
| Ditto, ditto, outlines ..... | 1,300 | 0 | 0 |
| Set apart for expenditure of prize-holders ..... | 10,730 | 0 | 0 |
| | £17,871 | 0 | 0 |

The amount set apart, according to this statement, for the purchase of works of art, viz., 10,730*l.*, will be thus allotted:—

| | | | |
|---|---|---|---|
| 30 | Works at | £10 ..... | £300 |
| 40 | ,, | 15 ..... | 600 |
| 36 | ,, | 20 ..... | 720 |
| 36 | ,, | 25 ..... | 900 |
| 28 | ,, | 30 ..... | 840 |
| 28 | ,, | 40 ..... | 1,120 |
| 20 | ,, | 50 ..... | 1,000 |
| 15 | ,, | 60 ..... | 900 |
| 12 | ,, | 70 ..... | 840 |
| 12 | ,, | 80 ..... | 960 |
| 6 | ,, | 100 ..... | 600 |
| 5 | ,, | 150 ..... | 750 |
| 3 | ,, | 200 ..... | 600 |
| 2 | ,, | 300 ..... | 600 |
| | | | £10,730 |

To these are to be added twenty bronzes of "Iris Ascending;" fifty statuettes of "Innocence;" thirty casts in iron of "Thalia;" 273 lithographs of "La Fleur's Departure," and thirty silver medals commemorative of Flaxman.

Mr. Marshall's group, "The First Whisper of Love," commissioned by the council for a prizeholder of 1845, having proved very satisfactory, the council thought it desirable to prepare thirty casts of it in plaster, and these will also be included in the distribution to-day, making in the whole 706 works of art. The total sum thus appropriated, including the cost of outlines and engravings, is 14,933*l.* 2s. 11d.

To shorten the time occupied in the distribution, a similar course to that adopted last year is proposed.

The bronzes will be allotted to the first twenty names drawn consecutively at the close of the general distribution; the casts of the "First Whisper of Love," will be allotted to the next thirty names similarly drawn; the casts in iron of "Thalia," to the next thirty names similarly drawn; the statuettes of "Innocence," to the next fifty names; the medals to the following thirty; and each subscriber whose name is found to stand in the subscription-list next after each of the prize-holders in the general distribution, will be entitled to receive a lithograph. Notice of the latter will be sent in the course of two days. The other prize-holders will receive intimation of the result by to-night's post.

The desire felt by the council to have such a selection made by the prizeholders as may confer credit on the association, and aid in properly carrying out its real purpose, has been constantly expressed by them. Now, however, and always, they would repeat it; urging prizeholders to consider the Art-Union an instrument for the encouragement and diffusion of art, and not a company for securing personal advantages to the subscribers. The council invite them most seriously to consider well before making their selection, and in the event of a want of acquaintance with art, to seek the assistance of qualified friends.

The desirability of confining the right of selection to the council has recently been mooted. Your council would greatly deplore such a change, and furthermore would consider it their duty to oppose it by every means in their power, as being calculated not merely to *lessen* the good effects of the association, but ultimately to destroy it altogether, and to do great injury to art and artists. The council are confirmed by experience in the opinion already expressed by them on other occasions, that by placing the selection in the hands of the prizeholders themselves, much good is done. Great additional interest in the subject is excited, personal inquiry and examination are induced, comparison between works is instituted, and knowledge obtained. In this way, too, all classes of art-works find a market; whereas were the selections all made by the same five or six individuals, a bias would exist even with the best intentions towards works of some particular character and style, to say nothing of the possibility of personal favouritism, and thus injury would be done to other classes of art. It should be remembered, too, in discussing this question fully, which cannot be attempted here, that, under the present arrangements, a large sum is annually added by the prize-holders to the amount expended by the Art-Union on works of art, which could not be the case if the pictures were selected by a committee. Moreover, allowing the prizeholders to select is so much more popular than the contrary course would be, that the change could not fail to lessen the number of subscribers most materially, thus interfering with one great object of the society, that of interesting the masses in matters of art, and affording them the means of enjoying them.

To familiarize the people at large with the best productions of art is the first step towards ensuring such a progress in the arts as may be called national. Until now, large numbers of even the educated public have been ignorant of the best characteristics of art, and unable fully to enjoy the intellectual pleasures it offers. When a people sympathize in art, find enjoyment in it, and feel it to be an indispensible need, they will become their own educators, but not till then: and then only may artists be expected to achieve great things. "The arts," as a recent American writer remarks, "are no luxury, no mere ornament and stimulus to a civic and complicated existence, as the worldling and the ascetic alike delight in representing them to be, but the herbarium in which are preserved the fairest flowers of man's existence; the magic mirror, by whose aid all its phases are interpreted, the circle into which the various spirits of the elements may be invoked, and made to reveal the secret they elsewhere manifest only in large revolutions of time; and what philosophy with careful steps and anxious ear has long sought in vain, is oftentimes revealed at once by a flash from this torch."

A true education in art has been defined to consist in a lively susceptibility of the emotion of beauty, and in a fixed determination of the principle of taste towards that which is beautiful, analogous to that of the reason towards truth and reality,—rather than in acquaintance with works of art, or even accurate perception of the beauties of any particular work.

The perception of truth, and harmony, and beauty, where obscure and disguised, is one of the distinctions of genius. To make these visible to all is one of its powers.

Art should form a part of general education, and will do so, it may be hoped, before long. It may be made to assist *in* education most materially. If, as desired by the ancients, none but beautiful forms were permitted in the assemblies of the young; if noble and holy actions gracefully set forth every where met the eye; and our rooms were hung with fine thoughts instead of unmeaning patterns,—the effect on the national mind would be much greater than would be believed by those who have not fully considered the subject.

Art shews us man as he can by no other means be made known; art gives us "nobler loves and nobler cares,"—furnishing objects, by the contemplation of which we are taught and exalted,—and so are ultimately led to seek Beauty in its highest form, which is,—Goodness.

Your council terminate their report by again urging the prizeholders so to exercise their right of selection, as to furnish an additional argument in support of their views on this subject.

George Godwin, } Hon. Secs.
Lewis Pocock. }

Mr. Serjeant Thompson, F.S.A., in moving the adoption of the report (which was seconded by Mr. Auldjo, F.R.S.), dwelt at some length on the advantage of allowing the prizeholders themselves to select the works of art. So many questions, the learned gentleman said, have arisen with reference to the subject of Art-Unions, that I am extremely glad to have the honour of meeting such an assemblage as that now before me, to whose approbation or disapprobation the sentiments contained in the report may be submitted. If it pleases this assembly to shew their approbation of these sentiments, then we shall be surprised should any difficulty hereafter arise, which we shall not have the means to meet and overcome. As is stated in the report, it has been suggested that a committee should be appointed for the purpose of determining what works shall be taken as prizes. But the principle adopted by the association is, that that should be left to the prizeholders themselves, who receive a sum of money to spend with the freedom of Englishmen, regard being had to the arts in this country. It is with this view, and in order that the knowledge of art might be enforced and increased among us, that the rule now acted on has been laid down. It is said, however, that the arts are not encouraged

thereby, and would it be believed that last year forty works of art were exhibited, which no money could touch? Looking to this fact, it was said, "If you had a committee they would have bought these works of art." They could not, the works having been disposed of before they were exhibited; but I trust we shall be able to increase the number of fine works from 40 to 400, from which we may have the power of selection. We wish for no private advantages, but simply to improve the arts, and give encouragement to artists.

Sir W. Ross, R.A., rose to move a vote of thanks to the Committee, and said, may it please your Royal Highness I have had the honour of having a resolution put into my hands, but could wish that it had been intrusted to some one more able to do it justice than I can. I trust, however, that the assembly before me will for itself supply my omissions. When we consider the importance of the duties which the officers and Council of the Art-Union are called on to discharge, I shall, I think, be sure of receiving the hearty and grateful concurrence of this large assembly in the resolution which I have just moved. For my part, I who have been so little accustomed to business, look with admiration on those gentlemen who give their time and their talents for business to such a cause as this. I feel the utmost gratitude to them myself, and I am sure you do also. Without further trespassing on your time, I beg to move the resolution.

Mr. Uwins, R. A., said I most willingly rise to second the motion, for I feel how large a debt of gratitude is due from the public to the officers and council of the Art-Union: and I would willingly dwell on the subject of the resolution, for I know much of the exertions to which it refers, but the hint which your Royal Highness gave to every one called to address the meeting suppresses that desire. I know how desirable it is that the business of the meeting should be expedited, and I therefore confine myself to cordially seconding the resolution proposed by Sir W. Ross.

His Royal Highness, the Chairman, then put the resolution to the meeting, and it was agreed to unanimously.

Mr. Wyse, who was received with loud cheers, here came forward and said, Your Royal Highness and Ladies and Gentlemen, I have been intrusted with a resolution which I have the greatest pleasure in moving, witness as I have long been of the zealous and efficient services of the gentlemen who are the object of this motion. I am called on to move, that the best thanks of this meeting be presented to the Honorary Secretaries, and do so with great sincerity. They have, from the beginning, directed their attention to the improvement and extension of art; and in saying this, I mean all which can apply to a body like the Art-Union. For unless there is reform and improvement in art, its extension is useless; and again, however great may be the improvement and reform, if these are confined, the progress of art is not advanced. In these two forms or divisions of art lie all the obligations which devolve upon all associations of this kind. Your Royal Highness will bear me witness, that for the last two or three years there has been a very remarkable movement in both directions, in reference both to the improvement and to the diffusion of art. For a long time art was a matter of luxury and external enjoyment, and no appeal was made to those higher feelings, and that more elevated intellectual gratification which form the chief value, and are the highest constituents of art. We then confined ourselves to a few schools, such as the Flemish, the Dutch, or our own immediate English school, without extending our attention to the Italian school, or to that large mine of enjoyment and elevation contained in the school of Christian art. For the first time, that has lately been alluded to, and by the impulse given not only in the building of the new Houses of Parliament, but in awakening through the country a sense of the value of that department which had hitherto escaped attention, we have extended largely the dominion of taste in every part of the country. Again, by the application of art to all the ordinary purposes of life, by its application in the thousand forms of manufacturing process, we have brought it down to the every-day enjoyments of the people, presenting to them during every moment of their lives, sources of feeling and intellectual observation, from which they have been hitherto debarred. And these improvements have not been confined to the few. For a long time in this country, art was only the representative of money, and the question was, not what the value of a picture was, but how much it cost. Not how many enjoyed it, but how few. It was then not for the people, but for the rich only; and with a view to its exclusion from the people, the collections in the country were conveyed to the remotest parts of it, instead of being thrown open to the nation. With such a drag it was impossible to improve, for the highest judge of art is the people, and the most impelling and encouraging rewards in its pursuit are those which are conferred by the nation. It was useless to talk of encouraging art without looking to the people at large for doing so. It was so with all nations who had made any progress in the arts—it was so in Athens and Rome, and during the middle ages, for what the temple was in Greece the church was in Italy. There the people were taught to see that art was made for them, and they for it. I remember, that when I was last in Italy, while at Bologna, not merely were its galleries open to the public—not merely was there admission by tickets to privileged collections, but the collections were brought to the people—placed in arcades, in the public streets, and the whole population of town and country let in to see them for eight days continuously. And these were paintings of the highest value, and were returned to the galleries of their owners without a single scratch. I remember hearing Cornelius say that until you appealed to the people, until you painted for the whole nation and made them your judges, you need never hope for approbation from them, or that the knowledge and love of art would become general among them. In music the public was admitted as at Exeter hall and other places, and it is only by making art,—as the oratorio and opera are at present—the enjoyment of the people, that you can hope for its elevation. I rejoice that this body, calumniated as it has been, and supposed to be merely an encouragement of the feeling of adventure, has established its claims to support. There must of course be a progression of steps in this, as in every other institution; for the highest point gained had its beginning at the lowest, and the greatest and most conservative feelings were at first innovations. And so I say, that if this body wants to do all that the arts of Italy and Greece have done, in preparing the people for the appreciation of those tastes, hitherto confined to the aristocracy, it must diffuse the enjoyments of art through all classes of the community. Thus the same benefits would be produced, the wonderful effects of which I have seen exemplified in Germany, a country which stands so deservedly high in art. As your Royal Highness will testify, there is scarcely a town there, which has not an institution for the exhibition of works of art, in which the whole people participate. After having overcome many difficulties, and after having consolidated our Association, by the assent of the Government and the Legislature, we have now met to promote the reform and diffusion of art, through all classes of the population. I beg to move the resolution which I have already read.

Mr. Zouch Troughton,—May it please your Royal Highness, ladies and gentlemen, after the very eloquent and useful speech which you have just heard, I shall not occupy your time by any remarks of mine, but, as an old member of the Council, having seen the exertions of the honorary secretaries, content myself with seconding the resolution, which I do most cordially.

The motion having been put from the Chair was carried unanimously.

Mr. Godwin, in returning thanks, said—I think this is the tenth year during which, in conjunction with my excellent friend Mr. Pocock, I have acted as your Honorary Secretary, and I may therefore now regard you as old friends. I feel exceedingly proud that, during that period, we have maintained your confidence. The Society stands now in a very different position from that which it occupied at our last annual meeting, but it must not be forgotten that with our increased powers have also come increased responsibilities; and that it is the duty of the Council (a duty which it is prepared to exercise) to use its utmost efforts to forward the interests of Art. For this purpose, several projects are now before the Council, projects which have occurred to different members, and one has suggested itself to me, which, at the risk of occupying five minutes of your valuable time, I will throw out to you. The great object of this Association has been well expressed, as directed to let a knowledge of art enter into the minds of the people, to spread a love of art among them, and make the public capable of appreciating it. Now I would suggest that the Council should appropriate a sum of 100*l.* or 150*l.* to obtain each year from the most eminent man a course of lectures on the Philosophy of Art, which might be delivered here, or in some other suitable place, and to which every member should be admitted. We should thus increase the enjoyment of subscribers, give knowledge, and add to our Art Literature, which has been hitherto an approbrium to Englishmen. A new series of works on Art would be produced by the plan which I have mentioned, and with the advantages of publication afforded, we could induce the best men to take upon them the duties of this professorship. Does this meeting approve of the plan? I accept that expression of approbation, and it will serve as a means of strengthening the hands of the council, if they should entertain my proposition. I will say no more than to thank you very heartily, and to remind you of our great desire, which is, to make good art cheap, and cheap art good.

Major Adair and Mr. Denys having been appointed scrutineers;

The Duke of Cambridge rose and said, Ladies and Gentlemen, you will permit me now to retire, which I do, wishing you all success, and that as many of you as possible may win prizes. In that wish, I must not, however, forget myself, for charity begins at home.

Mr. Wyse having been called by the meeting to fill the vacant chair, said:—I feel great pleasure in obeying your wishes, and I beg to propose for your acceptance and approbation a vote of thanks to the illustrious duke who has just left the chair. I need not in your Royal Highness's presence add one word to the approbation of this meeting beyond saying, that your connection with this body has been most useful, and that when we were in difficulties, none gave us more effectual assistance than your Royal Highness. When we were seeking for a charter of incorporation, and to secure the sanction of the legislature to our association, I had the honour of accompanying his Royal Highness, when he made a most urgent appeal to the late prime minister on behalf of this institution. If you had heard our president on that occasion, you would say that I had not uttered one word in respect to him which was not fully deserved. I therefore without diffidence propose a vote of thanks to the illustrious duke.

The vote of thanks having been carried by acclamation, his Royal Highness took his departure, and Miss Atkinson and Miss Templeton having been appointed to draw the numbers and prizes, the following persons were declared to be successful:—

*Entitled each to a Work of Art of the Value of Three Hundred Pounds.*

Estcourt, Col. B., Tetbury
Potter, R., Dartford

*Two Hundred Pounds.*

G. M. R., per J. T. Grove, Swansea
Hogg, W., 32, Crutched Friars
Stanton, A., Thrupp, Stroud

*One Hundred and Fifty Pounds.*

Hughes, T., Trinity place Halifax, York
Kennedy, Thos., 100, Chancery lane
Morrell, Mrs., Mortimer, Rectory, Woodham
Ravenhill, —, 36, Old Broad street
Wilson, Col. B. H., Caracas, W. I.

*One Hundred Pounds.*

Baldock, Mrs., Sevenoaks
Battersby, Chas., 2, Dale street, Liverpool
Desbois, J., Gray's Inn passage
Dornan, C. W., King street, Hammersmith
Tennant, H. D., Emmett street, Poplar
Thomson, H., Primrose, Clitheroe

*Eighty Pounds.*

Brown, Miss, 32, Francis street, Torrington sq.
Beckingham, C. H., 415, Strand
Cawood, T. B., Dewsbury

Coleman, M. L., War Office
Fripp, W., jun., Bristol
Galway, Jno. J., Cork
Garner, T., Wasperton, Warwick
Hitch, Chas., 5, Paulton's terrace, Chelsea
Parr, E., East street, Greenwich
Stanton, Dr., Clifton place, Bristol
Teschemaker, Dr., Tiverton, Devon
Wilson, R. M., Lark hill, Rathmines

*Seventy Pounds.*

Acheson, Viscount, Grosvenor street
Alexander, Miss C., Crouch hill
Clarke, J. W., Huddersfield
Dickson, A., Berwick
Doe, Miss C., Great Torrington
Greenly, F. L., Broomfield place, Deptford
Richardson, G., Norland place
Rickards, —, Lewisham
Saunderson, J., 104, Kingsland road
Smith, W., Blackburn
Southby, Mrs., Carswall, Farringdon
Turner, J., Newstead

*Sixty Pounds.*

Brown, Mrs. R., Ingleton
Collyer, Mrs., High street, Camden Town
Cooper, J. B., Rumford street, Liverpool
Dansay, W. M., 41, Green street, Grosvenor sq.
Forrest, R. G., Greenhithe
Gibbs, R., Aylesbury
King, W., Skipton
Light, H., 8, St. Paul's place, Wandsworth
Low, J., 30, Gracechurch street
Lunham, Thos., Cork
Morrice, J., Hammersmith
"Nemo," 14, Cursitor street, Chancery lane
Symes, J., 8, Porteus terrace, Paddington
Vaux, J., Ryde
Ward, E., Liverpool

*Fifty Pounds.*

Aldrich, S. J., 8, Park road, Holloway
Balls, C., Trumpington street, Cambridge
Butt, W., jun., Trinity College Cambridge
Campbell, G. F., St. Andrew's, New Brunswick
Cobbold, W. T., Ipswich
Cross, F., Paradise row, Stoke Newington
Ford, E., jun., Crooked lane chambers
Moon, Thos., Hardwick hall, Durham
Newton, A. N., Queen square, Bloomsbury
Oliver, Mrs., Twickenham
Rastrick, J. A., Woolwich
Reynolds, H. W., Thame, Oxon
Roberts, H., Northwood, Hanley
Saltwell, W., Carlton Chambers, Regent street
Smith, Miss M. A., 66, Harley street
Stamper, J., Oxford place, Liverpool
Steed, E., 11, North street, Fitzroy square
Thompson, G., Bury St. Edmunds
Trew, W. H., Cornhill
Wild, J., Clapham lodge

*Forty Pounds.*

Arnold, H., 45, Marchmont street, Russell square
Barford, J. P., Banbury
Barrett, G., Wintershall, Surrey
Bastin, J., 80, Upper Seymour street, Euston square
Baylis, W., Upper Rupert street
Betts, Mrs. E. L., 29, Tavistock square
Boetefeur, A., Moscow road, Bayswater
Bromley, C., 1, Portland place, Southampton
Cambridge, H.R.H. the Duke of
Champ, R., Burton crescent
Chephane, G. B., 32, Brock street, Bath
Collier, H. A., Radford terrace, Nottingham
Falconer, R., Albert street
Gascoigne, Capt. J., Woolwich
Gilhurd, F., 4, Adelaide street, Strand
Gray, Ed., 3, West Derby street, Liverpool
Heaton, Miss, Park square, Leeds
Jones, W., 65, St. Paul's churchyard
Langdale, Hon. C., Houghton
Moore, Mrs. T. D., Mornington terrace, Liverpool
Read, B. F., Hollowstone, Notts
Richards, E. P., Cardiff
Steele, Mrs. M., 11, Sussex street, London University
Steward, R., Southtown, Yarmouth
Wain, J., Huggin lane, Cheapside
Wakefield, T., 19, Green street, Bath
Watson, G., jun., 65, Great Dover street, Borough
Wright, C., Barnsley

*Thirty Pounds.*

Allport, R., Load-street, Bewdley
Bowcher, J., 30, Bush lane
Bright, H., Dudley villa, Paddington
Brodrip, W. J., 2, Raymond Buildings
Bulmer, G., Shrubbery, Dulwich
Busby, C. S. B., Chesterfield
Carr, J., Paradise square, Sheffield
Deeker, Rev. R., Wakerley, Stamford
Folson, R., Bolton House, Bradford
Foster, T. E., Charlotte square, Newcastle-on-Tyne
Hart, J. W., Excise Office, Broad street
Hewland, J., 105, Wapping
Hillier, H., 17, Cecil court, St. Martin's lane
Hodgkinson, Thos., Hare hatch, Maidenhead
Hodgkinson, J., 213, Upper Thames street
Knight, H. E., Southsea
Lloyd, B. S., 71, Strand
Lockington, W., Rugby
Lowrey, J., Barmoor, Berwick-on-Tweed
Miller, G., Emsworth
Penny, Rev. E., Ash Vicarage, Sandwick
Rees, Mrs., George Town, Merthyr Tydfil
Rich, Mrs., 5, Albert street, Victoria square
Sharrock, H. Ormskirk
Teal, W., Kirkgate, Wakefield
Troughton, T., Ambleside, Westmoreland
Westerman, G., Sandal lodge, Wakefield
Wotherspoon, D., 60, Cheapside

*Twenty-five Pounds.*

Allsop, R., Ridge green, Nutfield
Atkinson, C. J., South Devon place, Plymouth
Beadon, W. F., 11, John street, Berkeley square
Beatty, Miss, Newport Pagnell
Brackett, F. W., 15, Lombard street
Brown, G., Brompton place
Bryant, Rev. W., Bowness, Windermere
Buckley, E., Rassbottom street, Staleybridge
Cufand, D., Great Yarmouth
Dean, T., Batley, Dewsbury
Field, W. A., 20, Preston street, Brighton
Fleetwood, Mrs. M., Tarbuck, Prescott
Foote, W. W., Norfolk street, Sheffield
Gibson, R., New Coventry street
Graham, R., Venezuela, South America
Graham, J. C., Brewer street, Woolwich
Hardy, Miss E., 3, Portland place
Hargrave, G., Caistor, Lincolnshire
Harley, J., Monk Breton, Barnsley
Haynes, E., 110, Edgware road
Hitchin, E. W., Ennismore gardens, Knightsbridge
Hutchinson, H., Seaham harbour, Durham
Kinder, F., Fulham
Macnamara, D., Uxbridge
Parry, John, 17, Tavistock street, Bedford square
Rayner, Mrs., 15, Berners street, Oxford street
Rowton, S. J., 29, Austin Friars
Smith, W. H., 192, Strand
Smith, H., Kingston, Montreal
Tilden, A., Kidderminster
Tritton, T., Bengal place, Kent road
Turner, R., Tavistock villas, Tavistock square
Watson, Dr. J., 13, Circus, Bath
White, G., Abbey street, Bethnal green
Wilmot, J., Isleworth
Winter, W., 42, Oxford street

*Twenty Pounds.*

Bach, W., 42, New street, Birmingham
Back, J., Byfleet, Cobham, Surrey
Beckles, Miss S., 5, Wellington place, St. John's Wood
Brook, J., Greenhead, Huddersfield
Cockburn, S., Grenada
Coombe, Miss E., 3, Hertford street, Mayfair
Cowan, C., 287, High street, Edinburgh
Crump, F., M.D., Tralee, Ireland
Edwards, W. H., 3, West park, Bristol
Faulkner, R., 44, Jermyn street
Foss, E., Canterbury
Franklin, W., New Brentford
Glendenning, F., Devon villa, Finchley road
Hadley, J., 61, Brunswick street, Dover road
Hollway, J. H., Spilsby, Louth
Hopkinson, Sir C., 2, King street, St. James's
James, H., Leominster, Hereford
Job, C., Sleaford
Kelery, W., Folkestone
Lester, J., 1, Albion terrace, Bath
Luff, D., 26, Warren street, Fitzroy square
McKeand, A., jun., Trongate, Glasgow
Montague, H. S., Stamps and Taxes, Somerset house
Moscrop, S., Bolton St., Bury, Lancashire
Pelton, —, Dartford
Piggin, I., Bank, Braintree, Essex
Pugh, J., 12, St. Bartholomew place
Robjohns, J., Tavistock
Saville, W., 6, York street, Dover
Sharpe, Mrs. R., Apps court, Kingston-on-Thames
Spence, T., Wallace grange, Market Weighton
Standring, B., 4, Broad street buildings, City
Stapley, E. M., 11, Hemingford villas
Thornton, J. S., 26, Bloomsbury square
Woolven, Miss, 44, High street, Borough
Wontner, W. H., St. Ann's road, Brixton

*Fifteen Pounds.*

Atwood, Miss, 13, Upper Seymour street, Portman square
Bagot, Hon. A., 15, St. James's square
Billing, E., Cardigan villa, Kennington
Clark, G., 33, Lincoln's Inn fields
Clark, J. C., Chertsey
Colvin, Col. C. B., Ludlow
Cox, T., 36, Jermyn street
Crossley, J., Sowerby, Halifax
Doogood, W., Broomsgrove
Dorman, Castle house, Canterbury
Field, H. W., 2, Strand
Faulds, J. C., 58, St. Vincent-street, Glasgow
Freer, G., Enderby, Leicestershire
Gardner, J. A., 10, Chancery lane
Godwin, G., 11, Pelham crescent
Hare, S. I., Berkeley square, Bristol
Hawkins, J., 1, Hatfield street, Blackfriars
Jervois, Gen., 7, Portland place, Bath
Jones, R., Brackley, Northants
Lambert, W., Wellington place, West India docks
Lambert, Mrs. F., Stockwell-place, Surrey
Maddock, Rev. H. W., Kington, Hereford
Mallett, J., St. Heliers, Jersey
Mare, S., 7, St. John's street, Clerkenwell
Masson, J., 1, Elizabeth street, Eaton square
Moody, J. J., Hill gate, Stockport
Mollett, H. G., 29, Cornhill
Mottram, H., Parkfield, Sheffield
Oliver, Dr. F., 33, Hatton garden
Purdy, W., 54, Old Broad street
Rowden, J., Heytesbury
Solly, Miss E. R., Serge hill, King's Langley, Herts
Thompson, —, Southill cottage, Eastcott, Pinner
Thomson, J., Queen street, Ramsgate
Tindal, A., Aylesbury
Tomkins, J. N., Russell place, Fitzroy square
Vousden, R., Manor street, Clapham
White, H. W., High street, Merthyr
Wigram, E., 56, Upper Harley street
Woolnough, Mrs., River side, Twickenham

*Ten Pounds.*

Ashton, R., 2, Pelham crescent, Brompton
Balstone, G., Long Fleet, Poole
Barber, J., 18, Regent square
Bartho, W. M., 2, America square
Brereton, Miss, 54, Montpelier road, Brighton
Chamberlain, Miss F., Carlton crescent, Southampton
Chrystal, R., 39, Argyle street, Glasgow
Cottingham, J. G., Chesterfield
Dawson, H., 1, Trafalgar square
Easterbook, W., Tiverton, Devon
Farmer, D., 28, Aldgate
Green, S. C., 41, Lothbury
Griffiths, W., Newcastle-under-Lyne
Huishler, S., 8, Basinghall street
Hulme, R. P., 14, Blandford square
Jackson, Chas., Yarmouth, Penrith
Langridge, S., 2, Leigh street, Burton crescent
Mann, Miss S., Market place, Pontefract
Miles, J., 44, Belgrave square
Neve, W. T., Cranbrook, Kent
Nixon, D., Stoney Stratford
Noblett, L., Fleming square, Blackburn
Riley, W. F., Forest hill, Clewer
Roberts, Rev. G., Gloucester
Rushout, Hon. Mrs., Wansted
Swinburne, E., 32, Great Castle street
Taylor, J. L., Saffron Walden
Tisdale, G. E. T., St. John's, New Brunswick
Witham, H., 78, Gower street
Young, W. W., Warnerch, Neath

*Entitled each to a Bronze from Mr. W. B. Kirk's Statue of "Iris Ascending."*

Brand, Miss, Thaxted
Briscoe, Miss, Glendalane, Fermoy
Burnet, R., 2, Piazza, Covent Garden
Compigne, A., Great Berkampstead
Donegan, D., Patrick-street, Cork
Egerton, W. T., M.P., 43, Wilton crescent
Ewing, R., Greenock
Fletcher, Mrs., 7, Old Jewry
Gurney, H. E., 64, Lombard street
Hudson, C., 18, South street, Thurloe square
Lawson, Lieut., Trowbridge
Marris, G. E., Kirkmond, Benbrook, Lincoln
Pearson, J., 51, Cirencester place, Fitzroy square
Peel, J., 5, Barton street, Westminster
Perry, Sir E., Bombay, per Richardson
Roberts, D., 16, Northampton place, Old Kent road
Shaw, J., Wolverhampton
Symmons, W., 2, Upper Kennington green
Thornton, E., High street, Borough
Warner, H., The Elm, Loughborough.

Thanks were voted by acclamation to the scrutineers; also to Mr. Bunn, for the very kind and liberal manner in which he had granted the use of the theatre; and flattering reference was made to the manner in which Mr. T. S. Watson, the assistant secretary of the society, had discharged his duties during the year.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a meeting held on the 26th ultimo, Mr. Tite, V. P., in the chair; Mr. G. Porter, and Mr. G. B. Webb, were elected fellows.

The following announcement was made by the council:—

"Her Majesty having been pleased to grant her gracious permission for the Royal Medal to be conferred on such distinguished architect, or man of science, of any country, as may have designed or executed any buildings of high merit, or produced a work tending to promote or facilitate the knowledge of architecture or the various branches of science connected therewith, the council will in January, 1848, proceed to take into consideration the appropriation of the Royal Medal accordingly."

The honorary secretary read a description of the Tuscan Column at Baalbek, by Sir Gardner Wilkinson.

Afterwards two papers by Mr. Cornelius Varley were read. The first on a method of ventilating rooms for large assemblies; and the second on the means of preventing the emission of noxious effluvia from the sewers into the streets.

The mode of ventilation proposed was, to supply cold fresh air from openings in the cornice under the ceiling, and draw it away *through* the floor. In the course of a discussion which followed, it was stated that the theatre at Hamburgh was warmed and ventilated by a downward current, also the Newmarket prison. One speaker thought that the mode adopted at the new House of Lords was similar; but it was pointed out that there the air was both brought in and taken out by the ceiling. The chairman said the theory of ventilation was well enough understood; the difficulty was the *modus operandi*. If the air always moved in the currents that you wished, the result might be predicated, but without artificial means to produce the current, this could not be depended on. Day's "windguard" had answered very well for this purpose in some cases where he had employed it.

The Dean of Westminster said he had, by means of a modification of this cowl, cured a smoky chimney under the walls of Westminster Abbey, which had baffled the experiments of 300 years.

Mr. Varley's second paper proposed to trap all openings into sewers, and to provide for the escape of the noxious gases by flues against the houses, placed against smoke flues where practicable, to ensure a draught.

The chairman, after pointing out the difficulties of the plan, said he thought if gratings were placed in the *middle* of the street instead of at the sides, the annoyance would be obviated. He was disposed to think the evil was overstated, for he recently had been compelled to traverse a sewer, and found little or no inconvenience.

Mr. I'Anson agreed in this opinion; as did some other members present. Mr. Godwin said he considered this opinion a dangerous one: the gases generated in the sewers were deadly, and he should lament if any thing said there should interfere with the efforts that were being made to discover a means for preventing their escape.*

The dean followed with some excellent remarks in support of this view of the case.

The chairman said he should be sorry to be misunderstood on the subject, or to say anything from which it might be inferred that they were not willing to aid the Government to the extent of their power in providing for the public health. He thought the great point was to *get* sewers in neighbourhoods where there were none, and that the gases that escaped from them were of much less consequence than was supposed.

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A Cement-Rock-Quarry has just been discovered near Ashburton, on the South Devon line of railway, which also passes through what has been regarded as one of the finest marble-rock quarries in the country.

* The following letter to us bears upon the subject, and may be introduced here:—

Sir,—With reference to the ingenious ideas expressed in your last number by your correspondent, "Guillaume," that with the addition of an outer case, the foul air of sewers might be rendered innocuous in its passage out from them before it mixes with our atmosphere,—I beg to suggest, as a cheap mode of bringing about the desirable object, the passing, by some mechanical contrivance, the gaseous emanations from sewers to be drawn through some alkaline fluid, such as a weak solution of soda or potash, or else through a stratum of quick-lime or coarsely powdered charcoal. But as to the change of form necessary for this purpose of the present gratings and gulley-holes of sewers, I must leave to the ingenuity of those of your readers who are better mechanicians than your humble servant. W. Bromet.

## THE WATER-COLOUR EXHIBITIONS.

The old Society of Painters in Water Colours opened their room to friends and patrons on Saturday last, and to the public on Monday; the *New* Society, as already mentioned, had done so in the preceding week. As usual, the old society is strongest in landscape, the new in figure pieces. Both are very good, though both are deficient in what we may term extraordinary pictures.

Confining ourselves to the old society first, No. 22, "View of Snowdon from the Mountain Road between Pont Aberglaslyn and Tan-y-boolch," is a nice work of the president, Mr. Copley Fielding, as is No. 141, "View from the Sands of Traeth Maur, of Snowdon and surrounding Mountains,"—which is firmer than usual, and none the worse for it.

Mr. Evans (of Eton) has some nice drawings, especially No. 27, "A Day in the Forest of Atholl."

No. 41, "View in Epping Forest, near High Beech, Essex," by P. De Wint, is a fine piece of nature, and the same may be said of No. 125, "View on the Witham, near Lincoln."

Prout still maintains his place, "The Lady Chapel of St. Pierre, Caen" (53), where Gothic-run-mad displays itself, as we well remember, in long pendents from the intersections of the groining, and a larger drawing, "Augsburgh, Bavaria" (89), both display well his peculiar power.

No. 97, "The Necker, from the Konigstuhl, Heidelberg," by T. M. Richardson, jun., is a charming drawing, although it seems to us to misrepresent the old ruin on the hill.

No. 107, "The Visionary" (a maiden at a cottage door, discontented with the present, and feeding on memory), and No. 172, "The Hallowed Relic," both by Alfred Fripp, are two of the finest pictures in the exhibition.

Hunt has several small pictures; the best to our fancy is No. 160, "A Tramper."

Frederick Taylor's "Stag at Bay,"—the scene, a rocky glen in Braemar, Aberdeenshire (251), is an excellent drawing, full of vigour.

No. 56, "Drumadoun," by W. A. Nesfield; No. 100, "Prosperity," by O. Oakley; No. 142, "The Black Knight and Jester riding through the Forest," from Scott's immortal "Ivanhoe;" No. 156, "Windermere, from the woods of Ellery," by Mr. Gastineau; No. 192, "The Pfalz, on the Rhine," by W. Callow; No. 272, "Tattershall Castle, Lincolnshire," and many others, deserve special mention.

Stepping back to the younger society, we find close to the door a charming work by F. W. Topham, "Cavan's Well" (No. 10), which we like even better than his large picture, No. 72, "St. Patrick's Day," admirable as that is.

No. 44, "Prince Charles Edward in the Island of Skye," by John Absolon, is a great advance on any thing that Mr. Absolon has yet done. The head of the sleeping prince is a triumph.

No. 55, "La Prigioniera," by H. Warren, represents a captive with a ray of light,—"the same light, that on her native hills fell cheeringly,"—full on her cheek, a curious effect, well represented. The same artist has a larger picture, No. 218, "John the Baptist Preaching,"—a fine work, calculated to sustain his reputation. It is widely different from the conventional representations of the same subject, and is much nearer to truth.

No. 64, "At Maidstone," by James Fahey, is a particularly successful landscape. E. Corbould's principal picture, which is but a small one, is from that pathetic ballad hight, "The Children in the Wood."

Miss Egerton has improved greatly; her picture, No. 222, from the story of Lord Thomas and the fair Annet, is a piece of very elaborate execution, wherein the mind, nevertheless, is as obvious as the hand.

An accustomed visitor to this gallery searches, as a matter of course, for L. Haghe's work, and equally, of course, expects a fine thing. On the present occasion he will not be disappointed. No. 196, "Meeting-room of the Brewer's Corporation at Antwerp," is amongst the best of this artist's works;—the power of water colours has never been carried farther. It wants a better title to give interest to the groups.

E. H. Wehnert never treads a beaten track, and deserves high praise for his heterodoxy, even if not always successful. No. 175, "The Death of Jean Goujon" (shot while finishing some bas-reliefs at the Louvre), is the work of a man of genius, and claims applause in spite of some weaknesses.

C. Vacher has a number of very clever drawings from Venice and Rome. E. Duncan, J. J. Jenkins, William Lee, Geo. Howse, H. Maplestone, C. H. Weigall, Alfred Taylor, and Mrs. Margetts, have all some capital pictures.

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## ARMY AND NAVY CLUB COMPETITION.

On Thursday last, strangers, including the competitors and their friends, were permitted, for the first time, to view the designs which were submitted in competition,—too late for us on the present occasion to do more than glance round the *eight rooms* in which the drawings are hung, announce the successful competitors, and give the names of such of the other candidates as have authorised the committee to open the letters which accompanied the drawings.

The designs were suspended in the different rooms in the rotation in which they were received by the secretary, Mr. Walcot, in order that no preference of light, or situation, should be accorded to any particular design. They can all be viewed with ease and to full advantage; on no occasion, that we remember, has such ample justice been done in this respect; and we take the opportunity to bear witness to the anxiety displayed by Mr. Walcot, to obtain for every candidate fair consideration, and to keep himself free from the possibility of reproach.

The two designs which received the greatest number of votes were those previously selected by the committee, and recommended for adoption. No. 1, is by G. Tattersall of St. James's-street; No. 2, by Messrs. F. Fowler and Fisk, of Sackville-street;—the first probably selected for its elevation, the second for the plan.

We do not propose now to express any opinion on the selection, or to make any remark but this,—that the cubical contents of the first design are very small, as compared with the others exhibited, and we should think can scarcely afford the accommodation required for the club.

The following are amongst the competitors;—1, H. B. Garling; 3, H. Dudley; 4, Pope, Bindon, and Clark (Bristol); 5, G. A. Burn: 11, George Truefitt; 12, G. Sevatton; 14, H. Currey; 15, F. W. Fiddian; 16, E. Adams; 17, F. M. White; 18, M. Stutely; 22, G. Vulliamy and G. B. Kennedy; 23, A. Salvin; 24, A. Anderson; 27, J. R. Cantwell and T. Dyke; 31, B. Wetten; 33, Parsons, Dain, and Willson (Leicester); 34, J. Tarring; 35, Allom and Crosse; 36, C. C. Nelson; 37, H. B. Richardson; 38, E. B. Lamb; 40, John Johnson; 41, Wyatt and Brandon; 42, Jas. Wilson; 43, John Turner; 44, Owen Jones; 45, E. I'Anson; 47, E. J. Payne; 49, W. L. B. Granville; 50, S. C. Fripp (Bristol); 51, J. E. Ebbs; 52, H. Duesbury; 53, E. Stevens (Tonbridge Wells); 54, W. Wright; 56, Dickson and Brackspear (Manchester); 57, G. Alexander; 60, C. Fowler, jun.; 63, G. S. Clarke; 64, G. G. Scott; 68, C. D. Cuthbert; 69, J. W. Papworth.

Without immediate reference to the result, we greatly regret that the Committee did not obtain professional assistance in making the selection.

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South Staffordshire Hospital.—Sir: As you have had something to say about the new hospital here, I think it is but right to remark that all you have printed and much more is quite true. All the cornice on one side of the building, about 70 feet long, fell down as the men were hoisting the last stone, and the frieze is not more than three or four inches thick; the pilasters are put up in the way that we put up chimney-pieces, and are not much thicker. All the pediments are jointed together at the *top*, and all the bedmouldings of the windows are in *two pieces;* the ashlar in the basement is not more than three or four inches thick, and some less, and many more things of the same sort, which few will say make good work.—I am, Sir, &c.,

A Working Mason.

Wolverhampton, April 27.

CHANCEL OF BARFRESTON CHURCH.



BARFRESTON CHURCH, KENT.

The secluded village of Barfreston has obtained celebrity for the very early and curious church erected there, and which was, by some writers on architecture, once considered to be of Anglo-Saxon workmanship, but which has been more correctly appropriated to the Norman period, from the general resemblance its details bear to those exhibited in undoubted Norman erections. It is a small structure, dedicated to St. Mary, and consists only of a nave and chancel, which communicate with each other by a semicircular arch, rising from columns, and richly sculptured. These columns are ornamented with an angular fret or wreathing, and with capitals derived from the Corinthian order. On each side of the grand arch are two smaller ones, which are not perforated, and their use is not very certain. At the east end of the chancel are three round-headed windows, very deeply splayed and enriched above with foliated sculpture. Above them is a circular window, also richly decorated. The entire length of the interior is 46 ft. 6 in., the width of the nave, 16 ft. 8 in., and that of the chancel, 13 ft. 6 in. The walls are about 2 ft. 9 in. thick. The roof is higher in the nave than in the chancel, the difference being about 5 ft.

Of the exterior features, the most striking is the grand south door, the arch, tympan, and capitals of which are most richly and elaborately sculptured, with various fanciful figures, producing a striking and picturesque effect, second to no work of this early date. The windows above are round-headed and pointed; beneath them is a string-course ornamented with the chevron: a corbel-table above supports the eaves of the roof. In the chancel wall, on the same side, is the priests' door, with a sculptured circular head. The north side has a door opposite the grand entrance, but less ornamented, circular at top, but without a tympan; the windows on this side are all round-headed, connected by a plain string-course. One of the most curious features of the exterior are the recessed arches beneath the windows on the eastern side, and which are supposed to have been designed as places of sepulture for the founders of the church. After many years of dilapidation and neglect, this curious church has been put into a state of thorough repair by means of a public subscription. It is certainly the most interesting of the Kentish churches, and as a remarkable example of a richly-decorated village church of the Norman era, is a worthy study for the architect.

SIR ROBERT PEEL'S CONVERSAZIONE.

On Saturday last, Sir Robert Peel having issued cards for an inspection of his pictures, to several distinguished persons, and others eminent in the walks of literature and art, received a large number of visitors, at his house in Whitehall Gardens. The staircase and some of the rooms, have lately been re-decorated, as already mentioned in our pages, and the collection re-arranged. To the former we of course gave attention, and shall next week offer a remark upon the way in which the work has been done. The meeting was an exceedingly interesting one.

The Chinese House.—Dear Sir: in your notice of the Chinese house some time since,* I think you overlooked the purpose of the peculiar mode of lighting, which you describe as "wasteful." It appeared to me that this arrangement, by means of which the windows were deprived of an external view, was one of the manifestations of eastern jealousy, superior in effect to the *jalousies* which Christian suspicion had invented for the same object. This idea increased the interest which I took in the model.—I am, Sir, &c., A. A.

* See p. 105, *ante*.

CLOISTERS, MALLING ABBEY, KENT.





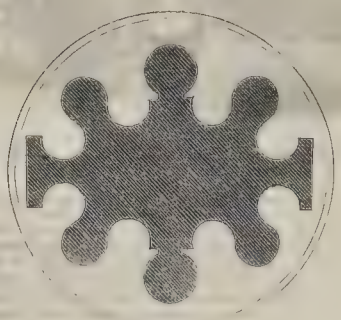




*Fig.* 1. *Fig.* 2. *Fig.* 3.

DETAILS OF CLOISTERS.

## CLOISTERS, MALLING ABBEY, KENT.

In our last volume, p. 306, will be found a notice of Malling Abbey, and an engraving of the curious roof over the ancient hall there. It was then mentioned that part of the cloisters, of early English character, was still standing; and to-day we give an illustration of these.

The details, Figs. 1, 2, & 3 will explain themselves.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Petrarch, the Artist.*—Mr. Scipio Volpicella, of Naples, has discovered in the Cathedral of Nola the interesting column, erected by King Robert d'Anjou in commemoration of his meeting with Andrew of Hungary (1333). The sculptures of this column must have been, for those times, what Vasari calls them, an *opera miraculosa*. It is conjectured by Italian art-critics, with a great degree of plausibility, that the allegorical basso-relievos on this column have been devised by Petrarch, who staid at Naples from 1341—1343, and co-operated, in this instance, with Masaccio the younger, whose work they are. It may be mentioned, by-the-bye, that with the present railroad system, Nola is reached from Naples in the short space of an hour.

*City of Paris Improvements.*—After long deliberations and delays, the common council have at last been empowered to sell the ground occupied, until lately, by the *Mairie* of the second arrondissement, between the streets Grange Batelière, Chauchat, and de Provence.

Accordingly, the Rue Grange Batelière will be prolonged in the axis of the Rue Richelieu—so far as Rue de Provence. The second portion of the street, which leads to the Faubourg Montmartre, will open, in a right angle, on the former. As soon as the present houses are demolished and the plans laid out, the corporation will sell this costly ground—situated, as it is, in the centre of the most opulent parish of the French metropolis. The funds thus obtained have to be employed (by *previous* stipulation), towards the works for the enlargement and amelioration of the central market-places of Paris (*Ce n'est pas tout comme chez nous*).

*The Museum of Roman Antiquities*—at the Hôtel de Cluny and the Therms at Paris, will be enriched by new halls and galleries, and has been temporarily closed for that purpose.

*Park Embellishments at Paris*—The fine *Champs Elisées* of that capital have now received their last complement. Hitherto, the Cours de la Reine and the Quai de la Conférence were not in accordance with the other parts of this splendid public *promenade*. A long range of footpaths will now extend along the Cours de la Reine, which will allow of the subsequent planting of an alley of trees. The Quai will be entirely new paved, and footpaths serve for the comfort of *promenaders* along the allies and the banks of the river. The present towing-path will be suppressed, and replaced by an especial road, gained on the hitherto breadth of the river. The expense of this people-serving measure will be under 100,000 francs.

*Munich and Bavarian "Art-Statistics."*—Although, as King Lewis said of late, the art-*permeation* of the nation and social life, are the chief aims of H. M.'s endeavours—still, the *finance* of the question is also to be taken into account. By the exertions of the king and other worthies of Bavaria, that country has become the art workshop, as it were, of all, at least of middle Europe. Thus it has been calculated that nearly *one-half* of the art-*produce* of Munich and Bavaria—is *consumed* beyond the limits of the country, some even beyond that of Germany. It has been stated before, that the royal glass painting manufactory supplies Russia, Hungary, nay England, with objects of their art,—Schwanthaler casts for Bohemia and all Germany: Bavarian engravings and lithographs, in fine, adorn the walls of the world. Taking the above, as well as the many oil paintings, which are *exported* from Bavaria, into account, and all the collateral art and trade-branches employed on this great art-movement, the sum of 1,200,000 florins may be put down as the monetary exponent of Bavarian art-trade, of which at least *one-half* is paid in hard cash; and cannot but beneficially re-act on the prosperity of that country.

*Naples.*—The splendid theatre of Puozzoli is now completely excavated. The dens of animals under the arena are surprisingly well preserved, the masonry being of an extreme solidity, and tasteful to boot; a great many columns, lamps, and ornaments, have also been found. Those, as well as the latest excavations at Pompeii, Cuma, &c., will be described in one of the next numbers of the "Bulletino Archeologico," conducted by Mr. Avellino.

*Schinkel's Birthday at Berlin.*—As *has been* the case every year, this year also, the 13th of March, the anniversary of the birth of this departed great man, has been celebrated by the members of the Architectural Institution (*Archit. Verein*), in the large saloon of Mr. Milentz. Many distinguished friends and admirers of the great architect had joined, amongst whom the Privy Councillor Beuth, General-Director of R. Museums, Mr. Olfers, *Master* Rauch, and others. A most singular exhibition graced this year's meeting—as Mr. Gropius exhibited his transparent pictures of the *seven wonders of the world*, made after the studies and designs of Schinkel. "It was generally remarked, how Schinkel owed all he did to his fantastic, dreamy ideas—which made him devote years of research to the restoration of these ancient structures, quite out of the beat of the general run of men." [Couldn't Mr. Gropius grope his way here with his *seven* wonders of the world?]

*A 'German' Architect on the Burning of Theatres.*—The eminent source, whence the following remarks are derived, begins with a comparison between Tacitus, Horace,—Scribe, Dumas, and others; into which, however, we will not enter on the present occasion. "The objects," says our author, "which we cannot accomplish with all our learning and wisdom, and which appertained, *ipso facto* (*by itself*), to times less illumined, are very many indeed—and amongst others, we build wretchedly (*jämmerlich*); not only without an individual character and innate form, but also very often without *brains*. It is true, that our architects know *better*, or at least, think so. Still, we believe, that every thing has assumed the same shape, since *law* and *art* (!) do no more emanate from the general mind *spontaneously*, but are made *predisposedly*, artificially. Such it is, since the architect, conjointly with other art-associates, has ceased to be a superior sort of *workman*, and has become a subordinate official—and since temples and other public buildings do no more arise from out of the hands of *masters*, and an (albeit circumscribed, still) general civilisation and its wants. Now-a-days, such things are eked out by esoteric *Ober-bau-raths* and *Hof-raths*, after a deadly scuffle with the demands and bigglings of secretaries of state, and other bureaux and officers.

It is a pity, that the Romans did not congregate in closed spaces, after nightfall—with as much lighting as possible. In this case, we would know how a practically skilled people—going, in every thing, *straight* towards its aim, would have constructed edifices, where the congregated multitudes are so much exposed to the danger of fire, as its arrangements are eminently tending towards this eventuality. And what then could have been the supremest immoveable *principle* of these structures? Surely—one derived from the dictates of most *common*, general reason, viz., to have as many as possible *issues*, as spacious and easy as possible, and *fire-proof* above all. May they have arranged and decorated the interior as they might—they would, at any rate, have surrounded the whole by a *fire-proof mantle* of stone, by whose numerous *vomitories* the people might speedily retreat. If the main walls were built right sturdily and massive, the theatre might burn *out*—but never could burn *down*.

Present architects may not think that they require the *preaching* of such cheap and plain wisdom—as they believe to have done every thing, if the public gets not *completely* consumed, whenever the tawdry tinsel of stage and proscenium catch fire. But even conceded that the Colosseum and the theatre of Verona had been night-houses, which merely wanted to be *copied*—we could not even do that *now*. Our architects *could* not accomplish all that, which practical reason would consider necessary precautions:—to execute the full demands of *reason*, would cost too much money; and so we think we may dispense with it *altogether*. Night theatres, as the ancients would surely have come to erect, would have been with them colossal, time-defying edifices; while it seems that our lessees and their architects are unconsciously led by the idea, that all our *drama* with all its tinsel-boast, is not *worth* the construction of such edifices. It may not—but still, is it neither worth the loss of one, even the meanest life. But to expatiate any further, how in a number of miserable German art-sheds (*elenden Kunst-buden*), the terrible catastrophes lately witnessed may again break in—would be superfluous, as it would be *completely useless!*

We have, therefore, arrived at that pragmatical *art-connection*, which is the leading star in the disquisition of all of them. And thus it is, first, these great show and decoration pieces (*Schau und Spectakel Stücke*), with their fireworks, lightning and thunder apparatus, the ballast of scenery and shiftings of all kinds, made of the most conflagrable stuff, which is to be taken into account. And for supporting that *pars pudenda* of theatrical art,* we must erect houses, reaching to the very skies, as it were, with a number of galleries, and corridors, and passages, and such like nooks and corners. Because, for expending large sums on these paraphernalia, as many people as possible are to be packed and crammed up—and it is to this incommensurate piling up in the galleries, that the great loss of human life at Karlsruhe is owing—which would have reached even the highest class of society, if the fire had happened half an hour later, when the boxes also would have been filled. Mr. *Louis Schneider*, tragedian to the court of Berlin, has put forth in an able work (*Allg. Theaterlexicon*) several important hints in this respect; amongst which, the use of *stucco* in the internal decoration is of great importance. In the Munich Opera most of the precautions have been already adopted—which, nevertheless, will avail little, if the workmen, scene-shifters, lightermen, box-keepers, &c., be not especially *instructed* and trained for such eventualities.

However, we are sorry to think, that until a king or a queen, or a bundle of princes or lords be burnt, no general stir in this instance will be made. We have done our duty."

* On the first representation of *Undine* at Berlin, the contractor of *gaz* sent in a bill amounting to several thousand Thalers for exci.

## CONSTRUCTION OF FIRE-PROOF BUILDINGS.

### INSTITUTION OF CIVIL ENGINEERS.

At a meeting on April 20th—Sir John Rennie in the chair—the paper read was by Mr. Fairbairn, of Manchester, "On the defects in the principle and construction of fire-proof buildings." It commenced by insisting strongly on the dangerous consequences of making use of cast-iron beams of large span, without intermediate supports, unless the dimensions of the beams were very large; and pointing out the treacherous nature of a cyrstalline metallic body, such as cast-iron, when applied to support heavy weights in the construction of buildings.

After some further remarks on the importance of a thorough knowledge of the laws which govern the use and application of cast-iron as a material for building, under the various strains to which it may be subjected, the author proceeded to investigate the circumstances connected with the fall of Messrs. Gray's cotton-mill at Manchester. This building was stated to be about 40 feet long and 31 feet 8 inches wide, and to consist of two stories in height, containing the boilers below and the machinery above, over which, instead of a roof, was a water-cistern, covering the whole extent of the building. The first floor was composed of large iron beams, of 31 feet 8 inches span, without intermediate support; on these beams brick arches were turned, sustaining the whole weight of the upper part of the building.

The author then demonstrated, that these large beams were totally inadequate to support the weight of the superincumbent mass, especially as the whole pressure was upon the centre of the beams, which were of a form ill-calculated to bear it; added to which, the wrought-iron trussing was so badly applied that the breaking strain was arrived at before the truss-rods were brought into a state of tension. The consequence of this was, that one of the lower beams broke in the centre under a less weight than it had previously supported, both under preliminary trial and when the cistern was fuller than at the time of the accident. The paper closed with some remarks on the delicate and invidious duty of reporting on such accidents as those in which the reputation of gentlemen of high professional acquirements may be involved; and the author expressed his reluctance in condemning the construction of the building in question.

In the discussion which ensued it was argued, that if proper proportions of material had been observed, the accident ought not to have occurred. It appeared evident that the wrought-iron truss rods had been so put on that they allowed more than the breaking strain of the cast-iron to be arrived at before they came into operation. The instances of the trussed beam bridges, so extensively used by Mr. Stephenson and other engineers on railways, were quoted to shew, that by a judicious employment of wrought-iron trusses upon cast-iron beams, large spans might be crossed with safety; and even in some cases, when from unseen defects in the metal a beam had fractured, the truss rods had sufficed to support the structure, and enabled the traffic to be continued across the bridge until the repairs could be effected. In all cases a strength of not less than four to one should be employed, and for such uses as the iron beams of pumping-engines, which were exposed to great vibration and sudden shocks, from the

sudden influx of steam below the piston, or the accidental breaking of a pump rod, the proportions of seven or eight to one should be observed.

## MANUFACTURE OF SHELL CAMEOS—PRESERVATION OF SANDSTONE.

At a meeting of the Society of Arts, on 21st ultimo, Dr. Roget in the chair, Mr. Gray read a paper "On the manufacture of shell cameos," and exhibited six specimens of shells with the cameos cut upon them. The author commenced by stating that the ancients formed cameos by engraving figures in low relief on different kinds of silicious stones, and generally selected for that purpose those which had layers of different colours, so that the figures or different parts of the same figures, were of divers colours. Such cameos are now made in southern Europe, and in France, where this art has lately been attempted to be revived, but the hardness of the materials require so much labour to be employed in their fabrication, that they are too expensive to come into general use. Numerous attempts have been made to substitute various materials, such as porcelain and glass, for the ancient cameos, but their great inferiority has caused them to be neglected. The best and now most used substitutes are shells, several kinds of which afford the necessary difference of colour, and are at the same time soft enough to be worked with ease, and hard enough to resist wear. The shells now used, are those of the flesh eating univalve, which are peculiar, as being formed of three layers of calcareous matter, each layer being a perpendicular lamen, placed side by side. The cameo cutter selects these shells, which have the three layers composed of different colours, as they afford him the means of relieving his work, but the kinds now employed and which experience has taught him are best for his purpose, are,—the bull's mouth, the black helmet, the horned helmet, and the queen conch. The two first are the best shells. After detailing the peculiarities of these shells, he proceeds to give an account of the progress of the art, which was confined to Rome for upwards of forty years, and to Italy until the last twenty years, at which period an Italian commenced the making of them in Paris, and now about 300 persons are employed in this branch of trade in that city. The number of shells used annually thirty years ago was about 300, the whole of which were sent from England, the value of each shell in Rome being 30s. To shew the increase of this trade, the number of shells used in France last year was nearly as follows:—

| | | | | |
|---|---|---|---|---|
| Bull's mouth.... | 80,000 .. | Average price | 1s. 8d. .. | value .. £8,400 |
| Black helmet .. | 8,000 .. | " | 5s. 0d. .. | " .. 1,800 |
| Horned helmet | 600 .. | " | 3s. 6d. .. | " .. 60 |
| Queen conch .. | 12,000 .. | " | 1s. 1½d. .. | " .. 700 |
| | for 500 Shells. | | | Sterling £8,960 |

The average value of the large cameos made in Paris is about six francs each, giving a sterling value of 32,000*l.*, and the value of the small cameos is about 8,000*l.*, giving a total value of the cameos produced in Paris for the last year of 40,000*l*, while in England not more than six persons are employed in this trade.

The second communication was by Mr. D. R. Hay, on a means of rendering sculptured sandstone impervious to the effects of our changeable climate and humid atmosphere.

The author first stated the nature and structure of the various sandstones, and the causes which operate upon them and separate the particles, and the plans usually resorted to for preserving masons' work from the injurious action of the air. Finding that the ordinary process of saturating the sandstone with linseed oil was ineffectual, and having occasionally used bees'-wax as an ingredient in paint, and knowing from experience that it is impervious to the blanching or oxydizing influences of the common atmosphere, he considered that if applied to sandstone, it would render it very durable. I believe (observes Mr. Hay), that it has been used by the ancients in securing their fresco paintings by rubbing it upon them, and facilitating its absorption by the application of hot irons, and a similar application has been recommended in modern times in respect to sculptured marble, but such a process must be very uncertain as to its efficiency, inasmuch as the absorption must be very partial and unequal. The plan I would recommend is applicable to statues, vases, and all sculptured architectural decorations, viz. a trough of suitable capacity must be built of brick with a furnace under it, and the trough filled with sand: placed amongst the sand at one end of the trough a vessel made of tin or copper and of the requisite capacity, into which put spirits of turpentine or naptha and bees'-wax, in the proportion of two or three pounds of the latter to a gallon of the former, according as the stone to be saturated is more or less porous. Keep the furnace going until the sand has become sufficiently hot to dissolve the wax amongst the oleageneous or bituminous spirits in the tin or copper vessel. Place the stone to be saturated in the unoccupied part of the trough until it becomes of a temperature equal to that which has dissolved the wax, and if the capacity of the vessel admits, let the sculptured stone be immediately removed from the sand and dropped into the adjoining vessel, when in a few seconds it will absorb a sufficient quantity of the wax, held in solution by the spirits, to prevent the humidity of the atmosphere ever acting upon it.

An interesting discussion took place after the reading of the paper, in which Mr. Gray, Mr. Tennant, Mr. C. H. Smith, Mr. Crace, and others took part.

## DWELLINGS FOR THE MIDDLE CLASSES.

Sir,—A great deal of attention has lately been paid to plans for providing dwellings of superior description for the labouring classes. Some of these plans display considerable architectural ability. I am inclined to think that in the neighbourhood of the metropolis, utility, beauty of design, and remuneration to the capitalists, might also be combined in a series of buildings for the accommodation of the numerous members of the *middle* class, whose narrow means compel them at present to reside in unfurnished apartments, or in small, ill-built, ugly, inconvenient, and high-rented tenements. It is well known, that under 40*l.* a year, it is most difficult to obtain a decent residence any where in the neighbourhood of London. By decent, I mean well-drained, solidly constructed, and with those advantages of air and water necessary for health and comfort. Now, I cannot help thinking, that if some of our young architects of talent, instead of devoting their spare time to designing fabulous palaces, impossible monuments, &c., cathedrals intended to excel St. Peter's of Rome and St. Paul's of London, were to turn their attention to the accommodation of from fifty to a hundred families, at rents varying from 20*l.* to 30*l.* a year in one building, a series of buildings of great comfort and great architectural effect might be combined. I have in my eye while writing these lines a small new square, situate about three miles from London, composed of nearly a hundred and fifty houses, surrounding a patch of dirt intended at some distant day to be a garden. The general design of these houses is picturesque, but they are mere lath and plaster; the floors of green wood, with scarcely a door or a window that will shut properly; lamentably deficient in drainage; damp and drafty. But they are let nearly as fast as they are finished, for the rents do not exceed 30*l.* a year; and smooth red brick with stone (?) dressings to the façades, attract young married couples. Of course, in these little two-story dwellings there is a great waste of space and material with very little privacy, for you can hear all the conversation of your next door neighbour, and the apology for a garden behind is as much exposed as the plot in front. But persons, not prepared to give more than thirty pounds a year, have no choice in London between cottages such as I have described, and unfurnished lodgings in houses not built for the purpose of accommodating separate families, and where the intermixing of the landlord and his lodgers is most unpleasant.

Now, if the capital which has been expended on the square I have described, had been devoted to one building, forming one or more aisles of a quadrangle, to be completed according to demand, I think that something much more convenient might have been provided for every family at the same rent, and with a good architectural design. A plot of ground in front might have been laid out ornamentally, and some general convenience for washing and baking provided.

The same idea has often been broached before, but it has generally been encumbered by plans for congregating the tenants at meals, at lecture-rooms and ball-rooms, and other assemblies foreign to English notions of housekeeping.

The neighbourhood of London swarms with respectable married people, whose circumstances do not enable them to keep up a large establishment, and whose education, station, and feelings render the lodgings, into which they are obliged to thrust themselves, a perpetual source of misery.

I propose that a handsome building, like those in the Temple, but with more domestic conveniences, should be erected in a convenient suburb, and let out in chambers; and the first experiment might be made in the following manner,—let a builder of capital procure plans and elevation from a competent architect; and having found a suitable piece of land, announce that as soon as he had the names of a sufficient number of parties willing to rent (say thirty sets of chambers), he would commence the first block. The subscription of parties willing to engage for a-year certain, would be filled up in a week. The Bank of England clerks would alone supply a score of tenants; and all the goverment offices a tithe of poor proud couples. Eventually, perhaps, the economy of a public kitchen and joint-stock cook might be arranged by some of the tenants on the club system.

I have thus roughly sketched out ideas suggested by the wants of my friends and neighbours, which your practical skill and architectural taste will enable you, Mr. Editor, to put into better shape.—I am, Sir, &c.,

10th April, 1847. Suburban.

## RAILWAY JOTTINGS.

At the Society of Arts, Adelphi, lately, a paper was read "On Fuller and de Bergue's Vulcanized India-rubber Springs for Buffers, &c." One of these springs is said to have been subjected to the tender mercies of Nasmyth's steam-hammer, under which it received 200 blows without the least effect on its elasticity. The article is being tested on the Great Western and several other lines.——The Ashford and Hastings line, with an expected traffic of 5,000*l.* a year, will cost, it is said, 20,000*l.* a mile. The North Kent, for the first six miles out of London, will exceed the Parliamentary land estimate for the whole length. Some of the claims average 20,000*l.* an acre for land. The total land estimate for the 26 miles, with stations, was about 300,000*l.*——The Southampton and Dorchester line will be opened in the course of the present month, and will then create an entire revolution in the mail conveyance throughout the south of England.——The projected new station is about to be erected at Chester, near the site of the present offices, as a grand central terminus for the London and North-Western, the Chester and Holyhead, the Chester and Birkenhead, the Shrewsbury and Chester, and the Cheshire Junction Railways, all the lines, in fact, which concentrate in Chester. The length of the building is to be 910 feet; the centre range having two stories of great architectural pretensions, flanked by towers 40 feet high. The cost of erection will be about 100,000*l.*——The Midland Company have followed the example of the London and Birmingham, by serving notices to quit on all the carriers by rail to Lincoln.——The first ston e of the Nidd viaduct on the East and West Yorkshire line, was laid on Monday week at Knaresborough.——The directors of the Dumbartonshire line have entered into a contract with Messrs. M'Ilquham, Forgan, and M'Elroy, for the erection of a viaduct bridge across the river Leven.——The foundation-stone of the railway bridge over the Almond, near Perth, was laid on Tuesday week before last.

Ventilating Panes.—Among the last inventions to facilitate good ventilation, Mr. Bowie has recently registered a pane of glass wherein small holes are drilled obliquely, an inch or an inch and a-half apart, thus giving an upward direction to the current, with the view of avoiding inconvenience to the occupiers of the apartment.

## ELECTRO-TELEGRAPHIC PROGRESS.

### TRANSATLANTIC ORGANIZATION OF THE TELEGRAPH.

If the railways are "working wonders," says an American contemporary, the telegraph is out-stripping them in achievements. Almost every state is now in instantaneous communication with New York. Merchants, both American and British, transmit their orders to their remotest agents, and even talk of throwing off a reel of submarine wires across the Atlantic. At any rate they already insulate them in their lakes, and thread them through their rivers. New York, Washington, Pittsburg, Buffalo, Baltimore, Philadelphia, and the other cities of the Atlantic are enabled to talk by them simultaneously with one another; and now that the telegraph between Buffalo and Toronto is completed, a citizen standing on the northern bank of the Ontario, may hold a pleasant parley and *tête-à-tête* with a friend on the western shore of the Atlantic. The progress of electric communication in America, in short, is far more marvellous and immense than any thing we yet know of in the mother country. Buffalo, Boston, and New York are comparatively next door neighbours. Intelligence flies through the country every minute in flashes of electricity; the merchant negotiates a loan, or consummates a purchase with a customer in a market a hundred miles off; and journals, distant a day's journey from Congress, have their speeches and proceedings in print while the speaker is in "possession of the floor." The Americans themselves, go-ahead as they are, can scarcely familiarize themselves with the wonders of this new creation of science.——Several of the telegraphs have been put out of order by the storms, with the exception of the New York and Philadelphia line, the wire of which is said to weigh 330lbs. to the mile, and is represented as capable of sustaining a weight of two tons.——Instances have occurred of what the Yankees call diddling by telegraph; and knavish speculators have even caused the wires to be broken in order to serve their 'commercial' purposes. ——The first flash of the telegraph in Canada occurred last month between Hamilton and Toronto. The communication was open to all without payment, and messages without end were transmitted.——The New York and Buffalo Electro-telegraphic Company have at length established the fact, that electric-telegraphs may be made safe and profitable investments. A dividend of 3 per cent. for the five months ending 7th of February has been declared by this company, and constitutes, indeed, the first dividend ever declared. The earnings of the line have been 11,000 dollars since 7th of September, of which the expenses have absorbed about one-third. Of this dividend the patentees got 27,000 dollars,—the first financial result of this noble invention.

In our own country, the progress at present appears to be deriving a decided impetus from the infusion of a spice of the Transatlantic invention and advancement.——In the Admiralty extension of the South-Western Telegraph from the office in the Strand, formerly the Courier office, to the Admiralty, the pipes are very properly laid inside the kerb stone, and connecting posts will be placed at intervals for the inspection of defects or injuries. The line runs on the north side of the Strand to Agar-street, and then crosses onwards to Charing Cross, where another crossing leads it into the Admiralty. By the middle of June, the communication will be complete between the Admiralty and the Portsmouth Admiralty office, and by the sub-marine telegraph between that and Gosport.

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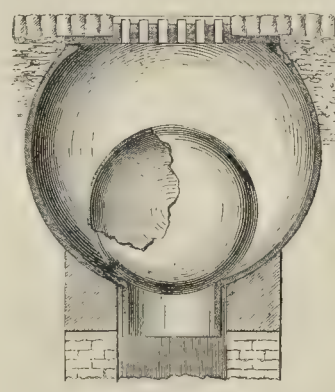
Urban Burial.—Under this title Mr. J. D. Parry has just now published,* as a small pamphlet, the accounts of London churchyards, with suggestions for joint parochial cemeteries, which originally appeared some time since in our pages. Its distribution cannot fail to aid the efforts now making to modify, if not prevent, intra-mural interments.

Yeovil Town Hall Competition.—We are informed that in the competition for the New Town Hall and Market at Yeovil, the first premium was awarded to Mr. Stent of that town, and the second to Mr. Morris Davis of Langport, in the neighbourhood.

* Strange, Paternoster-row.

## PROPOSED VALVE FOR THE GRATINGS OF SEWERS.

The engraving below represents a hydrostatic valve, proposed to prevent the emission of gases from sewers and drains, registered by Mr. F. Abate. It is an application of the hydrostatic law, that a body specifically lighter than water must float on it. A spherical recipient is placed between the mouth of the drain and the grating above; and a valve, spherical also, hollow and very light, which resting on the recipient closes the inferior hole of it, that is to say, shuts the entrance to the sewer. When water comes into the recipient the valve will float; and thus the mouth of the drain being open, the water discharges itself through it, till at length the valve, the inventor believes,



will replace itself upon the orifice, which will then be again closed.

The inventor says,—"The recipient as well as the valve may be constructed of different materials, and very cheaply. For the first, cast-iron, baked clay, or cement would be proper. The second may be made with sheet-iron, or copper, or wood (covered with a good varnish repellant of water), or with india-rubber inflated." We are not aware that any have yet been made.

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## JONES'S MORTICE CUTTING MACHINE.

To satisfy several inquirers who fear, with much reason, to trust advertisements, we have examined Mr. Jones's invention for cutting mortices, recently registered, and are disposed to think it will be found of considerable service, especially in large establishments. It consists of an upright frame, in front of which, at a convenient height for the workman, is fixed a piece of timber, called the table, on bolts working in slots in the front of the frame, to regulate the height of the board in which the mortice is to be cut. The mortice-chisel is fitted into a collar, turning in an arm at the top of the machine; and this arm is adjusted to the thickness of the timber to be morticed, by means of a slide. This collar is connected by a vertical rod and springs, with a treadle, and while the wood is guided by the hands of the operator, the rapid action of his foot on the treadle, brings down the chisel, and forms the required mortice in a very short space of time, and much more truly than it could be done by hand; the action of the springs is to force up the tool from the wood—the latter being kept firm in its place by two projecting brackets.

The saving in time must be very great. We trust the inventor will reap the reward of his ingenuity, and we do not hesitate to direct attention to the machine.

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Vat Ventilation.—The risk and loss of life by suffocation from carbonic acid gas in brewery vats and distillery fermenting-bachs, and the loss of time by the usual method of ventilation, are proposed, by a correspondent of the *Times*, to be obviated by pumping in common air by the portable force-pumps or jiggers in use in all breweries, whereby the gas may be 'blown out' in three or four hours, instead of requiring two or three days for its gradual dissipation as heretofore.

## SHALL ARCHITECTS ONLY COPY?

Sir,—Have the two following sentences in Paley's "Manual of Gothic Mouldings" escaped the eyes of The Builder? Surely they have, or they would not pass without remark. In speaking of what a work on mouldings might be, he says: "It may either contain a great collection of the best examples, accurately reduced to a scale, or accompanied by measurements, so as to form a magazine of reference, and thus supply the wants of practical men, who are often *driven to invent*, from not having at hand, and being unable to procure in their immediate neighbourhood, any available models" (p. 5, introduction). *Driven to invent!* This is really very shocking of the architects of England, and may well bring down upon them the censure of the Cambridge Camdenists. What have architects to do with *invention?* According to modern ideas, nothing; therefore read the following—it's very pathetic—"Strange, that with such noble examples of rich perspective effect and artistic display before them, architects will generally *persist in inventing* mouldings for themselves, rather than copy any of the perfect works of ancient art, which are every where to be met with, and of all degrees of costliness."

Well, I confess it is a strange infatuation on their part to *invent* for themselves; it certainly shews a deplorable want of respect for the ancients, and shews, moreover, a presumptuous reliance on their own powers which is not at all becoming in modern architects! As I said before, what has an architect to do with *invention?* And our author answers, nothing. He says as plain as words can say, copy. The receipt of "how to build a church" is given much after the following fashion: Take windows from that church, doors from this; columns, mouldings, caps, and ashlar work *ad libitum*, from various others, put them into a sack, give them a good shake, and let them fall out on a sheet of paper; note their positions, and draw out your plans at leisure.

Shall architects copy? Our masters say they shall, and so there is nothing for the young architects of England but to do as they are bid. Many of them, however, have gone on this tack long since, and I have no doubt find it adds weight to their purses. Henceforth, instead of new styles and progress, our motto must be "retrograde and copy." And we ought to go back at the same rate that the engineers go forward; for this is as it should be. Art received its highest finish in the 14th century, and it is nothing but reasonable and just that succeeding centuries should go back to that period, and draw from it as from a quarry. There is a profanity and presumption in inventing for ourselves, and I wonder architects ever had the audacity to do it; but "fools rush in," &c., &c.

J. S. C.

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## NOTES IN THE PROVINCES.

At Windsor Castle, the completion of the long-projected improvements lately alluded to in The Builder, has been begun by the sale and demolition of the old houses erected in the reign of James the First for poor knights. They are to be altogether cleared away by the 4th of May next, and the space they have occupied will then be converted into a public terrace walk, intended, eventually, to be continued all along the western front of the castle wall, until it joins the north terrace erected by Queen Elizabeth.——The new barracks at Horfield, near Bristol, are now almost completed. The cost of the erection has been about 57,000*l.*; and the contract has been fulfilled within the time specified, notwithstanding the occurrence of the extensive fire already noticed in The Builder. Besides accommodation for four companies of infantry, and two troops of horse, with an extensive area for exercise, there are baths, an hospital, horse-infirmary, chapel, library, reading room, granaries, magazine, &c.; and privates, and non-commissioned officers are here to be educated at the expense of Government.——It is proposed to build a new church in Lewin's Mead, says the *Bristol Journal*, to be dedicated to St. Mary Magdalene.——Trowbridge church is about to be rebuilt and generally restored.——The erection of a Lu-

natic Asylum, which will "absorb a heavy sum" is anticipated by the citizens of Bath. ——At Taunton, it is proposed to build an Eye Infirmary.——The foundation of a new church at Watermoor, Cirencester, was laid on the 15th instant. It is to be in the early English style inclining to the later or decorated manner, from designs by Mr. Scott, the architect of the new church at Swindon.——The Poulterers' and Fishmongers' Asylum, now in course of erection at Wood Green, near Tottenham, for twenty-four decayed and aged members, will cost 3,250*l.*, site inclusive. A bequest of 1,000*l.* has been generously promised by a retired poulterer to assist in 'feathering the nest' of the poor old 'roosted' members.—— The Fitzwilliam Syndicate, at Cambridge, have reported to the senate, in conformity with the opinion expressed by Mr. Cockerell, that the large picture-gallery and the south library of the New Museum will be ready for the reception of the Fitzwilliam collection of pictures, books, MSS., &c., in six weeks from the present time; and that the collection may be placed in them without risk of injury to it, and without obstructing the progress of the works required for the completion of the building.——New discoveries are almost daily being brought to light at the church of St. Nicholas, Yarmouth. Some sedilia and several fine arches have been discovered, and in what was formerly a part of probably "Our Lady's Chapel," on a part of the wall, is a painting of an angel, in a state so nearly perfect, as to admit of its being copied. The wall itself, like so many others, was covered with a coat of whitewash.——The consumers of gas at Mansfield, says the *Nottingham Review*, are charged 8s. 9d. per thousand, and 4s. per year for the use of a meter. The gas company are looked upon as a body of monopolists, and well they may. This the public will not endure another winter. The rate-payers, too, pay most heavily for their very defective street lights.——The *Review* complains of a peculiar nuisance practised, and submitted to, at Mansfield, namely, the chipping of blocks of stone in the streets by masons, who seem to regard the Mansfield streets as their prescriptive workshops, to the imminent risk of troublesome injury to those lieges who don't 'mind their eyes.'——The restoration of St. George's Church, says the *Doncaster Gazette*, has been recommenced

## WESTMINSTER COURT OF SEWERS.

A general Court of Commissioners of Sewers for the City and Liberty of Westminster, was held on Friday, at the Court House, Greek-street, Soho-square. Captain George Bague, R. N., in the chair.

After the confirmation of the minutes of the last court, and the reception of petitions and memorials, the only case of importance was

*The Improperly-constructed Sewer in Hereford-square, Brompton.*—William Holmes, the builder, and Thomas Hemmings, his bricklayer, appeared before the court, pursuant to a summons issued a fortnight since, for having constructed a sewer of pit-sand mortar.

It will be remembered, that the question has been before the court on two or three occasions, when it was reported by the clerk of the works (Mr. Webber) that he had several times called the attention of the workmen to the improper materials used, and finally ordered that the sewer should not be proceeded with. No notice whatever was, however, taken of these orders, and the work was completed. The court subsequently ordered the work to be done according to the instructions given; but this order was equally disregarded; and the consequence was the issue of the present summons for the attendance of the builder and bricklayer to answer for the same. Specimens of the mortar used were produced in court, which the commissioners declared to be very bad, and unfit for the purpose to which it had been applied.

Mr. Holmes, in explanation, said the work had been done in his absence and without his knowledge. The subject led to a long conversation; and it was finally resolved that the bricklayer be fined in the penalty of 15*l.* forthwith; and that Mr. Holmes be fined 100*l.*, unless, within a month, he do take up and rebuild the sewer in Hereford-square, Brompton, to the entire satisfaction of the commissioners.

## BUILDING NEAR DANGEROUS MANUFACTORIES.

According to arrangement, Mr. Boulanger's case, reported in our last, came on again before Mr. Secker, at the Southwark Police Office, on the 22nd ult., for the magistrate's final decision. Mr. Ogle did not appear, but Mr. Ballantine was in attendance. Mr. Drew, on behalf of Mr. Sugden, stated, that under the advice of Mr. Ogle they required that the further proceedings in the case might be taken to the general quarter sessions. Mr. Ballantine urged the necessity of an election being made, as to which of the three houses named in the present information should form the subject of appeal, so that judgment might be given in the case of the others. After a long conversation, it was eventually agreed that the subject of the whole twenty houses should be transferred to the quarter sessions. Mr. Sugden entered into recognisances of 200*l.* to appear and prosecute the appeal to the same.*

## Miscellanea.

Commercial Banking-House, Edinburgh.—The new premises in George-street, have at length been completed, and the business of the bank transferred to them. The principal entrance leads under a grand portico, with Corinthian columns, through a short passage into a lobby, from which a double staircase and gallery conduct to the upper apartments. The lobby is encircled by pillars painted in imitation of marble, and is lighted from the roof, which is decorated with raised and gilded plasterwork. Passing through this outer-chamber, we enter the public-office or telling-room. This apartment is of great extent, and is fitted up in a very elaborate style. It is surrounded by lofty Corinthian columns, painted like those in the lobby, and supporting an ornamented roof with an ample dome, in the decoration of which, gilding has been liberally introduced. The numerous desks, counters, &c., which cover the inner half of the ground space of the hall, are all of mahogany workmanship. Mr. D. R. Hay has executed all the painting, gilding on the ceilings, &c., and in one of the upper rooms he has introduced his new style of decorative painting, in which, by the intermingling of brilliant colours, a general effect of softened splendour is aimed at.

The Doncaster Church Ruins are dying a very lingering death. The north wall "fell prostrate with a tremendous crash" on Wednesday week; the columns have been dilapidated; the high arch which separated the nave from the chancel has shared the same fate; yet ever and anon has some one pitying eye and pen been engaged in earnest appeal to the hitherto immoveable corporation for a respite; and at length, in the very midst of the execution of the victim, it has been magnanimously and relentingly resolved to "take down and preserve" at least a few of the joints and members of the defunct, "in order that they may be removed to any place which may in future be thought appropriate for their re-erection." First of all "three pillars and two arches"—three toes and two fingers as it were of the mangled corse—were thus to be bottled up and 'preserved,' but Mr. Fisher succeeded in fishing up a few more fragments by quietly proposing "an extension of the plan" which was at length grumblingly agreed to. Mr. Francis, the architect of the new church at Balby, had planned out a scheme for incorporating the whole in a Norman market design, but the corporation found the plan to be,—what it rather appears they ought to have found themselves to be, 'impracticable.'

*The People's Important Guide for the Recovery of Debts under 20l.* By T. H. Rose. Sherwood and Co.

The assumption in the title of this pamphlet made us careless of looking into it. Doing so, however, we found it contain so many useful hints to young tradesmen beginning business, written in a good spirit, that we cannot avoid recommending it to all such. The shilling it costs may save them some pounds. It likewise contains the clauses of the new Act for the recovery of debts under 20*l.* in Local Courts.

* We have received a letter from Mr. Sugden relative to parts of our notice of the case last week, but it came too late to be referred to our reporter.

Projected Works.—Tenders have been called for, by advertisements issued in the past week's papers for completing the walls from the ground level, and roofing a church in the Isle of Wight; erecting a chapel and other work at the Gloucester jail; a manse, or clergyman's premises, at Allenton, North Britain; a school-room and other additions to schoolhouse at Dunmow; a lock-up house, &c., at Wooler; public baths and washhouses at Newcastle-on-Tyne; a union workhouse, with infirmary, register offices, worksheds, and other buildings, at Bridlington; a lunatic asylum at Birmingham, and a fever hospital at Bedford; also for altering flues and chimneys at Plomesgate Union Workhouse; cleaning, restoring, colouring, and painting St. Michael's Church, Southampton, and reglazing and restoring window stonework of same; excavating and erecting a gas holder tank at Stepney; erecting and constructing a gas holder there; forming sewers and land drains in Southampton Marsh, and supplying and fixing curb stones, raising Itchen Bridge and dock roads, and levelling and draining cricket ground there; also for a supply of 200 tons York paving] at Bermondsey; and curb, shingle, gravel, flints, granite, and old oak at Portsea.

Westminster Improvement Act.—A motion for an injunction to restrain the commissioners from carrying out the objects of this Act, was craved of Lord Langdale, in the Rolls Court, on 22nd April, on the ground of breach of contract with the plaintiff, Mr. Peter Rigby Wason, the original projector of the intended line of street between the Abbey and Peter-street, Pimlico, to be carried out under this Act with the assistance of 50,000*l.* from the Woods and Forests; the Commissioners, Sir Brook William Bridges, Bart., and others, or their constituents, Mr. G. S. Taylor, the architect, and Mr. Nathaniel Mason, a solicitor, allowing the plaintiff a rent charge of 30s. for every foot of the 666 feet of frontage ultimately estimated as the length of the proposed new street. His lordship, however, said he could not grant an injunction to restrain commissioners from carrying out an Act of Parliament passed for public purposes, on the mere ground of a breach of private contract, so long as there was no intention on the part of such commissioners to act otherwise than as directed by their Act, which recognized no such contract.

Gas Movement in House of Commons.—On the motion of Mr. Hume, a series of searching queries are to be put to "every gas company established by Act of Parliament in the United Kingdom," regarding rates of charge, price of coals, rates per cent. of dividend, &c., for every year since 1820, or the establishment of each company; amount of fixed capital; acts establishing the company, &c.

The Builders' Benevolent Institution.—We have received a copy of rules proposed for a new institution, under the above title, which seem well calculated to effect the object in view. When we have the names of the parties engaged in its establishment, and hear something more of its progress, we may give it some consideration.

## TENDERS.

For building six houses on Blackheath, for Mr. W. Smith.

| | |
|---|---|
| Thomas Howard, Newington | £5,383 |
| Lock and Nesham, Theobald's Road | 5,300 |
| W. Hill, Greenwich | 4,848 |
| Trevers and Son, Kent Road | 4,770 |
| John Goodwin, Lewisham | 4,736 |
| Joseph Heamden, Southwark | 4,600 |
| Thomas Rider, Union Street, ditto | 4,580 |

The last accepted.

For a new house and stable at Enfield. Mr J Wagstaff, Architect.

| | | | |
|---|---|---|---|
| Barker | £998 | 10 | 0 |
| Corne | 984 | 18 | 0 |
| Chesterman | 953 | 0 | 0 |
| Ward | 860 | 3 | 9 |
| Mayse | 790 | 0 | 0 |

For building an addition to Warnham Church.

| | |
|---|---|
| Bristow | £1,760 |
| Evans | 1,468 |
| Dewdney | 1,390 |
| Bothwell, | 1,360 |
| Carouther, | 1,359 |

The last accepted.

## TO CORRESPONDENTS.

"*Sir H. D.*"—The plan shall be safely returned. Pressure of matter has prevented our attention to it.

"*G. G.*"—The architect he mentions did not get a premium in the Houses of Parliament competition.

"*J. T. L.*"—We are obliged, but cannot send a draughtsman.

"*R. P.*"—The gentleman he names has left London. We shall be happy to receive the information offered.

"*C. H. W.*"—Our statement was correct. Mr. John Thomas, of Lambeth, having received a commission, is no reason why Mr. J. Evan Thomas has not. To the works of the former gentleman at the Houses of Parliament, we shall refer hereafter.

"*A Mechanic.*"—We avoid giving recommendations.

"*Stain for Fir.*"—A correspondent asks "for a receipe for a stain to make new foreign fir resemble oak; it will also require to be varnished." Asphalte is often used.

"*Gothic Groins.*"—We are obliged unavoidably to postpone this article

*Received.*—"D. F." "P. W. R." "Constant Reader," (Sheffield), "W. W." "J. L." "G. M." "S. S." "J. R. N." "T. V. K." "J. T." "Weekly Reader," "Phil pots," "R. D." "The First Book of Euclid's Elements, simplified and illustrated for Beginners." By the Rev. W. Trollope. (Foster, Paternoster Row). "Chronicles of Charter-House." By a Carthusian. G. Bell, 186, Fleet-street Talis's Pictorial Directory." No. I.

"*Books, Prices, and Addresses.*"—We have not time to point out books and find addresses.

N.B. The whole of the numbers of the present year may be had in parts.

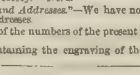
A few copies, containing the engraving of the House of Lords, are still on sale.

### NOTICE.

THE NEW THRONE.—*On account of the elaborate nature of our promised engraving of the Throne and Chairs in the New House of Lords, we are compelled, much against our will, to postpone it. We have other parts of the Westminster Palace in progress, which, when completed, will form an unequalled series.*

## ADVERTISEMENTS.


**ROYAL POLYTECHNIC INSTITUTION.**—LECTURES in illustration of ANIMAL MECHANISM by T. Rymer Jones, Esq. F.R.S. Professor of Comparative Anatomy at King's College, on Tuesday, Thursday, and Saturday, at half-past Three o'clock. LECTURES on ARTIFICIAL LIGHT, and the Agents employed in its production, by Dr. Bachhoffner. Experiments with ARMSTRONG'S HYDRO-ELECTRIC MACHINE. The WORKING MODELS and MACHINERY clearly explained. The varied OPTICAL EFFECTS include a New Series of DISSOLVING VIEWS, the OXY-HYDROGEN MICROSCOPE, &c. EXPERIMENTS with the DIVER, and DIVING-BELL, &c. &c.—Admission, 1s; Schools, Half-Price



**H. MORRELL'S FINE PREPARED** DRAWING PENCILS. Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East-India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of a fine and fluency of clean and pure, and all the requisites for the most highly finished drawings.

Sold by books at the Manufactory, No. 140, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

**BUILDERS AND IRONMONGERS** are requested, when writing for JENNINGS' SHIP SHUTTER SHOE AND FASTENER, to send the greatest thickness of the Shutter, and also at which end of the front they commence putting up the Shutters (RIGHT or LEFT), as they fasten both ways.

**JENNINGS'S SHUTTER FASTENER.** Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and to secure when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass are of greater property to the corner. The shoes leave no rusty dirt on the pavement, and do not in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A Book Front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of those who use Shutter Fastenings.—To be had of the Inventor, 129 Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS,
Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the cheapest and most simple kind in use. Their construction is so simple that the largest establishment can open or closed with the greatest possible ease without the use of machinery. Their superiority over other shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the present range can now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.** Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried under the Court of Chancery, that Court has granted a perpetual injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex bars, if required. The worm and wheel motion for raising and lowering revolving iron shutters as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and numerous additional experience during the last year have adapted every real improvement enables the Patentees to challenge competition with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with the common bars.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the fabric for which has acquired a decided superiority over other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR IRON, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall and Plate, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 30, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

DUTY OF ORNAMENTAL WINDOW GLASS.

**CHARLESLONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial, and borders from 9d. per foot, put in and having just built two of the largest lofts in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman square.—Terms, cash only.

**THE UNION PLATE GLASS Company** beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.

N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three-quarter inch thick.

H. CHRISTIE, Agent, 99, Hatton-garden, Holborn.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 15 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen** Tables, at the following low prices, for ready money:—

| | | £. s. d. | |
|---|---|---|---|
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ..... | 4 4 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot. |
| | Fourths ..... | 3 10 0 | |
| | C.C. ..... | 2 8 0 | |
| | C.C.C. ..... | 2 0 0 | |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

SASHES PRIMED, GLAZED, and sent to any part of London at 5d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, shew-cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES

Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 28s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

For complete Lists, priced Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

SASHES AND FRAMES, DOORS, MAHOGANY SHOP FRONTS, &c. MADE FOR THE TRADE.

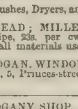
**J. KILBOURN, 26, City-road, and 14½,** Tabernacle Walk, Finsbury. 14-inch sashes and frames glazed and hung complete, 2s. 1d. per foot; 13-inch ditto, 1s. 9d. per foot; 14-inch four panelled doors, 8d. per foot; 13-inch ditto, 10d. per foot; ditto, moulded both sides, 1s. 0½d. per foot.

All kinds of Joiners' Work equally low, of the best materials and workmanship

**CHAS. WM. WATERLOW,**



MANUFACTURER of Sashes and Frames, adapted under to the Trade, 32, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices. Upwards of 200 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-saw & Moulding Mills in full operation.—N.B. This Establishment is not in the habit of advertising.



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE



**JOHNSON and PASK,**
1, Angell-street, Clerkenwell, near the New River Head.

Beg to inform the Trade, and the Inhabitants in general, that they continue to manufacture Shop Fronts, Doors, and all other kinds of Joiners' work, on the Lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



DRUGGES, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities at Wharfage, Entrance, or Delivery, by applying as above. A neigh-bridge and draw-dock.—N.B. Depôt for Glass Pantiles.

TO PLASTERERS.

**LIME FOR PLASTERING,** that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold on the usual price, at FORREST'S WHARF, Earl street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ball st, &c.

TO BUILDERS.

**PLASTERERS' HAIR.—JEREMIAH** LORDAN, Hair and Glue Merchant, 7, Butler's-buildings, Bermondsey-street, begs to call the attention of the Trade to his large stock of excellent Plasterers' Hair, which he has always on hand at the following very low prices:—Common 8d. 10s., Best 9d. 10s. per st., Glue, in sheets, per cwt. Cash or delivery, at his Warehouse.

**FIRE BRICKS.—WARD & HART,** Hondurus Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

**ARCHITECTS, BUILDERS, and the** Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, ribs, bead mouldings, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 23, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 33 per cent. cheaper than papier maché.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the stamp, a size each, is impressed in full on the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT.—WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cements, Blue and White Lias Lime Works, CHURCH-STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**PORTLAND CEMENT** is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by fire.

Being perfectly adapted, it is the best cement to use for building and all similar reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B WHITE and SONS, Mill-bank-street, Westminster.

**BATHSIDE CEMENT WORKS,** established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts: Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Plasterings and sole Manufacturers, J. B. WHITE and SONS, Mill-bank-street, Westminster, and Seel street, Liverpool

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand

MARTINS FIRE PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is entirely dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but actually resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses.

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface which may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It has no peculiar adaptation to any one class of walls, coverings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, and for these purposes it is now in general use, the most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Portland Stone Merchants, 20, Old Jewry, E.C.

Agent for Liverpool and Manchester, Mr. R. PART, 23, Canning-place, Liverpool

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MILL-OWNERS, SHIPBUILDERS, AND THE PUBLIC IN GENERAL.

**ST JOHN'S and CO.'S PATENT STUCCO** CEMENT. The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—

It will effectually resist Damp. It will not blister, nor turn green, nor chemically decay. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It will, also, be forwarded to any Climate packed for export. It is the only Cement that can be used with confidence by the Public. It may be used in the hottest or coldest climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mastes fast, and becomes perfect when quite Cemented to be used. It may be poured like Water, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain secure during the severest Storms. Any Plasterer may apply it, the Instructions for use being so clear and distinct. The Proprietors of this material does not exceed that of the cheapest Cement now in use; but with all the above named advantages and valuable advantages, nothing can approach it in point of economy

A Full Set of Bullders' Estimates, &c. for using this Cement have been drawn out, by which Builders will find it requires no job to assert, decisively, its preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, the mode of application, &c. obtained, with a volume of Testimonials from every part of the kingdom, may be obtained on application at the office of the Patentees, at No. 1, Duke-street, Adelphi, W.C., where Orders for the Patent Stucco, Quick-set, Cheapside, London; of whom also may be had.

ST JOHN'S and CO.'S PATENT COLOUR STUCCO PAINT is expressly intended for Painting over exterior Walls of Houses that have been done with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, and will frequently save the expense of renewing the whole process with Cement; whereas Messrs. ST JOHN'S and CO.'S PATENT PAINT having an affinity for the Cement, will adhere to it, stopping the suction, thereby rendering the wall a roof as set weather, and in the finish producing a greater durability and beauty by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

**PAPER-HANGINGS to the TRADE.**—French Papers superseded.—Messrs. HENNELL and CROSBY, Paper Stainers, Queen-street, Southwark-bridge-road, beg to inform the Trade that they are now ready to sell Satin Papers, Flock and Printed, at 9d. per Piece, Wholesale or Retail—Cheapest Lists for Panel Decorations and Corded Papers.

**FRENCH PAPER HANGINGS.—The** ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of the Continental Manufacturers, is at Messrs. MARKS & CO'S, 69, Princes Street, Leicester Square, established 1828, where the Trade may be supplied from an extensive stock of the newest Designs, at the lowest prices that will DEFY the GARBLED PIRACY that at present exists

TO PAPERHANGERS, HOUSE DECORATORS, BUILDERS, SHIPPERS, &c

**MERRICK, WILKINSON, and Co.,** 451, New Oxford-street, solicit the inspection of the trade to their extensive stock of PAPERHANGINGS, comprising every variety, and the choicest specimens of all the Continental Manufactories.

M., W., and Co. beg to call attention to their complete assortment of Panelled Decorations, suitable for every description of room, to shew the effect of which they have fitted up a number of rooms in their factory in all their different styles. Having built their manufactory expressly for the purpose, M., W., and Co. are enabled, from the many improvements in arrangement, and consequent economy in manufacture, to offer to the trade such prices as to defy competition. They will be happy to furnish estimates and enter into contracts in any situation, and guarantee the execution of them in the first style.

**PHOTOGRAPHIC PORTRAITS,** at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 183, Strand (between Norfolk-street and St. Clement's Church). Portraits, including case, from 10s. Satisfactory ones guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvass, combining the truth of the daguerreotype with artistic skill. Hours from 10 to Four.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREEVES and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N B The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

PATENT ARCHITECTURAL ROOFING TILES.

**ARCHITECTS,** Builders, and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and effect, surpass every other kind of roofing, whilst their cost but little exceeds the covering with common pantiles, and their superiority over slating is at once apparent.



For prospectuses and full particulars, apply to Mr. J. G. HUGHES, at the Company's Offices, 168, Strand.

Price, from 16s. to 22s. per square

**BROWNHILL'S BLUE METALLIC** TILERIES, and FIRE BRICK WORKS, near Burslem and Newcastle, Staffordshire, and No. 12, South Wharf, Paddington.

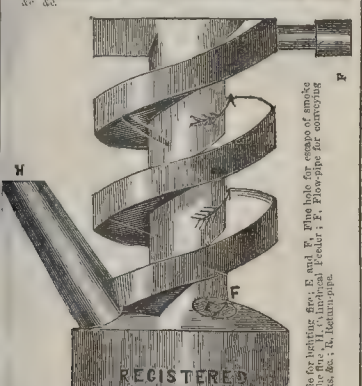
H and R HAYWOOD, Manufacturers of every description of Plain, Italian, or Roman, Gothic, Grecian, fancy, and other ornamental Blue Metallic Roofing and Ridging Tiles, &c., &c., of superior quality—invite the attention of architects, engineers, and the public to their antique patterns of Patent Encaustic, or inlaid Tiles of every variety of colour and shape, for paving churches, entrance halls, corridors, conservatories, dairies, &c., &c.; and to the great varieties in blue, red, black, fawn, and other coloured quarries for flooring and pavements. Blue dressed Bricks, which from their low price, durability, and hardness, are preferable to stone, or any other material also, their cylindrical, conical, and square pipes, for draining and conveying water, which being much cheaper and vitrified, are preferable, and infinitely more durable than iron. The Tiles of every description as used at Buckingham Palace, &c., &c., supplied by them. Balustrades and other Architectural Ornaments for Decorating Buildings, &c.

TO BRICK AND TILE-MAKERS.

**THE AINSLIE BRICK and TILE** MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's Office, 193A, Piccadilly, from Ten A.M. to Five P.M. Mr. ROBERT SCRIVENER, who has been appointed manager in the room of Mr. JOHN AINSLIE, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193A, Piccadilly.—March 1, 1847.

These Machines may also be seen at Mr Slight's, Leith-walk, Edinburgh; Mr. Lawrence Hill, 135, Buchanan-street, Glasgow; Mr Bright Charles, Mill hill, Leeds; Messrs. Finch and Cope, Perkridge, Staffordshire; and Messrs. Drummond and Son, Dublin.

**J. B. SAMPSON'S SELF-FEEDING** ECONOMICAL HOT-WATER APPARATUS for heating horticultural buildings, dwelling-houses, churches, chapels, &c. &c.




SPIRAL WATER HEATER.

J. B. SAMPSON, Engineer, &c., Maidstone, Kent, Inventor and Manufacturer of the much-approved RIPIDIFIC SPIRAL WATER HEATER, having created many during the last and this season, on its own responsibility, which have given the greatest satisfaction in every case, he can with confidence offer this admirable Boiler to the Public as the best yet introduced, possessing great advantages over the Conical and all others. 1st, Forming its own flue, and exposing three large surfaces to the action of the fire; after it has left the body of the boiler, the heat (which is lost in others), passing round it, and being economized to the greatest extent, allowing the least possible escape. 2nd, Requiring fuel but once in fourteen hours, and being made of cast-iron, renders it more durable, not burning out as copper or wrought iron. 3rd, A saving of full 50 per cent. in the consumption of fuel. 4th, Having cylindrical feeder, with air-tight cover, the fire is kept uniformly supplied. 5th, The simplicity of its construction enables any labourer to fix it with the greatest ease.

These Boilers are made five sizes: No. 1, 6 feet; 2, 7 feet; 3, 8 feet; 4, 9 feet 9; 5, 13 feet; the large size will heat 1000 feet of 4-inch pipe; they may be applied to any pipes, tanks, &c. &c. already fixed; all work intrusted to me will be warranted to answer all particulars for fixing, and references where they are in use may be had, post free, on application to the Inventor.—N.B. The conical Boilers, which alone is an improvement on, are supplied at the following prices: No. 1, 42. 4s.; 2, 5l. 5s.; 3, 7l. 7s.; 4, 8l. 8s. Cast-iron tanking for bottom-heat, single and double, 3 and 4-inch cast-iron pipe, with bends, &c. &c.

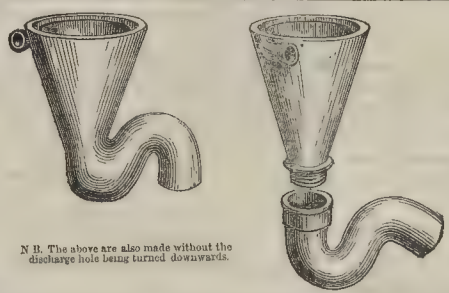
By Her Majesty's  Royal Letters Patent.

**PATENT ASPHALTE ROOFING FELT,** as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinbro'.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London, and Bull's Head Yard, Manchester.



N B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

**DOULTON AND WATTS,** LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their CLEANLINESS AND CHEAPNESS.

**THOMAS MILLINGTON'S** present TARIFF of GLASS, COLOURS, and PAINTS. 87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
|---|---|
| Foreign Sheet, in 100 feet Boxes .. | 3½d. |
| Do. do. Super 200 „ „ .. | 3d. |
| Crown Squares, 100 feet Boxes:— | |
| 10 in. by 8 in. and 9 in. by 7 in. | 3d. |
| 8 in. by 6 in. and 7 in. by 5 in. .. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. .. | 1½d. |
| 6 in. by 3 in. and under..... | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,

of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES, 6d. per inch;

A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the

NEW BOURSE AT HAMBURG,

and will shortly have completed the

LONDON ROYAL EXCHANGE,
NEW HOUSES OF PARLIAMENT,

and engravings to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

VARNISH.

| | per Imp. Gal. £ |
|---|---|
| Super Body Copal, for the bodies of Carriages ..... | 20 |
| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
| Super Copal Varnish ..... | 16 |
| A fine pale Varnish for the lighter imitation woods.—Dries in about eight hours. | |
| Super Carriage Varnish..... | 12 |
| Very durable, and well adapted for Coachmakers, except for light bodies. | |
| Elastic Oak, Wainscot, or Mahogany Varnish ..... | 10 |
| Brilliant and durable for House-painters' use, and for all imitation woods. | |
| Paper or Crystal, quite transparent | 10 |
| Gold Size for Gilders ..... | 10 |
| Also as a dryer in ground Colours, which much improves their appearance | |
| Black Japan ..... | 12 |
| A splendid Jet Black, for Coachbuilders' use. | |
| Brunswick Black ..... | 6 |
| A Black Varnish for Iron-work, Stoves, &c.—It dries immediately ..... | 6 |
| Furniture Varnish for Japanners.... | 14 |
| Dries in two hours | |
| White Hard Spirit Varnish, for Cabinet Work ..... | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods .. | 20 |
| Rather longer drying than the above. | |
| Maple Varnish, pale, for Pictures.... | 24 |
| Turpentine Varnish..... | 5 |
| French Polish ..... | 16 |
| Naphtha..... | 10 |
| Patent Liquid Wood Knotting ..... | 16 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £ s. d. |
|---|---|
| 2½ inch Lift Pump on Plank ..... | 4 6 0 |
| 3 „ do. do. ..... | 4 16 0 |
| 3½ „ do. do. ..... | 6 0 0 |
| 4 „ do. do ..... | 6 16 0 |
| Well Pumps on Square Tails, with Iron Bow, equally low. | |
| ½ inch Bib, Ball, or Stop Cocks. | 0 1 8 |
| 5-8th „ do. do. | 0 2 1 |
| ¾ „ do. do. | 0 2 6 |
| Pan Water-Closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire .. | 1 10 0 |
| Blue Basin, extra..... | 0 4 0 |
| Ditto, with Sunk Handle, extra .. | 0 4 6 |
| Spring Valve Closet, on Brahma's principle, complete ..... | 3 10 0 |

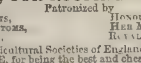
Beer Machines, from one to six motions, in handsome cases.

Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

PAINTS AND COLOURS.

Best White Lead, 27s.; Seconds, 25s
Thirds, 23s.
Milled Sheet Lead and Lead Pipe, 20s.
Linseed Oil, 2s. 6d. per gallon; Turpentine, 4s. 6d. per gallon; Boiled Oil, 5s. per gallon.
Brunswick and Navy Greens, Crimes Blacks, Blues, Reds, Patent Dryers.
Best Town Glue, 40s. per cwt.
Brushes and Plumbers and Glaziers' Tools. Patent Diamonds, 12s each, warranted.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F. McNEILL and Co.** of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of
**THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.**
Patronised by

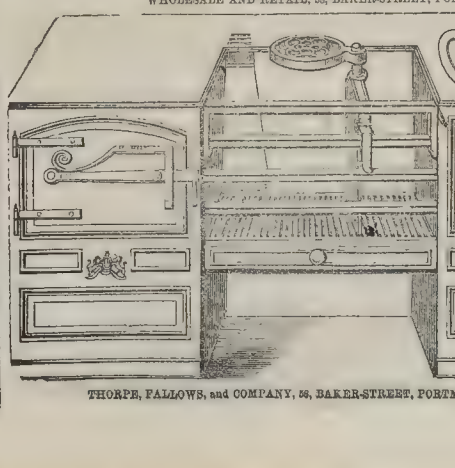
HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
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TO BUILDERS, CARPENTERS, JOINERS, AND OTHERS.

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Lot 2. [illegible] ditto in Put Shaw, close to the last mentioned wood).
Lot 3.—8 beech and two chesnut trees in the before-mentioned wood and Shaw.
Lot 4.—109 oak trees in Birch Croft Wood, Shelly's Farm.
Lot 5.—42 ditto in Newlands Shaw, Norstead Farm, and adjoining Lot 4.

For a view of Lots 1, 2, 3, and 5, apply to Mr. PEACOCK, at the Bull's Head Inn, Pratts Bottom; for Lot 4, to Mr. MARTER of Shelly's Knockbolt; and for particulars, apply to Messrs. BLAKE, Croydon.

BUILDING LAND, NORWOOD, SURREY.—BY

**MESSRS. BLAKE, at Garraway's Coffee** House, Change Alley, on TUESDAY, May 25th, at Twelve o'clock, in lots, VALUABLE FREEHOLD BUILDING LAND, together with a detached Residence (land-tax redeemed), on the south western summit of Beaulieu Hill, a situation which for salubrity of air and beauty of scenery is almost unrivalled, being in the immediate vicinity of the Beulah Spa, and about three-quarters of a mile from the Norwood Station on the Croydon Railway, affording most eligible sites for the erection of moderate sized villas, and well worth the attention of Building Societies and small capitalists.—Particulars, with plans, will be prepared twenty-one days before the sale, and may be had on the premises; at the Inns in the neighbourhood; at Garraway's Coffee House, Cornhill; Artichoke Inn, Newington Causeway; of Messrs. DRUMMOND'S, ROBINSON, and TILL, Solicitors, Croydon; and of Messrs. BLAKE, Croydon.

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**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION on the Premises, Creek Wharf, Hammersmith, on TUESDAY, May 4th, and following day, at Twelve for One, without reserve, by order of the proprietor, to clear the premises, the second portion of the valuable stock of timber, comprising yellow and white planks, deals, and battens, die square timber, sawn boards, arris railing, slating battens, quartering, &c.; a large quantity of dry, well-seasoned ash and beech planks, elm boards, oak quartering and posts, ash felloes, oak and elm stocks, spokes, beech quarters, birch posts, &c.; also an excellent spring van, light cart on springs, a new punt, the erection of sheds, and numerous other effects. May be viewed three days prior to the Sale, and Catalogues had on the Premises, also of Messrs. WATSON and SONS, Solicitors, 22, Bouverie street, Fleet street, and at Hammersmith; at the Three Pigeons, Brentford; the Rose and Crown, Kew; and of the Auctioneers, Coal Exchange, or 1, Little Smith street, Westminster.

TO STONE-MASONS, BUILDERS, PAVIORS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION, on the Premises, 30, Commercial Road, Lambeth, on TUESDAY, May 11th, and following day, at Twelve for One precisely, by order of the Assignees of [illegible] Sharp, bankrupts, the remaining portion of their valuable stock in trade, consisting of Portland blocks and scantlings, of large dimensions, York and Portland landings, steps, and ledgers, York curbs and sills, Purbeck sinks, granite curb and blocks, several thousand feet of York and Rockhill paving of superior quality, rubbed slab and chimney jaumbs, a worked Caen stone balcony, monumental marble tablets and chimney-pieces, hot oil stove, &c., also a quantity of excellent scaffolding,—crab engine and hoisting jack, hand trucks, barrows [illegible] full set of shear legs, [illegible] carpenter benches, deal [illegible] planks [illegible]. May be viewed [illegible] prior [illegible] and Catalogues had on the Premises; of Messrs. DONNE & TAYLOR, Solicitors, 22, New Broad street; of the Auctioneers; Coal Exchange, or 1, Little Smith-street, Westminster.

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**WANTED, by an Active Practical Young** Man, a Situation as Clerk of Works or in a Builder's Office; is a good draughtsman, can take out quantities, measure up work, make specifications, &c., has no objection to the Country. Good references of ability and respectability will be given.—Address G. G., 2, Gt. James-street, Bedford-row, London.

TO BUILDERS' FOREMEN.

**WANTED, an Experienced Practical Man,** to take the entire charge of a large Business, but more particularly the joiners' branch, as he will be required to arrange and set out all joiners' work, and must be also competent to measure all kinds of work. References will be required. Apply by letter, stating where last employed, to Z., office of "The Builder."

TO CLERKS OF WORKS, AND ARCHITECTS' ASSISTANTS

**WANTED, by an Architect in a Thriving** Provincial Town, a Clerk of Works, competent to superintend buildings generally, and also to make working drawings, and measure up works. Also an Office Assistant, who has served his articles, but who is desirous of further improvement.—Address with particulars of last employment and terms, to A. R. B., 19, Cornwall Place, Holloway, London.

**WANTED, in a Surveyor's Office, a Respect**able Youth as Articled Pupil; he must write a good hand, and be able to square dimensions correctly. One who has had some acquaintance with the profession would be preferred. He will have every opportunity of gaining a good practical knowledge of surveying, &c. A small premium will be expected.—Address to G. H., Mr. Wickenden's, Post Office, King William-street, City.

TO BUILDERS, &c.

**WANTED, by a Young Man aged 24 Years,** a Situation in a Builder's Office, or as a Working Foreman, being acquainted with the usual routine of a builder's office. Can prepare working and finished drawings, take out quantities, &c. Has been bred up as a joiner, &c. Satisfactory references given as to ability and integrity.—Address, H. H., 5, Mulgrave-place, Woolwich, Kent.

TO ARCHITECTS.

**A CLERK of the WORKS, who has just** completed superintending an extensive Public Building, is desirous of AN ENGAGEMENT in a similar capacity. The most satisfactory references can be given. Letters addressed to B. A., 34, Ebury-street, Eaton-square, will meet with due attention.

**A GENTLEMAN, who has just completed** an Engagement with an Eminent Architect, is desirous of entering into a fresh arrangement. He is capable of making out fair and working drawings, and thoroughly conversant with the general routine of an office. References unexceptionable.—Address B. P., No 9, Robert-street, Hampstead-road, London.

TO ARCHITECTS

**A YOUNG GENTLEMAN wishes for an** engagement in an Architect's office, he has been for some length of time in one of the first offices in town. For terms, &c., address, pre-paid, to W. B., office of "The Builder."

TO ARCHITECTS, BUILDERS, &c.

**A YOUNG MAN, whose office-hours expire** at half-past Five, P.M., is desirous of obtaining employment for the rest of the evening.—Please address A. Y., office of "The Builder," 2, York-street, Covent Garden.

TO BUILDERS AND OTHERS.

**A YOUNG MAN of good Address, and** thoroughly conversant with Business, having been five years junior clerk in a Builder's office in Salop, requires a similar Situation. He is 22 years of age, and can be most highly recommended by his late employer.—Address, free, to H. O., 34, Great Marlborough street.

TO ENGINEERS, IRON-FOUNDERS, AND OTHERS.

**A YOUNG MAN, Age Twenty-nine Years,** being disengaged, wishes a Situation as Time or Prime cost Clerk, or Overlooker of Workman on a Railway, &c. References to late employers; well versed in accounts and the general duties of a counting-house.—Address, A. B., 1, Bollingbroke Cottages, Boundry-lane, Walworth-road.

TO ARCHITECTS AND SURVEYORS.

**A YOUNG MAN, Aged Twenty-five, who** has served his time to a Builder, is desirous of entering an architect and surveyor's office, where he will have an opportunity of improving himself in drawing, and of acquiring the knowledge of measuration; he has no objection to Article himself for one or Two Years.—Address, to J T. M., care of Mr. Wood, 8, Bridge-terrace, Portcus road, Paddington.

TO CARPENTERS AND BUILDERS

**A STEADY, Industrious Man, a Carpenter** and Joiner, and a good workman, wishes for Employment, where he can have the privilege of taking his Son as youth 15 years of age, to learn the business. No objection to give a small premium. Address, pp., to A B., Mr. Cannah's, 16, Ann's terrace, Hackney.

### CONTRACTS.

TO BUILDERS AND OTHERS.

**THE Court of Sewers for Westminster and** part of Middlesex, will be ready at the Court House, No. 1, Greek-street, Soho-square, on FRIDAY, the 21st of May, 1847, to receive TENDERS for the following Works, viz.:—To arch over 1,100 feet of the Kings Scholars Pond Sewer, north-eastward of the Skew-bridge, in the Vauxhall-bridge-road, Westminster. A Section and Specification of the above Work may be inspected, and Forms of Tender, and other particulars obtained at this Office, daily, between the hours of Nine and Four. Parties offering must be in attendance at One o'clock precisely, on the 21st of May instant, with sealed Tenders, marked on the outside "Tender for Works." Each Tender must be strictly in the printed form prescribed. The Court does not bind itself to accept the Lowest Tender.

LEWIS C. HERTSLET, Clerk.

Sewers Office, No. 1, Greek-street, Soho-square.
May 6th, 1847.

LONDON, BRIGHTON, AND SOUTH-COAST RAILWAY.
CONTRACT FOR MAINTENANCE

**THE Directors of the London, Brighton,** and South Coast Railway are prepared to receive TENDERS for the Maintaining and Upholding the Way and Works of their Coast Lines for a period of seven years; the Contract to be let in Two Divisions, viz.: East Coast Branch, from Brighton to Hastings, being a Distance of 22¾ miles, or thereabouts, and West Coast Branch, from Brighton to Portsmouth, being a distance of 44¾ miles or thereabouts. Specifications and Forms of Tender may be seen at the office of the Resident Engineer at Brighton on and after the 10th May next, and sealed tenders, in the prescribed form only, will be received at the Secretary's office, London, not later than Ten o'clock on the morning of the 24th of May next, when parties tendering, or their accredited agents, are requested to be in attendance. The Directors do not pledge themselves to accept the lowest tender.

J. J. BUCKTON, Secretary.

London Terminus, 27th April, 1847.

TO BUILDERS.

**PARTIES disposed to contract with the** Directors of the Corn Exchange and Market Company for the erection of the intended Exchange, Public Rooms, and Market House, may inspect the Plans and Specifications of the same on application at the office of Mr. W. A. NICHOLSON, Architect, Lincoln, at any time between the 10th day of May and the 1st day of June next; on or before which latter day the Tenders must be sent to my office, sealed, and indorsed "Tenders for the Lincoln Corn Exchange and Markets." The Directors do not pledge themselves to accept the lowest tender. By order,

WM. ANDREW, Secretary to the Company.

CHURCH AT LUMB, NEAR NEWCHURCH, LANCASHIRE.

**PARTIES desirous of Tendering for the** whole or any part of the works required in the erection of this church, may see the plans and specification at the house of the Reverend RALPH KINDER, the incumbent, at Shaw-clough, near Newchurch, in Rossendale, from SATURDAY, the 29th May. Tenders, endorsed as the corner, to be delivered to the Architect, JOSEPH CLARKE, Esq., No. 1, Lincoln's-inn-fields, London, on or before the 31st May. Parties tendering will be required to take out their own quantities, and the incumbent does not bind himself to accept he lowest tender.

TO BUILDERS, CONTRACTORS, AND OTHERS.

**ERECTION of BAPTIST CHAPEL,** Luton, Beds.—NOTICE IS HEREBY GIVEN, that the Committee for Erecting the above Chapel have ordered the Plans and Specifications to lie at the George Hotel, Luton, for six days, from the 10th day of May next, for the inspection of parties desirous to contract for the erection of the above building. Sealed Tenders to be left at my office, on or before Monday, the 17th day of May next. No Tender will be received after Six o'clock, P.M.

RICHARD WARING, Solicitor, Luton.

### CONTRACTS.

TO BUILDERS.

**BUILDERS willing to deliver Tenders for** the erection by contract of a new street in the Town of Wansford, Saint Mary, Lincolnshire, on the Bedford Hospital Estate, under the superintendence of Mr SYDNEY SMIRKE the hospital architect, can inspect the drawings and specification at the Manor House, Wansford, any day except Sundays from the date here of, until Tuesday, the 1st day of June next, on which day the Tenders are to be delivered at the Clerk's Office, Bridewell Hospital, New Bridge-street, Blackfriars, London, sealed, endorsed "Tender," and addressed to "The Committee of Governors of Bethlem Hospital."

B. WELTON, Clerk.

Dated May 1, 1847.

TO BUILDERS, &c.

**PERSONS desirous of Tendering for the** erection of a small house for His Grace the Duke of Manchester, at Needingworth, near St. Ives, Hunts, may see the drawings and specifications, on application to Mr. HABERSHON, the Architect, St. Neot's, Huntingdonshire, to whom sealed Tenders are to be delivered on or before Thursday, May 20th, at Twelve o'Clock. The Architect does not bind himself to accept the lowest Tender.

TO BUILDERS, &c.

**PERSONS desirous of Contracting for the** erection of an extensive Stone Terrace, Ornamental Walls Entrances, Seats and other Works, at Lilford Hall, near Oundle, Northamptonshire, may learn the particulars and receive an order to see the drawings and specifications, on application to Mr. HABERSHON, the Architect, the Priory, St. Neot's, Huntingdonshire. Sealed Tenders are to be delivered to the Architect, by Twelve o'Clock, on Thursday, May 20th. The lowest Tender will not necessarily be accepted.

BOROUGH OF BIRMINGHAM. Lunatic Asylum. Notice to Builders and Contractors.

**PERSONS desirous of Contracting for the** Erection of the Pauper Lunatic Asylum for the said borough, are hereby informed that the drawings and specifications of the intended works may be inspected from the 26th day of April inst. to the 17th day of May next, at the office of the Architect, Mr. D. R. HILL, in Christchurch-buildings, Waterloo-street, Birmingham; and that copies of the conditions for the Contract may be had on application to Mr. HILL, personally or by letter. Tenders for the erection of the whole of the buildings, or for any portion thereof, endorsed, "Tender for the Erection of the Birmingham Lunatic Asylum," to be sent, sealed, under cover to the Town Clerk (post-paid), on or before the 24th day of May next.

N.B. Parties wishing to contract will be allowed to appoint two respectable and competent persons to take out the quantities of the various works, one of such persons to be approved of by the architect; and such persons are also requested to send their names to the architect on or before Saturday, the 1st of May next.

Birmingham, April 7th, 1847.

Guildhall, 30th April, 1847.

**THE Committee for letting the City's Lands** will meet at Guildhall on WEDNESDAY, the 19th day of May next, at One o'clock precisely, to receive TENDERS for LETTING, on Lease, for thirteen years, from Lady-day last, a House on the north side of L me-street and on the east side of Beehive-passage; and also for Letting, on Lease, for twenty-one years, from Midsummer next, Two Houses, Nos. 3 and 3, Saint James'-Duke's-place, near Houndsditch. Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall.

THOMAS SAUNDERS, Comptroller.

PLANS FOR PUBLIC SCHOOLS.

**THE Committee for Building Schools for** the District of Christ Church, Bermondsey, are prepared to receive PLANS for the erection of the same. The proposed accommodation is for 300 children, with residence for master and mistress, at a cost not exceeding £900.—Plans to be sent in by 22nd May instant, and particulars may be obtained of Rev. R. MARSHALL MARTIN, 7, Claremont-place, Upper Grange-road, Bermondsey.

**ROYAL ACADEMY of ARTS, Trafalgar**-square. The Exhibition of the Royal Academy is now open. Admission (from Eight o'clock till Seven), One Shilling; Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Dep Sec

**NEW SOCIETY of PAINTERS in** WATER COLOURS.—The Thirteenth Annual Exhibition is now open, at their Gallery, 53, Pall Mall, near St. James's Palace, from 9 o'clock till dusk.—Admission 1s.; Catalogue 6d

JAMES FAHEY, Secretary

ARMORIAL BEARINGS.

**ARMORIAL SHIELDS and Heraldic** Devices of every Description, for Ceilings, Cornices, or Family Monuments, emblazoned by WM. PARTRIDGE, Heraldic Artist, 123, Great Portland-street, Cavendish-square.

WM. PARTRIDGE has had twenty-nine years' experience, and can refer to various churches and mansions where he has executed the above works.

**ARTISTS, DESIGNERS, and Amateurs** are informed that the General PRACTICAL SCHOOL OF DESIGN, 18a, Maddox-street, Hanover-square (Master J. M. Leigh, Esq.), is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female—with Weekly Lectures on Art.—Terms, One Guinea per Quarter.

R. W. BERMAN, Hon. Sec.
24, Green-street, Grosvenor-square.

**PAVING, 2s. 9d. PER SQUARE YARD.**

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 13, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. [illegible]; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch. 1, King-street, Portman square. — Terms, Cash only.

THE UNION PLATE GLASS Company beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.
N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three-quarter-inch thick.
H. CHRISTIE, Agent, 99, Hatton-garden, Holborn.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE. A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian [illegible] Sheet Glass, either cut to sizes or in [illegible] cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally, is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimension. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

BUILDERS, PAINTERS, GLAZIERS, and Others are respectfully informed that J. WINCH, many years foreman to Mr. R. COGAN, is able to supply them with BRITISH and FOREIGN CROWN and SHEET-GLASS—Colors—Varnishes — Brushes — Pipe and Sheet-Lead—Pumps—Closets—Basins and all other materials used in the Trade on the best wholesale terms. Prices will be forwarded on application at the Warehouse, 15, High-row, Knightsbridge. ORNAMENTAL GLASS always in Stock.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

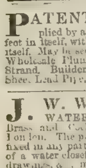
CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

| | | £. | s. | d. | |
|---|---|---|---|---|---|
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ...... | 4 | 4 | 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot. |
| | Fourths .... | 3 | 10 | 0 | |
| | C.C. .......... | 2 | 8 | 0 | |
| | C.C.C. ........ | 2 | 0 | 0 | |

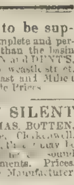
SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

STAINED GLASS.—To Clergymen, Architects, and Others, desirous of furnishing their own designs and materials for Church and other Windows, can have their glass cut and glazed by the Advertiser, who has a practical knowledge of stained glass in all its branches, and will give any instructions that may be required in the art of imitating the antique. Old windows restored and releaded. Ladies and Gentlemen who paint their own glass will find in the Advertiser a [illegible]. Communications from the country punctually attended too.—Address, A. B., office of "The Builder," York street, Covent Garden.

CHAS. WM. WATERLOW,



MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sun-blind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed Feather Factory, 14, Kingsgate-street, London.

PATENT URINAL BASON, to be supplied by a self acting or other apparatus, complete and perfect in itself, without requiring any other fitting than the basin itself. May be seen and had only at Messrs. BURTON and DENT'S, Wholesale Plumbers and Lead Merchants, 31, Newcastle-street, Strand. Builders and the Trade supplied with Cast and Milled Sheet Lead Pipe, cut to any lengths, at Wholesale Prices.

J. W. WILKINS'S PATENT SILENT WATER-CLOSET, Manufactured by CHAS. BOTTEN, Brass and Cock Founder, [illegible], Clerkenwell, London. The peculiar advantage of this closet is, that it may be fixed in any part of the house without communicating the sound of a water closet to any of the surrounding apartments. Prices, drawings, &c. may be had on application to the Manufacturer where the closet may be seen in action.

ARCHITECTURAL CARVING WORKS (IRVING'S PATENT), late Sir Francis Chantrey's Foundry, Eccleston place, Pimlico, [illegible].
Architects and Builders are respectfully informed that Carving in Wood, Stone, and Marble, by patent Machinery, is carried on at the above premises. [illegible] beautifully executed [illegible] at comparatively small expense. [illegible] try, to work on the spot, at a great saving in price. Fonts, chimney-pieces, Gothic windows, fluted columns, monuments and head-stones, are likewise beautifully executed, and ready for fixing or fixed. Mouldings, wood and stone, made to any pattern; scagliola and inlaid work executed in all their branches. For the beauty of their workmanship, the public are respectfully informed that a show-room has lately been fitted up on the premises [illegible] other establishment in London, for the inspection of their merits.

CARVING BY MACHINERY. JORDAN'S PATENT.
TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decorations, to the peculiarities of their Machinery and the proofs of its efficiency, which are to be found in the fact of its being employed at the Government Workshops for the interior decorations of the New Palace at Westminster, [illegible] the Exhibition of [illegible].
*The Illustrated [illegible]*, in speaking of the Specimens of Carvings produced from Jordan's process, "These were really astonishing. A bunch of Hops and brace of Partridges were worthy to hang by the side of Grinling Gibbons's Works. A portion of the Ghiberti Florentine Gates were also very successful. The Machinery employed accomplishes precisely the task assigned to the sculptors assistant. It clears away all the superfluous [illegible] and prepares the work for the hand [illegible] of the Artist. No matter how high the relief, how low [illegible] the undercutting, no difficulties baffle this Machinery."
The Proprietors find it to be due to themselves and to the Public to state that they have at present only one Establishment which is their Machine Carving Works at Belvedere Road, Lambeth, formerly Coade and Sealy's Terra Cotta Works, where specimens may be seen and estimates for large works obtained.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only. 64, WATERLOO BRIDGE ROAD.
An Apprentice wanted [illegible].
N.B. Wanted, a good Grainer and Writer; also, an Ornamental Painter or Penman. [illegible] None need apply unless good workmen, and have good references.

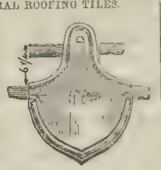
TO ARCHITECTS, BUILDERS, AND OTHERS.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained at MINTON and Co.'s Warehouse, [illegible] Albion-place, Surrey side of Blackfriars' Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire-places, &c.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and [illegible], Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.
N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace row, Worcester.

PATENT ARCHITECTURAL ROOFING TILES.

ARCHITECTS, Builders, and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and effect surpass every other kind of roofing, whilst their cost is little exceeds the covering with common pantiles, and their superiority over slating is at once apparent.
For prospectuses and full particulars, apply to Mr J. G. HUGHES, at the Company's Offices, 158, Strand.
Price, from 16s. to 22s. per square.



TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK and TILE MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's Office, 193A, Piccadilly, from Ten A.M., to Five P.M. Mr. ROBERT SCRIVENER, who has been appointed manager in the room of Mr JOHN AINSLIE, will show the machines at the works at Alperton, which is within a mile of the [illegible] station of the London and North-Western Railway, and two miles from Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, [illegible] Piccadilly.
These Machines may also be seen at Mr. Sligh's, [illegible], Edinburgh, Mr. Lawrence Hill, [illegible], Glasgow, Mr. Robert Charles, Mill-hill, Leeds; Messrs. Finch and Cope, Penkridge, Staffordshire; and Messrs. Drummond and Son, Dublin.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.
The properties of this Paint are preventing iron from oxidation, wood from decay, and masonry from damp; it neither [illegible] Railway bodies, Steam, Gas, and Water pipes, [illegible] It preserves vegetation on the outside of buildings and is not affected by spray of sea-water.
PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an [illegible] mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly discovered Liquid Composition, which Messrs Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint.
Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article [illegible].
In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.
Sold wholesale and retail by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated [illegible] tation has a sameness of appearance when compared with the continual variety which different woods present in their natural [illegible] whole interior of a house, which [illegible] Trade supplied.
Sold also at the office of "THE BUILDER," 2, York street, Covent Garden, London.

GAS.—The Introduction of Gas into private dwellings is rapidly increasing; it is therefore of the greatest importance [illegible] the consumer but to the gas companies [illegible] the most secure and simple means of [illegible] The patentees of CARTER'S SAFETY GAS VALVE [illegible] experience and the high testimonials [illegible] recommend it to all persons interested in gas lighting, as being more secure, more durable, [illegible] and in every respect superior to the old plug cock, so frequently leaky or set fast by corrosion. It has the advantage of being inexpensive, and easily adapted to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, [illegible], New-cut, near the Blackfriars-road.

GAS.—The National Economic Gas Burner is particularly recommended to the notice of Architects, Builders, Surveyors, Engineers, Gas Fitters, and Consumers of Gas [illegible] adapts it for public buildings, churches, chapels, &c., likewise for [illegible] and tested by an experimental meter [illegible] Engineers, 12, Leather Lane, [illegible] free on application [illegible] National Economic Gas Burner [illegible].

SAMUEL HOOD and Co.'s IMPROVED PAVEMENT and STABLE GUTTER, from the peculiar [illegible] and the manner of connecting it with the rain-[illegible] It is also, from its superior strength, and [illegible] especially adapted for stabling. Cast Iron Warehouse, 67½, Upper Thames-street.

BUILDERS AND IRONMONGERS are requested, when writing for JENNINGS' SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and [illegible] hang the shutters RIGHT OR LEFT, as they face the front.

JENNINGS'S SHUTTER FASTENER. Shop Fronts are more damaged and disfigured by the Shutter bars [illegible] JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners [illegible] brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board [illegible] have been secured by the invention, and testimonials [illegible] may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal [illegible] Painters, who [illegible] To [illegible] street, Blackfriars road, [illegible].

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.
Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number [illegible] durability, [illegible] Their construction is so simple [illegible] superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently [illegible] and are safer [illegible] to draw up in [illegible], without machinery [illegible] oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees [illegible] in the action [illegible] the Court [illegible] has granted a perpetual Injunction for restraining all infringements of this Patent and therefore all parties are hereby cautioned against infringing the same.
THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering [illegible] shutters (as secured by this Patent) is [illegible] of effecting that object. In large shutters it is indispensable.
Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or [illegible] which they have [illegible] enables the Patentees to challenge comparison with any others. They will guarantee all Shutters [illegible] last twice as long as [illegible] laths.
[illegible] REVOLVING WOOD SHUTTERS [illegible] at the same prices as other [illegible] fitted with their patent raising gear and proper metallic hinges, without which no shutter can be [illegible].
BUNNETT and CORPE are likewise Patentees and Manufacturers of [illegible] SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, ZINC, [illegible] WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.
[illegible] Brass or Zinc [illegible] Moulded, [illegible] Fittings of [illegible] and lower in price than any other house. Contracts taken in Town or Country.
[illegible] supplied for the Trade.
Offices at No. [illegible], London; Works, at Deptford, Kent.
[illegible] Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, [illegible] Works.

HEAL AND SON have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam: thereby no [illegible] from the unpleasant smell of the stove which all [illegible] feathers are subject to that are dressed in the ordinary [illegible] the feathers the bulk is greatly increased, and [illegible] the price of New Feathers.

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| Mixed, per lb. ............ | 1s. | 0d. | Foreign Grey Goose ...... | 1s. | 8d. | Best Irish White Goose ........ | 2s. | 6d. |
| Grey Goose .............. | 1s. | 4d. | Best Foreign Grey Goose .... | 2s. | 0d. | Best Dantzic White Goose .... | 3s. | 0d. |

HEAL and SON'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court road.

CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and only Patentees of THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronised by

HER MAJESTY'S WOODS AND FORESTS, HER MAJESTY'S COMMISSIONERS OF CUSTOMS, HONOURABLE EAST-INDIA COMPANY, HONOURABLE BOARD OF ORDNANCE, HER MAJESTY'S ESTATE, ISLE OF WIGHT, [illegible] PARK.

And by the most eminent members of the Royal Agricultural Society [illegible] it has been exhibited and OBTAINED THE PRIZE [illegible] Royal Agricultural Society's [illegible].
[illegible] non-conductor of heat [illegible] ONE PENNY PER SQUARE FOOT. Samples, [illegible] Felt, for covering Boilers, [illegible] DIRECT to the FACTORY [illegible] CAUTIONED AGAINST [illegible] F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.
Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

The Builder.

No. CCXXII.

SATURDAY, MAY 8, 1847.

A GREATER crowd never assembled within the rooms of the Royal Academy on a "first day," than was found in them on Monday last, and we will venture to say that those composing it had never seen there a better collection of modern works of art than is now presented.

It should always be remembered, that the paintings there exhibited are, with some few exceptions, the produce of the year.

Some of our travelled friends, who would shew how fastidious knowledge has made them, should especially be reminded of this. The collections they have visited of works of by-gone masters, both at home and abroad, are the results of many years,—the best examples of the best men, shifted and sorted and weeded. When they institute comparisons between this and these, they do injustice.

Creswick, Etty, Herbert, J. P. Knight, Lee, Leslie, Maclise, Mulready, Pickersgill, Roberts, Stanfield, Webster, Witherington, exhibit fine examples of their right to the position they have attained; and the rising men, R. Ausdell, Elmore, Egg, Frith, Frost, F. Goodall, A. Johnston, Kennedy, Lance, F. R. Pickersgill, Redgrave, Lear, Linton, E. M. Ward, and many others, tread worthily forward.

The number of pictures returned for want of room must have been very great. More room is necessary, and must be had. The demand for modern works of art has immensely increased within these last few years, yet the number of works exhibited remains the same. We have seen several excellent pictures which have been returned, and more that are out of proper sight, though in the rooms; and know what loss and privation will be the sad consequence to their authors.

It is quite time, as we have before urged, that the national collection should be removed to some fitting structure, where it will have room to grow, and that the present building should be wholly appropriated to the Academy and annual exhibition.

In the Academy itself, some move is looked for, and it may be hoped, will shortly be made. We trust that the time is not far distant, when amongst other improvements, the exhibition will be thrown open freely to the masses, at certain periods. That this may be done safely has been clearly proved; the value of it must surely be evident to all who are friendly to national progress. The council of the Art-Union of London in their last report, justly remark, "that the annual exhibition of works of Fine Art, opened by the Society, gratuitously, to the public, may be regarded as one of the most important results of the Association;" and that "they would gladly see greater facilities for the enjoyment of works of art elsewhere afforded to the people generally, than now exist."

On this point we are ourselves most anxious, and we would suggest to the "Society of British Artists," that they should *set the example*, by admitting the public gratuitously to their exhibition, for a certain number of days, at the close of the season. It would be a graceful return for the charter of incorporation recently granted to them.

We are wandering, however, from the walls of the Academy.

The architectural room is, in some degree, an improvement on that of last year. The number of drawings admitted is greater, too, although they are still over-laden by "Coquetry and Gallantry," "Rural Courtships," and "Charity," pictured in bright colours.

No. 1244, "South East view of the Church of St. Nicholas, at Hamburgh, now under erection," by G. G. Scott, and 1247, an interior view of the same church, are the most important drawings in the room. The design appears to have been altered slightly since the lithograph of it was published; if carried out efficiently, it will prove honourable to our age.

S. Beazley exhibits "New Improvements on the Castle Hill, at Dover" (1077), shewing a crescent of residences in the castellated Gothic style, of some importance.

R. and J. Brandon have several drawings: "Portswood Church, Southampton" (1102), an early-decorated structure, with the tower at the east end of the south side of the nave. "The Chancel of St. Martin's Church, Leicester" (1134), A Tudor "House, now erecting at Reigate" (1157), and others.

S. Smirke shews "The New Carlton Clubhouse" (1,109), originally entrusted to the late Mr. Basevi and himself, an engraving of which with some particulars will be found in our present number.

Wyatt and Brandon have several clever designs: "A Chapel erecting in the City of London and Tower Hamlets Cemetery" (1117), an octagon Norman building after the model of the Templars' churches; "Mansion erecting at Craig-y-nos, Breconshire" (1196), very picturesque in arrangement; and "Perspective View of the Maria Antonia Railway Station, now building at Florence."

D. Mocatta has been engaged in erecting a large mansion at St. Michael, in the Azores, Italian in style, with a campanile, and exhibits a view of it nicely set forth.

T. Bury has two very good drawings of "Battersea New Church, now erecting from the designs of Lee and Bury" (1187 and 1188). The style is the decorated.

L. W. Collman, in 1213, "View of a Library," shews an excellent piece of decoration.

J. J. Scoles exhibits a "View of the (Roman Catholic) Church of the Immaculate Conception, erecting near Berkeley-square," a clever design, to which justice is scarcely done by the drawing.

J. K. Colling sets forth the "Interior of Knapton Church, restored," wherein the painting of the roof is shewn as it *is*, and not as it would be seen, and therefore has rather a flaunting appearance.

"A Bird's Eye View of the Birmingham Cemetery," by Hamilton and Medland (1148), shews that the style adopted is pointed; that the church, with tower, has a range of catacombs on each side of it; and that a part of the land in front of the church is excavated to get other catacombs.

1108, by A. Johnson, is one of the best of the "Designs for an Architectural Institute," submitted in the competition for the Royal Medal.

C. J. Richardson has a "Riding School," (1132) the roof of which is ingenious.

G. Alexander exhibits a design for "Almshouses" (1164) and a "New Church (decorated) now erecting at Salton Waldron, near Shaftesbury."

1234, "St. Kyran's Roman Catholic College, now erecting at Kilkenny," by W. D. Butler, seems a very large building, in pointed style, of very indifferent design.

We shall return to the room with more care before long.

## THE DESIGNS FOR THE ARMY AND NAVY CLUB.

SUCH a competition as that for the new building for the Army and Navy Club, the result of which we have already announced, has not occurred during several years past. Since that of the Royal Exchange, competitions have either been confined amongst a few selected individuals, or been comparatively unimportant. In the present case, the object was one which allowed great scope for embellishment,—the amount allotted being in no respect inadequate, whilst the site, though requiring the full exercise of skill in arrangement, was favourable for the display of art. The result is, that sixty-nine designs have been submitted; out of which some call for high praise, and a large proportion, in some point or other, are well worthy of examination. We have devoted more time and attention to them than we are usually able to spare for any single object, from the desire of forming some opinion on the propriety of the selection. The difficulty, notwithstanding, we have found to be great, and, had we required such an argument, would have convinced us of the impossibility of any equitable decision from individuals not engaged in the practice of architecture. Coming to this inquiry with all the facility which we necessarily possess, of understanding plans and elevations—things which to nearly all the gallant judges, as indeed we heard some of them affirm, must be perfectly incomprehensible—accustomed as we are to the various considerations affecting convenience, space, light, and sound construction in buildings of this nature, we yet felt that though we started with these advantages, we had still a task which required great deliberation, and a knowledge of the peculiarities of the object and the site, scarcely possessed without having devoted the time and labour required from a competitor. Indeed, without now coming to a definite conclusion upon that subject, we would say, that there is strong ground for the opinion held by many, that the competitors themselves are the proper judges.

It may be well to state, that the ground has a frontage of about 100 feet on the west side of St. James's-square, and of the street which enters Pall Mall, and a frontage of about 60 feet in Pall Mall; but there is a long piece extending westwards from the north end of the principal portion, indispensible for the extent of accommodation required, although very awkwardly situated as regards the provision for light, and the rights of adjoining owners. In most of the designs there is an entre-sol between the basement and the ground-floor, the kitchen department being in the basement, we believe, in every design but one. In some of the designs this basement story would be very ill lighted, for in one or two cases only has the mezzanine story been raised to a high level. Many of the designs have but two stories above, apparent in the decoration, but nearly all have a second-floor arranged in some way. The morning-room being desirable with windows looking into Pall Mall, most of the entrances are on the east, and the "coffee-room" generally extends from the north side of the doorway, westward, in some cases for 80 feet and upwards.—In general character of decoration, this being one of those occasions in which it may be desirable to record progress, we think there is evidence of considerable advance in architectural taste. Notwithstanding that there is an unaccountable resemblance of general character in many of the designs, which make use of a combination of arcades, or an arrangement of windows and cornices too directly traceable to the Reform Club, and that the influence of the New Board of Trade is distinctly visible in others, there is still much taste displayed in details; whilst we cannot but recollect that ten years ago we should have had windows without architraves, and a few Grecian columns as the sole decoration.

As regards the justice of the selection made, we believe the committee have been anxious to

come to a correct opinion, as indeed they might have been in any other matter in which they had no practical experience; and there is no evidence of any hasty decision, or want of such consideration as they were themselves able to give. The design they have chosen is in many respects creditable to its author. The elevation has, indeed, some excellent features; but we think is, nevertheless, quite equalled by several. The space devoted to the purposes of the club is very meagre, indeed quite insufficient; and the internal design, with all the advantage of the care which has been taken to shew it, is inferior to that of many other competitors. The second design, by the same author, is still less satisfactory; and if it found favour in the eyes of the committee at all, must have done so from its circular corner and window;—an indispensible requisite with those who, like the late author of the "Rejected Addresses," "flatten their noses against the window pane." It is remarkable that some excellent designs in this competition are not favourably rendered in perspective; and, indeed, in one or two cases, a want of acquaintance with this essential requisite in the language of the art is betrayed, which we should not have to notice in the work of any properly educated artist. And, notwithstanding that the artistic skill shewn by some, would have received the admiration of professional judges, it cannot be supposed that with them the want of it in the one case, or the presence in the other, would have stood in the way of a fair examination into other evidence of design, which it would be scarcely safe to say is the case in a course like the present; whilst a gilt frame would be likely to give no more value to the design than it ought to possess. We allude to these points, because we think that some of them, or others invisible, must have occasioned a preference, having looked in vain for sufficient reason in other respects; and knowing, as we do, the anxiety of the committee to prevent any suspicion of unfairness, we are surprised they did not take the obvious course to secure both a just decision and their object in the competition, by seeking the opinion of persons able to see what would meet the purpose contemplated. To the allotment in the second instance, there may be less reason to object; for though the external features of Messrs. Fowler and Fisk's design are not what might be desired, the interior, in arrangement, is worthy of praise, as being well calculated to serve the purpose of the club.

In Mr. Tattersall's selected design, we find a basement story containing the kitchen department, the fittings arranged precisely as those of the Reform Club,* and a mezzanine, much after the same original. The morning room, on the ground floor, occupies the Pall Mall front, and above it is the drawing-room. The staircase and entrance are in the centre of the length, with a low tetrastyle portico to the doorway. The coffee-room is north of the latter, and has the form of the letter L, reversed. It cannot possibly give the accommodation required. The servants' rooms occupy a former building, proposed in this design to be retained. The design exhibits a range of windows in the ground story, having architraves and cornices, above which is an arcade, a narrow open loggia being formed outside the drawing-room, looking on to Pall Mall. A good character, however, is gained by strengthening the angles, where the windows and arches of each floor are omitted, and above the entrance there is a central feature, formed by carrying up the parapet, and introducing sculptured accessories. In construction there are numerous doubtful points; the number of stairs shewn could not possibly take the members to the upper floor; and there must be a great mistake in the relative height of the proposed and adjoining buildings.†

In Messrs. Fowler and Fisk's design there is but one story below the street level, but three appear in elevation. The plan differs from most, in having an excellent coffee-room, and in placing the kitchen nearly on the same level, at the back, where it is open, and ventilated from above: lifts, and with them it is supposed much inconvenience and annoyance from smell, have been dispensed with. The kitchen at the United Service Club is similarly disposed, and it is stated with admitted advantage, although it is right to say that lifts are not so objectionable as might be supposed, and at the Reform Club they are scarcely ever out of order. Considerable merit is also claimed for the arrangement of the corridors, and other means of carrying out the purposes of the club. The principal rooms are also of good dimensions, and it has been stated that in each case, they exceed those in any existing club. The morning-room being in the usual place, and the entrance as in the other design, the coffee-room is at the north, being in width thirty feet, and extends to a length of a hundred feet. It will be lighted at the east end by windows, at about half its length by glazed compartments in the ceiling, and at its circular termination by a glazed dome light, supported by columns. In this part of the plan, at least, there would seem to be a great advantage over many designs, for in several that may otherwise have high merit, a room of eighty feet long and upwards is proposed to be lighted at each end only. The visitors' coffee-room would, however, bear some increase of light. On the first floor, the drawing-room, library, and card-room form one suite. The external design shews a rusticated basement, an order on the first floor, and an attic pilastrade. The order has a broken entablature, the columns supporting statues. A more important feature, in the shape of an arch over a large window, occupies the centre of the principal façade, and the building is there terminated by a triumphal chariot. The entrance is rather deficient in importance.

Passing through the rooms, we noticed that No. 1 had a basement, good in design, but that the plan had much loss of space in passages. No. 4, by Messrs. G. Vulliamy and Kennedy, had some good parts, although suggestive of their sources, and there moreover appeared to be something wanting in palatial character. No. 11, by Mr. George Truefitt, who it will be recollected has contributed some illustrations to our journal, is one of the only two Gothic designs, and has very considerable merit. It has much of continental character, with lofty roofs, central tower, and angular pinnacles, and the elevations particularly are drawn with great care and knowledge of forms. It cannot fail to give a degree of reputation to its author. In No. 19, Mr. Pickett, who lately published a curious book on "A New System of Architecture," has excited much laughter at his mode of illustrating his ideas. "Give your judgment," said a celebrated lawyer, "but never your reasons, the first may be right, the second is just as likely to be wrong:" to Mr. Pickett, we would say, as long as you advocate the principle of suspension in words, you may be worthy of attention, but when you attempt anything further, you prevent the investigation which possibly may be merited. The ordinary system in architecture has this advantage of Mr. Pickett's, that the principle of *support* is natural, whereas that of suspension always requires an explanation to do away with the first thought of insecurity. In No. 15, Mr. F. W. Fiddian has given a colonnade projecting from each front of the ground-story. In No. 22, there are statues at the angles, in places scooped out for the purpose, the angle of the roof being also interfered with. No. 23, by A. Salvin, has a projecting window to the morning room, which might have been made a more graceful feature. The pilasters above seem of very great length. The coffee-room here is 85 feet long, yet only lighted at each end. No. 24 shews some taste in the arrangement of the plan, which is scarcely borne out by the elevation. No. 25, supposed to be by Mr. Railton, has a large space occupied by the hall, but has a good coffee-room. The room is of the greatest width that could be got, so that it is entirely lighted from above, and a vault springing from columns, makes an excellent subject for a perspective interior view. The exterior is profusely enriched with sculpture, and the cantilevers of the cornice have Victories, but the basement might hardly have proceeded from the same hand, and could easily have been improved by strengthening the angles, or by placing piers beneath the pilasters above. Messrs. Allom and Crosse, No. 35, have a good plan with the entrance as in the other cases. They have introduced a picture-gallery beyond, which forms a good access to the coffee-room at the back. On the first-floor the library is placed apart from the drawing-room, and access is gained to it by a distinct staircase. The interior decorations seem to have been carefully considered, and are shewn in some clever sketches. Mr. Lamb's design, No. 38, would at once be recognized as one of his; he has displayed much taste, although we think scarcely succeeded in catching the palatial character, which, in opposition to one of the competitors, we think a club ought in some degree to possess. There are three stories, and all the windows have arched heads, with rustics round the archivolts. In this case the entrance is in Pall Mall; the lobby, hall and staircase, occupy the full length, and the latter is carried up to the top. We fear the light for the kitchen would have been deficient. The author of No. 39 has hardly taken the pains to explain himself, but the plans of some of the rooms appear to combine some valuable ideas. Mr. J. Johnson, No. 40, has the club-room looking into Pall Mall, with a large projecting window, which would seem to give all the advantages of the much-desired bow. The entrance is in the usual place. The coffee-room is lighted from above. An open loggia for smoking is provided at the top of the building. The perspective view,—an admirable drawing, shews three stories, the basement having horizontal rustics pleasingly varied. The general design is an arrangement of superimposed columns, occupying central positions, and much ornament is introduced about the cornice and elsewhere, some of which may, perhaps, resemble too closely that on a neighbouring building in the square, also designed by Mr. Johnson.

In No. 41, by Wyatt and Brandon, there is a large arcaded porch to the entrance in St. James's-square, and a recessed loggia to the morning room, ingeniously planned, so as not to interfere with the internal decorations. The morning-room is here again 81 feet long, with windows at each end. The library is over the morning-room; would it not have been better to place the drawing-room next Pall Mall? An open loggia for smoking has been provided at the top of the building above the entrance. The mezzanine story in this design appears well elevated. The ground story and the top of the building are nicely treated, but the windows on the first floor scarcely please us so well. Much taste has been displayed in the interior decorations, which are well explained in sketches. Mr. J. Turner, No. 43, proposes to use brick and stone; he has employed a number of bow windows on the ground floor, and has introduced much sculpture. In No. 44, Mr. Owen Jones has not been able to forget the Alhambra; his design being throughout a clever attempt to reproduce that style. The entrance is in Pall Mall, and the plan generally seems to have been neglected, the mosaic pavements excepted. There are balconies enriched with ornament, and the angle of the building overhangs in a way that would present some difficulty in construction. On the pedestals round the building there are gigantic aquatic figures, holding the lamps. Mr. E. I'Anson's plan has rather a large space occupied by the hall; the exterior is arcaded in three stories, the angles strengthened and supporting obelisks, and there is an open loggia, as in other cases. No. 29, which we should have noticed earlier, is by Mr. C. J. Richardson. He has, with considerable judgment, elevated the mezzanine story about one step above the street, which is greatly to the advantage of the story below. There is therefore an ascent internally to all the principal rooms. Balconies are carried completely round to the principal stories. The design is marked by some originalities, and is well grouped with central features, elevated above the general cornice. Messrs. Parnell and Smith (No. 46) have adopted a rusticated basement, and an arcaded first floor with balconies. This is one of those designs which are not done justice to by the perspective view. The design of Mr. W. L. B. Granville has a good hall, well shewn in a perspective view. The elevation has three

* Vide THE BUILDER, Vol. IV.

† A correspondent (one out of nineteen) remarks:—"That Mr. Tattersall (No. 1) makes his cornice range in the perspective view with that of Winchester House. Yet his cornice is, according to his section and elevation, 7 feet high, while Winchester House is 9 feet. The author of the second plan, whose cornice above his first-floor windows is 7 feet above the street, makes that range with the Winchester House cornice, and sends the whole of his upper floor towering above the Bishop, whereas, in truth, his whole height is to be equal to that of the adjoining house. The same mis-statement is shewn in the Pall Mall front with reference to the adjoining houses, though perhaps not in the same degree. Such departures from fact should be discouraged. If the first design were carried out as shewn, it would be buried between the adjoining houses—one rising 20 feet above it, and a shop in Pall Mall also above it to the west."

stories columned and arcaded, and bears marks of a close adherence to Italian models. No. 50, by S. C. Fripp, has an entrance, in some respects a good idea, and otherwise displays fancy, but is spoilt by a circular projection upon the angle, the object of which might be supposed, did not the plan raise a doubt. No. 52, by Mr. H. Duesbury, is mainly remarkable for its extremely lofty windows, with balconies from the second floor above them. The design seems to have been carefully considered, and is superior to many. Messrs. Dickson and Brackspear, of Manchester (No. 56), stand alone in the position of their entrance, which they have placed at the north corner in St. James's-square, and by which their plan has many advantages; but the entrance is not sufficiently conspicuous. The general design consists of two arcades and orders, the entablatures being broken, and vases surmounting the pedestals of the balustrades, with longer terminations at the angles. The design, though highly meritorious, would, perhaps, be more suitable for a museum or picture-gallery. Mr. G. Alexander (57) has shewn three stories, columned and arcaded. The library and staircase are the parts which best please us. No. 59 has a plan with the entrance at the corner, forming a circular vestibule, from which a hall extends diagonally, and has some good features, without much loss of space. Mr. G. G. Scott's design is, as might be supposed, in the Gothic style, and is worthy of great praise. His plan is perhaps improved, by his not feeling it compulsory to adopt a central position for the doorway. The building has a lofty roof with dormer windows, a large oriel of two stories projecting from the north-east corner, and a pinnacled turret (from the *Palais de Justice*, at Rouen), corbelled out at the south-east corner. This forms an adjunct to the library on the first floor. In many parts of the interior, perfect knowledge of the style chosen and much artistic skill are displayed. The Messrs. Papworth (No. 69), though they, perhaps, hardly express the purpose of the building, shew in the plan, without much loss of space, considerable artistic skill in the arrangement of recesses, and other features of effect, for which we fear very inadequate justice would be done by a non-professional tribunal. The design has large venetian windows grouped together, and much enriched. So large a surface of glass is shewn on the Pall Mall front, that the piers of division would have to be of iron, in order to support the mass of stone above; and we question whether the effect would not have been better avoided. Nevertheless, the design has great merit. The cornice has Victories as cantilevers.—The exhibition is of such extent, that we have had to omit noticing several designs. Amongst those to which names are not attached, is said to be one by Count D'Orsay, hitherto not known as an architect, though in many other walks of art.

In making this general review, we have not pretended to point out which designs are really best entitled to the premiums, or even to mark the relative merit of the various plans. To do this correctly, would require a much longer and more systematic examination than was consistent with our other duties.

The result, however, to which we arrive with certainty is this, that by not calling in professional assistance, the committee, perhaps unintentionally, have acted unjustly towards the competitors, and, moreover, have involved themselves in a dilemma from which we venture to prophecy, they will find some difficulty in extricating themselves.

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Queen's Drive, Edinburgh.—The carriage way round Arthur Seat and Salisbury Crags is now on the eve of completion. The lowest part has been open for a considerable time, and an easy access now exists along this drive between the Old Town and the Portobello-road. The higher portion, to Samson's Ribs, is in most places quite finished. The road here, although seemingly a terrace above a deep abyss, is now as safe as any portion of the drive, a parapet wall, from twenty to thirty feet high on the outside, inclosing this part. Immediately above Sampson's Ribs the road is all excavated, and the completing link formed between it and the crescent round Salisbury Crags.

## DECORATIONS AT SIR ROBERT PEEL'S.

From the attention given in The Builder, to the subject of interior decoration,* it will be understood, that we examined with some interest the decorations of the rooms and staircase at Sir Robert Peel's house, on the occasion previously mentioned. The staircase consists of a simple flight of steps to the principal floor, and the walls are painted in encaustic colours. The work was executed by Messrs. Collman and Davis. The upper half is decorated in compartments, the principal panel painted on each wall having an allegorical figure, illustrating one of the seasons, in the centre. These figures are in neutral colours upon a dark ground. Arabesque scroll-work is painted in colour at the foot of each panel, and small subjects are introduced at the edges, exhibiting some pleasing and fanciful designs. The whole ceiling is divided into compartments, filled in with squares of ground glass; and a more liberal use of positive colour is here indulged in, with great propriety, and beauty—the red lines upon the glass itself being particularly happy in effect. The frieze beneath the ceiling, is enriched with a scroll in relief—white upon a dull red ground. The gilded brass-work of the railing is arranged in curves of elegant design. We might have preferred the four allegorical subjects in actual relief, but the combination of colours, and the general design in this staircase seem to us worthy of great praise, and shewed an acquaintance with principles, which we have before inquired into, such as we are not in the habit of meeting with. The decorations in the principal rooms above stairs, are almost confined to the ceilings, the walls being nearly covered with pictures. Gilded mouldings, and ornaments relieved by red grounds, serve to unite the ceilings with the walls, the general groundwork being of light hue. The cornice has been judiciously treated, some of the ornaments are relieved by green, according with the olive tint of the walls.—On the ground floor, the dining-room has been well treated. There is little actual relief, except in the ceiling, yet the treatment of colour and form has been very successful. Crimson, or purple, predominating in the carpet, and dark colour in the furniture, the walls are made lighter in tone. The ornament is arranged in panels, painted to resemble oak, the divisions being like pollard oak; and a pattern in dark brown colour is also introduced. The result of the imitation is perfectly successful. We have before argued, that "not the mere *fact* of the imitation, but rather, only the want of success, is matter for regret, according to the particular intention, and that imitations of materials are perfectly admissible, provided they are so good, as to awaken no sense of inferiority to their originals."† This, which we presumed to give as a fundamental axiom, could hardly have been better observed than in the case under notice; whilst in other points necessary to be recollected by the designer, equal judgment has been displayed. Gilding on the mouldings prevents any dissonance between the walls and ceiling, whilst the dark colour of the ornamental pattern promotes the same union with the floor and furniture. The same kind of treatment, observed in the walls, is carried on to the doors. In the ceiling, colour is more freely introduced, but still without interfering with the object just noted. The gilding is relieved by red; the groundwork is partly light pink, and partly dove-colour.—This apartment looks out on to the garden, next the river, the windows opening on to a balustraded terrace, with vases on pedestals.

The collection consists, as is well known, of unrivalled works by the Dutch masters, some by Rubens, and includes a few by artists of later date. On the walls of the room first entered, were some magnificent drawings, chiefly by Rubens. In the library, were disposed a number of choice proofs of engravings, and in the dining room were a few pictures by Reynolds, and Wilkie's well-known work of "John Knox preaching." The works by Reynolds, are particularly interesting, and include a portrait of himself, of Dr. Johnson, one of George IV. when Prince of Wales, and that known as "Robinetta." The rooms upstairs, are filled with fine works by Rubens, Cuyp, Wouvermans, Hobbima, Vander Velde, Gerard Douw, De Hooghe, and others. "The Triumph of Silenus," and the "Chapeau de Paille," by Rubens, are amongst his finest works, the latter indeed being called his "*chef-d'œuvre*." At the end of one room, were portraits by Winterhalter, one of Prince Albert, and the other of the Queen and the Prince of Wales. Although perhaps, an involuntary comparison with the works of Reynolds was unfavourable to the merits of these portraits, we cannot say, that they would bear comparison with the works of some living English artists we could name.—In a smaller room adjoining, were two pictures by Reynolds, and portraits of two of the daughters of Sir Robert Peel, by Sir Thos. Lawrence and E. Landseer.

Altogether, throughout the house, we marked the perception of the delights and the graces of art, not usually found, even with the opportunity of extravagant costliness. We can only regret, that the very circumstances, which made the association of individuals of kindred tastes so gratifying to all present, prevented the detailed examination of the treasures that the right honourable baronet possesses, which they so fully deserve.

* Vide Vol. IV., pp. 14, 180, 192, &c., also "The Objects and Resources of Art in Interior Decoration," page 22, and "Imitation and Artifice in Form and Materials," page 47, *ante*.

† Page 47, *ante*, and elsewhere.

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## ROYAL INSTITUTE OF ARCHITECTS.

### ELECTION OF OFFICERS.

The annual general meeting of the Institute was held on Monday evening last, to receive the report of the council on the state of the property and affairs of the Institute, and to elect officers for the ensuing year. Mr. Tite, V.P., was in the chair.

The report shewed that the finances were in a very satisfactory condition. Relative to Mr. Weale's proposal to publish annually a volume illustrative of the works of the members, which appeared in our pages some time ago, the council stated, that, as the plan required them to guarantee a supply of matter for the volume by the members, which they had not power to compel, it was necessarily declined.

The chairman alluded to the difficulty with which becoming papers for the evening were obtained by the secretaries, and called on the members to afford them that assistance which they ought to expect.

Thanks having been voted to the various officers of the past year *seriatim*, the members proceeded to ballot for council, and the following gentlemen were elected:—*President*, Earl de Grey; *Vice-presidents*, Messrs. S. Angel, A. Poynter, and C. Fowler; *other members of council*, Messrs. G. Alexander, H. Ashton, C. Barry, D. Brandon, R. D. Chantrell, T. L. Donaldson, J. B. Gardiner, E. I'Anson, G. Pownall, and John Woolley; *hon. secs.*, Messrs. Bailey and Scoles; *foreign sec.*, Mr. Donaldson.

It was stated that the president was about to issue cards for his annual conversazione to the members.

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Railway Stations.—The alterations at Rugby station are to be immediately commenced, by the erection of 300 cottages. A crescent of offices is to be erected with divisions for the different companies to occupy them, and who are to have their warehouses, sheds, &c. built behind the offices. Six lines will converge at this point in 1849, when the new offices are expected to be completed.——The Midland Company are to build a new passenger station, at Derby, north of Derwent, with approaches that may have considerable influence on the future arrangement of the streets and traffic of the town. The precise locality, however, has not yet been fixed.——Active preparations are in progress for the erection of the Blackburn station of the Bolton line, which is to be on a large scale; length 252 ft., breadth 40 ft. The four lines of rail in front of the platform (330 feet in length) will be covered by an iron roof in one span. The buildings will be of the Italian Palazzo style, with entrance and carriage way under a lofty covered portico, and numerous approaches.—The Darwen station will be a gothic structure with ample accommodation.

Competition at Bury.—A competitor for the designs for workshops, &c. at Bury, wishes to know whether any of our correspondents can give information as to the result.

## AWARDS OF THE OFFICIAL REFEREES.

### MATERIALS OF WALLS—CAUTION TO BUILDERS.

With regard to eleven third-rate buildings on the west side of Halford-square, Clerkenwell, the surveyor of that district (Mr. Sibley), having first given notice to the builder, Mr. Watkins, of Islington, that in building the party-walls, "unsound bricks had been laid in such a manner as not to produce solid work;" to which no attention was paid, lodged an information with the referees to the same effect.

On examination by the referees it appeared, "that the party-walls were built with a large proportion of brick-bats, and with mortar made of road stuff or silt, in the place of sand, and of a quality unfit to produce solid work; and the chimney-breast in the party-wall on the third story having been cut into for the purpose of inspection, it appeared that the heart of the wall and breast was composed of dry brick rubble." They accordingly awarded, "that the party-walls of the houses in question have not been built of sound bricks or of stone, or of such bricks and stone together, laid in and with mortar or cement in such manner as to produce solid work, as alleged by the said Robert Sibley in his said information; and we do hereby direct the said William Watkins *forthwith to pull down the party-walls in question.*"

### ATTACHED AND OFFICE BUILDINGS.—SURVEYORS' FEES.

Mr. R. P. Browne, surveyor of the district of Greenwich, submitted the following requisition:—"With regard to certain additions made to buildings of the first class and fourth-rate, more particularly shewn by an accompanying plan: Whereas it is provided in schedule C, part 1, under the head of "Rule for ascertaining area," that the area of every building is to be determined by the number of squares contained in the surface of any floor, &c., at or above the principal entrance, &c., but excluding from such surface the area of any attached building or office, &c.; and, whereas, it is also provided in schedule L, that "for every attached or detached building, distinctly rated (except any such attached or detached building built at the same time as the building to which it belongs, and carried up and covered in within twenty-one days after such building shall have been covered in within the meaning of this Act), such fee as is hereby imposed in respect of additions to, or alterations of buildings, of the rate to which such attached or detached buildings shall belong," then follows the amount of fees to be paid for such works.

Now I, the said R. P. Browne, having much doubt upon the construction of the above clauses, request the award and direction of the official referees of metropolitan buildings to the following questions, to guide me in the just discharge of my official duties:—

First. Whether to a building of the first class and fourth-rate, a kitchen building, one story high, may be erected, if carried up at the same time as the main building, or within twenty-one days after the roof of the same shall have been covered in, without increasing the rate of the house to which such kitchen belongs.

Secondly. Whether to a similar structure a building of two stories may be erected, if carried up and covered in within twenty-one days after the roof of the main building shall have been covered in, without increasing the rate of the building to which they belong.

Thirdly. If both cannot, may either of them be carried up after the expiration of twenty-one days from the roof of the main building being covered in, by notice being given to me for an addition to the main building.

Fourthly. Whether I should be entitled to a fee of 10s. for an addition to a fourth-rate building in either of the above three cases.

Fifthly. What is the meaning of the words "attached buildings or offices."

The referees determined,—"Upon the first point submitted,—that the one story 'kitchen building' is an office belonging to the main building, and that, inasmuch as the area of every building is to be determined by the number of squares, contained in the surface of any floor which shall contain the greatest number of squares at or above the principal entrance to such building, but excluding from such surface the area of any attached building or office area, balcony, or open portico, the kitchen building in question, whether communicating or not by an internal opening with the main building, may be built with the main building, without increasing the rate of such main building.

Upon the second point submitted,—That a building of two stories cannot be erected in the manner shewn in the plan and section referred to in the requisition,* if carried up and covered in within twenty-one days after the roof of the main building shall have been covered in, without increasing the rate of the building, being a building of the first or dwelling-house class, to which such addition may be made.

Upon the third point submitted,—That an addition may be made to a building of the first or dwelling-house class after the roof thereof shall have been covered in, upon notice being given to the surveyor of the district for an addition to such building, but no such addition, as that set forth in the second point submitted, may be made by raising a second story upon the walls of a kitchen building, as set forth in the first point submitted, until the same period shall have elapsed after the covering in of the roof of such kitchen building.

Upon the fourth point submitted,—That the district surveyor would be entitled to a fee of 10s. or 15s., as provided in the Metropolitan Buildings Act, according to the number of the stories of the fourth-rate building, being of the first class, to which any addition may be made of the kind, or under any of the circumstances set forth in the second and third points submitted.

Upon the fifth point submitted,—That an 'attached building' within the meaning of the Metropolitan Buildings Act, is a building in the same occupation with a main or principal building, and separated therefrom by one of its inclosing walls, without any doorway or other internal communication with the main building."

## SCENERY AND DECORATIONS OF THEATRES.

At the last meeting of the Decorative Art Society, Mr. Geo. Cooper in the chair, the second portion of a paper on this subject was read by Mr. Dwyer. The subject was resumed with an examination of the advantages derivable from placing the scenery obliquely on the stage, referring of course to the wings and set-scenes, the flats or back-scenes being in the usual position. Some difficulties in perspective having been alluded to, it was stated that for drawing-rooms and apartments, the scenery ought to be arranged with due regard to the ground-plan of what is to be represented. This would enable actors to enter or take leave in a complete manner; they would not be observable by those in the side-boxes when approaching or lingering for that purpose, and their voices would reverberate and be carried into the body of the theatre. A scene in the "Flowers of the Forest," now being performed at the Adelphi, was described as an example, and also as clearly shewing that with some attention to ground-plan in setting out an interior, together with an introduction of bay windows, octagonal recesses, doors in appropriate places, &c., the variety and perfection of scenery would be greatly advanced.

Mr. Dwyer than directed attention to the principles of design, which he considered as mainly divisible into two classes, ideal and constructive; the former embodying certain characteristics without reference to natural laws, and the latter demanding strict attention to the fundamental principles of composition in art. Ideality, it was said, had in some Extravaganzas been developed in a surprising and ingenious manner, and delicate conceptions in a refined taste were frequently introduced with that remarkable freedom peculiar to the School of Art.

Some chalk sketches, designed for the scenery to the "Enchanted Forest," lately performed at the Lyceum, were exhibited as illustrations of the vigorous manner and spirit of this class of compositions. Constructive design was described as necessary to Architectural subjects. The opinions of Professor Cockerell and others were quoted in acknowledgment of the artistic talent, together with accurate knowledge of the architecture of remote ages, which are frequently displayed in our theatres; and the reader suggested that if the attention of the students in decorative art at the Government School of Design were directed to the contemplation of the better scenic productions, having the beauty and principles of design explained, this would be found one of the most practical and efficient modes of acquiring knowledge.

He regretted that many admirable works of Art, executed for Theatres, should have had such a transient existence, leaving scarcely a trace behind them. The creative fancy and design in numerous instances ought to have been preserved at any cost; and he argued that students in Art would, in a careful contemplation of scenery, realize more freshness and originality in ideal and constructive design than from any other class of examples. Knowing its power and the vast unexplored range, he felt an earnest desire that scene painting should be fully and properly estimated. Engraved examples might offer an interesting collection of the most ingenious fancies of the most eminent Artists.

Perspective, the reader observed, constitutes one of the greatest obstacles to perfection in scenic effects, and he alluded to the defects which ordinarily appear in set-scenes, from their being made up of various parts, placed at intervals along the stage, each part drawn, probably, at a different perspective angle. The peculiar manner of treating perspective for theatrical purposes was explained. While the situation of spectators varies greatly, the treatment must necessarily be imperfect. It is, therefore, usual to set out scenery with two points of sight, but he preferred, in architectural subjects, to have *three*, and to have them placed near the centre, so as to counteract the effect of opposition in the horizontal features of the wings, whereby the scenes frequently are made to appear hoisted. Scenes shewing ground in perspective, are frequently spoiled by the visible junction of the wings and the floor, thus disturbing the illusion of distance attempted by the artist; and he would tint the lower portion of the scene with colour similar to that of the stage. Architectural drop-scenes were frequently objectionable from the same cause, and he maintained that they should never be thus applied, but only as pictures within frames, if at all.

The effect of linear and aerial perspective was adverted to, and the softening influences of colour in aerial perspective were described as pertaining to the highest order of artistic talent. Scenes of this kind are composed of a number of parts, the flats representing sky and extreme distance, while the middle distance and fore-ground are broken into perspective forms. Float-lights being placed behind these parts, impart brilliant effects that no colouring can attain to, resembling the sunny spots of a landscape.

Linear perspective required, it was said, very great consideration, and failures in street architecture, and similar subjects, are often evident to the least initiated observer. The artist, however, has to contend with serious disadvantages from not being permitted to set out this class of scenes upon the stage instead of in the painting-room, and the manner in which they are produced ought to be borne in mind when judging of their merits. Street architecture offers a peculiar difficulty from the actors influencing the scale by their comparative size; this illustrates the absurdity of placing a facade of the National Gallery or other well-known building within the area of a theatrical scene, without a proper regard to distance. As an instance of a favourable effect, he named a scene in the "School for Scheming," at the Haymarket, representing portions of streets abutting on the quay, at Boulogne, which he considered far removed from a common-place effect, and that it also testified what might be obtained by placing scenery obliquely.

Mr. Dwyer next alluded to the taste and refinement Madame Vestris had first presented to the public in her drawing-room scenes, elegantly and completely furnished,* and he also mentioned with commendation some interiors produced at the Haymarket, in a similar spirit. He admired this perfect kind of representation, and was pleased with the manner in which it had been extended to ex-

* The plan shews a communication with the main building on both floors.

* Attributable, as at the Haymarket, probably, to the superintendence of Mr. Planché. *Ed.*

teriors, garden scenes, &c. and he referred to the garden scene to the "Lady of Lyons," at Sadler's Wells, in which the stage is covered with a painted cloth imitative of gravel walks, grass plots, shrubberies, &c. producing together a very superior effect. In a snow scene in the "Battle of Life," at the Lyceum, the stage was covered with painted canvas very successfully, and in the "Flowers of the Forest," the scene of a village church, with well-worn paths, &c. similarly treated, was equally skilful and pleasing.

The reader commented upon the fits and starts usual to these matters, stating that the better scenes were exceptions, while the imperfect school retained the predominance. As one of the earliest and most perfect illusions ever depicted, he described a scene, introduced in the opera of "Acis and Galatea." The last scene in the ballet of "Coralia," at her Majesty's Theatre, was also fully described as an eminent example of scenic display.

He then noticed the machinery pertaining to theatres, and recommended the use of painted canvas placed on rollers sufficiently lofty so as to dispense with the series of curved, scolloped, and straight fly borders, ordinarily representing sky, &c. He next reviewed the inconsistencies which occur in scenery, and properties, being of a different period in character and style to that of historical dramas, mentioning a scene in "Lucia de Lammermoor," at the Italian Opera House, Covent Garden. It represents a Norman interior furnished with one chair of modern French style, and one table of doubtful period, the story of the opera being in 1669. He contended that those adjuncts are important, and that if costume, manners, and customs are rendered faithfully, properties should receive equal attention. The progress in matters of costume from the time of Garrick was noticed, and the properties introduced by John Kemble, Planché, and others, were mentioned with encomiums. The increasing taste of actors shewn in careful dressing and wearing apparel with a bearing in accordance with the period represented, was also favourably commended, as displaying research and accurate study of their art. Mr. Dwyer drew attention to the force with which the varieties of colours in dresses may be developed, by having regard to the background and to the position of the actors. An acknowledgment was made of the elevated taste and artistic arrangements which Mr. Macready had frequently shewn in groupings and tableaux, and he concluded with the expression of a desire to find a proper feeling more generally established between the artists, actors, and managers, so that the capabilities of combined talents might produce results at once gratifying, elevating, and promotive of the welfare of the arts.

## THE LATE MR. ARCHIBALD SIMPSON, ARCHITECT.

Mr. Simpson, who has contributed conspicuously to the adornment of Aberdeen, his native city, was born in the year 1790; and, at the period of his decease, had nearly completed his 57th year. His father, a respectable merchant, gave him the benefit of a liberal education, at the Grammar School and Marischal College. According to a notice of him by Mr. Ramsay in the *Aberdeen Journal*, he early evinced a decided partiality for the profession of an architect, and was apprenticed to the late Mr. Massie, builder, in this city, and was afterwards, for some time, under the tuition of Mr. Lugar, architect, in London. He subsequently visited Italy, where he spent some time in the study of the monuments of classic art, whether ancient or modern. These studies were accompanied by the careful perusal of the best writers on architecture. His preparatory studies completed, Mr. Simpson resolved to establish himself as an architect in his native city. Although, latterly, eminently successful, his professional career was by no means unknown to early struggles; but from the time he obtained an opportunity of displaying his taste and talents, his business progressively increased, and he at length reached the highest status of his profession. He practised in all styles of architecture—the classic and gothic, the ecclesiastical, institutional, baronial, and domestic. Of these, numerous specimens are to be found. To enumerate them all is impracticable; we give a list of the principal:—In the city of Aberdeen—Marischal College, the Public Rooms, Royal Infirmary, Market, and Market-street which gives an easy access to the heart of the city from the Quays, so long a *desideratum;* the Post-office, Mechanics' Hall, East Church, Orphan Asylum at Albyn-place, St. Andrew's Chapel, Free Churches in Belmont-street, Athenæum, North of Scotland Bank, Town and County Bank, Medical Society Hall, Lunatic Asylum, North of Scotland Assurance Office, Oldmachar Free Church, Bell's Schools, Frederick-street, &c. He also planned Bon-Accord-square and Terrace. Mr. Simpson, too, was the first to give an outline of the recently-contemplated city improvements; and his ideas will, doubtless, be found of great value, when circumstances favour that important undertaking. Mr. Simpson was also the architect of the Church of Elgin, General Anderson's Institution there, the Duchess of Gordon's schools at Huntly, the rebuilding of part of Gordon Castle, and the chapel attached to it. He planned and executed, either in whole or in part, the mansion-houses of Boath and Glenferness, Morayshire; Newe, Murtle, Meldrum, Heathcot, Park, Durris, Druminnor, Putachie, Crimonmogate, Scotstown, Haddo, Lessendrum, Thainston, Carnousie, Craig, Pittodrie and Tullos, Aberdeenshire; Stracathro and Letham, Forfarshire. Latterly, he planned the Free Church at Rothesay, the additions to Skene-house, and, at the period of his death, he was occupied with plans for the railway terminus in this city. In addition to the works above enumerated, we must not forget to mention Mr. Simpson's rebuilding of the bridge across the Spey, at Fochabers.

Mr. Ramsay says,—"The extensive business which Mr. Simpson thus enjoyed, was entirely the reward of his undoubted genius and taste. He was imbued with the warmest enthusiasm, and the finest feeling for art. He had great tact in the adaptation of his designs to any given circumstances; and where difficulties occurred, no man could display more adroitness in surmounting them. He was particularly happy in accommodating the style of his works to the purposes for which they were intended, and to the character of the situation in which they were placed. Thus, when at one time it was proposed to place the new Marischal College on the site now occupied by the Free Churches, in Belmont-street, he designed a magnificent classical building, with an expansive and imposing front, and lofty dome, admirably calculated to bring out the great artistic effect of which the situation was susceptible. But when this site was afterwards abandoned for that on which Marischal College now stands, his design was altogether different. Then he chose the cloistral, or monastic style, which was unquestionably the best adapted to the peculiarities of the retired site of the building; while it harmonized with the character of an academic institution. In process of time, however, the old site in Belmont-street was again to be occupied by a public building—comprising three of the Free Churches. In this case the funds were rather limited. An erection in the classic style was impracticable. Such a building as Marischal College would have been sadly misplaced. But true to the *genius loci*, Mr. Simpson adopted the style of ecclesiastical gothic, so moulding it to circumstances, as to take advantage of the very same peculiarities of situation which would have given so much effect to a building in the classic style. There was still the long-drawn horizontal line; while the effect which would have been secured by the lofty dome, was sustained by the tapering spire. These remarks will, perhaps, serve to convey some idea of the peculiar character of Mr. Simpson's professional genius and skill. Of both he has left many enduring monuments, which make us proud to claim him as a native of Aberdeen. We feel that we scarcely exaggerate his merits, when we say, that some of his best works, all circumstances considered, will not suffer by a comparison with those of another architect, also a son of Bon-Accord, the distinguished Gibbs. The work of both, although by no means the happiest of either, happens to be conjoined in our East and West Churches."

Competition.—Plans are wanted for schools at Bermondsey for 300 children, with residence for teachers: see advertisement.

## IRON-WORK IN MASONRY.

### FREEMASONS OF THE CHURCH.

April 13th.—Mr. French in the chair. A communication was read from Mr. Blacket, architect, accompanied by a drawing and description of St. Stephen's Church, Camperdown, Sydney, New South Wales, erected by him,—with one exception, the only church in that part which has a chancel. The Bishop of Tasmania was elected an hon. fellow. Mr. W. H. Rogers read a paper upon a singular alchemical MS., enriched with illumination of curious style. One of the most singular features of the book, is the "Rota" of Raymond Lullius, well executed on pieces of vellum, and let into the interior of the binding. Mr. J. West laid upon the table a large collection of drawings made by him during a continental tour. He first went to Antwerp, and commenced walking at Liége, proceeding by Cologne to Coblentz, then along the banks of the Rhine to Mayence, Frankfort, Heidelburg, &c., through Switzerland by Zurich, crossing Mont St. Gothard, visiting Milan, Padua, Venice, Vicenza, Verona, Bologna, and Florence, to Rome. All the guide books represent the journey as formidable; in none are the expenses estimated at less than 80*l*. The artist in question was absent fourteen weeks, and it cost him 32*l*. We mention this as an instance of what *may* be done.

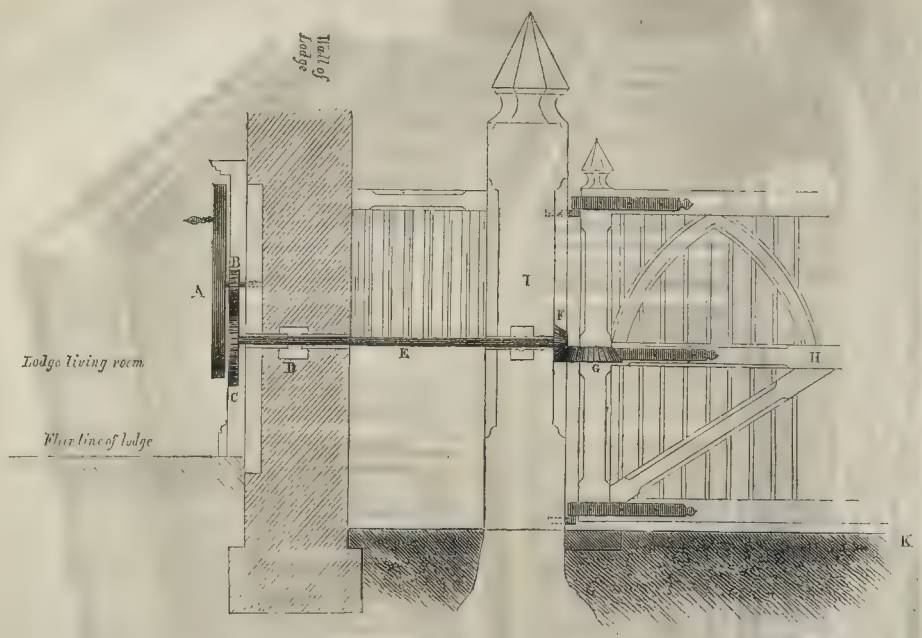
A paper was then read by Mr. Mallcott, "On Masonry." He observed that the failures attendant upon employing iron cramps in masonry were too well-known to require any lengthened remarks from him. Sir Christopher Wren forbade the use of them when exposed to the air, but permitted them if within nine inches of air (See "Parentalia," page 286). The writer, however, was of opinion that they ought not to be resorted to at all, and he regretted to find among architects of the present day, their constant employment. He then stated, that when he constructed the domes to the turrets of the wings of the National Gallery, in Trafalgar-square, neither iron cramps, nor iron chain bars or cross bars were used, nor were they in the bell-turret of the Temple Church, recently built by him. The stones were so worked, that when placed in their several positions, they overlapped each other (and in such a manner as to prevent the rain from penetrating), forming a continuous band from the bottom to the top; the finial was then put on, which completed the spire, forming a key-stone and tie to all. Mr. Mallcott stated he was not aware of a stone dome being so constructed before; he believed that the chain bar or cross bar was always used.

Mr. Combes informed the meeting that the churchwardens of West Ham Church, Essex, were about to destroy two of the original columns and arches to benefit a wooden gallery! and that the ancient inn, known as the "Spotted Dog," was to be pulled down. The magnificent altar in Reigate Church, Surrey, was also alluded to, in consequence of its *now being destroyed.*

St. Thomas's Church, Winchester.—This edifice, just now completed, deserves some further mention than was made of it the week before last, under our head of "Notes in the Provinces." It is a lofty and massive building of stone (with tiled roofs), in the early pointed style. It consists of nave, aisles, and an engaged tower on the south side of the nave, to receive a spire, 180 feet in height. We have seen only the outside ourselves, but a correspondent tells us that the nave and aisles have open timber roofs, all of good proportions; that there are no encumbrances of galleries, and that the seats are open, and kept low. The chancel and parvises are well proportioned, and the detail good. The windows display considerable variety. Mr. Elmslie is the architect. Some of the decorations are spoken of as being not so satisfactory in effect as might be desired.

The Queen's Monument at Guernsey.—We understand that the committee for the erection of the monument in commemoration of her Majesty's visit to Guernsey, have made choice of a plan for the building, but have not yet determined on the site. A competitor complains to us that the letter containing his name was opened. We do not remember the terms of the advertisement.

MODE OF OPENING CARRIAGE GATES FROM WITHIN.




## MODE OF OPENING CARRIAGE-GATES FROM THE INSIDE OF LODGE.

Sir,—Some time ago I addressed a letter to you, asking information respecting the best method of opening an entrance or carriage-gate from the inside of a lodge. Not seeing any plan suggested, I venture to send you one I have thought of, and intend adopting. On referring to the plan you will perceive, whichever way the fly-wheel, A, is turned, all the cog-wheels are set in motion, and the gate would open either to the right or left, as the case may be. Of course, stops would be fixed to prevent it swinging back too far. The latch being a simple affair, I have not shewn it in the drawing.—I am, Sir, &c.. H. S.

*Reference.*

A Fly-wheel.
B Small cog-wheel.
C Larger ditto.
D Cushions for shaft. E Shaft
F Small bevilled cog-wheel.
G Larger ditto, fixed to the gate.
H Gate, about 9 feet 6 inches wide.
I Gate-post.
K Line of carriage road.

## ARCHITECTS' BENEVOLENT FUND.

The following memorial has been forwarded to the council of the Royal Institute of British Architects:—

"We, the undersigned architects, feeling the propriety and necessity of establishing a benevolent fund, to alleviate the wants of the less fortunate members of the profession, desire to suggest to the Royal Institute of British Architects the formation of such a fund. The very slender means afforded by existing institutions, which, upon careful inquiry, prove to be inadequate to the numbers seeking relief, certainly render it imperative that the architects of England, forming, as they do, so numerous a body, should possess a benevolent fund of their own, and that the Royal Institute of British Architects, from the high position it occupies, should secure this advantage to the profession. It is therefore that we solicit the attention of the Institute to so desirable and worthy an object, in the hope and expectation that the council will take such steps as they may deem necessary to establish the fund."

It was signed by thirty-four architects.

## PROPOSED WINDOW AT ST. MARY'S OXFORD.

The dispute which has arisen between the Vicar of St. Mary's and his parishioners, respecting the right to put up a memorial window seems now in a fair way of being settled. The vicar's opinion was, that the right to sanction the erection of the window rested in him, with the consent of the churchwardens, without reference to the parishioners. The parishioners disputed this, relying on the following opinion of a legal authority:—"As churchwardens may not deface, demolish, or *remove* any thing already existing in the fabric, or utensils of the church, so neither can they add any thing new thereto without the express *consent of the parishioners*, and (if it affects the interior of the church) of the ordinary; for as we have before seen, he is the sole judge of what is fit and decent to be put up in the church; and, if the churchwarden should add any thing without the consent of such parties, it might be taken down, and removed at the pleasure of the ordinary, and the charges for the same be disallowed by the parishioners."

The vicar has now addressed a letter to the *Oxford Herald*, giving the result of an application to his bishop, and as it is a question which might often arise, we think it useful to quote the bishop's statement. It is to the effect, "that *none* of them — Incumbent, Churchwardens, or Parishioners, in vestry or otherwise —have the *legal* right alleged; but in strictness a Faculty only can give power desired, of making an alteration in a Church: that nevertheless, the application for a Faculty may often be omitted, to save expense: and that in this case, it is a very fitting course for a clergyman to consult his Vestry; not that his doing so invests either him or them with new powers, and beyond those which they by law possess, but as an act of friendly confidence, by which it may be ascertained whether a Faculty need or need not be applied for."

His lordship adds—"in your present case, you may either submit the designs to me for my approval, and to the parish for theirs, either collectively in vestry, or in any other way,——or you may apply to my Court for a Faculty."

Accordingly, the vicar proposes to submit the designs to the parishioners "in vestry," forthwith.

## THE NEW CARLTON CLUB-HOUSE.

On the other side we give a view of the new building now rising in Pall Mall, for the use of the Carlton Club, and which will materially increase the magnificence of this *rendezvous* of fine structures.

It will be remembered by our readers in 1845, that after a competition of designs, the result of which did not meet the views of the committee, the election of an architect was decided by vote for individuals, each member being left at liberty to place in the balloting-box the name of the architect he preferred.

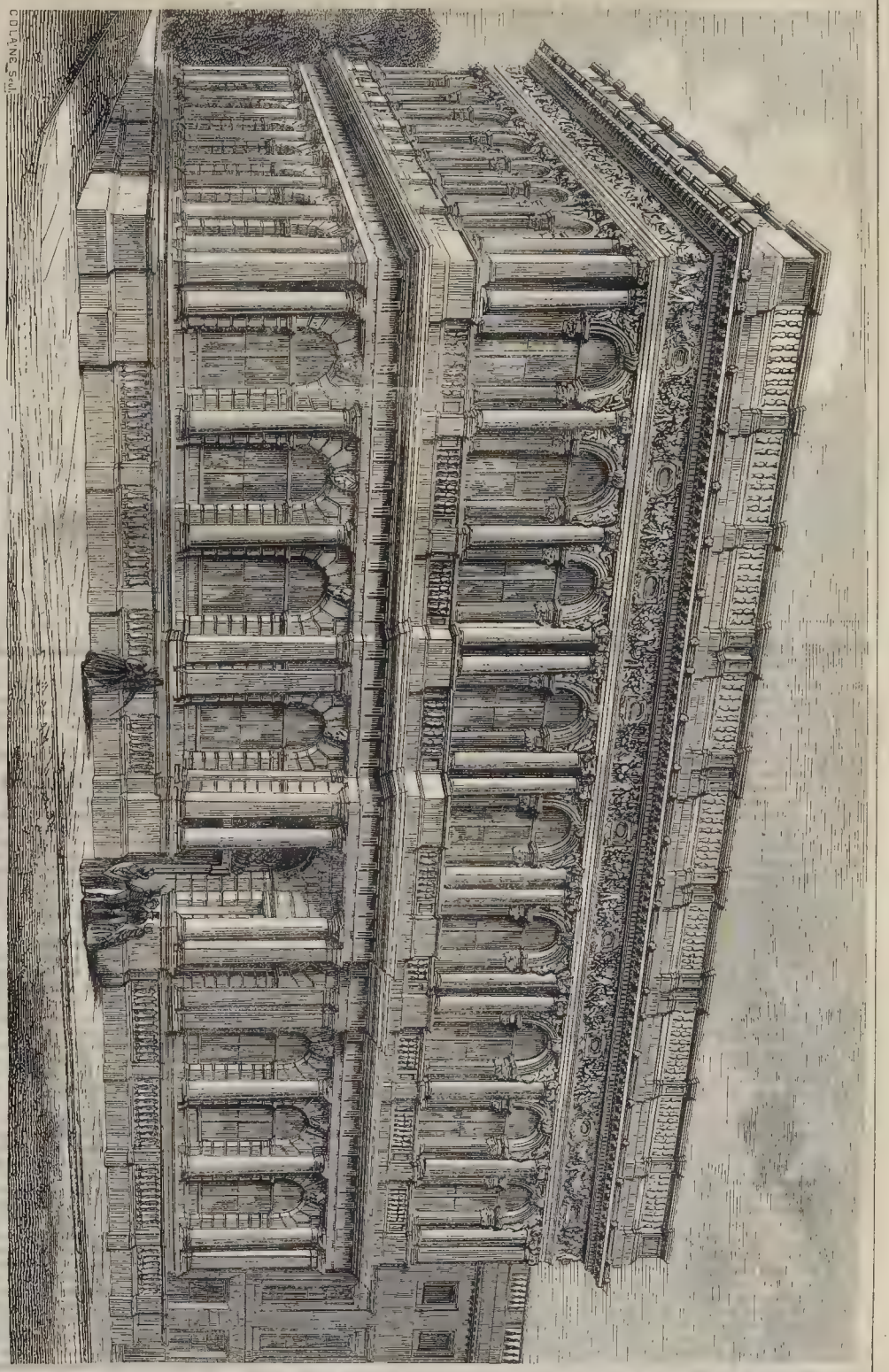
The majority of votes proved to be for Mr. Sydney Smirke and Mr. G. Basevi, who were then engaged together on the Conservative Club-house, and who had made it known among their friends that they desired to be voted for jointly.

The club, however, postponed deciding upon taking any active course in respect to their new building for some time, and in the meanwhile Mr. Basevi met with his untimely death: this was in October, 1845. It was not until the summer of 1846 that the club decided on building. The committee, being left to take such course as they thought proper in respect to the architect, decided on retaining Mr. Smirke, notwithstanding the death of his friend; and under his direction, therefore, the building is being erected.

Tenders were obtained from six builders in September last; Mr. Grissell's was the lowest, and was adopted. It amounted to 19,000*l.* for the new wing only, which the contractor is bound to complete next October.

The fronts are of Caen stone, the shafts of all the pillars and pilasters are of polished Aberdeen granite, the red tint of which will have a good effect. The new wing now in progress consists, on the ground floor, of a spacious coffee room 90 feet by 36 feet. Beneath it are two floors of offices. Above it on the first floor are a house dinner-room 29 feet by 28 feet, with waiters'-room adjoining; and a billiard-room 36 feet by 26 feet, with a room for members to wash in. On an upper floor is another billiard-room in connection with the future smoking-room, and some apartments for servants.

We are informed that the interior arrangement of the rest of the intended new building,



THE NEW CARLTON CLUB HOUSE.—Mr. SYDNEY SMIRKE, Architect.

which we need scarcely say will be on the site of the present house, is not yet definitively settled.

The extent of the front in Pall Mall, is 133 feet, and the height is 70 feet.

The general design, our readers will observe, is adopted from that of the library of St. Mark, at Venice.

## NOTES IN THE PROVINCES.

The Eton College Chapel improvements and extensive alterations have been commenced. The whole of the interior is to be remodelled throughout, as we said some time ago. A temporary wooden church, capable of affording accommodation for nearly 1,000 persons, has just been erected on the College eyot, for the use of the school (which now numbers between 700 and 800 boys) and the public. The expense of its erection, including the use of the materials, was 800*l.*——The munificent sum of 1,000*l.* it is said, has been given by the Rev. T. A. Houblon, of Peasemore, Berks, for the erection of a chapel for the use of the inmates of the Wantage Union Workhouse. ——A public meeting has been called at Newport, Isle of Wight, to consider the best mode of promoting the restoration and improvement of St. Thomas's Church there. ——A proposal has been circulated by Mr. R. C. Lucas, the sculptor, a native of Salisbury, to restore to the chantry and tomb of Wm. Wykeham, at Winchester, the statues which formerly occupied the niches. The possibility of doing so Mr. Lucas grounds on discoveries which he has made amongst the numerous fragments of statues which are lying in the crypt of the cathedral.——The erection of an asylum in Somerset for prisoners on the expiry of their term of imprisonment is in contemplation.——A new church is being erected at Bishop Sutton, in the parish of Chew Magna, Somerset.——St. Donat's church, Monmouthshire, is about to be restored.——The foundation-stone of the new aisle in the parish church at Forthampton, Gloucestershire, was laid on Monday week before last.——The city of Worcester is to join with the county in building an asylum for the accommodation of the pauper lunatics belonging to both.——A college, it is rumoured, is about to be established in North Wales, to be called the "Powis College," as a testimonial to the Earl of Powis. The site, however, is not yet fixed upon.——Schools capable of receiving 500 scholars have been erected at Littleport, Isle of Ely, near the church.—— Our readers will have, ere now, heard of the destruction of another of our original examples of Elizabethan architecture, Brandeston Hall, Suffolk, which had stood the wear and tear of three centuries, and was in course of receiving a new lease of existence by elaborate restoration, being, at the time, in possession of the contractor and his workmen, who occupied apartments in the building. The loss is estimated at 20,000*l.* though, in fact, irreparable. —— St. Olave's Bridge, Yarmouth, about which so much has been said and so little done since 1842, when it was declared by an engineer to be in so dangerous and ruinous a state that repair would cost nearly as much as re-erection, is likely at last to be rebuilt, as the Yarmouth haven and pier commissioners have voted the sum of 500*l.* to assist the magistrates of Norfolk and Suffolk in the expense of re-erection, which, however, is estimated at 3,500*l.* of which 1,000*l.* were looked for from the commissioners.—— Ten houses were burnt down at Diss, Norfolk, on the 29th ult.——The proposed North Beach Esplanade and Terrace, at Yarmouth, is to be commenced immediately, it is said, by Mr. C. Cory, of that town. The esplanade is intended to be at first 500 feet in length. The terrace is to be constructed on a concrete wall 8 feet below, and 10 feet above the ordinary level of the beach. In the centre will be semicircular projections. There will be about twenty houses immediately fronting the sea alongside the terrace, and behind these, on the west side of the New-road, forty more. The houses are intended to be of a superior character, especially those on the esplanade. Mr. Scoles is the architect.——There are considerable improvements in progress at Beverley, where one manufactory of Mr. Crosskill's (iron-founder), for 100 mechanics, will consume upwards of 700,000 bricks, besides stonework, in the erection, which is in the hands of Messrs. J. and R. Stamford, builders, of Beverley. In the same vicinity other extensive premises, with forges, &c., are being erected by Mr. Richardson, builder, of Beverley, for operative occupation by nearly 100 smiths and others. The buildings altogether will cost about 9,000*l.*——During the year 1846, says the *Manchester Advertiser*, upwards of 1,600 houses were built within the borough of Manchester, and besides, 500 more were in course of erection; thus making provision for the accommodation of 10,000 additional inhabitants; and, judging from present appearances, there will be fully that number erected during the year 1847. As the building of houses was for the last ten or twelve years at least equally numerous, it is not an unreasonable thing to anticipate a similar extension of the borough during the next decennial period. Manchester, it is thus anticipated, will at length become only second to London in point of population. ——The first stone of an intended new church at Heaton Mersey was laid on Monday week. The design is by Mr. Walker, of Manchester, architect. —— Workmen, says the *Liverpool Weekly News*, were employed during the whole of last week in taking down the houses on the south side of Parker-street, for the purpose of widening that extensive thoroughfare to and from Church-street. The cost of the improvement, which will of course fall on the corporation, will be not far off 20,000*l.*—— The foundation-stone of the new church at Balby was laid on the 20th ultimo. The style adopted is the early pointed of the latter end of the twelfth century, with a chancel and nave, bell turret, vestry, porch, and high pitched slated roof. The material is to be the grit-stone of the vicinity, with interior plastering: length of building, 73 feet; breadth of nave, 28 feet 6 inches; of chancel, 20 feet 6 inches; height to ridge, 38 feet; cost 1,050*l.*, exclusive of site, granted by Doncaster corporation; sittings 220. The contractors are Messrs. Lister.——A large proportion of the gas consumers of Ashton have petitioned Parliament for the restriction of their gas company, in the new bill, to a maximum price of 4s. 6d. per 1,000 cubic feet.——The contracts for the proposed new church at Oxton, are being entered into. The cost of church and parsonage house, with land, is estimated at 3,000*l.*, of which 1,000*l.* have been contributed by the Rev. Joshua King, rector of Woodchurch, besides the Easter dues, towards the endowment. Of 900 sittings, one-third are to be free. ——A correspondent of a Bradford paper complains that the water provided by the Water Works Company there, often 'resembles such as may be got from a common clay pond.' The company should be doomed to drink such water themselves. The unwholesome want of cleanliness is attributed to a neglect of 'letting off' the water for a proper time each morning.——On Monday week was laid the foundation-stone of a new Unitarian chapel at Leeds, to be erected upon the site of the late edifice, wherein the celebrated Dr. Priestley used to officiate upwards of a century ago.——A remnant of the aboriginal inhabitants of Fleetwood, namely, the rabbits, seems to be determined to make a patriotic stand, however hopeless, against the usurpers of their native soil. A tribe or colony have just made a daring inroad on the 'town of palaces,' and triumphantly pitched their camp in 'a room at the Euston Hotel, in that town,' which they had previously undermined, with the skill for which these professional 'sappers and miners' have been so long celebrated. The patriotic daring and the scientific skill evinced in the accomplishment of such an unexpected *ruse*,—by a detachment only 20 strong, too,—deserved a nobler *coup de grace* than that which the cannibalistic denizens of the 'Euston Hotel' are likely to have given the unwitting little interlopers.—— A cargo of Swedish stone is reported to have arrived at Hull for use in the construction of the Victoria Dock. From its hardness and durability, this stone is considered to be better fitted for the intended purpose than any to be found in England.——From 6th to 15th April inclusive, the amount of duty paid at the port of Hull on timber and deals, under the new tariff, is said to have exceeded the sum of 8,000*l.*——A public meeting was held at Hull on Wednesday week, when the establishment of baths and washhouses for the poor there was determined on.——The masons employed at the Sunderland Pier, lately gave notice to their masters for an advance of wages from 27s. to 30s. a week, intimating that unless this demand was complied with, they would leave their work. Only three weeks previously, their wages were advanced from 24s. to 27s. a week.——We may here observe, by the way, that we have been authorized to correct a mistake in the paragraph which has been going the round of the press in regard to the turn-out of masons at Rochdale. "They have had 4s. 6½d. per day all winter, and they have struck for 6d. per day more."—— The inhabitants of Kettle, in Fifeshire, Scotland, have determined on the erection of public gas-works.——The ancient obelisk or 'standing stone,' at Stanwick, in the parish of Nigg, North Britain, was thrown down and broken to pieces during a late gale. This curious old stone, as many of our readers may be aware, has various hieroglyphic sculpturings on its surface, and was supposed to have been intended to commemorate the death and burial of a Danish sea-king, who, in the days of the Vikingz was wrecked off the neighbouring coast.

## THE HEALTH BILL.

Meetings have been held in various parts of the country in support of Lord Morpeth's Bill. In Gloucester, a petition to the Commons has been prepared, which sets forth:—

"That the provisions of that bill seem calculated greatly to improve the condition of the streets, courts, and houses in which many of your petitioners reside, by introducing a complete and efficient system of cleansing, drainage, and sewerage, by enforcing the prompt removal of all decomposing animal and vegetable matter and other nuisances, and by securing a constant, unlimited, and cheap supply of pure water.

"That these improvements, carried thoroughly into effect, would protect the health, prolong the lives, and improve the morals of the labouring classes; and would thus greatly reduce the poor rates, diminish the expense of repressing and punishing crime, and render the existing charities more adequate to their objects.

"That, inasmuch as the bill judiciously provides that the cost of the proposed improvements may be distributed over many years, your petitioners are assured, that the annual expense would be more than defrayed by the collection and profitable disposal of the contents of the sewers and the refuse of the town; these valuable materials being now wasted in polluting both the atmosphere of the city and the waters of the Severn, instead of being employed in fertilizing the soil and increasing the produce of the adjacent country." And it then prays the House to grant them a sound comprehensive and practical health-bill.

This may serve as a precedent for other towns.

## ADDITIONS TO BUCKINGHAM PALACE.

A few nights since, in the House of Commons, when a vote of 50,000*l.* was asked for, to defray, for the year 1847, the expense of the works for enlarging and improving Buckingham Palace,—Mr. Hume said, that last year he had made an appeal to Lord J. Russell on this subject, which had been but very little attended to. To spend 150,000*l.* in erecting an additional front to a palace in such a situation was, he thought, throwing away money very improvidently. He recollected that under a former Government the then Chancellor of the Exchequer undertook to rebuild Buckingham Palace for 350,000*l.*, and afterwards added 750,000*l.* to the sum, and now it was proposed to add 150,000*l.* more. It had already cost more than 1,000,000*l.*, and it was a miserable thing after all. The putting up a front would, in his opinion, make the square so close, that it would be more unhealthy than it had hitherto been.

Lord J. Russell agreed in the observation of his hon. friend, that it would have been better originally not to have spent so much money on Buckingham Palace. Undoubtedly the handsomer plan would have been to build a new palace. As regarded her Majesty's conveni-

ence, too, it would undoubtedly have been better to have a new palace, and in the best possible situation. But the question which the Government had to consider was, whether it was advisable for the public interest to incur so large an expense. He could not think that a handsome palace could be built for a less sum than 800,000*l.* or 900,000*l.*; and he feared the hon. member for Coventry would have been asking them to reduce rather than augment that estimate. The result was, that the Government thought it better not to incur so large an expenditure. He did not think that the building, when completed according to the proposed plan, would be so unhealthy, or such a deformity, as the hon. member seemed to suppose. He thought that the elevation, as prepared by Mr. Blore, would be a very handsome one, and that the sight for the public, in going through the parks, would be an improvement upon the present view of Buckingham Palace.

## RAILWAY JOTTINGS.

From the Report of the Commissioners of Railways, on the pending bills in which the Great Western Company are interested, it appears, that when passed, the powers of this company will be very materially increased. By the Gloucester and Dean Forest bill, they will be authorized to construct a dock or basin at Gloucester, and to raise for that purpose, a capital of 31,000*l.* and to borrow 11,333*l.* By becoming lessees of other lines, as of this one, similar powers will be conferred on them to construct docks at Plymouth and Weymouth. The Bristol press are naturally on the *qui vive* at such a project, and are rousing the attention of the citizens to a subject so materially affecting their interests. In March last, the Bristol Chamber of Commerce memorialized the Railway Commissioners to the effect that "it is essential to the city of Bristol that the Great Western Railway Company should be precluded from embarking their capital in constructing docks, harbours, or such like undertakings."——The Great Western Company, we understand, are building a class of eight-wheeled engines. With these a speed of *eighty-five miles an hour*, it is anticipated, will be easily maintained, while the additional pair of wheels, which are placed in the rear of the engine, are expected to give great additional steadiness. The first of these engines is about to make an experimental trip.——An imperfect report is in circulation of "the sudden falling in of the tunnel now forming under Bar-street and Houndwell (Southampton) for the Dorchester and Southampton Railway, for a space of nearly 200 yards," but it appears, to have been "the old canal tunnel, which is [unavoidably or not we cannot as yet say] crossed over by the railway tunnel diagonally," that gave way, first of all at least, and that not very suddenly, or at all events unexpectedly, as Mr. Hicks appears to have warned the Improvement Commissioners two days previously, that it "would gradually give way and a founder take place, unless means were immediately taken to secure it." Mr. Hicks was accordingly ordered to require the company, immediately, to make a diverted road, as the main road must be dangerous to pass over at the point where those tunnels cross beneath it. Ere this could be done, however, the anticipated founder took place, on the 23rd ultimo, though, fortunately, without injury to any one. But a carriage bazaar has been so undermined by the sinking of the ground, that it has been deserted, and is to be taken down.——The new railway works at Birmingham have been commenced; the London and North Western extension, by Messrs. Braunston and Gwyther, the contractors, with a skew-bridge over the Birmingham canal; piers for the viaduct at the Proof-house, and iron bridges over New Canal-street, Fazely-street, and other streets; —the Birmingham and Oxford Junction, by the same contractors, with piers of the great viaduct,—one of the largest in Britain,—extending from Carr's-lane to Milk-street, 2,800 feet, on fifty-nine arches, and other works; —and the Stour Valley line by Mr. Henfrey, the contractor, with the tunnelling at Swallow-street and Broad-street, and the shafts at Old Wharf, &c. This tunnelling is almost entirely through solid rock, so that the anticipated danger of tunnelling underneath the most busy parts of the town is thought to be groundless. The tunnel, however, to make surety double sure, is to be lined throughout with brick.——

——The following particulars relative to the North British line are from the report of Captain Coddington, R.E., and Mr. James Walker. Within two years the extensive works on the 57½ miles of this new line from Berwick to Edinburgh were formed. The bridges over it are 28 feet in width. There are but two tunnels, and these very short. The inclinations are 1 in 78, in 96, in 190, &c. The smallest radius of a curvature is half a mile in two instances. The general security of the finished works is considered to be undoubted. On the Edinburgh contract of four miles, Messrs. Lorimer and Somerville contractors, about 20 yards in length of the haunch of the arch of the tunnel under Calton-hill, have been forced down and appear distorted. On the Linton contract of five miles, Mr. George Milne contractor, the Tyne-bridge, at Linton, had two stone arches of 45 feet span, and a stone pier of 7 feet, the foundation of which being bad, allowed it to be carried away by the September flood. The rubble behind the arches was of bad quality. A permanent wooden viaduct of 85 feet opening, and therefore without a pier in the river, is to be substituted. The Cockburn's Path contract of six miles, Messrs. Ross and Mitchell, contractors, in boldness of design, is creditable to the engineer, Mr. Miller. The Tower Burn runs in a ravine 150 feet below the railway, and filled by a solid embankment, with a horse shoe shaped stone arch, 12 feet wide, and 14 feet high in the clear, to pass the water off the burn. The great weight crushed the materials of the arch. It was then obliged to be supported by timbers inside. The opening thus contracted was almost entirely stopped by straw, bushes, &c., which the September flood floated down. Thus the water accumulated and rose on the upper or south side of the embankment, which was obliged to be cut through to let it off, down to 40 feet from the bottom, at which level a trunk was placed as a temporary passage for the water. At Lamberton, four miles from Berwick, the line comes close to the sea at an elevation of 150 to 200 feet above high water. Perfect stability will not be obtained without completely protecting the foot of the slope from the wash of the waves, by means of a good breakwater of heavy stones laid at a long slope, and of such considerable thickness as to form a stop or footing to the bottom of the slope.——The bridge at Ballochmaile, on the Dumfries and Carlisle line, which is the 'largest bridge in Britain,' consists of three arches, each 50 feet in width, on either side of the great arch which spans the river from rock to rock. The latter is a semi-circle of 181 feet, the height from the water to the top of the parapet being 186 feet. The centering on which this 'stupendous' arch has been constructed (for the arch is now built) consisted of 1,200 logs of Baltic timber, each log being 14 inches on the sides. There are about 400 men employed in connection with the bridge, building stone.——The Government aid of 620,000*l.* to Irish railways moved for by the Chancellor of the Exchequer in the Commons on Monday week, is thus to be distributed amongst three of the companies who have paid up half their capital, viz., the Great South Western, 500,000*l.*; the Waterford and Kilkenny, 84,000*l.*; and the Dublin and Drogheda, 36,000*l.*; the money to be payable in five instalments, between this and November next, and the loans to bear interest at 5 per cent. until repaid. It is thought from the general favour with which the proposition was received as a substitute for the public work system, that the principle will be further extended, and that other railways will be brought into operation by loans of public money.

An improvement in the manufacture of electro-telegraphic wire has been patented by a Mr. Reid. The principle consists in the obviation of the welding of shorter bundles of wire, and the risks of failure, by welding the iron rods previous to being drawn into wire, and hence manufacturing wire in bundles of any required length or weight. Another portion of the invention consists in the cleansing of wire (preparatory to being coated with zinc or galvanized to prevent oxidation) by means of friction, instead of by acids which often corroded and injured the substance of the wire. By means of machinery, this process is carried on with great rapidity and effect.

## A COMPETITION ABROAD.

In a new French publication entitled *Moniteur des Architectes*,* we find an advertisement for a design for a *Cercle* (Club-Assembly, and Concert Rooms), at Aix, in Savoy. The building is to comprise a saloon for balls and concerts, about 200 *mètres carrés*,—a room for daily meetings, about 100 *mètres carrés*: all their conveniences; refreshment and anterooms, dressing-rooms, &c.; card and billiard rooms; a reading-room; a café and restaurant, with billiard and a smoking-room, accessible to the public, and separated from the part devoted to the subscribers; open covered ways, a place for orange trees, lodges for a porter and coffee-house keeper, a small theatre. The plan to be drawn to a scale of 1 to 100, and a specification. The drawings shewing the various fronts, staircases, sections, details of construction, added to which there must be a correct estimate of the cost. The whole not to exceed 150,000 francs (6,000*l.*). The drawings (prepaid) must be sent to the president of the Cercle before the 15th of July, 1847, with a sealed letter containing the name, country, and residence of the writer, and a motto similar to one on the plans and drawings. A special committee, appointed for the purpose, will consult with persons of art to examine the designs, which will remain exhibited in the Cercle, during the whole time. The successful candidate will receive a premium of 1,500 francs cash, and 500 francs as a share in the undertaking. His name and country will be published in the principal papers of France and Piedmont. He will have the preference in directing the works in the event of his wishing so to do, and it is understood that the remuneration for this direction will be paid independently of the prize gained. The other designs will be returned to the owners or parties bearing their order. The advertisement further gives the prices of the various building materials used on the spot.

## CROWN IMPROVEMENTS AT WINDSOR.

A Bill will be forthwith introduced into Parliament by Lord Morpeth, empowering the commissioners to carry into effect the most extensive of the long contemplated alterations and improvements in the approaches to the castle and town of Windsor.

From their comparatively extensive nature, involving the purchase of a number of houses, and the building of two new bridges across the Thames, it is expected that the grant of a sum exceeding 150,000*l.* will be required.

The following description of the alterations, &c., we abridge from the *Morning Post*: —

A bridge is to be constructed across the Thames at Datchet from Black Potts, to the north end of the Home Park, whence a public road is to lead into Datchet-lane and thence into Thames street, Windsor.

The houses and buildings on the south and east side of Thames-street, and east side of High-street, are to be cleared away from the foot of the Hundred Steps, to Castle-hill, and the roadway widened. The roads leading into the Home Park or across the Long Walk are to be stopped up, and a new road made from the Sheet-street road across or under the Long Walk, through Shaw and Clay Hall farms to Old Windsor and Egham, by which Frogmore House and grounds and the Castle and Home Park will be within what may be termed "a ring fence."

A new road is to be made from Old Windsor down to the river and the second bridge, whence a new road is to run to Southly House, near the village of Datchet, whence another new road is to run along the north bank of the Thames to Black Potts. Datchet bridge is then to be removed, and the roads and footpaths in the parish of New Windsor leading to it stopped up.

The towing-path and road in Windsor parish, lying between the two intended new bridges, are to be stopped up, and a new road and towing-path to be made on the opposite bank of the river.

* Published *à la Papeterie Guillard, 15, Rue Laffite, Place Notre Dame de Lorette, Paris.*

## New Books.

*The Ancient World; or Picturesque Sketches of Creation.* By D. T. Ansted, M.A., F.R.S. Van Voorst, Paternoster-row. 1847.

Professor Ansted is already so well known as a sound and well-informed writer on geology, that little recommendation can be needed for the work before us. The object of it is to communicate, in a simple form, to the general reader, the chief results of geological investigation. While technicalities are avoided, it gives a complete idea of all that is known on the subject, at least in its broad outlines.

A very pretty binding, an example of what may be done by taste at small cost, further concurs to make it a nice "present" for young friends.

*The First Book of Euclid's Elements, Simplified, Explained, and Illustrated for the Use of Beginners.* By the Rev. W. Trollope, A.M. Foster, Paternoster-row, 1847.

This will be found an excellent introduction to a knowledge of algebra. It is so small that none will doubt their ability to grapple with it, yet contains sufficient to make the after study easy.

## Correspondence.

THE PREVENTION OF THE ESCAPE OF NOXIOUS GASES FROM SEWERS.

Sir,—Agreeing to the fullest extent with the observation of Mr. Godwin on this subject, at the last meeting of the "Institute of British Architects," I beg to contribute my mite in the shape of a few suggestions for the attainment of this object:

The principal gas which is generated by the sewage matter, and which finds its way through the gulley holes and gratings is, I believe, sulphuretted hydrogen, which is well known to be not only obnoxious, but extremely prejudicial to animal life. The plan I should adopt is as follows: I would trap (without exceptions) *all* the gully holes where the water finds its way into the sewers, and for this purpose I think the trap made use of in the city of London, viz., a cast-iron valve or swing flap, is as efficient as any. The *only* other openings from the sewers to the streets I would place at the junctions of the streets, in the positions where it is usual at present to have obelisks and lamp posts; and at these points I would have shafts for the passage of the deleterious gas from the sewer. In a convenient position in the shaft (above ground) I would fix an apparatus, somewhat similar to the water gas meter at present in use, so that the gas, in its passage up the shaft, should pass through its contents (which should consist of a solution of chlorine), which would deprive it of the sulphur, and the hydrogen would find its way out of the shaft harmless. All that would be necessary to keep up this effect, would be to change the solution occasionally, which could be done with very little trouble.

The shafts would not take up any more space than the obelisks and lamp posts which we place at the junctions of our streets, and they might be used for the latter purposes if thought necessary, and might be made to form very ornamental objects.

I am Sir, &c.,

"C. B."

Mary-le-Bone Vestry: Baths and Washhouses.—The Commissioners of Baths and Washhouses recommend, as an eligible site for new baths and washhouses, the present bowling-green, &c., of the "Yorkshire Stingo," an area of three-fourths of an acre; cost, 5,500*l.* In their report it is added, that thus also a much-required improvement would be effected, viz., the widening of Stingo-lane running into New-road. Dr. Spry, the chairman, expressed his conviction, from practical knowledge, that the parish would not only be gainers by the outlay in erecting baths and washhouses, but that the rates would also be materially relieved.

Westminster and Lambeth Bridge.—The bill to give power to Sir Samuel Brown to construct this bridge, was opposed by the Archbishop of Canterbury, and lost, on a division for second reading, by a majority of 15, on the 26th ult.

## Miscellanea.

County Court Comforts, Injustice to Justices.—The defective arrangements of County Court Houses to which we have ere now repeatedly pointed attention, have at length compelled the judges to adopt a somewhat new line of defence, or rather of attack, in the hitherto vain endeavour to remedy the evils complained of. Mr. Justice Maule, the other day, at Reading, came into court with his little three-corned hat in his hand, and casting his eyes in all directions, without finding room for its convenient deposit, very gravely requested the under-sheriff, in a clear and official tone of voice, to take it back to his lodgings, as there was evidently too little space for it there. It was well with him at Reading, however, as he probably himself thought when he went to Gloucester, where the lodgings devoted to his judicial service don't appear to have been fit to hold even his official 'tile,' and at all events consisted of such a dog-hole, as he himself stigmatized them — nay, an unventilated, undrained, fœtid dog-hole—that he declared it to be impossible to sleep in them, and accordingly politely intimated, that in consequence of being obliged to shake the magisterial dust of Gloucester off his feet every night, and betake himself to Cheltenham, for a human habitation, he exceedingly regretted that he should be unavoidably unable to open the court for business at the usual hour. Thus ridicule, shame, and public exposure may accomplish what private expostulation has endeavoured in vain to do. The extremely defective ventilation of the Taunton Court House too has been calling forth the indignant animadversions both of bench and bar. "The warming and ventilation have been declared to be execrable. The bar pathetically assured Mr. Justice Cresswell the other day that the cold was killing them." The judge advised them to make out their own wills and submit themselves to their fate, consoling themselves with the assurance that they were not a whit worse off than he was, in a fever of heat on one side and a freezing cold on the other, the mean difference of 40 degrees being probably designed "to keep us independent between both parties," and being, at all events, he might have added—carrying forth his very apt and natural figure of speech, if *figure* of speech indeed it be, to its still more obvious conclusion—very fitly representative of that *heat*, as well as *coolness*, which the atmosphere of law courts is at all times apt to engender between two unhappy litigants.

English Sculptors in Rome.—A correspondent in Rome supplies the *Athenæum* with some information as to what our sculptors are doing in that high temple of the art. Gibson is at work, and has been so for some time, on, amongst a variety of other things, a *basso relievo* for Lord Fitzwilliam, whose subject is "The Hours with the Horses of the Sun." This sculptor will be at Liverpool in the course of the summer, for the purpose of selecting a site for the statue of Huskisson.—Wyatt has finished a statue of "A Female leaving the Bath," for Lord Canning; and a "Venus and Cupid," for Mr. Holford, of Park-lane.—Macdonald is about a bust, yet in clay and unfinished, "of so striking a character," says our correspondent, "that I must make it the subject of an especial mention. It is a portrait of Lord Walpole, who is now here. It is finished in the simple Greek manner, without the usual drapery round the shoulders. Macdonald intends remaining in Rome during the summer, to make a large statue of "Eurydice," for Lord Ward.—Theed "has had a great deal to do this winter, and has now many commissions. Amongst these are two statues, ordered by Queen Victoria; "Narcissus at the Fountain," and "Psyche." He is making in clay a full-length statue of "Rebecca," for the daughter of the late Mr. Rundell. His "Prodigal Son" is nearly completed in marble. Mr. Gibson's statue of the Queen, which was on its way to England, has been, and we fear still is, in a perilous position.

Stained Glass in Norwich Cathedral. The dean and chapter of Norwich have commissioned Mr. Warrington to fill the Norman window at the east end of the cathedral with stained glass, as a memorial to the late Canon Thurlow. The three upper perpendicular windows above this are already filled by the same artist.

Projected Works.—Tenders have been called for by advertisement for the works necessary in the erection of a church in Lancashire; a church at Greenwich; a chapel at Luton; a chapel and other work at Gloucester; a corn-exchange and markets at Lincoln; a lunatic asylum at Birmingham; a small house near St. Ives; twelve houses at Battersea; a new street at Wainfleet, three cottages at Hornchurch; a police station-house at Newcastle; a lock-up house at Wooler; stables at Cardiff Castle; a temperance hall at Birmingham; a number of coke ovens at Shoreham; a stone terrace, ornamental walls, &c. near Oundle; a concrete sea wall, with stone coping, steps, and other works, at Yarmouth; a bridge and other works at Bristol; a reservoir and other works at Bury water-works; sewers, land drains, and other works in Southampton Marsh; a supply of gravel at Chelmsford, and of ballast-gravel and core, at Islington; arching of 1,190 feet of sewer, at Westminster; building railway station-houses at Skipton and Kildwick, goods'-shed at Bingley, and several cottages between Keighley and Skipton; maintaining and upholding the way and works of the coast-lines of the London, Brighton and South Coast Railway Company; erecting a passengers' station platform and iron-roofing at Nottingham; supplying 1,500 tons of cast-iron girders, &c. for tubular bridges across Menai Straits and river Conway; and about 3,500 yards of mains, with turned and bored joints for Hamburg gas works; for painting houses at Southwark and workhouse at Lambeth; and for painters' glaziers', plasterers', masons', and other works at St. Michael's Church, Southampton.

Institution of Civil Engineers.—On the 27th ultimo, the paper was "On the laws of Isochronism of the Balance spring as connected with the higher order of adjustments of Watches and Chronometers;" by Mr. C. Frodsham. The first portion gave an historical sketch of the horological inventions and writings of the artists of the 18th century, which appear to constitute the basis of all the knowledge possessed in the present day, and the principles of whose school are still invariably followed in the construction of both watches and chronometers of the better sort. It was admitted, that by the aid of machinery and the practical skill of the workmen, the separate pieces of clocks and watches are now produced in a high state of perfection; but it was contended, that horology, as a science, had declined since the days of Hooke, Barnouilli, Sully, Graham, Harrison, Camus, Mudge, Ellicot, the two Arnolds, Earnshaw, Le Roy, Berthoud, and others, whose splendid talents and scientific attainments were all devoted to the elevation of the art of constructing time-keepers. Among these, Dr. Hooke appears to have been the first to bring the force of acute reasoning and pure mechanical genius to bear upon the practice of the art, and his experiments upon the pendulum, and the application of the balance-spring, unquestionably laid the foundation of the chronometric art. It is evident that he partially raised the veil which concealed the laws of the isochronism of the spiral spring, as is demonstrated by his expression "ut tensio, sic vis,"—and it is extraordinary, that so plain a hint was not immediately seized upon by the able men who succeeded him. Arnold appears to have been the first who really practically comprehended the subject, and in the course of his researches he invented the cylindrical spring and compensation balance, which formed the commencement of a new era in the science. The paper then considered generally and technically the subject of the isochronism of the balance-spring, enumerating isochronism to be an inherent property of the balance-spring, depending entirely upon the ratio of the spring's tension, following the proportion of the arcs of inflection; a balance-spring, therefore, having the progression required by the law of isochronism, will preserve that property, whether it be applied to a balance making quick or slow vibrations.

### MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Tuesday, May 11.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.; Syro-Egyptian Society, 71, Mortimer-street, Cavendish-square, 7½ P.M.

Wednesday, 12.—Society of Arts, Adelphi, 8 P.M.; Graphic Society, Thatched House Tavern, 8 P.M.

Thursday, 13.—Society of Antiquaries, Somerset House, 8 P.M.

Friday, 14.—Archæological Association, 8½ P.M.

## TO CORRESPONDENTS.

"*K*"—Common "heel-ball," obtainable at any shoemaker's and in paper.

"*G. H.*"—The gentleman named has had no connection with the Builder for some years past. We have seen the invention.

"*N. M.*"—Gwilt's Encyclopædia contains a glossary.

*Faith and Hope*"—May learn the charge at the office.

"*W. N.*"—It is beyond our province to square dimensions for our readers

"*An Architect.*"—We avoid recommending dealers.

"*G. H.*"—We are obliged, but are well supplied just now.

"*X. X. X.*"—Possession for twelve years does not give a right. Call in an architect.

"*Building near Dangerous Trades.*"—We are unable to give space for Mr. Sugden's letter in the present number, but will insert he material part of it in our next.

"*R. S.*"—The number is out of print.

"*Stain for Fir.*"—A correspondent recommends our inquirer of ast week to use "Stephens' Stain," as advertised in this day's Builder.

*Received.*—"H. L." (Hull), "G. J. W." "Subscriber for Last Three Years," "Query," "G. A." "S. C. F." "W. S." "J. R." "B. R." "H. P." "Sir H. D." "G. B." "Ecclesiastical and Baronial Antiquities of Scotland," by R. S. Billings and W. Burn, No. II. (Blackwood). "Lanzi's History of Painting," by Thos. Roscoe; Bohn's cheap edition, Vol. II. "The Carpenters' New Guide," Part I. (Weale, Holborn). "People's Journal," Part XVI. Novello's Edition of "The Creation," Nos. 6 and 7, and "The Messiah," Nos. 9 and 10. Wood's Edition of "The Songs of Scotland," Nos. 2 and 3. "Popular Atlas of the World," No. II. (Wyld, Charing-cross).

*** The whole of the numbers of the present year may be had in parts.

A few copies, containing the engraving of the House of Lords, are still on sale.


## ADVERTISEMENTS.

**ROYAL POLYTECHNIC INSTITUTION.**—LECTURES in illustration of ANIMAL MECHANISM by T. Rymer Jones, Esq. F.R.S. Professor of Comparative Anatomy at King's College, on Tuesday, Thursday, and Saturday, at half-past Three o'clock. On Chemistry, on Monday, Wednesday, and Friday Evenings, at Nine, by F. H. Holmes, Esq. On Artificial Light, and the Agents employed in its production, by Dr. Bachhoffner. Experiments with ARMSTRONG'S HYDRO-ELECTRIC MACHINE. The WORKING MODELS and MACHINERY clean and painted. The varied OPTICAL EXPERIMENTS include a New Series of DISSOLVING VIEWS, the OXY-HYDROGEN MICROSCOPE, &c. EXPERIMENTS with the DIVER, and DIVING BELL, &c. &c. The Evening Music, under the direction of Dr. Wallis, commences at Seven o'clock.—Admission, 1s.; Schools, Half-Price.

**PHOTOGRAPHIC PORTRAITS,** at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 168, Strand (between Norfolk-street and St. Clement's Church). Portraits, including frame, from 1s. Stereoscopic pictures guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvas, combining the truth of the daguerreotype with artistic skill. Hours from Ten to Four

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**FRENCH PAPER HANGINGS.**—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the richest productions of all the Continental Manufactories, is at Messrs. MARKS & COX'S, 69, Princes Street, Leicester square, established 1824, where the Trade (and no private) from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the CARTELED PIRACY that at present exists

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HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their office, Hatton-garden is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the sanction of the Public Body by whom all the above-mentioned authentic Drainage, and which they recommend all such Persons to apply for at the above office. By the Court,

STABLE ELLIOTT, Clerks

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square

**TO BUILDERS and Others interested in** buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by water-courses falling into the River Thames between the City of London and the parish of Fulham.

The Commissioners hereby give notice that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application made to them at the above office, of intended excavations such ground, information shall be given as to the level depth of such intended drains.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow gas-works, slaughter-houses, &c. to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses or other premises, to ascertain whether such premises have been constructed and have proper drain communication with sewers.

All petitions are directed to be left at the office at least three clear days before they are presented to the ensuing meeting, and all such petitions will be read over in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The powers conferred by the Metropolitan Buildings Act of and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are clearly reserved, and their regulations made subservient to the purposes of the Act. The executive of such works, under the superintendence of the district surveyors, to control the due warrant the making of any sewers or drains within the commission, not relieve the parties making them from the penalties above mentioned.

By order of the Court,

LEWIS C. HERTSLET, Clerk.

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Apply at W. CLEAVES Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

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| 4*s.* 3*d.* | 8*s.* | 6*s.* 6*d.* | 7*s.* 6*d.* | 10*s.* | 12*s.* per gross. |

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Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars—

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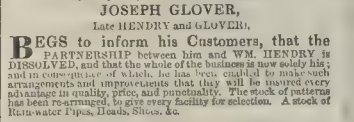
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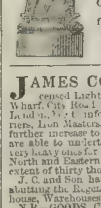


Lea's Patent Double Action Bolt, combining cheapness and facility of action with the greatest possible security, particularly adapted for Fire-proof doors, meeting the wants and peculiar difficulties with which they are frequently accompanied, at the same time equally applicable for the strongest folding doors as well as the most delicate cupboard, wardrobes, &c. &c.

| Best Patent Cut Clasp. | 6d. | 7d. | 8d. | 1*s.* | 1*s.* 6d. | 2*s.* |
|---|---|---|---|---|---|---|
| | 4d. | 6d. | 8d. | 10d. | 20d. | 30d. |
| Best Patent Sash Line. | 3d. | 6d. | 7*d.* 7*s.* 6*d.* | 10*s.* | 12*s.* | |
| | 1 | 2 | 3 | 4 | 5 | 6 |

Every description of Ironmongery equally low.

**PORTER'S CORRUGATED and PA-TENT GALVANIZED IRON ROOFING WORKS,** Southwark bridge (and the Grove), Southwark. At the above Works, the Roofs are secured upon the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied



SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT,

For the cure of smoky chimneys, has been tested extensively, throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Pot at Pots cannot corrode or get out of order, and can be effectually swept by the sweep passing it.

They are now manufactured of artificial Stone Cement.

The Trade supplied with them at the Manufactory.

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

**JAMES COVINGTON and SON,** Licensed Lightermen, Wharfingers, and General Agents, No. 8, Wharf, City Road Basin, and 1, Warkworth Terrace, Limehouse, London, beg to inform the Companies, Railway Contractors, Carriers, Builders, and others, that the above made a further increase to their extensive stock of very superior Craft, and are able to undertake Contracts to any extent; they have fulfilled very heavy ones for the Lord Mayor and Borough and Eastern Counties, North and Eastern, and Great Western Railways; the latter to the extent of thirty thousand tons per annum.

J. C. and Son have part of their very eligible WHARF to LET, abutting the Regents Canal Bridge, City Road, with a Counting-house, Warehouses, and the use of a very powerful Crane.

N.B.—GOODS CRANED, LANDED, and CARTED, on moderate terms.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

TO PLASTERERS.

LIME FOR PLASTERING, that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORRESTS' WHARF, Earlstreet, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 24 inches long by 24 across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vesiculate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

BATHSIDE CEMENT WORKS, established in 1809 to supply a genuine quality of ROMAN CEMENT. Titus JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts: Three Crane Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, in its application for which purpose it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Seel street, Liverpool.

GREAVES'S LIAS LIME and CEMENT. RUTTY and VEREY, 3, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—acts as firm as a rock under water using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour similar to Portland stone, does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S and S pledge themselves that MARTIN'S CEMENT is totally dissimilar in its composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other hydraulic cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To the Lord of the Patentees, Chester of Ince and Cement Manufacturers, 190, PRUSSIA LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 58, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing for any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the Coldest or coldest Climates at any season. It will adhere to any substance, such as Wood, Iron, Stone, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when others decay. Cements hasten to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain unaffected by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it is sure only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 7, Maiden-lane, Queen-street, Cheapside, London; of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds its if with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in it application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

W. GREENWOOD, SASH MAKER and JOINER to the TRADE, 6, Wickam-street, Pool-street, New North-road, begs most respectfully to submit the following list of reduced prices for Sashes, Frames Doors, &c., with best workmanship and materials, for ready money only:—

| In. SASHES, at per Foot Super. | s. | d. |
|---|---|---|
| 1¼ Ovolo | 0 | 4 |
| 1½ Shop Fronts | 0 | 4½ |
| 1½ Ovolo Sashes and Frames | 0 | 5 |
| 1¼ Ditto, double hung | 0 | 9 |
| 2 Ovolo Sashes and Frame | 0 | 10½ |
| 2 Ditto, prepared to hang double | 1 | 0 |

| Glazed Sashes and Frames, at per Foot Super. | s. | d. |
|---|---|---|
| In. | | |
| 1¼ Ovolo Sashes | 0 | 8 |
| 2 Ditto ditto | 0 | 9½ |
| 1¼ Do. do. with frames, lines, and weights | 1 | 2 |
| 1½ Ditto ditto, double hung | 1 | 3 |
| 1¼ Ditto ditto, with lines and weights | 1 | 3 |
| 2 Ditto ditto, double hung | 1 | 4 |

| In.. DOORS, at per Foot Superficial. | s. | d |
|---|---|---|
| 1¼ 4-panel square | 0 | 7½ |
| 1½ Ditto, moulded one side | 0 | 8½ |
| 1¾ Ditto ditto, both sides | 0 | 10½ |
| 1½ Ditto, bead, butt, and square back | 0 | 9 |
| 1¼ Ditto, bead, flush, and square back | 0 | 10 |
| 1¼ 6-panel square | 0 | 8½ |

FANCY SASHES, SHUTTERS, AND DOORS, TO ANY DESIGN.

THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS, 87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS.

| | per ft. |
|---|---|
| Foreign Sheet, in 100 feet Boxes | 2½d. |
| Do. do. Super 900 " " | 8d. |

Crown Squares, 100 feet Boxes:—

| | |
|---|---|
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. | 1½d. |
| 6 in. by 3 in. and under | 1d. |

Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,

of the most brilliant colours, 1s. 6d. per foot.

VARNISH.

| | per Imp Gal. s. |
|---|---|
| Super Body Copal, for the bodies of Carriages | 20 |
| Super Copal Varnish | 16 |
| Super Carriage Varnish | 12 |
| Elastic Oak, Wainscot, or Mahogany Varnish | 10 |
| Paper or Crystal, quite transparent | 10 |
| Gold size for Gilders | 10 |
| Black Japan | 12 |
| Brunswick Black | 6 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £. | s. | d. |
|---|---|---|---|
| 2½ inch Lift Pump on Plank | 4 | 0 | 0 |
| Do. do. | 4 | 16 | 0 |
| Well Pumps on Square Tails, with Iron Bow, equally low. | | | |
| Pan Water-Closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire | 2 | 10 | 0 |

PLUMBERS' BRASS WORK.—Continued.

Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

PAINTS AND COLOURS.

Best White Lead, 27s.; Seconds, 25s. Thirds, 23s.

Milled Sheet Lead and Lead Pipe, 20s.

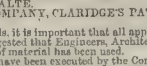
Linseed Oil, 3s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 3s. 10d. per gallon.

Brunswick and Navy Greens, Cromes; Blacks, Black Reds, Patent Dryers.

Best Town Glue, 40s. per cwt.

Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrmont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depôts, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster Bridge, London.

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Conch-houses and Stabling. | Piggeries, &c. &c. | which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Kitchen Floors (particularly where it is essential to keep damp from rising). | Dog-kennels. | | |
| Garden Walks and Terraces. | Barn Floors. | Covering of Railroad and other Arches. | |
| Carriage Drives. | Granaries. | The only effectual remedy to prevent the percolation of water, | |
| | Tan-room Floors. | | |
| | Malt-house Floors. | | |

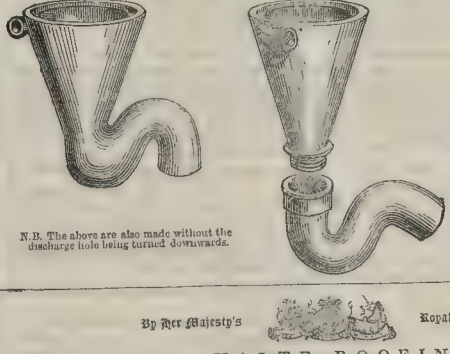
The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.



N.B. The above are also made without the discharge hole being turned downwards.

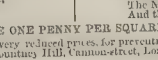
CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

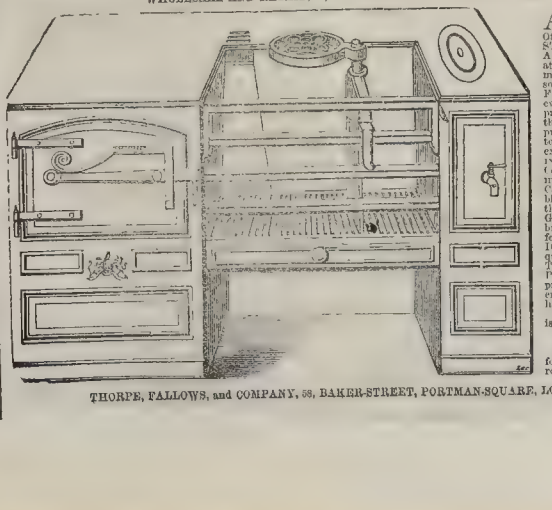
By Her Majesty's  Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by Her Majesty's Woods and Forests, The Royal Agricultural Society of England, The Leeds and Manchester, The London and North Western, The Liverpool and Manchester, The Chester and Holyhead, The Norfolk and other Railways, And the Corporation of the City of Edinburgh.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound. THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London, and Bull's Head Yard, Manchester

THE PANKLIBANON IRON WORKS, WHOLESALE AND RETAIL, 58, BAKER-STREET, PORTMAN-SQUARE.



ARCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of Stove Grates, Fenders, and Fire-Irons, ever offered to the Public, at prices considerably below the usual charges. The Proprietors beg the same to beg to invite attention to their extensive stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing everything suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epergnes, &c. The plan adopted by the Proprietors, of sharing the profits to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermometer is in daily operation. Also PENN'S IMPROVED HOT AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

**ELIGIBLE BUILDING GROUND, with** a Frontage of 130 feet, TO BE LET, desirably situate in Stockwell Park-road, near St. Michael's Church, at Stockwell, Surrey, for the erection of Villas. The road and a sewer have recently been made. A portion of the amount expended will (if required) be advanced on mortgage as the works proceed. For particulars, apply to Messrs. COLLIER, HEDGES, and STEEL, Solicitors, Carey-street, Lincoln's Inn.

CAMDEN PARK, TUNBRIDGE WELLS.

**BUILDING PLOTS of an Acre each, or** more, for Houses of approved design and dimension, TO BE SOLD, OR LET on Lease for 100 years; with a reserved advantage of adjoining pasture land, roads, and plantations of ornamental character. Inquire at the offices of DECIMUS BURTON, Esq., 6, Spring-gardens, London; 10, Calverley-parade, Tunbridge-Wells; and of Mr. ROPER, Bayham Abbey, near Lamberhurst.

ST. JOHN'S WOOD PARK !!! IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET in this** most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approach [illegible] and street near the metropolis, and greatest facilities [illegible] the fashionable resorts and promenades of the West End and the City!—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's villas, Avenue road, Regent's park.

TO WHEELWRIGHTS, SMITHS, ENGINEERS, AND OTHERS.

**TO BE LET OR SOLD, Good Work-** shops, Large Yard, with or without Dwelling-house.—For particulars, apply on the premises, Bermondsey New Road, opposite Adam's Timber Yard.

DESIRABLE BUILDING LAND for Small Cottages or Houses close to Fulham New Church, and a short remove from the high-road.

**TO BE LET, upon Building Leases, on very** advantageous terms, about Three Acres of Freehold Land, presenting a frontage to the road of about 900 feet, by an average depth of 140 feet, most admirably adapted for the erection of small houses, which are very much required in this locality, no house of this kind being let. Advances may be made to respectable parties. For full particulars apply to Mr. FREDERICK CHINNOCK, Surveyor and Auctioneer, 28, Regent-street; of Messrs. WELLS, Solicitors, 22, Sackville-street, and of Mr. STOCKTON, at the Cottage on the land.

TO BUILDERS AND UNDERTAKERS.

**FOR SALE, a Respectable Business and** Valuable Lease of Premises (very improveable, there [illegible] for two additional houses), held for an unexpired term of 60 years, at only 8l. ground-rent, consisting of a house and shop, workshops, saw-pit, sheds, stabling [illegible] mises, with two frontages, the stock in trade, utensils, and fixtures, at a valuation. [illegible] Whitechapel. For particulars and cards to view, apply personally to the proprietor of the Red Lion, Bevis Marks, City.

A BARGAIN.

**TO BE SOLD, near Guildford, Surrey, and** close to three new lines of railway, about 10 acres of Freehold Land. [illegible] Apply to [illegible] SALMON, [illegible]

VOTES FOR MIDDLESEX.—TO SMALL CAPITALISTS, AND OTHERS.

**TO BE SOLD, by PRIVATE CON-** TRACT, together or separately, Twenty Substantial and Well-built Freehold Tenements, recently erected in the Road leading from Walham Green, to Hammersmith, known as Bedford-place, fitted up with the usual fixtures and with Pumps [illegible] water. The premises are well drained, and all at present let to weekly tenants, producing a Rental of about 134l. a year. Land-tax redeemed. Price and Particulars may be known on application to Mr. CARTER, Builder, Bedford-place, Fulham Fields.

BUILDING LAND, PECKHAM, ADJOINING THE ROSEMARY BRANCH RACE COURSE.

**MR. SINGLE will LET by AUCTION,** at the Rosemary Branch Tavern, Peckham, on THURSDAY, May 27, at Six precisely, 43 Plots of very valuable Building Land, [illegible] Leases will be granted [illegible] years. Particulars may be obtained of THOMAS TRYER, Esq., Solicitor, 11, Artillery Place, Finsbury Square, and at the Office of Mr. SINGLE, Land Agent, [illegible] Street.

## SALES BY AUCTION.

Second Portion.—To Ship, Boat, and Barge Builders, Mastmakers, Builders, and others.

**MESSRS. DAVIS and VIGERS will** SELL by AUCTION, on the Premises, [illegible] Rotherhithe, on THURSDAY, May 13, and following days, at Twelve for One, the Second Portion of the [illegible] OAK TIMBER, the produce of the best timber counties of England, [illegible] trees, some of large [illegible] for shipbuilding purposes; a fine Quebec mast log and three mast fishes, also [illegible] extensive mould loft recently taken down, with the sashes, sash-frames, doors, door-frames, floors, stairs, rafters, beams, ties, &c., and many useful lots of timber, moulds, firewood, and sundries, being the clearance of the yard, a large strong-built skiff, &c.—To be viewed two days before the sale. Catalogues to be had on the Premises, and of the Auctioneers, 3, Frederick's-place, Old Jewry.

BUILDING MATERIALS, STEAM ENGINE, CRANES, JENNIES, &c.

**MESSRS. DAVIS and VIGERS have** received instructions from the Commercial Dock Company to SELL by AUCTION, on the Premises, [illegible] Rotherhithe, adjoining the [illegible] on THURSDAY, May [illegible], at Twelve for One, all the useful MATERIALS of a FIFTEEN ROOMED HOUSE, except bricks, consisting of [illegible] plain and pan tiles, oak and fir girders, joists, rafters, quarter-partition floors, [illegible] glazed sashes, doors, lead gutters and pipes, cisterns, coppers, stoves, range, stone paving, chimney-pieces, closets, dressers, &c. Also all the [illegible] crane, two timber ditto, two treadwheels, sound bell, &c., with the [illegible] To be viewed two days before the sale. Catalogues to be had on the Premises, and of the Auctioneers, 3, Frederick's-place, Old Jewry.

TO STONE MASONS, BUILDERS, PAVIORS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION, on the Premises, 30, Commercial Road, Lambeth, on TUESDAY, May 11th, and FOLLOWING DAY, at Ten for Eleven o'clock precisely, [illegible] number of lots, by order of the Assignees of S. and G. Sharp, bankrupts. The remaining portion of their valuable stock in trade, consisting of Portland blocks and scantlings, of large dimensions, York and Portland landings, steps and kerbs, York copings and sills, Purbeck steps, granite [illegible] blocks, several thousand feet of York and Rochford paving of superior quality, rubbed slab and chimney jaumbs, a worked Caen stone base [illegible] pieces, hot air stove, &c., also a quantity of excellent scaffolding,—crab engine and hoisting jack, hand trucks, barrows and [illegible] clock, and numerous other effects,—also at the same time the lease of the excellent premises. May be viewed one day previous, and Catalogues had on the Premises; of Messrs. DONNE & TAYLOR, Solicitors, 28, New Broad-street; of the Auctioneers; Coal Exchange; or 1, Little Smith-street, Westminster.

## SALES BY AUCTION.

TO BUILDING MATERIAL DEALERS, OVEN BUILDERS, IRONFOUNDERS, AND OTHERS.

**MR. MARSH (late Fuller and Marsh) has** received instructions to SELL by AUCTION, at Messrs. [illegible] and SONS' Coal Wharf, Belvedere-road, Lambeth, on WEDNESDAY, May [illegible], at Twelve o'clock, unless an acceptable offer be previously made by private contract for the entirety, or any portion thereof, the erection of SIX COKE OVENS, comprising about [illegible] of reduced stock bricks, with [illegible] good Fire Bricks, iron stays, [illegible] May be viewed, and catalogues obtained of Messrs. COLES, CHILD, and Co., Belvedere Wharf, Lambeth, and at Mr. MARSH'S Offices, 27, Bucklersbury, Mansion House.

TO BE SOLD BY AUCTION, BY

**MR. DAVID JONES, on the Premises,** at Rallt Wen Stone Quarry, Tre' Madoc, Carnarvonshire, on TUESDAY, May 18, at Twelve o'clock precisely, a 7-horse high pressure Steam Engine and Boiler, a rubbing machine, four circular tooth saw machines, with 10 feet beds, twelve railway trucks, a road cart, and other effects, comprising the plant of Rallt Wen stone and slate flag quarry, Tre' Madoc, Carnarvonshire, the whole of which is nearly new, and was made to order, regardless of cost. Catalogues may be had of Mr. JAMES REES, Printer, Carnarvon; Messrs. CRAM and SMITH, Brokers, Liverpool; Mr. BRENAN, Ship Agent, Tower-street, London; and by application to Mr. DAVID JONES, Auctioneer, Tre' Madoc, they would be posted to any part of the country.

FIRST PORTION of the Extensive Stock of Ironmongery, of the very best manufacture, removed from No. 40, Newgate street, for PEREMPTORY SALE.

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79, Basinghall-street, May 7, 1847.

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CHS. CLARK

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Sewers Office, Guildhall, 4th May, 1847.

JOSEPH DAW, Prin. Clerk.

Guildhall, 12th May, 1847.

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TO TIMBER MERCHANTS, CABINET-MAKERS, BUILDERS AND OTHERS

**FOR SALE BY AUCTION**, without reserve, on the premises, 10, Gun-street, Spitalfields, on Monday, 17th May, 1847, at Eleven o'clock precisely, a large assortment of Honduras, Spanish, and Cuba Mahogany, in logs and planks, boards, and veneers; rosewood planks and veneers, pencil cedar, dry wainscot, birds-eye maple, logs and veneers, oak deals, Vinl ebey wood, oak veneers, &c. To be viewed two days prior to the sale Catalogues to be had on the premises and of THOS. EDWARDS and SON, Brokers, 1, Pinner's Hall, Great Winchester-street.

HORNCHURCH.—400,000 Bricks, Drain Bricks, Drain Pipes, and Tiles.

**TO BE SOLD BY AUCTION, by G.** COLLIS, by order of the executors as directed by the will of the late Mr. Charles Coxe, on the premises, Hornchurch, Essex, on TUESDAY, May 18, 1847, at Eleven o'clock, All the Stock in Trade, consisting of 400,000 excellent stock, mould, place, and other Bricks, with the moulding lots of Sand, Loam, and Gravel, a large assortment of Drain Bricks, Pipes, and Tiles of various sizes and descriptions; ridge, plain, valley, and other tiles; chimney, cardage, and coal pots; also three strong-built broad-wheel iron-arm brick carts, which will be sold without reservation. The whole of the property will be described in catalogues, and may be viewed two days prior to the sale when the property may be viewed, at the inns in the neighbourhood; and of Mr. G. COLLIS, Auctioneer, Estate Agent, &c. Romford The above property lies within 4 miles of the river and 2 miles of the Romford station

STOKE-NEWINGTON. Valuable Building Ground, containing excellent Brick Earth.

**MESSRS. WINSTANLEY** respectfully announce that they will SELL, by AUCTION, at the Mart, on TUESDAY, June 1, in one lot, by direction of the Executors of Joseph Jones, Esq., an important FREEHOLD PROPERTY, consisting of Eighteen Acres of Valuable Building Land, rich in excellent brick earth, for working which arrangements have been made with the Lord of the Manor, with a dwelling house, sheds, and out-building in front of the Highgate-road, now in the occupation of Mr JOHN GANTLEY, who will quit, if required, at Michaelmas next, at a low surface rent of 17s. per annum To which is annexed a valuable Timber Yard, in the occupation of Messrs. BAYLEY and JONES, No. 1, Park-place, Bas-hall-street, of Messrs. WIGG and POWNALL, Surveyors, 7, Bedford row; at the Mart; and of Messrs. WINSTANLEY, Paternoster-row.

## SALES BY AUCTION.

NORWOOD SURREY.—Valuable Freehold Building Ground, a portion of the Estate of the late Lord Chancellor Thurlow.

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FREEHOLD BUILDING LAND, CROYDON, SURREY. LAND-TAX REDEEMED

**MR. ROBERT KING** has the honour to announce that he has received instructions to SELL at the Auction Mart on Monday, June the 7th, at Half-past Two o'clock precisely, in Lots, several pieces of most valuable Freehold Building Ground, —land-tax redeemed; situate near the Town of Croydon, a short distance from the Station of the Croydon and Dover Railways, commanding the most interesting views, and presenting several charming Sites for the erection of Villa and other Residences, which are in great request in the neighbourhood, offering to the Builder, Speculator, and Capitalist a most eligible opportunity, as the land is rich and dry, with excellent road to it, only 12 minutes from the station on the London-side, and 10 minutes walk from the Croydon-side, at the principal Inns in the neighbourhood, at the Mart of the Auctioneer, 29, Great Winchester-street, Old Broad-street, City

BUILDING LAND, NORWOOD, SURREY, BY

**MESSRS. BLAKE**, at Garraway's Coffee House, Change Alley, on TUESDAY, May 18th, at Twelve o'clock to the minute, VALUABLE FREEHOLD BUILDING LAND, together with a detached Residence land-tax redeemed, on the south-western summit of Beaulieu Hill, a situation which for salubrity of air and beauty of scenery is almost unrivalled, being in the immediate vicinity of the Crystal Palace, at three-quarters of a mile from the Norwood Station on the Croydon Railway, affording most eligible sites for the erection of moderate sized villas, and well worth the attention of Building societies and small capitalists. Particulars, with plans, will be prepared, twenty-one days before the sale, and may be had on the premises, at the Inns on the ground, at Garraway's coffee-house, at Messrs. DRUMMONDS, ROBINSON, and TILL, Solicitors, Croydon, and of Messrs. BLAKE, Croydon

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The Builder.

No. CCXXIII.

*SATURDAY, MAY* 15, 1847.

IF we had not been often disappointed in an anticipation equally well grounded, we should say that the result of the Army and Navy Club Competition will do much towards a reform of the present system. But we have lost all hope of such a desirable consummation.

"Hereditary bondsmen, know ye not—
Who would be free, themselves must strike the blow,"—

said Byron, and after him O'Connell. Reform must be brought about by the architects themselves, and as long as members of the profession can be found, so lost to a proper sense of the dignity of their calling as to respond to invitations of the most insulting character (of course we do not now refer to those of the club in question), take the chance of accident, influence, and chicanery, work for any thing,—nothing,—so long, we fear, things will remain just as they now are. While architects will submit designs for a Literary Institution, to an obviously incompetent tribunal, for an offered five pounds five shillings, as in the Ipswich affair, denounced by us some time ago in less measured terms than we generally use,* little improvement is to be looked for. Architects must themselves arrange the leading terms of competitions, and resolutely decline participating in those otherwise conducted; architects must themselves avoid the exercise of underhand influence, must themselves shew integrity and high feeling; and further, *refuse to compete or co-operate with those proved guilty of want of these qualities.*

For some years, architects have been doing their utmost to convince the public that they consider their own productions of no value, and now they are surprised to find that the public are precisely of that same opinion. What can be had for nothing is generally thought to be worth nothing; and architects' designs, in the minds of large numbers of persons, serve as an illustration of the correctness of this belief.

So far from making any addition to the usual payment to architects, in return for the chance of having done the work for nothing, committees are constantly found offering sums, the most insignificant, quite inadequate to the skill and labour required, if even there were no risk attached. Without again alluding to the Ipswich case and others similarly preposterous, we may point, in illustration, to an advertisement in our paper of the 24th ult., for plans for a general hospital at Cheltenham, which is to contain from sixty to one hundred beds, with necessary accommodation for officers and servants, and to be built substantially, at a cost not exceeding 5,000*l.* The *honorarium* offered to the successful competitor is 60*l.*, and, "in consideration of that sum, he will be required to furnish *an estimate, specification, and working drawings*, necessary for the effectual carrying out of the above plan,"—in consideration of that sum, which is not one-half of what would be a fair charge for the work required, if an architect were, without risk, commissioned to execute it. A detailed estimate, if he employed a surveyor to make it, would cost him more than the money!

If a man went into Westminster Hall and offered two guineas in competition to barristers, for the performance of some ordinary service, for which the recognized fee was four, how would he be received? Or, if he wrote to a number of hat-makers, for example, inviting them to submit for his inspection some twenty-shilling hats, and offering to give ten shillings for the best one amongst them, how many applicants would he have? The 22nd of May, the day on which these hospital designs are to be delivered, will shew how differently architects and hat-makers view the same thing.

We are not willing to oppose architectural competitions altogether. They might be made to present the means of advancement to unknown and struggling merit, in a profession singularly wanting in such opportunities; and we are, therefore, much more anxious to see competitions properly conducted than to find them abandoned. We have laboured for this for some years past, and our pages contain a large number of remarks, exposures, and suggestions, in connection with the subject.

A competent tribunal (coupled with, or we may say, proceeding from, due consideration of the value of an architect's labours) is the great point to be achieved. And it is under this head alone that we are at issue with the Army and Navy Club.

We attribute to the committee, as a body, no trickery, unfairness, or ungentlemanly feeling. As we have already said, they probably made the selection with an anxiety to do justice; but they were not competent, and could not be expected to be competent to perform the duty. If they had called in proper professional assistance, they would not merely have avoided much reproach, trouble, and annoyance, but have entitled themselves to the thanks of the profession for the manner in which the whole matter was conducted.

We have received a number of letters complaining that the sections submitted by the competitors, in compliance with the instructions issued, and which are of course all-important in forming a judgment on the relative merits of the plans, were not exhibited with the other drawings, excepting those appertaining to the selected designs: contemporaries, also, dwell loudly on the same fact. We need scarcely say that the absence of sections was not overlooked by us, or unregretted; we were positively assured however, on inquiry, and believe the assurance, that all the sections were examined by the committee (whether they understood them is another matter), and were left open for examination by the members until after the selection was made, when they were removed for safety, with the exceptions already mentioned, as there was not space on the walls to receive them.

As we foresaw must be the case, the committee will not adopt either of the selected designs, nor can they amalgamate them. The premiums will be paid to the authors of them, and then, the club having obtained additional ground, a fresh competition will be invited on the part of the six architects whose designs received the greatest number of votes, including of course the two rewarded competitors. No premium will be given, but the author of the selected design will be employed to carry out his plan; and the committee have determined on *taking professional opinion before coming to a decision.*

On another page in the present number, will be found some useful information as to the size of rooms in existing club-houses.

* See p. 69, *ante.*

## THE ARCHITECTURAL ROOM AT THE ROYAL ACADEMY.

RESUMING our notice of the architectural drawings in the present exhibition, we are still surprised to find how inadequately the progress of the art during the past year, is represented. We have not a single drawing of any part of the Houses of Parliament, of the British Museum, the New Board of Trade, the additions to Buckingham Palace, or the interior of Covent Garden Theatre. The last mentioned would have made an excellent subject,—having the advantage of colour, in which our own illustration * was necessarily deficient. There is this year, not even one contribution by an academician, and comparatively few drawings of the churches in progress or lately completed. One design for the Army and Navy Club, noticed in our last number, is the only indication of this recent excitement in the architectural world. Yet, as usual, a considerable amount of space is occupied by views of old buildings, and also by designs never intended to be carried into execution. It is difficult to understand, why, year after year, this branch of the Royal Academy should present so unsatisfactory an aspect. But, in the absence of any knowledge, this season, of the number or quality of the rejected works, the solution most probable, is, that architects are too much dissatisfied with the management of this department, to incur the labour of production, on the chance of a bad place, or that of rejection. We have frequently seen admirable drawings, and of works in course of execution, which had been rejected, indeed, the occurrence is notoriously frequent. To prepare an elaborate perspective view requires an expenditure of time, which few architects can themselves readily devote to such an object, but were there any probability of the labour being properly appreciated, the result would be very different. At present, the great objects of attraction are the large rooms, where are the oil paintings and the new fashions, and with most visitors, the dinner hour arrives ere either architecture or sculpture are thought of. In an exhibition devoted entirely to architecture, with only two or three lines of drawings, the case would be very different, and considering that comparatively few now do any thing more than enter the architectural room, whilst the examination of a large proportion of these would be just as well dispensed with, we cannot but think, that architects and the art would be gainers by the change. The architectural exhibition would thus stand upon its proper merits; it would be visited for its own object, and could not fail to give a large amount of interest, not only to the general public, but to others more particularly interested in the art. Whether plans, elevations, and sections, and whether views of old buildings, being hung in a distinct room, should be admitted, as well as of those lately, or to be erected, and some other details, would require consideration; but we think the project is well worth the attempt, and the success of the water-colour exhibitions augurs well for it with another class of drawings, in which, pictorial representation alone considered, the amount of talent displayed is in no degree inferior. We are aware that the project has been often suggested, but the present seems a favourable time for reviving it.

Looking at the drawings, we find two designs (1078 and 1287), by M. L. Watson, for the sculpture of the pediment of the Royal Exchange, submitted in the competition which was gained by Mr. Westmacott. They represent "The Proclamation of the Royal Exchange in the presence of Queen Elizabeth," and "England proclaiming universal commerce with all nations." The last is the most successfully treated, yet is perhaps hardly equal to the sculpture on the building. "The proposed new church at Daurbridge, Cheshire,"—J. Clarke (1083),—will be of the decorated style, with a large west window, and a square tower, to which, we should presume, it were intended to add a spire, if representation did not more frequently exceed than fall short of reality. No. 1884 is a plan showing the position of Dover Court, in relation to Harwich, and the new railway. The view of the new town (1111) has not any very important architectural character: the tower seems intended to group with the design, but is a failure.—Mr. J. Dobbin has mounted a steed which he cannot manage, and we only

* Page 170 *ante.*

notice his drawing of York Minster (1086) to protest against its occupying valuable space: it is very badly drawn, and is very inaccurate. No. 1087 is the Grove Ferry Station, now erecting on the Canterbury and Ramsgate Branch of the South Eastern Railway: the design has been intended for a Gothic one, but cannot be received as such. The New Church at Honiton, of which Mr. C. Fowler exhibits a drawing of the chancel in No. 1088, has a Norman apse decorated with paintings. The pulpit stands upon a twisted Norman column, in front. No. 1091, "The Dogana and Church of Sta. Maria Della Salute," at Venice, is a washy drawing, in which a large piece seems to have been washed off the side of the dome. J. Thompson shows a "front elevation of the proposed enlargement of the Polytechnic Institution" (1093), by which it appears, that the front will be nearly doubled in length, and a projection corresponding in form and position with the porch, but which is not an entrance, is added. The windows have pediments, and beneath the cornice, a fret and the name of the building are introduced. No. 1094, E. Nash, shows the porch of a residence lately erected, and is in good taste. The angle forms a square rusticated column, with pilasters attached.—Why the stables of the "Nobleman's Mansion in the Vicinity of Eaton square" (1095) were thought worth exhibiting, we can scarcely guess, unless it were to please the nobleman. C. E. A. Blair's "Design for a Railway Bridge" (1104) is in the Gothic style, and is certainly picturesque. No. 1110, "Approach to a Marine Palace," is all "pomp and circumstance;" there is a striking want of purpose, always fatal to a work of art. The *mere* art of architecture requires the presence of reason and utility.—"Pennant Church, about to be erected in Montgomeryshire" (1119) is designed by E. B. Lamb, and with some novelty, is strikingly picturesque. There is a lofty bell-cot on the south side, with buttresses projecting to a great distance, and forming the walls of the porch. Mr. Lamb's "Study for a Portal" (1129), has receding concentric arches, the faces ornamented, the archivolt being surrounded with rustics. "St. Andrew's Church, Wells-street, Oxford-street" (1116) is the church, of which an illustration was given in the first number of our present volume. 1120, "The Church lately erected at Ryde, Isle of Wight," by T. Hellyer, has a western tower and spire, and is in the early decorated style.—No. 1131 is a drawing of the Parthenon, and the Erectheion at Athens, by G. Knowles. The view is extremely interesting, being, we believe, one of the latest representations of these buildings. The quantity of fragments scattered about, appears great, and amongst these are many capitals and other members of orders, of all which we should be glad to see careful drawings. Architectural students would do well to acquire the delicacy of touch in pencilling, coupled with the pains-taken accuracy observable in this view. The "Design for a Testimonial to the Memory of Shakespeare," is a very unsuccessful attempt to adapt the character of the Queen's crosses at Northampton, and elsewhere. The "New Church to be erected at Rossendale, Lancashire" (1140), J. Clarke, is a Norman cross church, with apse, and low central tower. The view of Messrs. Overend, Gurney, and Company's bank in Lombard-street, designed by H. Baker (1142), is not a fortunate representation of the building, although the angle is really not very successful. The window interrupted by a door, might have been avoided. No. 1143 is "A sketch for a church without aisles," but *with* a prodigious transept. The spire and window dressings have been treated with a lavish expenditure of gamboge. D. Wyatt exhibits a view of the arch of Titus at Rome (1150), interesting, as shewing its present state, and a drawing of a ceiling at Perugia (1262). In the union workhouse, Calne, Wilts, Mr. Allom seems not to have exerted his skill. The design is very ordinary Elizabethan. J. E. Nash has a "Design for a gallery of painting and sculpture" (1161), which has some good features, but copies the bad arrangement of the National Gallery, in the absence of steps to the portico. Lions' heads on the corona, should have been omitted. "The design for a gateway" (1167) we really think was in the exhibition of last year.—The interior view of the church at Bembridge, Isle of Wight, T. Hellyer (1170), is plain early English, but in good taste; the roof has all the timbers framed as principals.—"The Tunbridge Wells Station, lately erected from the designs of R. B. Gardener" (1172) is in red brick and stone, of rather plain character, with an arcade between two projecting ends. W. H. Clayton exhibits a "Design for an Institute of British Architects, as submitted to the Institute in competition for the royal medal" (1173), a matter upon which we have already said sufficient. In this design there is a great want of unity, and some of the ornament is excessively disproportionate. S. Wood exhibits the "Dublin Terminus, Great Western and Southern Railway, now erecting" (1176). The main building has a rusticated basement, a row of plain Corinthian columns, with broken entablatures above, supporting sedent figures, the whole surmounted by a low pediment. The wings have lofty turrets with cupolas. The "View of the new Institute about to be erected at Stoke Newington," F. Cross (1178), is an attempt in a style of architecture almost defunct. The building, of one story, has a low hexastyle portico, the columns of which are rather wide apart.—F. E. H. Fowler's "Double Villa at Clifton (1185) is perhaps picturesque, but is injured by the difference in the heights of some of the horizontal lines. "The National School, now building at Great Waltham," by C. Dyer (1186), is a good Gothic design, not greatly varying from many others. H. Deusbury's "Design for the Manchester Royal Lunatic Hospital" (1192), obtained the second premium. From the view, we cannot discover any very great merit in the design, which may be called Elizabethan. The plan takes the ⊞ form, and turrets rise midway between the projections of the ends and centre. No. 1198, is a design by E. Christian, for the "New offices of the Imperial Insurance Company." Judging from his other design (1284), the plan seems to have presented some difficulty, the ground being the corner adjoining the Hall of Commerce, in Threadneedle-street. The last-mentioned gained the second premium; it has, like the other, a circular corner: the rooms seem to be arranged without much loss of space. J. Dwyer has produced a successful piece of interior decoration, in the design for the room at Stapleford Hall, Melton Mowbray (1199). This design stands next to the "view of a library," by L. W. Collman, already noticed, and both display a very accurate knowledge of principles, although in result they are entirely different. The "Railway station and hotel, at Hull, now erecting"—G. T. Andrews, (1202), seems rather tame, considering the opportunity for something more effective. Breaks in the front would require corresponding breaks in the roof, and the design would have been improved by preserving them.

The "submitted design" (1204), is so much like two houses, that it would hardly have bespoken the object of the "Kingsland Literary and Scientific Institution." "St. John's Catholic church, now erecting at Salford, Manchester" (1212), has the name T. M. Baynes attached, but we have always understood it to be by Messrs. Weightman and Hadfield. It is a very large and elaborate building, in the decorated style, and has been frequently referred to in our pages. O. B. Carter has made a "design for rebuilding the church of Holyrood, Southampton, preserving the present nave-arches, and restoring also the ancient ceiling and chancel-stalls." The drawings (1217 and 1218), shew that the ceiling is arched, coloured blue, and powdered with stars. The interesting church of St. Jacques at Antwerp, remarkable for its ceiling decorated in polychromy, is shown in an interior view (1229) by S. Read. W. F. Poulton shows his design for restoring St. Lawrence's Church, Reading (1230). The roof having a tie-beam, and the queen-posts being of unusual length, the effect is rather singular: but we do not recollect whether it is in accordance with the original. A. Ashpitel has a "design for a new Church, Battersea" (1231). The style is the decorated. The lucarne lights in the tower, appear rather too numerous and close. Brandeston Hall (1242), now in course of restoration by J. M. Clarke, is an interesting old building of red brick and stone. The "east view of St. Alban's Abbey Church," by J. Buckler (1246) shows the window—of rather unusual character, and the drawing is worthy of examination, as, if we recollect right, a station for viewing this end of the building is not easily accessible. "The Royal Agricultural College, Cirencester" (1258) is a Gothic design, having a range of small gables along the roof, and a central tower. R. H. Essex, who seems to have drawn the Temple Church from every possible point of view, this year gives the round part in one of his elaborate drawings (1263). E. Barr illustrates St. Andrew's Church, Emerby, Lincolnshire, which he has "drawn from admeasurement," restoring the fittings and decoration, in a sheet of neatly executed drawings (1271). "Archbishop Parker's Grammar-school," Rochdale, by J. Clarke, is a brick and stone building in the Tudor style, with an open timber roof. In the "church and mausoleum of the Metropolitan and Suburban Cemetery Society, Woodford branch," by J. H. Stevens, the Lombardic Romanesque style has been followed. The view of Canterbury Cathedral (1276) by F. Bedford, jun., may be examined by those who have not seen the effect of the building, since the addition of the perpendicular tower corresponding with that on the other side—an addition involving the destruction of an old Norman tower, which has been severely commented upon. No. 1285 is a design by F. H. Groves, for a church proposed to be groined over, "so as not to interfere with the uniformity of the design." The design would be open to criticism, but constructively, some ingenuity is displayed. Christ Church, Bermondsey, now erecting from the design of W. B. Hays, is in the Romanesque style.

Amongst the models, is one of the new Coal-Market, to be erected at the corner of St. Mary-at-Hill, in Lower Thames-street, by J. B. Bunning. There is also one, of alterations in progress at Somerleyton Hall, Suffolk, the seat of Mr. S. M. Peto; Mr. J. Thomas is the architect. The building occupies three sides of a quadrangle of large area, and is Elizabethan. There is also a model of a font and cover, very rich in colour and gold, but that is all we think it necessary to say of it. The cover is copied from that at Canterbury, given in a former volume of THE BUILDER.

## A NATIONAL MONUMENT TO SHAKESPEARE.

A PROPOSAL has been often made, of erecting a national monument to Shakespeare. A correspondent of the *Manchester Guardian* has lately revived the idea, and enters into some explanation of what he contemplates. Without pledging ourselves to an opinion in favour of all the details, the proposal has so wide an interest, particularly at a time when every line of the poet is studied and commented upon, that we deem it necessary to notice it.—It is recommended that a "magnificent and spacious building" should be erected, to be called the "Shakespearean Temple," to be "open to the public without charge." In the centre, on the ground-floor, the proposer would have "a splendid colossal statue" of the poet "surrounded by the muses, and Fame crowning this great and good man." The walls to be decorated in fresco, with designs taken from Shakespeare's works; and on the ceiling "all the aerial beings (or the imaginative creations of his fancy) should be displayed." The windows to have stained glass, and some of the most remarkable passages in his plays to be inscribed on marble slabs, round the walls. Niches and pedestals to be provided for statues, and busts of eminent actors and expounders of his works. A circular building, perhaps surmounted by a dome, is suggested, and a large bronze statue of the great poet to be placed in some conspicuous position on the exterior. The building, when completed, to be handed over to the trusteeship of Government. It is rightly argued, that such a building, if erected, would be no mere place of amusement, but an important means of instruction, and a fitting index to the code of morals, which Shakespeare has laid before us. There can hardly be any project, for which a national subscription would be so readily undertaken, if properly put forth, and we think it should not be lost sight of.—The opportunity, on the eve of passing away, of making the house of Shakespeare at Stratford-on-Avon, national property, unless taken advantage of, will afford a subject for deep regret through future years of England's history.

## SIZE OF APARTMENTS IN CLUB HOUSES.

THE following table was drawn up by Mr. Alexander, Architect, for his own guidance, and may be useful to some of our readers, now or hereafter, although it is not complete:—

| | Reform. | Travellers'. | Old Carlton. | City. | Oxford and Cambridge. |
|---|---|---|---|---|---|
| Fish Larder—Ice | | 13 by 8 | | | |
| Pastry ditto—Knives | | 15 by 6·8 by 8 | | | |
| Stores—Lamps | | 8 by 8 | | | |
| Scullery | 24 by 14 | | 19 by 23 | | |
| Hardware Scullery | | 10 . . 10 | | | |
| Steward's Dining-room | 20 . . 16 | 16 . . 12 | 20 . . 13½ | | |
| Housekeeper's Room | 20 . 12 | | 24 . 23 | | |
| Kitchen | 28 . . 28 | 27 . . 23 | 27½ . . 26 | | 28 by 22 |
| Servants' Hall | 25 . 21 | 24 . . 20 | 28 . . 22 | | |
| Upper Servants' Hall | | 18 . 16 | | | |
| Still Room | 24 . . 16 | | 18 . . 13½ | | |
| Clerk's Office | 15 . 10 | | 17½ . 16 | | |
| Raw Meat | 18 15 | | 17½ . . 11 | | |
| Cleaning Room | 15 . . 11 | | 27 . . 15 | | |
| Cooks' Room | 19 . . 12 | | 17 . . 11 | | |
| Cold Meat | 12 12 | | 17½ . . 11 | | |
| China | | 16 . 16 | 18½ . . 13 | | |
| Butler | 14 . 9 | 10 . . 18 | 19 . . 14½ | | |
| Plate | 9 . . 5 | 11 . . 8 | 19 . . 7½ | | |
| Bath Rooms | | | 3) 16½ . . 8½ | | |
| Linen | | | 17 . . 9½ | | |
| Dispensing Cellars | | | (2 17 . . 9½ | | |
| W. C. | 2 | | 4 | | |
| Dressing Rooms | | | 1 22½ } = 1 11½ 17 } | | |
| Wine | | 20 . . 22 | | | |
| Ditto in Wood | | 18 . . 11 | | | |
| Coffee Room | 116 . . 27 | 67½ . . 24½ | 54 . . 25 | 58 . . 30 | 66 . . 24 |
| Parliamentary Library and Morning Room | 66 . . 28 | 44½ . . 24½ | 66 . . 24 | 26½ . . 25 | 31 . . 28 |
| Audience Room | 17 . . 10 | | | | |
| House Dining Room | 40 20 | 29 27 | 27 . . 22 | 25 . . 22 | 28 . . 19 |
| Second Coffee Room | | | | | |
| Entrance Hall | 81 | 13½ . . 23 | 21½ . . 15 | 10 . . 25 | 26½ . . 36 |
| Waiters' Room | | | 23 . . 32 | 21 . . 10 | 21 . . 15 |
| Waiting Room | 30 11 | 14 7 | | 3) 10 . . 8 | |
| Saloon | 50 55 | | | 29 . . 29 | |
| Secretary's Room | | | | 18 . . 12 | 20 . . 13 |
| Clerk's Room | | | | | 16½ . . 7½ |
| ONE PAIR:— | | | | | |
| Drawing Room | 116 27 | 46½ . . 24½ | 55 . . 26 | 46 . . 25 | 54½ . . 28 |
| Library | 60 . . 27 | 65 . . 24½ | 65 . . 25 | | 37½ . . 32 |
| Private Drawing Room | 30 . 20 | | | 35 . . 25 | 23 . 39 |
| Committee Room | 24 . . 20 | | 18 16½ | | 27 20 |
| Reading Room | 30 . . 14 | | | | |
| Card Room | 28 . . 14 | 27 . . 24½ | | | |
| Card Accountant's Bed Room | | 16½ . . 14 | | | |
| Groom of Chamber's Bed Room | | 16½ . . 14 | | | |
| W. C. | 9 | | 1 | 2 | 2 |
| Waiters' Room | 20 . . 11 | | 16 . 9 | | 20½ . . 13 |
| Smoking Room | 22 16 | | | | |
| Bath Rooms | | | | 2) 10 . . 9 | |
| Dressing Rooms | | | | 2) 10 . . 9 | |
| Billiard Room | | | 35 . . 21½ | | |
| TWO-PAIR STORY | | | | | |
| Smoking Room | | | 27 . . 16 | | |
| Billiard Room | | | 1) 17 . . 7 | | |
| Top of Groined Windows | | | 16 | 16½ | 23 |
| Bottom of One-Pair ditto | | | 21 | 25 | 30 |
| Top of ditto | | | | 34 | 42 |
| Top of Cornice | | | | 48 | 56 |
| Principal Staircase | | 15½ | 17 | 29 | 204 |
| Stairs | 8 | 7 | 7 | 2½ | 10 |
| Second Staircase | | | 10 | 7 | 10½ |
| Stairs | | | | 3½ | 3½ |
| Height | | | 41 | 47½ | 61½ |
| Length | | | 61½ | 67 | 96 |

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Stanzas of Raffaelle.*—When Mr. Ingres was director of the French Academy at Rome, he conceived the idea of having the above works copied, as another art-ornament of the French metropolis. Government cheerfully accorded the necessary funds. Paris possessed already copies of the *Loggie*,—Sigalon, had just finished the copy of the Last Judgment,—and thus the *Stanzas* will complete the cycle of copies of these incomparable frescos of the Vatican. Mr. Ingres, having been left at liberty to choose the artists, selected two of his pupils, the brothers Balse, who spent five years on this work. Persons who have seen the copies of the Stanzas by the side of the originals, declare them fine, truthful, and conscientious. The work and the artists are soon expected at Paris—where the latter are engaged to execute, under Mr. I.'s direction, his pictures of St. Vincent de Paul.

*"Novel" Chronology.*—Dr. Fraas, a German *savant*, has just published an interesting work on the great changes which Greece and other old countries have undergone in the lapse of time. Dr. F. conjectures, from the combined testimony of authors like Homer, Hesiod, &c., and actual observation and appearances, that *civilization* is much *older* than we were hitherto induced to believe, and assigns to the oldest monuments (temples) of Thebes the age of 8,000 years! Chevalier Bunsen will arrive, it seems, at similar results in the forthcoming volumes of his work on Egypt.

*National Recognition to Rauch, at Berlin.*—The seventieth anniversary of that great sculptor has been celebrated, this time, in a way deserving especial notice. On the eve of the festivity a torch-procession and serenade (*Fackelzug*) were offered to the artist, directed by Messrs. Kiss and Wolf, prof. R.A.; after this followed the bands of the life-guards and dragoons—amongst the airs intonated Arndt's *Vaterland*. H.M. the King conferred on Mr. R. the second class of the order of R E., and, to add to his family comforts, transferred his son-in-law from Halle to the University of Berlin. On the forenoon of the festival day, a deputation of artists presented their worthy master with a silver (gold-galvanized) laurel crown. The dinner was served in Milent's saloon, at which, besides several cabinet ministers, the Earl of Westmoreland, Count Pourtalis, &c., assisted. The most extraordinary, however, on that occasion was, that Mr. Rauch, on celebrating his seventieth anniversary, found, at his side, his very master, the *Nestor* of sculptors, old sterling Gottfried *Schadow*, who replied to the toast brought out in his honour, in a very feeling, yet humorous and lively way.

*The Late Louvre Exhibition, judged by German Critics.*—There is a picture in this art-show which, conjointly with Couture's "*Orgie*," stamps French art very low. It is called, "Un Conseil d'Ami." It represents the atelier of an artist, painting a biblical subject. The model for one of the angels stands near him, a female with white garment and loose hair—smoking a cigar. Truly, exclaims the better portion of the German press,—"this is not art, this is the pathology, the disease, the idiocy of art. Thence it comes, that French (*present!*) artists cannot produce any more those pure, sky-descended Madonnas or saints of the middle ages. Raffaelian models, it is true, may not have been always perfect saints, although many of his Madonnas were gathered on the market-places of Rome, from the *Campagna* di Roma; but surely they were not those dallying, thoughtless, fallen beings, past every recovery and redemption, like those who represent them. And thence, the crown of the present Louvre-exhibition is an "*Orgie!*" The thing is awfully true, a picture and monument (*Denk*-mal) of the present time. The models Mr. C. found at every step, and it will once shew—if, pitiably to think, it should reach posterity, not what the Romans were in *their* downfal, but we in ours. To describe this picture minutely, would be to *advertise* it. Still, we may throw down a few sketches, to disgust our readers. To the left of the canvas sits a well-formed youth, leaning his weary and giddy head on a column. He *drowses*, —poetry has gone from him, and nought but exhaustion and nervous syncope have remained. One of the wretched votaries of habitual debauchery climbs up to a statue of Brutus, placed in the background, and offers him a cup of wine. There stand also (as in derision) the images of Cincinnatus, Coriolanus, and others—as if looking with scornful contempt on the naked degeneracy of their progeny. Well they may! Göethe is right, saying,—

"Die Zeiten sind schlechter als wir denken."*

*Burial grounds abroad. Florence.*—The example of Père La Chaise has been a pregnant one—and soon every city of Europe will have a similar establishment, as most of them, long ago, established *extra-mural interment*. The plans for an ornamental cemetery at Florence have been made by Mr. Matas, and the model also of a very artful construction, made at the expense of the Grand Duke of Tuscany, is now completed. The locality chosen is an inclosure of the Font St. Miniato, built by Michel Angiolo, quite close to the town. Thus the Campo Santo of Florence will vie with those of Naples and Bologna. It will be eminently a monumental cemetery—the same for modern times as Sta. Croce has been in the middle ages. The great mass of the people have been, all along, buried in a cemetery three miles out of town, and by this new arrangement, the great and wealthy will cease to have their dead deposited in the corridors of churches and monasteries, as has been done hitherto.

*A "German" College.*—We extract from the programme of the University of Tubingen (Würtemberg), the following branches relating to our departments, as taught in the summer course of 1847. There are *six* faculties at Tubingen, of which the last is called that of *Staatswirthschaft* (states' economy). Here we find a professor of the "general doctrine of engines and construction of engines;" —"especial technology with experiments and excursions;"—another professor teaches "the doctrine of forges, smelting, and salt manufacture, and railways;"—"cyclopedia of agronomy with experiments." Under the head of *Kunst und Leibesübungen* (exercises in art and gymnastics), we find a teacher of the "history of the different styles of architecture, demonstrated by drawings and models," "exercises in drawing and painting" in an especial institution (Zeichnungs Institute). Of gymnastics, fencing, dancing, equitation, and athletics (*Turnen*) are taught; and, not to mention English language and literature, all the ancient and modern languages, Arabic, Sanscrit, Persian, French, Italian, &c. &c., are taught. Of other establishments, we find the public library, anatomical museum, the *old* and *new* chemical laboratory, cabinet of antiques and medals, laboratory for technic and agronomic chemistry, museum of technological models, philological institution, a manège, fencing and athletic establishment. (!!)

*Schiller's House at Weimar.*—It is situate on the *Esplanade*, a place planted with trees, and was purchased by the poet from an English gentleman in 1802, as Schiller liked the aspect, where he could enjoy the morning and noon's sun. Hence, his corpse was also carried out in the night of the 11th of May, 1806. Being again to be disposed of, our German contemporaries fix the attention of governments and others thereon.

* The times are worse than we even think.

## THE HEALTH BILL.

Lord Morpeth has been led to curtail his Health Bill very considerably for the present session. His lordship proposes now,—To confine the positive application of the Bill to the country corporate towns in England and Wales, to those towns which are the subject of the Municipal Corporations Act, and have already the regularly constituted bodies to which these new powers and functions can be applied. To allow other towns in the country to apply for the use of the same powers on a petition to the Privy Council from a majority of the rated inhabitants. To dispense in such cases with the provision that the Crown should nominate one-third of the commissioners. To have a separate Bill for the metropolis. With respect to gas works, to give the councils or commissioners power to construct them in places where no gas companies already exist, and to contract with companies where they do exist. To enable the councils or commissioners to construct waterworks where no water companies exist; to contract with them where they do; and further, if they shall be so advised and authorized by a government inspector, to purchase them compulsorily; the value of the property purchased to be estimated in the same manner as under the Land Clauses Consolidation Act, but enabling the purchasers to pay a fair dividend on the value so estimated to the proprietors. Lord Morpeth said, when he gave notice of this change, that in a future session there would be more leisure to deal with the remaining portion of the subject, and with a better chance of success. It is to be hoped that no further concession will be made.

Some time since Mr. Bardwell, architect, addressed a letter to Lord Morpeth on this subject, urging that the bill should contain clauses to the following effect:—

1. Enforcing strict cleanliness in the streets, and the diurnal removal of all decomposing animal and vegetable matters.

2. Preventing shopkeepers sweeping the dust and refuse of their shops into the streets.

3. Prohibiting all privies, and compelling the provision of water-closets instead. In the city, where no excuse can be made for such abominations, they prevail to a greater extent perhaps, than in any other district.

4. Suppressing lay-stalls, and all places of the kind, within a circuit of three miles from the cathedral church of St. Paul.

5. Removing noxious trades from the metropolis, particularly the increasing nuisance of coke-ovens.

6. Prohibiting cattle markets, and the slaughtering of cattle within three miles of Somerset House.

7. Prohibiting the throwing of filth of any description into the river, whether thrown from the land or from shipping. This was prohibited by enactment as early as temp. Henry VIII.

8. Providing intercepting sewers and receptacles under one direction, and on a well-digested plan. The projected companies will only partially remedy the evil of filth entering the river, as they only take those parts where the intercepting sewers will be the least expensive.

9. Trapping the gulley-holes, and providing for the destruction of the noxious gases generated in the sewers.

10. Prohibiting all intra-mural interments of the dead, and providing proper and convenient places for the burial of corpses with decency, solemnity, or splendour.

11. Prohibiting the farther encroachment of buildings on all open spaces within the metropolis.

12. Providing that all graveyards be kept as open spaces in perpetuity, and erecting a large cross or some suitable monument therein, with an inscription, shewing that the dust of the buried dead from A.D. 1620 (or whatever time the graveyard was formed) to A.D. 1850 resteth here.

13. Providing for the gradual destruction of courts and alleys, and in lieu thereof, building fire-proof houses five or six stories high, as dwellings for the poor. Such houses to have open spaces around them, planted with trees. I have shewn, by publicly exhibited plans, that a larger population may be healthfully located on a given space than is now lodged in the present health-destroying tenements.

14. The perfect and entire separation of large parishes into smaller ones, so as to secure the effectual classification and supervision of the inhabitants by the parochial authorities.

15. And then, in accordance with that beautiful arrangement of nature, by which the rejected parts of animal life become the food of plants, and the excretions of plants necessary for the healthy condition of man, I would plant out every extinct graveyard and open space as thickly as possible with trees and shrubs, and minor plants, so as to provide the lungs of those unfortunates who are compelled to breathe the contaminated air of London year after year with a little oxygen, the want of which the alarming increase of bronchitis so painfully demonstrates.

Encouragement should also be given to plans for the erection of houses with flat roofs, so that a luxuriant growth of plants in pots and boxes may be obtained. I have over and over again shewn the necessity for these things, because in consequence of the great spread of buildings around London, the supply of pure air is yearly lessened. Young life can scarcely be supported, and the mortality of infants has increased to 80 per cent. How beautiful were the cities of old! superb foliage and flowers were waving on every side. Jonah went into Nineveh, a day's journey. Imperial Rome never contained much more than a million of souls, yet its sanitary precautions were such as we cannot hope to realize for many generations.

16. Encouraging plans for the prevention of smoke; for the better ventilation and warming of dwelling-houses; for making dwelling-houses fire-proof, and compelling the fire-proofing of inns, hotels, and all houses of public entertainment.

17. The removal of the mud-banks which now disfigure the sides of the river, and from whence the most noxious exhalations are constantly arising.

The machinery and means by which the foregoing objects may be accomplished are,—

The appointment of a sanitary office or board with proper officers attached.

The profits on cemeteries, until the expenses of forming such places are defrayed.

The rent of manure-tanks.

A rate of a penny or two-pence in the pound on all rateable property in the metropolis.

## NOXIOUS GASES FROM SEWERS.

Mr. Editor,—The plan of your correspondent "C. B.," for rendering innoxious "the principal gas which is generated by sewage-matter," is well worthy of consideration. But it may be doubted whether "a solution of chlorine," alone, be capable of decomposing all the unpleasant emanations from sewers; and whether so few emissories as the few spacious junctions of our streets now afford, would give sufficient ventilation in the main sewers, as to permit inspectors and workmen to enter and work in them when they may be required so to do.

I beg to ask also in what kind of vessel does your correspondent propose to place the "solution of chlorine," and by what method is it to be changed when it shall have become inert? And more especially, how he would ensure the passage through the chlorine of the whole emanation of sewers? for should much pass out unpurified, it would be very annoying to the inhabitants near the ornamental lamp-posts, which it is proposed these emissories might also serve for, and I fear that lamps would not burn with brilliancy, in such an atmosphere as these lamp-posts would probably be surrounded with.

I shall be sorry, however, if the above observations repress any attempt at removing the nuisance in question, or a due consideration of the suggestions of your ingenious correspondent "C. B."—I am, Sir, &c.

May 10th. W. Bromet.

[We may here, too, for our own part, call the attention of our correspondent, "C. B.," to the fact, that chlorine will not deprive sulphuretted hydrogen *of its sulphur*, leaving the hydrogen to escape, but will, on the contrary, deprive it *of its hydrogen*, leaving the sulphur to fall or precipitate. Chlorine has been often used for the neutralization of the noxious smell and poisonous properties of sulphuretted hydrogen, but if it had united with the sulphur instead of the hydrogen of this noxious gas, the consequence would have been the production of the highly volatile, irritating, and noxious, chloride of sulphur; a substance only second to sulphuretted hydrogen itself perhaps,—in abominable odour at least, if not too in noxious properties. The general merit of our correspondent's idea, however, is not vitally, or even materially, affected by this result; only, means should be provided for the neutralization of the muriatic acid, or chloride of hydrogen, formed in the decomposition of the sulphuretted hydrogen by means of chlorine; indeed, even though chloride of sulphur were formed instead, so active and noxious an agent would have still required neutralization, being in fact a sort of acid itself, like sulphuric acid, only with chlorine instead of oxygen as its acidifying agent. It must have been kept in view, in that event, however, that were the chlorine in solution, the *water* of solution would have at once decomposed the chloride of sulphur, its hydrogen passing to the chlorine, and its oxygen to the sulphur, so that with the use of such a solution, the result would have still contained muriatic acid.]

Sir,—Permit me to suggest to your correspondents, who are proposing various plans for neutralizing the poisonous gases which are evolved from the soil in drains, that they had better consider the means of prevention than those of cure. If we had a constant strong stream of water through every street drain, we should not be troubled with poisonous gases. Water-works, a mile above Maidenhead Bridge, might, by means of pipes carried along the side of the Great Western Railway to Kensal Green, and thence across the North Western Railway to Highgate, supply a reservoir on the high ground above London with water enough to flood all London.

I am, Sir, &c., N. R.

Temple, May 10, 1847.

With reference to Abate's registered trap for the gullies of sewers, noticed in a recent number of our journal, a correspondent suggests, that the atmospheric pressure upon the surface of the water, as well as on the sphere, would tend to fix the sphere so firmly on the outlet, that it would be raised with difficulty even by the hand.

## RAILWAY JOTTINGS.

The Railway Department expenses in the present session are estimated at 11,966*l.*; out of which the three commissioners enjoy salaries,—the first, Mr. Strutt, of 20,000*l.*, and the other two, Mr. Ryan and Major Brandreth, of 1,500*l.* each; the secretary, Mr. Bruce, one of 1,000*l.*; the head of the statistical and topographical department, Captain Harness, one of 800*l.*; and the two inspectors in the engineer department, Captains Coddington and Simmons, salaries of 600*l.* and 400*l.*——It has been decided in the Court of Exchequer, *in re* Midland Great Western Irish Railway *v.* Gordon, that an allottee is liable to pay the calls or shares which he has sold in the event of the purchaser of the shares neglecting to register. But, as remarked by a correspondent of the *Sheffield Iris*, the companies seem to consider that whilst the allottee is bound to pay,—the purchaser, notwithstanding his *laches*, is still the owner, and they accordingly refuse to hand over the scrip to the allottee, whose name they have placed on their register. It is a question of some interest, therefore, whether there be any decision which limits or defines the rights of the purchaser of scrip, who thus throws his liabilities on the shoulders of another, in whose shoes he at the same time, to all profitable intents and purposes, nevertheless stands. ——The extraordinary discrepancies and deviations in statement and counter statement, respecting the progress of the atmospheric system, which have hitherto perplexed the impartial chronicler of events, appear at length to have reached their terminus, so far, at least, as regards the Croydon atmospheric, which the directors of the London, Brighton, and South Coast line, are now reported to have 'definitively abandoned.' "A portion of the atmospheric pipes at the Croydon end of the line," says a contemporary, "have already been taken up, and the work of destruction is rapidly going on." The decision is said to

have been sudden and unexpected, and a "breach of agreement" is talked of. The Government Board by refusing to sanction the extension of the atmospheric system on the Epsom line, are said to have brought about this unfortunate result. The pipes and pistons on the Epsom line, have been pulled up over the whole route. The latter line was to be opened on Monday last. Its chief feature is the succession of some thirty bridges of various designs. The cost has been about 200,000*l.*——As we anticipated, the 'exaggerated statements' in the 'inflated accounts' forwarded to the metropolitan press as to the falling of a tunnel at Southampton have been contradicted. A large body of workmen have been engaged during the past week in repairing the damage. It is proposed to open this Dorchester line on the 21st instant.——Mr. H. E. Scott, of London, has taken a contract—the Ballingham and Fawley tunnels, between Ross and Hereford,—on the Monmouth and Hereford Railway, under Mr. Brunel. It comprises 1,900 yards of tunnelling in red sandstone.——The works on the Lynn and Dereham line, between Narborough and Swaffham, are proceeding with great rapidity, by night as well as by day: great part of the permanent way is laid. The station at Swaffham has been commenced. The works were retarded during winter.——A special train, consisting of five carriages, on the London and North-Western line, ran from London to Birmingham on Wednesday week, a distance of 112 miles, in two hours and thirty minutes, or, as the time of actual travelling did not exceed two hours, at the rate of 56 miles an hour. The latter portion of the distance was accomplished at the rate of a mile a minute. The engines were Mr. Stephenson's patent ones. Lord George Bentinck and other gentlemen were in the train on their way to the Chester races.——A Birkenhead correspondent of the *Liverpool Mail* complains that the bridges constructed by the railway company in some of the most public thoroughfares in the town are in such a state from want of proper fencing, that there is imminent risk of the loss of lives until "some protection be afforded to the public who have to pass over those abominable erections."——At New Holland and Grimsby, active preparations have been of late in progress for the construction of the new dock or tidal-basin, to the extent of 3½ acres, and a new pier, intended for the use of the Manchester, Sheffield, and Lincolnshire Railway. A powerful pile-driving-engine was sent thither from Grimsby, where it had been used at the dock now making at the Grimsby terminus of the above railway, which is expected to be 'the largest in England,' embracing upwards of thirty-eight acres. The contractor for both these undertakings is Mr. Lynn.——Extensive preparations, says the *Berwick Warder*, are now making for commencing the construction of the 'stupendous' bridge over the Tweed. The piling machines are at work, one of them, with a hammer of four tons weight, striking seventy blows in sixty seconds, and driving a pile 18 feet long into the ground in four minutes. A steam saw-mill, a temporary bridge, &c., are also in course of erection, and the foundation-stone of the permanent structure is expected to be laid in course of next month with masonic honours.——On the Newcastle and Berwick, from Newcastle to Morpeth, the telegraph is now completed. It is also in course of erection on the North British, and is completed nearly to Dunbar. In the course of a few months, when extended southward from Rugby, London and Edinburgh will be linked together by this mysterious and subtle agency.——To calculate, for amusement or instruction, the speed at which you are travelling on a telegraphed railway, multiply by 2, says the *Durham Chronicle*, the number of telegraph posts you pass in a quarter of a minute, and the result, in each case, will be the number of miles you are then travelling per hour; the posts being arranged thirty to a mile.

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The Nile Barrage.—The foundation-stone of that grand undertaking, the barrage of the Nile, was laid on the 9th ult. by his highness the Viceroy of Egypt in person, with all the approved and orthodox, if not very common, formula of silver hammer, gold trowel, &c.

## BATHS AND WASH-HOUSES.

In reply to some inquirers we may state, that the only bathing and washing establishments actually at work in London are those in Glasshouse-yard, near the London Docks, which have been open since May, 1845, for the gratuitous use of the very poor; and those in George-street, Euston-square, which have been open since the beginning of August, 1846.

The model establishment in Goulston-square, Whitechapel, is to be opened shortly.* The parishes of St. Martin-in-the-fields, Marylebone, and St. James, Piccadilly, are taking the necessary steps to erect suitable buildings. The Act has been adopted also by the parishes of St. Margaret and St. John, Westminster; and as soon as the necessary extension of the provisions of the Act of last session has been made, the Holborn Union and other Metropolitan districts are expected to follow.

### MACHINERY FOR PUBLIC WASHHOUSES.

At a washing establishment opened in Bradford by Mr. Mitchell, the operation is effected in the following manner:—The articles having been first numbered and sorted, are soaked for a few hours in water impregnated with alkali. They are then placed in deep tubs filled with soap and water,—the smaller articles being in nets.

A slow rotatory motion is communicated to this tub by means of a small wheel acting on teeth placed around its circumference, and at the same time three pieces of wood (termed 'jumpers') are successively raised and let fall on the articles in the tub by a revolving shaft carrying wipers. The ends of these pieces of wood are inclosed in flannel bags, so that while the operation of washing is effectually performed, it is also accomplished without injury to the clothes. A few minutes suffice for the operation. The water used for the purpose, by the aid of steam, which is conveyed into the tubs by means of pipes, can be heated to the boiling point in a very short time.

To deprive the articles of the superfluous water they contain, they are put into a vessel of zinc, in shape and size somewhat resembling a small furnace, the sides of which are composed of wires longitudinally arranged, so that a small space is left between each. This is contrived so as to turn round with very little friction. The wet articles are put into this vessel, which is then made to revolve with great rapidity; the centrifugal force thereby generated causes the particles of water to fly off through the interstices of the wires, and in a few minutes the contents of the vessel become almost dry. The drying is effected in a room in which the air is heated to a high temperature by boilers beneath the floor. The mangles in the laundry are moved by steam power, as also are the rollers, one of iron and the other of hard wood, through which carpets and other heavy goods are made to pass.

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## NOTES IN THE PROVINCES.

The Chinese system of boring at the Southampton artezian well is after all to be resumed,—minus the 'improved British rope,' we presume. The solution of the geological problem of the existence of an abundant and easily obtainable supply of water in the greensand stratum may thus be still looked for.——A gentleman has liberally undertaken to erect a church on the Octagon hill at Ventnor, Isle of Wight. The works connected with the sewerage of the town, which have been interrupted by the encounter of two or three large streams of water, are now nearly completed to the already manifest advantage and comfort arising from so necessary an improvement.——A committee has been appointed at Newport to employ a surveyor and examine into the repairs necessary for the restoration of St. Thomas's church and the probable expense.——'By the introduction of gas into Cowes,' says the *Hampshire Independent*, 'added to the water company now established, and a proposed system of drainage and sewerage by the commissioners, Lord Morpeth's Bill will not be much needed here.' The turning in the Bath road towards the Parade is about to be widened by the commissioners.——The contract for the erection of the new barracks at Portsea, capable of accommodating 1,000 men, has been taken by Mr. Thomas Burton, builder, of London. The time allowed for the completion of the building is one year and nine months. Mr. Burton's previous contract for building the officers' quarters progresses fast toward completion. It has been computed that the barracks about to be erected will consume upwards of 5,000,000 bricks.——The *Hampshire Independent* publishes a quasi-advertisement addressed to schoolmasters, butchers, and others, intimating that Winchester cathedral yard will in future be appropriated as a play-ground, sheep-walk, &c., and that at the same time that part of the cathedral yard called 'Paradise,' which has hitherto been lost to visitors, together with that part of the cathedral 'eastward,' including the most beautiful portion of its exterior, which 'Paradise' with its high wall completely shuts up, will be henceforth made accessible by the opening of a 'hole in the wall' for behoof of the poor owner of 'Paradise,' as well as of those visitors whose glimpses of this Eden have hitherto been so few and far between.——The Abergavenny iron districts have been for some time in a 'fearful state.' At all the works one or more furnaces have been blown out, while at one or two there is not one now in blast. At Coalbrook Vale, and Cwm Celyn, nearly all the men are standing out, and at Ebbw Vale the colliers have struck, and a furnace has been blown out.——The Birmingham jail and corporate buildings committee report to the council that the works at the jail are proceeding to the architect's satisfaction, and that as much progress has been made with the corporate buildings and the public baths as possible. The Lunatic Asylum Committee also report their proceeding to obtain tenders for erecting the building.——A subscription has been entered into at West Bromwich for the completion of Christ Church, by the insertion of a stained east window, from a design by Messrs. Chance and Co., and by the erection of a peal of bells.——The new race-course at Broughton Meadows, Manchester, approaches nearly to its completion in time for the Whitsuntide festivities, in preparation for which the whole works are said to be as busy as a bee-hive. When completed, it will rank, if the boast of the local press be not beyond the mark, as 'the very first race course in Britain.' The site is a perfectly level tract of low ground, measuring nearly sixty acres, with a rising ground on the east and north, forming an eligible amphitheatre, capable of accommodating half the population of Manchester in itself. The course is oval in form, bounded partly by the river and partly by railings. There are to be three stands, substantially built, the grand stand in the centre being 120 feet long by 50 feet broad, with two stories of brick, two and a half thick, and a third of timber, with slate roof. The designs of the three stands were by Messrs. Starkey and Caffley, architects, Cross-street, and the grand stand has been erected by Mr. William Trees, builder, Cheetham hill. The police have a lock-up in the basement. The second class stand, though not so lofty, is longer than the grand one, being 198 feet in length by 33 in breadth. The small stand is 99 feet long by the same width. Exclusive of the inclosure, is a terraced piece of ground connected with the grand stand, and capable of accommodating 400 to 500 persons. The stands are estimated to enable 9,100 persons to view the races. There are three general approaches, and a race-telegraph, stables, &c., also in preparation. The toll-bar at the entrance is expected itself to realize 1,500*l.* to 2,000*l.*——The Sheffield bricklayers turned out on Monday week for an advance of wages. One-half, however, have since gone in at the raised rate.——The restoration of the church of St. Mary, Bottesford, has been contracted for by Messrs. Broadbent and Hawley, of Leicester. The restoration is to be a thorough one both in the masonry and the reseating in oak.—The accounts for the restoration of St. George's church, Leicester, have been examined and passed by Mr. Parsons, the architect, and amount to 1,430*l.* odds.——Sowerby church, says the *Chelmsford Journal*, though erected 80 years ago, was not consecrated till last week, owing to some dispute as to the title to

* We have recently examined the new building and arrangements, and shall have something to add to our former notice before long.

THE THRONE IN THE NEW HOUSE OF LORDS.



the ground.——An extension of the plans for the Hull Borough Lunatic Asylum has been determined on, so as to accommodate 70 instead of 50 lunatics, and the competing architects have been ordered to alter their designs accordingly. —— We understand that the Yorkshire Architectural Society have made the offer of 40*l.* towards erecting a handsome stained-glass window at the east end of St. Paul's Church, Hull, on condition that another 40*l.* be raised for the same purpose by the inhabitants of Hull and its vicinity.——The opening of the Hartlepool west harbour and docks, an important event for the port, is to take place on 1st June; and a total freedom from dues is to be enjoyed by all vessels that clear out in the first twelve days of the month. The first vessel that entered the docks at Birkenhead—the *Oregon*, as already noticed—is to be clear of dues at these docks 'for life,'

## THE NEW HOUSE OF LORDS.

### THE THRONE.

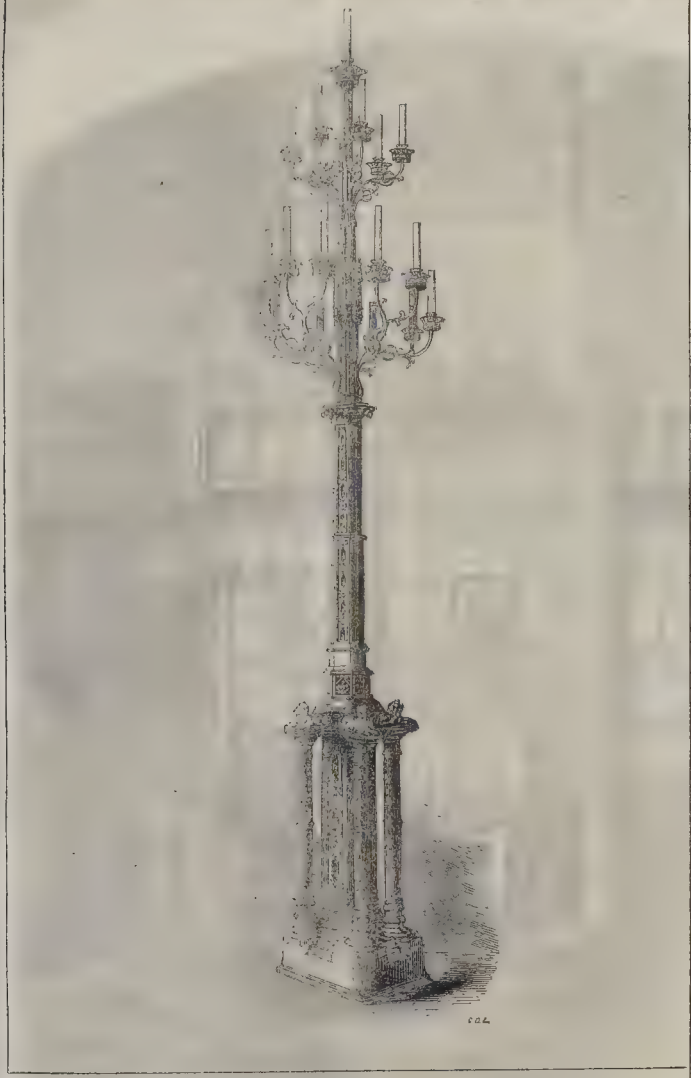
We have already described in general terms the magnificent carved throne set up in the House of Lords, and the chairs of state for the Sovereign, the Prince of Wales, and the Prince Albert.* We now lay before our readers an engraved representation of these, premising that, notwithstanding its excellence and accuracy, it conveys but a feeble idea of their elaborate character and beauty. As we have already said, we should have been better pleased with rather less gilding about the throne: nevertheless, it is the finest thing of the sort in Europe, and cannot be too highly praised.

We also give an enlarged representation of one of the two brass candelabra at the throne-end of the house, the position of which is shewn in our general view of the interior.† It is about 13 feet high, and, like the gates, is the work of Mr. Hardman.

The distinguishing feature of all the metal-works here is, that they are on the old principle, being in a great number of pieces, and the whole built together so as to get plenty of undercutting, which produces a lightness not ordinarily seen in modern metal-work. The whole of the surfaces, also, are most carefully worked over, and brought as much as possible to a polish, by which the light is reflected in every direction. In most modern work, on the contrary, the usual endeavour has been to cast the work in as large pieces as practicable, and to have the pattern prepared so that as little work as possible would be required to it afterwards.*

NEWS

## CANDELABRUM IN THE HOUSE OF LORDS.



### BUILDING NEAR DANGEROUS MANUFACTORIES.

SUGDEN AND SOUTHGATE

The following version of this case has been forwarded by Mr. Sugden.

"In the year 1843 the street in question, called Alice-street, was laid out by the freeholder, and opened as a thoroughfare, and was what is technically called a shoot; thus the ground became considerably raised. In 1844 part of the ground was let; upon which the person taking the same built four houses, which were entirely finished and occupied the same year; also previous to the operation of the new Buildings Act three other houses were built at the other corners of the street, and the foundations of five other houses laid in the intermediate space; this was done by the freeholder under the direction of his surveyor in 1845 and the beginning of 1846. Four other houses were built and finished in the intermediate space. Thus six different builders had erected eleven houses in the same street before I took a foot of the ground or laid a brick on it. Between June and September last I erected four houses, also in the intermediate space. Before commencement, I gave the district surveyor the necessary notice, and also inquired of him if there would be any question about the width of the street; and the district surveyor told me that there would be no question, as it was an already formed street. Between the end of the four houses which I erected and the one built at the other corner of the street, there then remained ground sufficient to hold twelve houses more. Some friends of mine desired to take the whole of the remaining ground, and build the twelve houses through the funds of a building society; they applied to me for advice and assistance, and I recommended that, as these houses would come within ten or eleven feet of Mr. Boulanger's premises, that the whole matter had better be laid before the district-surveyor. Consequently, it was arranged that I should give notice to the district-surveyor that the twelve houses were about to be erected, and also to ask him to come down and see the situation, and explain the matter to him, that there might be no misunderstanding or question hereafter. The district-surveyor came down to see the foundations, which were just being laid, and then, in the presence of a respectable witness appointed for the occasion, I put the following questions: Is there any thing in the new Buildings Act that will prevent the erection of these houses so near to Mr. Boulanger's premises, as he has got an agreement for fourteen years, and his house cannot be pulled down till he leaves it? The district-surveyor said, "as you have got room for a scavenger's cart, the provisions of the Act will not be infringed; you are perfectly right under this authority." The houses were erected, thinking, of course, that all was right; but to my great surprise on Monday, the 12th inst., I received three summonses to appear at the Southwark Police-court to answer the complaint of Mr. Boulanger, on Thursday, the 15th inst., when he endeavoured to prove that he carries on a dangerous business within the meaning of the Act, and that I had become liable for a penalty not exceeding 50*l.* a day for every day that each of those houses remains so near to such dangerous business.

The case was referred to the quarter sessions to be tried by a jury. Allow me to state, that I have no reference to Mr. Boulanger himself, for I have always found him open and candid, and especially when he told me in the presence of a gentleman, that he had had 400*l.* offered him in cash, and an indemnification from all costs, by certain parties, if he would allow them to bring an action in his name against myself and all parties concerned. Your insertion of the above in your journal for Saturday next will oblige, Sir, yours very respectfully, JOHN SUGDEN.

Bermondsey New-road, April 28, 1847.

### PICTURES PURCHASED BY THE ART-UNION OF LONDON.

The following is a list of the principal works of art selected by the prizeholders up to the time of our going to press:—"The Vale of Clwyd," by J. W. Allen, 300*l.*; "The Invention of the Stocking Loom, by A. Elmore, A.R.A., 210*l.*; "The Deserters Home," by R. Redgrave, A.R.A., 168*l.*; "Harvest Home in the Good Old Times," by H. M. Anthony, 150*l.*; "Peter Denying Christ," by J. H. Wheelwright, 150*l.*; "View from a Deserted Rock Quarry," by J. Tennant, 100*l.*; "Refreshing the Weary," by R. Hannah, 200*l.*; "Clearing Fallen Timber in the Wood of Buckhurst," by H. Jutsum, 70*l.*; "Scenery of the Wye," by J. Tennant, 120*l.*; "A Summer's Evening in North Wales," by H. J. Boddington, 105*l.*; "A Welsh Mill," by H. J. Boddington, 84*l.*; "A Scene in the Dolwyddelan Valley," by E. Hassell, 73*l.* 10*s.*; "On the Gulf of Spezzia," by G. E. Hering, 70*l.*; "The Wayside—Evening," by W. Shayer, 105*l.*; "Tired Travellers," by W. Shayer, 68*l.* 5*s.*; "Toilet Musings, by S. A. Hart, R.A., 70*l.*; "The Necker, Heidelberg," by T. M. Richardson, jun., 73*l.* 10*s.*; "Salmon Trap, North Wales," by J. Wilson, 60*l.*; "Hop picking," by H. Stewart, 60*l.*; "an English Pastoral," by J. Wilson, jun., 60*l.*; "Distant View of Purfleet," by J. Tennant, 63*l.*; "The Slave Dealer," by A. Cooper, R.A. 52*l.* 10*s.*; "Scene and effect from memory," by J. Tennant, 52*l.* 10*s.*; "Beagles," by C. Josi, 50*l.*; "Coast of Calabria from Salerno," by E. W. Cooke, 63*l.*; "A Pastoral," by A. J. Woolmer, 47*l.* 5*s.*; "On the margin of fair Zurich's waters," by J. B. Pyne, 50*l.*; "Prosperity," by O. Oakley, 47*l.* 5*s.*; "View from Strong Cross, new Forest," by W. Strayer, 50*l.*; "The Mill ford," by A. Montague, 42*l.*; "On the Cad, Bichleigh Vale, Devonshire," by W. Williams, 50*l.*; "Goatfell Glen, Rossie, Isle of Arran," by T. M. Richardson, jun., 68*l.* 5*s.*

### AMENDMENT OF THE BUILDINGS BILL.

Lord Morpeth has brought in a Bill for further amending the Act for regulating the construction and use of buildings in the metropolis. His lordship said, on moving for leave to do so, that it had been intended to introduce a comprehensive measure of amendment, but the period of the session was too far advanced for such a course, and the present Bill, therefore, had been framed with a view to the remedy of the most striking grievances complained of. The bill is now before us, and will have our immediate attention. It contains twenty-eight clauses and two schedules.

## THE ARCHITECTURAL ASSOCIATION.

At a meeting of the Architectural Association (late the Association of Architectural Draughtsmen), on the evening of the 5th instant, a paper was read by Mr. J. K. Colling, upon Design in Architecture. The writer said that the author of the "Newleafe Discourses," in condemning the extent to which copyism and adherence to precedent were carried in the present day, had flown to the opposite extreme in denouncing copying altogether. He (the reader) considered architecture to depend much upon copying—and that the art was guided by rules and precedents—that the true aim of the art was to take advantage of all which had been already invented in producing new and more perfect combinations—new effects, and further improvements. He stated that architecture consisted of art and science,—the art being that of producing the beautiful in buildings,—the science that part which treats of the various modes of construction, strength, and capacities of different materials—suitable arrangement and fitness of purpose in buildings. Without studying the science an architect could not be considered competent to carry into execution his own designs. He ought, therefore, to be particularly cautious how he adopted the opinion that the science was merely building, and therefore not necessary to be studied.

He proceeded to say that the art of the beautiful was lamentably neglected by the architect of the present day,—that any thing that was ancient was considered by some perfection, and they were satisfied to copy it literally to the hundredth part of an inch—copying faults as well as beauties in the most persevering manner imaginable. Architects should not introduce any feature into a design which had only antiquity to recommend it. It should pass under a strict investigation of their *own* judgments, as to its claims towards the beautiful and fitness of purpose. They should not, however, alter merely for the sake of doing something different—something novel. If a feature could not be *improved*, it should be used without alteration, or not used at all,—that it was far better to stand still than go back. If they could not improve their materials they had better use them as they were. In pursuing the study of design, "the mind should," in the words of Sir Joshua Reynolds, "be enriched by an assemblage of all the treasures of ancient and modern art," for, "there could be no doubt that he who has the most materials, has the greatest means of invention, and if he has not the power of using them, it must proceed from a feebleness of intellect, or from the confused manner in which those collections have been laid up in the mind."

One thing he considered should not for a moment be lost sight of, especially by those who were commencing the study of design, and that was, that facility and power of drawing were absolutely necessary, and were the first things to be acquired. A confidence in the mechanical part, the art of drawing beautiful forms with ease, gave freedom in the art of design.

He concluded by observing that the art did not depend upon any heaven-born inspiration,—that it was only the result of incessant study and practice, and that all who desired to possess the power, provided they had the courage to pursue the path with sufficient perseverance, might depend upon arriving ultimately at success.

The election of officers for the ensuing year will take place on the 19th inst.

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Association to promote the Free Exhibition of Modern Art.—The private view of the first exhibition of this association took place at the Egyptian Hall, Piccadilly, on Thursday last, too late for us to do more than allude to it. It consists of 208 works, amongst which are specimens by J. Z. Bell, Biard, Fraser, Miss Joy, Lauder, Charles Lucy, Melan, P. Park, Donald, Robins, R. Rothwell, Cornelius Varley, Wagstaff, &c.,—some of them exceedingly good. Mixed up with these, however, are others of very indifferent character, which greatly mar the exhibition as a whole. The attempt is a good one, and deserves success, but the plan will require modification.

## THE LAND WE LIVE IN.

This is the title of a new literary serial, which offers peculiar attractions amongst the swarm of periodicals, daily, weekly, and monthly, issuing from the ever-teeming press. It is conducted and written by the enterprising and talented Charles Knight, who has already produced a complete revolution in literature; and promises to be a worthy successor and companion to his valuable and interesting volumes on "London," and "Old England."

In gratitude to Mr. Knight, we direct the attention of our readers to "The Land We Live In," the more especially, too, as it will necessarily contain many historical, architectural, and engineering essays, which cannot fail to interest a wide circle of readers and thinkers. The first number of this work, now before us, is entitled, "*The Road and the Railway.*" It embraces a review of the origin of public roadways from their first scientific formation by the conquering Romans, to the new and extraordinary era of the iron road. Many curious and amusing instances of the dangers and difficulties of travelling in England before turnpike-roads were generally formed, are here recorded; and the narrow views of those who in all ages have opposed every useful improvement as a dangerous innovation are exposed.

In bygone days, the Scotchman, the Welshman, the Cornishman, the Yorkshireman, even the Norfolkman, seldom visited the metropolis. The conveyances were carriers, waggons, and post-horses; and when at last the mail-coach was introduced, it was regarded as the *ne plus ultra* of expedition, as well as of scientific style and equipment. But now the all-conquering railway has come upon our age and country as a miraculous phœnomenon, revolutionizing the whole system of transit from place to place, and rapidly superseding every other mode of locomotion, both for man, beast, and merchandize. We must not omit to state, that the present number is illustrated by four nice wood-engravings by Jackson, Dalziel, Branston, and T. Williams, from designs by Harvey, and Creswick; shewing "The Pack-horse train" passing over a mountain defile in the 17th century; an equestrian group at "The Turnpike," 1663; "The Machine," a lumbering stage-coach of 1750, with six horses, and literally a "basket" attached for passengers behind; and lastly, "The Road-waggon" of the 18th century; specimens of which are still occasionally met with. We anticipate for the work a decided success.

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## WESTMINSTER COURT OF SEWERS.

A general court of Commissioners of Sewers for the city and liberty of Westminster was held on Friday last at the sewers court, Greek-street, Soho-square; Capt. Bague in the chair.

The report of the deputation appointed to wait on Lord Morpeth respecting the Health of Towns Bill was received, which stated, that the deputation had been courteously received; and that after hearing arguments, his lordship said he would give them consideration, and transmit his answer to the commissioners.

Relative to the late contract for a new sewer in the Fulham-road, it was stated that Mr. Hobbs, to whom the contract was given, had made no attempt to commence the work, and it was believed that he had no intention of doing the work required.

The question having been brought before the court, it was thought by some that the next lowest contractor should be selected, or the contractor forced to proceed; but ultimately it was arranged, that Mr. Hobbs should receive notice to proceed, and in default, the question to be brought before the next court.

*The Sanitary Condition of the District of All Souls, Marylebone.*—The subject of the improvement of the sanitary condition of Marylebone came again before the court this day, when a long discussion ensued on the report of the surveyor presented at the last court, when certain works were ordered in pursuance of the suggestions therein contained. The total cost of the whole will be upwards of 20,000*l.*, but those at present ordered would only amount to a fifth of that sum. It was thought by some hon. commissioners, that they ought to pause till they saw the result of Lord Morpeth's Bill, while others were of opinion they should pursue the course of improvement irrespective of such considerations, and especially as they had reason to believe that Lord Morpeth's Bill would not be passed in the present session. It was also intimated that great difficulties would arise in making a rate, if one division of their jurisdiction was to continue to drain into another.

It was eventually resolved by a large majority, that the order for the following works be confirmed, viz.:—2,495 feet of No. 1 Sewer along Berwick-street, St. James's; and Wells-street, and Great Titchfield-street, St. Marylebone; 800 feet of No. 2 Sewer, along Foley-place and Edward-street, St. Marylebone; 1,660 feet of No. 2 Sewer, along Little Castle-street, Oxford Market, Great Castle-street, John-street, and Margaret-street, St. Marylebone.

It was arranged that the first-named work should be that first proceeded with, and it was ordered that advertisements be inserted in the papers, for tenders for the performance of the same.

A rate was made on the Ranelagh district on houses at 3d., and land at 1d. in the pound; and on the Counters Creek District on houses at 6d., and on land at 2d. in the pound. Abstracts of the same will be found below:—

RANELAGH DISTRICT.

| | Total Rental. | Total Rate. |
|---|---|---|
| St. John, Hampstead.. | £ 19,787 .. | £212 16 7 |
| Willesden ..... | 6,040 .. | 44 19 0 |
| St. Luke, Chelsea .... | 139,985 .. | 1,735 12 1 |
| St. George, Hanover-square..... | 141,146 .. | 1,764 6 6 |
| St. Margaret, Westminster ..... | 24,565 .. | 307 1 3 |
| St. Mary Abbott, Kensington..... | 65,726 .. | 817 5 6 |
| St. Mary, Paddington.. | 268,715 .. | 3,335 5 9 |
| St. Marylebone ..... | 113,109 .. | 1,407 9 3 |
| Totals .... | £779,073 | £9,624 15 11 |

COUNTERS CREEK DISTRICT.

| | Total Rental. | Total Rate. |
|---|---|---|
| Willesden ..... | £ 2,216 .. | £ 35 7 0 |
| Hammersmith..... | 3,879 .. | 95 0 10 |
| St. Mary, Paddington.. | 4,358 .. | 107 11 4 |
| St. Margaret, Westminster ..... | 1,797 .. | 44 18 6 |
| St. Mary Abbott, Kensington ..... | 110,979 .. | 2,609 7 2 |
| St. Luke, Chelsea .... | 18,947 .. | 459 11 10 |
| All Soul's, Fulham.... | 16,397 .. | 399 0 6 |
| Totals .... | £158,573 | £3,750 17 2 |

The decree having been signed for the above, the Court was adjourned.*

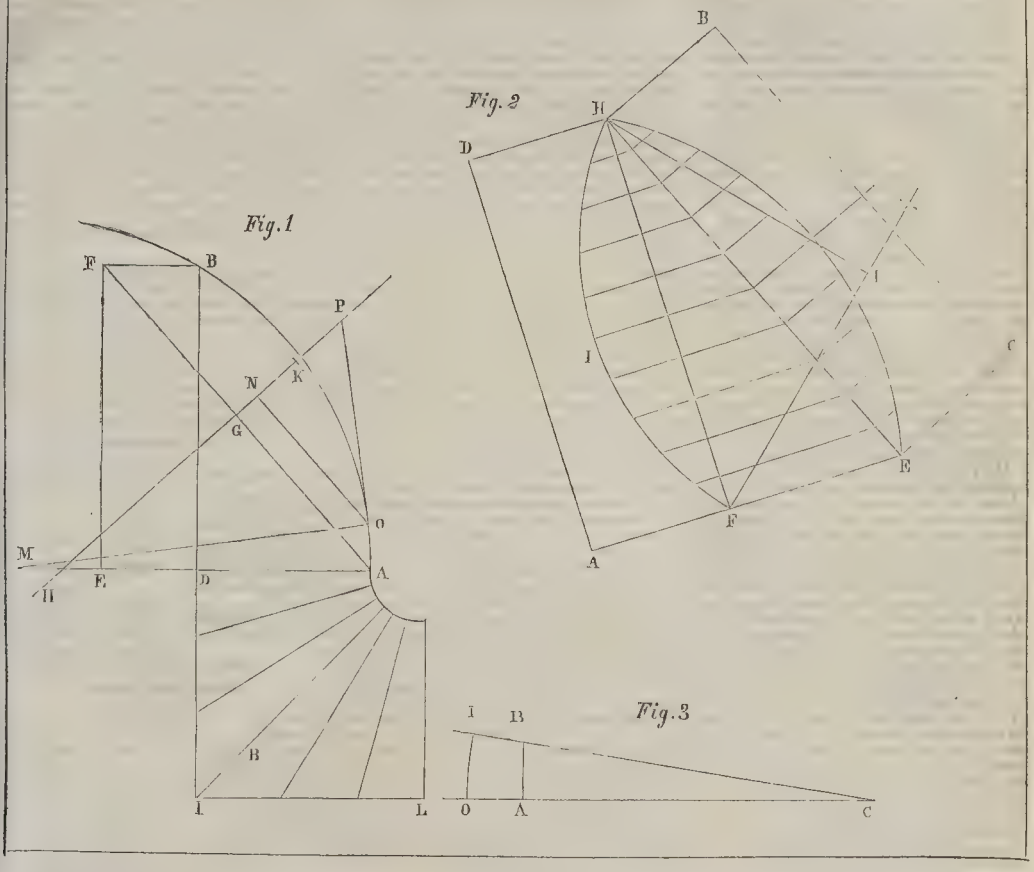
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Further Novelties in Glass.—Sir Robert Peel's anticipations of the extended use of glass appear to be on the way towards a complete fulfilment. Only the other day a proposal was made in The Builder, to add a new glory to that elegant expositor of the feminine graces and sentiments, the pianoforte, by covering the key notes with a tasteful iridescence of varicoloured glass; and other projects, such as the conduction of illuminative gas through pipes of glass, with ground and closely-fitted jointings, have been suggested through the same medium. It now appears, however, that not only milk-pans (yielding, by the bye, an additional crop of cream, it is said) and cream-pots, jars, and flower-pots, tiles, grape-glasses, and various other horticultural and floricultural utensils are already made of glass, but even also such unlikely implements as rolling-pins, and a heterogeneous list of other manufactures hitherto usually wrought in wood, or clay, or metal. Bee-glasses, too, and propagating-glasses, seed protectors, &c., are now made of this useful and elegant, as well as cheap material, which scarcely requires the establishment of any thing like truth in a recent report of the discovery of a mode of rendering it malleable, in order to constitute it a most formidable antagonist and substitute for all kinds of manufacture, not only in metal and wood and clay, but in other materials, including even silk and worsted,—for we may add, what may not be known to some of our readers, that beautiful fabrics, even as it is, have been actually woven with a mixture of threads of coloured glass and silk.

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* In [illegible] number of [illegible] tenders was [illegible] because the scale of prices of [illegible] somewhat [illegible] than this.

## GOTHIC GROINS.




### GOTHIC GROINS.

Sir,—As you frequently take occasion to lay before your numerous readers such theories and useful rules as tend to the advancement of branches of the building art, I venture to send you a few remarks on the construction of the varying ribs of a Gothic groin, with a practical method of forming them from a given radius of a circle for one rib, accompanied by the requisite figures and their explanations.

As Gothic groins are constructed in a variety of complicated forms, it will be requisite to give, in addition to the accompanying figures, a brief description of such a groin whose form it is intended to bring under consideration in this article, and which is as follows:—

Such whose several ribs spring at equal distances from the centre of a circle on the cap of a pillar or corbel, and each rib having the same transverse section, and all rising to the same height, but have their spans of unequal length, and generally of a rectangular form upon the plan. This latter form, however, may sometimes be otherwise.

If this description of a groin be clearly comprehended, it will readily appear that in such a construction as the above, where several ribs spring from a portion of the circumference of a circle, and each rib has the same transverse section, that it would require a portion of the whole of the several ribs to be of the same curvature at their springing, in every such like case, whatever the given curve may be. In the present instance, this portion would require to be of equal radii: were it otherwise, the ribs would not intersect truly; but it must be observed here, that the intersections of the several ribs will necessarily be limited in their length, that is, if the ribs be formed on the principle shewn in the method which is given with these short remarks. The quantum of this length in all cases will depend greatly on the difference betwixt the span of the given rib and that of the one required; but this will be more clearly understood by the explanations which accompany the several figures. It must be understood that the whole of the several ribs are to stand perpendicular over their plan. Then let the rectangle ADIL, fig. 1, represent one quarter of the plan, of such a groin, which has been already noticed in the foregoing brief remarks, or something less than one quarter to allow for horizontal ribs. Let the line AM, fig. 1, be the given radius of a circle, and the arc AB a portion of the circle, which will represent a side or wall rib, and the distance AD its span. Let the distance AE be the span of the rib marked B on the plan, and let the distance DB or EF be the rise or height of the ribs. Draw AF, and bisect it perpendicularly in G, with the line HK; then AF will be a double ordinate to an ellipse, and the line HK, will represent a portion of the transverse axis, whose length will be equal to the given diameter of the circle. At a small distance from the springing line in the arc AB, take the point O, and from O draw the radiating line OM; also from O draw OP, perpendicular to OM, meeting HK, prolonged to P, in P; then the line OP will be a tangent to the arc AB; also from O draw ON perpendicular to HK. Let D = the given diameter of the circle, or transverse axis of the ellipse, and $a$ = NP, and $y$ = NK, the abscissa required. Then by the property of the ellipsis, we have,

$$y = \tfrac{1}{2}\left(D + a \pm \sqrt{D^2 + a^2}\right).$$

This theorem may be performed by construction in a very simple manner. Thus, if a right-angled triangle, BAC, be constructed as is shewn in fig. 3, with its base, AC, equal in length to the given radius of the circle, or the semi-axis major of the ellipse, which is the same, and its perpendicular, BA, equal to half the distance, NP, fig. 1. Then let AC = $a$, AB = $c$, and let the hypothenuse BC = $d$; by Euclid, book 1, proposition 47, $a^2 + c^2 = d^2$, consequently, the length, BC, of the hypothenuse of the triangle, BAC, is equal to the root required. Then prolong the base, AC, of the triangle, to O, and make the distance, AO, equal to half the distance NP, fig. 1; and from the point C, with the distance CO, describe an arc, meeting the hypothenuse, BC, prolonged to I; in I, then, the distance, BI, will be the abscissa required.

On the plane BCEH, fig. 2, describe an arc with the given radius, and make its height equal to the distance BI, fig. 3, added to the distance NG, fig. 1, and project it on another plane DAFH, as shewn in the figure, whose length is equal to the double ordinate, AF, fig. 1: then the elliptic arc, HIF, will be the form of the rib required. From F, with the distance AE, fig. 1, describe an arc; from H, with the distance EF, fig. 1, describe another arc, intersecting the former at I; draw the lines, HI and FI. For any other varying rib proceed in the same manner.

In the above instance, it will be found that a portion of the arc, HIF, equal to one-third of its whole length from either extremity, will be of the same curvature as that of the given circle, and, consequently, when the whole of the ribs are formed, as shewn above, and placed in their relative positions, this portion will be of equal radii as required. In constructing the working drawings for such a structure as the above, the several ribs would be more readily formed by using the trammel.

It will no doubt be observed, that the method of drawing a tangent, as shewn in the figure, is true in the case of a circle, but not so in that

of an ellipse. I am aware of that, but it will be found sufficiently near for any thing in practice.

The point in the arc from whence the tangent is drawn, may be taken at 1 foot 6 inches or 2 feet from the springing line, in full size drawings, observing to make the length of radius employed a little guide.

Stroud. M. WRIGHT, Mason.

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*Mignard*, Guide.—Guide for Constructors; or Theoretical and Practical Tuition. Paris. 8vo., atlas fol., each part 1s.

*Boyer*, Manuel.—Complete Manual of the "Porcelainer," the Delf-maker, Crockery-maker, Brick and Tile-maker. Paris. 2 vols. 18mo., plates, 6s.

*Manly*, Monuments.—The Principal Funeral Monuments of the Père La Chaise, Montmartre, Mont Parnasse, and other Cemeteries of Paris. Paris. 4to., each part 1s. 6d.

*Adhemar*, L., Traité.—Treatise on Perspective, for Artists. Paris. 2nd Edit., enlarged, 8vo., plates, 16s.

———, Perspective.—Perspective of Distant Objects. Paris. 4to, atlas fol.

*L*—, General, Count, Application.—Application of the Properties of Motion on the Stability of Vaults and the Dressings thereof. Paris. 4to.

*Coulier* et *Ruggieri*, Code.—New Code of Signals by Day and Night; or of General Communication between Different Localities by Means of a Pyrotechnic System. Paris. 8vo., 3s.

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*Vicat*, L. I., Etudes.—New Researches on the Artificial Puozzolanas compared with the Puozzolana of Italy, in their Employment in Fresh and Salt Water. Paris. 4to., 12s.

COMPETITION PLANS.—Designs are invited for schools attached to Christ-church, Bermondsey, to be sent in on the 24th. One of the conditions is,—the total cost, exclusive of fixtures for the residence and fittings for the schools, and the usual commission of 5 per cent., must not exceed 950*l*. Each architect must be prepared, if required, to undertake the erection of the various buildings at the amount of his estimate, under a penalty of 15 per cent. upon the cost of the same!

## Correspondence.

### SHALL ARCHITECTS ONLY COPY?

MR. EDITOR,—I think your correspondent, J. S. C., has taken an erroneous view of this question; at least, he has taken a different view from mine upon the subject. I think we ought to consider the architecture of our ancestors as a dead language, in the same way as we apply that term to the Latin, not therefore to be cast aside, but rather cultivated, as shewing to what perfection our predecessors in art had arrived; and as there are many expressions in one language which are unattainable in another, so in Gothic there are effects which cannot be arrived at in any other. A man, if he choose to write in Latin, is obliged to follow the same conjugations used some centuries before, and is never accused of copying because he uses the exact words of the ancient Romans; and should he *persist in inventing* new words, though they might appear to him to possess great superiority over the words in common use, his works would be left unread because no one would understand the peculiar senses in which he would apply his novel terms. There are words which have come into use at the present time, for which there are no corresponding terms in the Latin or any other dead language; so there are matters required for an architect of the present day to design, for which there is no authority whence may be learned the form which the old English architects would have appropriated to the purpose. In both these cases I can see no reason why new terms or details should not be invented. S. R. N.

### IMPROVEMENT OF SOUTHWARK AND LAMBETH.

SIR,—It has been reported for several days past, that an intended improvement on the estate called the Mint, in Southwark, has been agreed to between certain parties and the Commissioners of Woods and Forests, and will be effected speedily. The suspense that the proprietors of property are in, in this neighbourhood, paralyses them, and prevents any improvement on their various estates. The want of knowledge, too, of what may be the course that the railways will take through this district immediately south of the Thames, operates as a great hinderance to builders. The doubt and uncertainty that has so long hung over the owners of land and houses as to what is to be effected by the Metropolitan Improvement Commissioners has put a stop to buildings, &c. One for instance, the Philanthropic Society, New-road, is suspended, and no one knows why. Any information through your journal as to when, where, and how, our interests are to be attended to, will oblige. Poor Lambeth and Southwark would be delighted to know their fate. If it is only through lines of railway these matters are to be accomplished, an awful destruction of property must take place first.

In the hope of obtaining for this locality knowledge of the reality of their case this is sent respectfully for your consideration.—We have the honour to remain, Sir, the patient and small holders and sufferers by this mysterious delay,

SHOPKEEPERS SOUTH OF THE THAMES.

### FIRE-PROOF BUILDINGS.

SIR,—In your journal of the 1st instant, I notice your insertion of a paper read by Mr. Fairbairn, of Manchester, at the Institution of Civil Engineers, on the "Defects in the principle and construction of fire-proof buildings." Mr. Fairbairn makes some very proper remarks on the nature of cast-iron beams and their supports in the *cool state*. I want to be informed what strength the beams and supports must be of when fire actually takes place, and when, for example, the whole of the iron-work in the building, as in the fire of the Tower of London, is at the melting point? Iron, it is well known, absorbs heat intensely, and, in consequence, where likely to be exposed, requires protection from the influence of fire.

In my own practice of rendering buildings proof against fire, I have melted and destroyed both cast and wrought-iron, hence came the necessity of protecting iron-work required in fire-proof buildings. There are many "defects in the principle and construction of ordinary fire-proof buildings," which have never yet entered into the minds of the builders of the present day. If the ceilings or floors are of cast-iron beams, and filled in between with brick or tile arches, set in Roman cement, these are the *ne plus ultra* of their notions of fire-proof buildings; yet every practical person must know from the sudden desiccation of Roman cement, that the action of fire will destroy its adhesive quality. If builders wish to know more of fire-proof building, let them erect a building, and set a powerful fire to it (as I have done), not for a day, a week, or month, but continue it for years; they will be astonished to find, if the "principle" is understood, what a very simple mode of construction will restrain the most powerful fire.—I am, Sir, &c.,

Camden-town. WM. SMITH.

## Miscellanea.

ANCIENT SCULPTURES IN LEICESTERSHIRE.—Mr. Potter, the historian of 'Charnwood Forest,' read a paper on Monday week before the Leicester Literary and Philosophical Society, on 'some remarkable ancient sculptures or friezes in Bredon Church, and other ecclesiastical curiosities of North Leicestershire. The following particulars are gleaned from the *Leicestershire Mercury*:—It was somewhat remarkable, that few of the audience appear to have ever seen or heard of the singular bas-reliefs of which the lecturer presented between twenty and thirty plaster casts to the Museum of the Society. Mr. Potter thinks that the friezes built up with the walls were built in by the monks in the twelfth century, and that those stuck in were inserted by Mr. Shirley in the sixteenth century, after he had pulled down the ancient church; and he argued, that as they were in both cases fragmentary at the time they were first used in the present edifice, they must have belonged to an older building. The whole scope of his argument, in short, appeared to be to show that the ancient parish church, if not the original, was at least the previous place of these friezes. The ancient church on Bredon Hill (proved to be ruined in the twelfth century), has probably been, *as usual*, a Roman temple, or at least erected out of the materials of one; and we were somewhat struck, says the *Mercury*, with the strong corroboration of the truth of this hypothesis by the plans of localities similar to Bredon, which the lecturer exhibited, all still having a Christian church on the very site of the ancient *prætorium* or *sacellum*. The probability of Bredon with its strong fortifications being a similar case, appeared very striking; and the more so on a glance at the smaller bas reliefs—so Romanesque in style—panthers among vines, figures in Roman costume gathering grapes, groups of eagles, lions, fabulous centaurs, and 'the chimera dire,'—some of them very beautiful in design, but many showing by the state of the cast how deeply clogged up the originals must be with repeated coats of abominable whitewash. An account followed of some very large figures (casts of which were in the hall) taken also from Bredon Church. These, from their different style, subject, and material, the lecturer considered of a later date, namely, the Saxon or Norman, to which indeed those who were not convinced by his arguments would perhaps be inclined to assign the friezes. The concluding part of the paper consisted of a rapid glance at some remarkable monuments at Ashby Folville, Gaddesby, Brookesby, Prestwold, Whitwick, Castle Donington, Kingston, and Bunny.

LIVERPOOL LIBERALITY.—Relative to the published assertion that Mr. Herbert, R.A., had received from a wealthy commoner residing in Liverpool the sum of 1000 guineas for painting a portrait, and which assertion received a subsequent contradiction, the artist has written to the Editor of the *Art-Union* journal, stating the case as it really occurred. According to Mr. Herbert, "When Mr. Challoner's picture was completed, that gentleman, with the liberality which so much distinguishes him, put into my hands a cheque or draught on his cashier, authorizing me to receive whatever sum I should demand, not exceeding 1000*l*. Of this cheque it was Mr. Challoner's express wish that I should make a very liberal use. I immediately took the cheque to the cashier, and asked for and received, without difficulty, 250 guineas."

PROJECTED WORKS.—Tenders were called for by advertisement in last week's papers for the erection of a Baptist chapel, at Luton; a chapel and other work at Gloucester; a lock-up house, &c. at Wooler; a house near St. Ives; a street in Wainfleet, St. Mary, Lincolnshire; an extensive stone terrace, ornamental screen walls, and other works, near Oundle; stables at Cardiff Castle; a Lunatic Asylum at Birmingham; taking up and relaying pavement in New Road; supplying 5,000 yards of squared stone at Rye harbour breakwater; 2,000 to 3,000 yards of gravel at Wisbeach; gravel at Chelmsford; 2,000 tons of cast-iron railway chairs near Strathaven, Scotland; also for enclosing burial ground at Islington with wrought-iron railing; for a supply of turned and bored cast-iron pipes for Liverpool New Gas and Coke Company; and for making 4,000,000 to 6,000,000 bricks for Great Northern Railway.

COST OF AN ARTESIAN WELL NEAR MANCHESTER.—We learn from a local paper that a well on this principle is now being bored on the hill at the end of Melbourne-terrace, Salford. The well is covered over by a wooden shed, under which is also a small engine and the boring apparatus, which is constructed so as to perform a kind of double eccentric movement. When they have bored a certain depth a cylinder is let down to the bottom, and the sand and other substances are drawn up, when the process of boring is resumed. 160 yards have been bored. It is stated that less than 1*l.* per yard will cover this undertaking; and it is understood that the depth of 300 yards is intended to be reached. With the present depth (160 yards) the water in the well has risen to within fourteen yards of the surface, and it is expected that by the time they reach 300 yards it will rise to the top. This experiment will cost something over 1,200*l.*; and if it be correct that the main or artesian well-spring lies about 400 or 450 yards below the surface, if 5*l.* per yard were allowed for a greater depth than 300, the cost would not exceed 2,000*l.* for the whole depth of 450 yards.

NEW PLASTIC COMPOSITION.—The current number of the *Art-Union* notices the new plastic material devised by Mr. Jules Sohn, which he has applied to producing exact copies of statues, reliefs, wood-carvings, and vases, at a moderate price. It is his intention to visit London in the course of the summer, and to invite public attention to his specimens of an art which promises to prove as important to the sculptor as engraving to the painter, or printing to the author. "It is impossible," says the *Art-Union*, "to view the modern sculptures of France, and even of Italy, without being tempted to exclaim with the patriotic Syrian, 'Are not Pharphar and Abama, the rivers of Damascus, better than all the rivers of Israel?' Our modern school of English sculpture is now second to none in the civilized world; but means are wanting to make its merits known to the people of England: the processes of statuary-copying hitherto used in this country are not adequate to the artistic wants of the nation."

GREAT BELL FOR MONTREAL.—A bell, equal in size to any in Europe except the Russian monster, has just been completed at the foundry of Messrs. Mears, Whitechapel, for the Roman Catholic cathedral, Montreal. It weighs four tons thirteen hundred weight and a half, and its diameter at the mouth is 8 feet 7 inches; height to the top of the crown, 8 feet 9 inches; thickness at the sound bow, 8 inches. The tone is said to be deep, rich, and round; the key is F below the line in the bass clef.

THE NATIONAL GALLERY.—Mr. Wornum has nearly completed a descriptive and historical catalogue of the National Gallery, which he was commissioned to write by the late Government. Besides containing descriptions and histories of the pictures, it will give biographical notices of the painters, arranged alphabetically, preceding the accounts of their respective works.

ROYAL INSTITUTE OF ARCHITECTS.—At the next meeting of the Institute, to be held on Monday evening, the president, Earl de Grey, will take the chair, and will present the medals for the successful essays. Professor Willis will read a paper "On the successive construction and history of the Church of the Holy Sepulchre at Jerusalem, from Constantine downwards." The president's *soirée* is fixed for Wednesday, the 19th.

GATESHEAD AND TURKEY.—Dropping in, the other morning, to Hawks and Crawshay's ironworks, we came across some swart smiths, in a far-away nook of this monster establishment, earning their bread by the sweat of their brows. One of them, thrusting a cylindrical rod of iron into the fire, allowed it to remain until it became red hot. Then, withdrawing it, the heated end was brought to a machine, and coiled swiftly round an elliptic mould. The ellipsis, thus formed, was cut from the rod—slipped upon another ellipsis—and thrown upon an anvil. Then came a shower of hammer-heads rattling down upon the ductile metal, and closed the crevice by which the one had been inserted into the other. It was all done in a moment. "What is this you are doing?" we inquired, addressing ourselves to the Biggest Hammer. "What are we doing?" replied Vulcan: "why, *forging chains for the Turks*, Sir!" And so they literally were. Yes! our canny Gatesiders have an order on hand from Abdul Meschid, the young Sultan of Turkey—one of whose subjects, now in England acquiring our language and arts, may daily be seen in our streets. We suggested to the smiths at the South shore, that the Oriental stranger, by seeing them at their work, might be enabled to teach his countrymen, on his return, to make chains for themselves—(a feat which, if we may believe Mr. Baines, Englishmen are now industriously performing). "Ha!" exclaimed a fair-haired Saxon, with an incredulous laugh, "the Turks knaws better! It's ower hard wark!"—*Gateshead Observer.*

DAMAGES FROM OPEN SEWERS: RESPONSIBILITY OF CONTRACTORS.—In the action by Mr. Clayards, cab master, for damages from loss of a horse by falling into a sewer opened in Dover-street in 1845 by the defendants, Mr. Dethick and another, as contractors, under the authority of the Commissioners of Sewers for the Holborn and Finsbury division, Lord Denman, in summing up the evidence, said that the obstruction of a public way in London was a very serious thing, though it seemed to be treated very lightly by the defendants. He was rather surprised to hear that those gentlemen seemed to think that they might keep a whole neighbourhood in a state of siege for many days, and that people must be content either to suspend the avocations by which they obtained their living, or run the risk of these accidents, and then have to bring an action for redress. His Lordship after going through the evidence, left it to the jury to say whether or not they thought the defendants had been guilty of negligence, for if they had, the plaintiff was entitled to their verdict. The jury almost immediately gave their verdict for the plaintiff, with 20*l.* damages, although the witnesses called for the defendants said that the horse was not worth more than 3*l.*, and was only fit for the knackers, and even swore that the plaintiff himself said, that it was no matter that the horse was killed, for he was worth as much dead as alive.

CORROSION OF LEADEN PIPES AND CISTERNS.—The endeavour to protect lead from the action of water, by placing it in contact with zinc—once alluded to by us, and then generally understood to answer the object—according to a statement by Professor Solly, at the Royal Institution, has signally failed. So much does the present result of experiment vary from that previously made, that it is said the corrosion is greatly increased by the presence of zinc, and the water thus rendered additionally poisonous. The professor also referred to an attempt to render lead insoluble by alloying it with $\frac{1}{250}$ of its weight of arsenic. Mr. Solly also shewed, that unless water contain from $\frac{1}{50000}$ to $\frac{1}{100000}$ of its weight of earthy salts—such as sulphate of lime—it ought never to be taken internally, if kept in leaden cisterns, these earthy salts protecting the lead from the action of the water.

THE SUEZ SHIP CANAL.—Once more we have a rumour of the speedy realization of this long-projected work. "It is evident," says a correspondent of the *Morning Post*, "that something more serious than mere talk is intended, as several German engineer officers, at whose head is M. Yasnager, have actually arrived in Egypt, while many others are expected, their avowed object being a thorough survey of the Isthmus of Suez, as connected with the formation of a navigable ship canal."

ISLE OF MAN GRANITE.—The quarry of granite which was opened in the Isle of Man when the mining monopoly in the island was broken up last summer, is not only "turning out a good concern," according to the *Mona Herald*, but the material is so hard, well knit together, and capable of receiving so high a polish, and indeed is of a quality so altogether superior, and in strata so favourable for working, that "even Aberdeen has sent orders here for such blocks of granite for its barbour as cannot be supplied by its own quarries;" so that, according to a correspondent of the same authority, "it bids fair not only to rival the quarries on the west side of England, but even the more distant ones in Devonshire, as well as Aberdeen itself." The navigation laws, however, are felt to interfere very much with the distribution of it in return cargoes, at a moderate freight, to London, Chatham, Dover, &c., southward, or Aberdeen northward, as the timber and other produce required in the Isle of Man is chiefly brought in foreign bottoms from the Baltic and elsewhere, the vessels returning in ballast, although they would be glad to take granite at moderate freights.

THE GOOD AND BEAUTIFUL.—Man is so inclined to give himself up to common pursuits, the mind becomes so easily dulled to impressions of the beautiful and perfect, that one should take all possible means to awaken one's perspective faculty to such objects, for no one can entirely dispense with these pleasures; and it is only the being unaccustomed to the enjoyment of anything good, that causes men to find pleasure in tasteless and trivial objects, which have no recommendation but that of novelty. One ought every day to hear a little music, to read a little poetry, to see a good picture, and, if it were possible, to say a few reasonable words.—*Goethe.*

THE LITERARY FUND.—The anniversary dinner of this admirable institution took place at the London Tavern on Wednesday last, Chevalier Bunsen in the chair. With such men as the Archbishop of Dublin, Bishop of St. Davids, Sir Stratford Canning, Sir R. H. Inglis, Lord Sandon, Dr. Whewell, and others to propose toasts and respond, and a very large company, it was nevertheless a drowsy meeting. Discretion is a rare virtue.

PAWNBROKERS' ALMSHOUSES COMPETITION.—A correspondent informs us that the successful candidates in this competition are, 1, Messrs. Elmslie and Lee, of London; 2, Mr. W. H. Woodman, Reading, Berks; and, 3, Mr. M. H. Cooper, of London. As usual, we have received several complaining letters, but as we have not yet seen the designs we postpone the consideration of them.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, May 17.—Statistical, 12, St. James's-square, 8 P.M.; British Architects, 16, Grosvenor-street, 8 P.M.

TUESDAY, 18.—Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 19.—Society of Arts, Adelphi, 8 P.M.; Architectural Association.

THURSDAY, 20.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*To Dissolve Plaster Casts.*"—Sulphate of lime, of which plaster of Paris images mainly consist, will be dissolved by dilute nitric and hydrochloric acids. But from these solutions, when concentrated, it separates in long, silky, transparent rhombic prisms. Sulphate of lime is decomposed by solutions of carbonate of potash and soda.

"*H. R.*"—Asphalte might probably be applied successfully.

"*W. A. G.*"—A reply on such information would merely mislead. Moreover, it is beyond our province.

"*Sewer in Old Brompton.*"—Thomas Emmins, of Kensington, requests us to state he was not the bricklayer referred to in "Notice of Court of Sewers," last week.

"*Constant Reader.*"—The study of perspective is most important. We have not time to recommend books.

"*Elon.*"—A correspondent says, the cost of temporary church at Eton was 450*l.*, not "1*l.* as stated.

"*Tyro.*"—Thin coat of Keen's cement would answer the purpose.

"*Henricus*" reached us too late for a reply.

"*R. A.*"—We have not the address of the party in question.

"*Severe Sufferer.*"—Take a professional opinion. We should think the difficulty might be got over.

"*Stone and Tile.*"—A correspondent asks to know "the comparative wearing properties for pavement in a public building between stone, Staffordshire encaustic tiles and Newcastle tiles."

"*Old Oak.*"—The suggestion that we should publish in a separate and cheap form a selection of our engravings requires consideration.

"*W. J.*"—They can be had. Write to the office.

"*W. S.*"—We are supplied with reports of society in question.

"*J. W. LL.*"—Much depends on the goodness of the materials; 1 of lime to 2 of sand ought to make good mortar.

"*Putty.*"—A correspondent asks "if there is any chemical or other process by which the putty of old sashes can be removed with ease and safety, in order to get out the glass."

*Received.*—"A. Y." "W. D." "B. A." "T. M. R." "Mrs. W." "Mr. T." "Operative Carpenter." "J. C." "Colonel S." "Rome in its Ancient Grandeur, Display'd in a Series of Engravings," by A. Desgodetz; edited by Sir C. Lockie Reid, Bart. "Lectures on Naval Architecture," by Mr. Tredgold. "Plan for the Removal of Pauperism and Mendicity in Ireland," by Hibernicus. J. Thomas, Pimlico. "A Proposed System for the Valuation of Carpenters' and Joiners' Works," by H. H. Bowman, M.B.A., Wells, Holborn. "Pasley, on Measures, Weights, and Money." Egerton, Whitehall.

"*Books, Prices, and Addresses.*"—We have not time to point out books and find addresses.

## ADVERTISEMENTS.

**MESSRS. HOPKINS and Co.** solicit the attention of Architects, Builders, and the Public generally to their REGISTERED SELF REGULATING BLINDS, which, dispensing entirely with the centre line, is peculiarly suited to French casements and bay windows.

OUTSIDE SUN BLINDS ON IMPROVED BALANCE ACTION.

H. and Co. are the sole manufacturers of BARRON'S PATENT METAL GROOVE ACTION, contrived for the easy and noiseless carriage of curtains on Brass or Wood Poles. This action has been much used, and with invariable success for octagon, bow, and other shaped windows. Models constantly on show.

HOPKINS and Co., late James Barrow, Window Blind Manufacturers and General Brass Founders, 40, Castle-street East, Oxford-street, London; and at Birmingham.

**ARCHITECTS, BUILDERS,** and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, sofitts, trellis heads, &c. &c., on the most reasonable terms, by JNO HERBERT and SON, Modellers, &c., 43, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 3s per cent cheaper than papier maché

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT.—WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lime Works, CHURCH-STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**PORTLAND CEMENT** is the only Cement for external purposes which requires no painting or colouring does not crystalize or burn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

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N.B. Plaster of Paris and Bricks at reasonable prices.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

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**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VERRY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dockwalls, hydraulic, and all other works; its adhesive qualities being superior to Roman Cement.

AS CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not crystalize or crack, hardens by exposure to the atmosphere, and is well adapted for moulding and casting.

Metallic Sand on hand

**MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.**

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. In purity and surpasses the hardness of Portland.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin

For the floors of halls and fire-proof warehouses, its lightness, durability, and non-absorbing surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 20, MURRAY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

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Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and the mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and Co., SOLE AGENTS for the Patentees, No. 39, Cornhill, Queen-street, Cheapside, London; of which may also be had

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, blends itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

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**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 8d. per foot superficial; and borders from 9d. per foot; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King street, Portman-square. Terms, Cash only.

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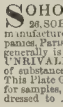


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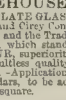
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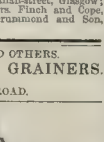


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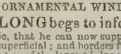
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These Machines may also be seen at Mr. Knight's, Leith-walk, Edinburgh; Mr. Lawrence Hill, 135, Buchanan-street, Glasgow; Mr. Robert Charles, Mill-hill, Leeds; Messrs. Finch and Cope, Pemkridge, Staffordshire; and Messrs. Drummond and Son, Dublin.

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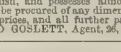
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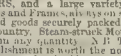
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**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their machinery a trial that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. The shooting, grooving, and tonguing a board (although curved), the machine follows the edge, cuts one no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber-merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

**BUILDERS AND IRONMONGERS** are requested, when writing for JENNINGS' SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which part of the front they commence putting up the Shutters, RIGHT OR LEFT, as they are the front.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction and constantly recommended them both for security and durability, he offers the following as the most reliable method that his experience and study that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being with at metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of cord.

**JENNINGS'S SHUTTER FASTENER.**

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are constantly put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of malleable iron, about one-sixth the weight of the common shutter, and leave no rusty deposit on the stall-board in dirty weather. Hundreds of shops have been secured by the inventor, and the testimonials of the ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same

THE PRICES ARE GREATLY REDUCED, and BUNNETT and CORPE'S SHUTTERS and IMPROVEMENTS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, in numerous practical experience having with them have established their superiority over all others, they will guarantee all Shutters put up by them to keep in order, and last twice as long as any with the common laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, and already superior, fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 28, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

# THE BUILDER.


TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 25, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 9d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 46s. per cwt. Do. Scotch, 62s. per cwt.
Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d | 5s. | 6s. 6d. | 7s. 6d | 10s | 12s. per gross. |

Elliptic stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

2 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 2 ft. | 2 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £2 6s. | £2 13s. | £3 16s. | £4. | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven,—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. | £4 15s. | £5 5s. | £6 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFARTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

**E**CONOMICAL RADIATING STOVE GRATE MANUFACTORY, No. 5, Jermyn-street, Regent-street.

PIERCE respectfully invites the attention of the Nobility, Gentry, and Architects who are building or fitting up Mansions, to his newly-invented and extensive display of STOVE GRATES, FENDERS, and IRONS, in suites, which are now on view at his Show Rooms. In conjunction first-rate Artists, he is enabled to guarantee that every work entrusted to him will be finished in the best manner, and the purest style of Architecture required; being manufactured on the premises, guided by his practical experience of more than thirty years devoted to the Warming and Ventilation of Apartments, Public Buildings, and Private Mansions, to numbers of which he can refer for the perfect success of his arrangements.

PIERCE has just erected an Register Stove, an improvement for the Ventilation and Economy of Rooms, with Wrought Iron Arches, with other points of domestic economy, which may be found worthy of notice.

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**F.** A. TIDDEMAN, Purfleet Wharf, Earl-street, Blackfriars, keeps a stock of Socket Pipes, Rain-Pipes, Half-round, and O. G. Gutters, &c. &c. &c. Contracts taken to any extent.

IRON-WORK FOR BAKERS' OVENS.

**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Sockets, Crossmouthpieces; Plates, Furnace bars, Top and Fall Plates, Stoving Rims, &c. &c. Iron for Outside and Arch ties, Doors and Frames, Lamps, &c. &c.; all of the best assortment, and at very moderate prices. CAST IRON UPSETS.

TO BUILDERS, CARPENTERS, &c.

**W.** YOUNG and CO., 191, Oxford Street, announce their present prices of IRONMONGERY for Cash:—Patent Cut Nails, 1s. 1d. per 2 lbs.; 1s. 8d. Doz., 3-inch. 2s. 1d. Do., 4 inch Saw Pattern, 2s. 7d. Doz. 4 inch Brass Do., 2s. 8d. Do., 5 inch Sash Weights, 3s. 6d. Cwt.; Sash Lines, 6s. 6d. Doz.; 24 Rain Pipe, 1s. 7d. Yard; 3-inch Do., 1s. 10d.; Mortice Locks, 38s. Doz.

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**PUMPS** of Superior CONSTRUCTION, Bored perfectly true by improved machinery, in various ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

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IRON FOUNDRY.

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**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely in his own hands, by which he has been enabled to make such arrangements and improvements that they will be more fully able to execute in a still superior and punctuality. The stock of patterns is also re-arranged, and every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**SMITH** and ENGLISH, late Andrew Smith, BUILDERS' MACHINISTS, ENGINEERS, IRON and BRASS FOUNDERS, SMITHS, &c., Princes-street, Leicester-square, London. Inventors and Manufacturers of the Improved Revolving and Panelled Iron Safety Shutters and Doors, Invisible Weather-tight Lasting and Self-Balancing French Casements, Double-action Door Springs for Banking Houses and other Swing Doors, Improved Cramps for Laying Floors, Improved Rope Lightning Conductors, for the protection of Churches, Towers, Chimney-shafts, and other high Buildings, Metallic Wire Lines for Hanging Sashes, Shutters, &c., Invisible Raising and Lowering Machines for Bankers, Jewellers, Wine Merchants, and others; also Manufacturers of Hoth and Low Pressure Steam Engines, Sawing and every description of Machinery for Builders, &c., Wharf, Warehouse, and Truck Cranes, Tramway, Traversing and Stationary Purchase Cranes, Blocks and Falls; Screw Jacks, Joiners' Cramps, &c., and of Iron Suspension, Sliding, and other Doors; Fire-proof Safes and Strong Rooms; Roofs, Conservatories, Verandahs, Skylights, Casements, Staircases, and Balustres, Balconies, Cantilevers, and Brackets; Palisading, Gates, Gratings, Fences, &c.; Girders, Columns, Pipes, Heads and Gutterings, Pumps and Cisterns; Metallic Sash-bars and Mouldings for shop Fronts, Windows, Sky-lights, &c.; Stall-board Plates, Brass Butt, and other Hinges; Buildings Warmed and Ventilated on approved Plans; Estimates given for the Improved Iron Shutters, Metallic Shop Fronts, Sashes glazed, if required, and every description of Metal Works; IRON WORK GALVANIZED FOR VARIOUS PURPOSES.

**PATENT URINAL BASON,** to be supplied by a self-acting or other apparatus, complete and perfect in itself, without requiring any oil or fitting than the basin itself. Now seen and had only at Messrs. BURTON and DENT'S, Wholesale Plumbers and Lead Merchants, 21, New-castle-court, Strand. Builders and the Trade supplied with Cast and Milled Sheet Lead Pipe, cut to any dimensions at Wholesale Prices.

**J.** W. WILKINS'S PATENT SILENT WATER-CLOSET, Manufactured by CHAS. BOTTEN, Brass and Cock Founder, 19, Crawford-passage, Clerkenwell, London. The peculiar advantage of this closet is, that it may be fixed in any part of the house without communicating the sound of a water-closet to any of the surrounding apartments. Prices, drawings, &c., may be had on application to the Manufacturer, where the closet may be seen in action.

**PAVING, 2s. 9d. PER SQUARE YARD.**

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of pavement laid down at the above low rate, and like work guaranteed. Apply to JOHN DIX KINGTON, PATENTEE of the BITUMEN PAVEMENT OF PICE, 15, WHARF-ROAD, CITY-ROAD. Noblemen, Gentlemen, Surveyors, Architects, Builders, Engineers and Contractors supplied with the best Solution for covering bridges and arches.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.** This newly discovered Liquid Composition, which Messrs. Geo. and Thos. Wall have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however large, and preventing them coming through and discolouring the paint above.

Many substances have been used in much time spent in endeavouring to find out a fitting Knotting, but hitherto without success. Messrs. Walls therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not crack or heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

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The properties of the Protoxide of Iron that at present ingross from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is the most valuable for Railways, Boilers, Steam Pipes, and Water pipes, Hothouses, Foreign houses, all Fresh paint, Brickwork is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 55, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and dries with oil an unctuous and cohesive mixture. If laid on with other paints it has a softer tone than white lead. For those painted during occupation, it is most preferable, being perfectly inodorous.

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**P.** FOUCARD and W. TUCKWELL, Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others that they have a large stock of superior dry seasoned Caen Stone on their Wharf imported July last, available from their quarries at Allemagne, which, for its whiteness, is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, and, at the offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby no objection the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way.

Old Beds is dressed in this process are perfectly sweet from animal impurities, and by expand to the feathers the bulk is greatly increased, and consequently the Bed is rendered much softer. The following are the prices of New Feathers:—

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| Mixed, per lb. | 1s. 0d. | Foreign Grey Goose | 1s. 8d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 2s. 0d. |
| Best Irish White Goose | 2s. 6d. | | |
| Best Dantzic White Goose | 3s. 0d. | | |

HEAL and SONS' LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to them at 196, Tottenham-court-road, opposite the Chapel. Tottenham-court-road.

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WINDOW GLASS.

| | Per ft. |
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| Foreign Sheet, in 100 feet Boxes | 1½d. |
| Do. do. Super 200 „ „ | 2d. |
| Crown Squares, 100 feet Boxes— | |
| 10 in. by 8 in. and 9 in. by 7 in. | 1d. |
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Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,

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VARNISH.

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|---|---|
| Super Body Copal, for the bodies of Carriages | 8 |
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PLUMBERS' BRASS WORK, WARRANTED.

| | £. s. d. |
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| 2½ inch Lift Pump on Plank | 4 0 0 |
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| Well Pumps on Square Tails, with Iron Bow, equally low | |
| Tan Water Closets, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire | 1 10 0 |

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Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

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Best White Lead, 27s.; Seconds, 25s. Thirds, 23s.

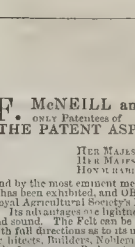
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Brunswick and Navy Greens, Cromes; Blacks, Blues, Reds, Patent Dryers.

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Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.



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HIGH-STREET, LAMBETH,

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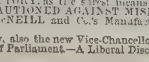
Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

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THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

Patronized by

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And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under stages at the Royal Agricultural Society's House, in Hanover square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as it is the sole means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only works in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMBS-BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

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# DICTIONARY OF THE ENGLISH LANGUAGE.

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The Publisher has received a great many communications, inquiring who the author of the UNIVERSAL DICTIONARY is. In answer to all such Correspondents, Mr. GILBERT has to state, that there exists no reason why the Author's name should not be known, save an earnest wish on his part that the Work should be tested solely by its own intrinsic worth. Mr. GILBERT, however, may state that the gentleman in question is personally known, and his talents appreciated by some of the most eminent Professors in the Universities of London, Oxford, Dublin, Edinburgh, and Glasgow, and that he is himself an author of several publications connected with Natural Science and Polite Literature, and has been for several years a Lecturer in one of our Universities.

"The work before us fills up a decided desideratum in the English Language. He would indeed be most unreasonable who did not own the debt due to the author in giving us the singular information of the Traveller, the deep learning of the Divine, the [illegible] of the Philologists, the succinct definitions of the Mathematician, the technical terms of the Manufacturer, the terminology of the Naturalist, the newly formed instruments of the Musician, the gentle science of the Herald, and the abstruse information of the Physiologist."—*New Quarterly Review, Jan. 1847.*

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## CONTRACTS.

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THE Guardians of the Farnham Union are desirous of receiving Tenders for additions to, and alterations of, the Farnham and Aldershot Workhouses. The plans and specifications may be seen at the Farnham Workhouse, any day Sundays excepted between the hours of eight and four, and information obtained on application to Mr. W. YOUNG, Architect, 14, King William-street, West Strand, London. The tenders to be delivered at the Board Room, at the Farnham Workhouse, before ten o'clock in the forenoon of the 4th of June next, after which hour no tender will be received. The Guardians do not pledge themselves to accept the lowest tender.—By order of the Board,

Farnham, May 14th, 1847. W. HOLLEST, Clerk.

TO BUILDERS.

PERSONS desirous of Contracting for the Rebuilding of the Parish Church at Cranoe, Leicestershire, may inspect the drawings and specification for the same, on application to the architect, Mr. J. G. BLAND, of Dungley, Market Harborough, from the 24th instant to 7th day of June next, on or before which latter named day Tenders must be sent to the Architect, sealed and endorsed, "Tender for Rebuilding Cranoe Church." Two approved sureties will be required for the due performance of the contract. The Rector does not pledge himself to accept the lowest tender.

GUILDHALL, 20th May, 1847.

THE Committee for letting the City's Lands hereby give notice, that they have postponed receiving tenders on the 26th instant, for a building lease of a wharf and premises, on the east side of Puddle Dock, and on the north side of the river Thames, until further notice.

THOMAS SAUNDERS, Comptroller.

Guildhall, 13th May, 1847

THE Committee for letting the City's Land will meet at Guildhall, on WEDNESDAY, the 26th day of May instant, at One o'clock precisely, to receive TENDERS for a Building Lease of Sixty-one Years, from Midsummer next, of a Wharf and Premises on the East side of Puddle Dock, on the South side of Upper Thames street, and on the North side of the River Thames; and also for Letting on Lease for Twenty-one Years from Midsummer next, a House, No. 6, on the South side of St. Mary Axe, Houndsditch. The conditions for Letting the said Premises may be seen, by applying at the Office of Works, Guildhall. THOS. SAUNDERS, Comptroller.

ELIGIBLE BUILDING GROUND.—CITY OF LONDON.—The Commissioners of Sewers of the City of London will meet in the GUILDHALL of the said city on TUESDAY, the 25th of June next, at Eleven o'clock in the forenoon precisely, to receive Proposals for a Plot of Ground, now vacant, on the east side of Fetter lane, near Fleet-street, on which the said Commissioners will grant Building Leases for a term of Eighty Years on certain conditions, which may be ascertained at this office. JOSEPH DAW, Prin. Clerk.

Sewers Office, Guildhall, 4th May, 1847.

## CONTRACTS.

BUILDING CONTRACT—PARISH OF LAMBETH.

BUILDERS and Others, wishing to contract for the alterations of a ward in Lambeth Workhouse, can see the plans and specification at the office of Mr. ROGERS, Architect, Palace chambers, Lambeth. Sealed tenders to be delivered to the Board of Guardians, on or before Tuesday, the 1st of June, at 10 o'clock. The Guardians do not bind themselves to accept the lowest tender.

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NOTICE to CONTRACTORS.—The TIME for receiving TENDERS for the maintenance of way on the East and West Coast Branches is EXTENDED from the 24th instant, as previously advertised, to Monday, the 7th June next, at noon, when the parties tendering are requested to be in attendance.

T. J. BUCKTON, Secretary.

London Terminus, 15th May, 1847.


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The attempt to provide an asylum has been commenced by the Institution of Builders' Foremen for the purpose of rendering assistance to their aged and decayed members, or those who by accident or other causes may be disabled from following their usual occupation, and through such misfortunes being unable to support themselves by their own exertions, are reduced to a state of poverty. Likewise the Widows and Orphans of deceased Members who are left unprovided for, having no longer their natural protector, will be also especial objects for assistance from the funds of this Charity.

The various accidents and misfortunes which that portion of society employed in the building trades are daily subject to, as well as other ills to which the human family are heirs, have for a considerable period enraged the attention of the members of this Institution to the importance of providing an asylum or pension fund, by which means they might in future be enabled to assist in case of necessity their fellow foremen, or those depending on their exertions for support, with a small weekly allowance; anticipating such assistance may be the means of averting much of that distress which too often follows when no longer able to discharge the active duties required, and when the only means of existence were the proceeds of their daily labour.

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In introducing a subject of this description to the notice of the building profession and a generous public, the directors do not assume that all who are members of the Institution of Builders' Foremen will require the aid of an asylum, or support from the pension fund; but, like all other classes of society, some are more or less fortunate than others. It is earnestly hoped in this case the attempt to assist the less fortunate may meet with that Christian feeling in this great and wealthy metropolis, which so generously responds to applications to assistance from similar institutions, founded on the same principles, and where their usefulness must have been a source of great satisfaction to the feelings of their generous benefactors, whose charitable motives have been directed to relieving the sufferings of those who, without committing crime, are unexpectedly plunged into a state of poverty.

The directors most respectfully appeal to the various Architects and Builders in this great metropolis and provinces for assistance in support of this charity for honest as builders' foremen, hoping their assistance in the discharge of their respective duties may be regarded as having some claim to the sympathy of those eminent persons whose names are associated with London's greatness as architects and Builders, whose position in society must have made them familiar with the fact, extensive as is the building on that class of persons whom this charity is intended to benefit.

Signed, on behalf of the Directors,

W. ALLARD, Secretary.

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**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of His Royal Highness Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most [illegible] of the price of marble. [illegible] dairy shelves, flooring and plain slate work in general executed in [illegible] derate terms. Welsh slate slabs, of the finest de[illegible] reduced prices.—N.B. The trade supplied with [illegible] self-faced, or planed on one or both sides, direct [illegible]—A book of prices will be forwarded on applica[illegible]

**ROYAL ACADEMY of ARTS, Trafalgar-square.**—The Exhibition of the Royal Academy is now open. Admission from Eight o'clock till Seven, One Shilling; Catalogue, [illegible] JOHN PRESCOTT KNIGHT, R.A., [illegible]

WHITSUN HOLIDAYS.

**ROYAL POLYTECHNIC INSTITUTION.**—Lectures on Chemistry on the Evenings of Monday, [illegible] Electric Machine. The Working M[illegible] new Dissolving Views, the [illegible] at 7 o'clock. Admission, 1s.; Schools Half-price.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, [illegible] Messrs. Geo. and Thos. Wallis have the satisfaction of [illegible] vouring to find a cure for a bad knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the [illegible]

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and [illegible]

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON. [illegible]

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, [illegible] hundred weight is equal to one and a half of lead. It works well [illegible]

SNCKELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, [illegible]

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction [illegible] superiority over other revolving shutters consists in their great [illegible] any part of the premises with the slightest exertion, without ma[illegible]

**JENNINGS'S SHUTTER FASTENER.** [illegible] are more [illegible] Bars are a trouble to put up and [illegible] JENNINGS'S REGIS[illegible] tive Bar, and answers the purpose also of a shutter shoe. The shoes [illegible] the in[illegible] and testimonials of their ease and effi[illegible] tained from the occupiers. A front, contain[illegible] whose shops they decorate.—To [illegible] of any respectable ironmonger. [illegible] which end of the front they commence putting up the shutters, RIGHT or LEFT, as they [illegible]

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST [illegible] shutters it is indispensable.

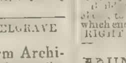
Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or [illegible] REVOLVING WOOD SHUTTERS, the Patent for which has expired, at the same prices as other [illegible]

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, [illegible] GLAZING, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES. [illegible] Sashes, Plain or Ornamental, handsomely Engraved, Moulded, [illegible]

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent. [illegible]

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and** only Patentees of THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

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HER MAJESTY'S WOODS AND FOREST, HER MAJESTY'S COMMISSIONERS, HONOURABLE EAST INDIA COMPANY, HONOURABLE BOARD OF ORDNANCE, HER MAJESTY'S ESTATE, ISLE OF WIGHT, ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And is the most economical [illegible] Royal Agricultural Society of England [illegible] it has been exhibited, and OBTAINED THE PRIZE, [illegible] Royal Agricultural Society's House in Hanover-square. [illegible] ONE PENNY PER SQUARE FOOT [illegible] LONDON.

[illegible] with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

The Builder.

No. CCXXIV.

*SATURDAY, MAY* 22, 1847.

A TANGLED web is gradually enclosing all who meddle with building matters, in and around the metropolis, the inconveniences of which they will find much difficulty in escaping:—the more so too, because they scarcely know what it is or where to look for it. At the present moment the law which regulates building is nowhere to be found, out of the registrar's office, but *in our pages*, and there only by searching for and collating the two Acts of Parliament, the various modifications which have been authorized, from time to time, by the Woods and Forests, and numerous awards issued by the official referees. The Metropolitan Buildings Act is universally admitted to be a defective and vexatious piece of legislation. The amount of ill-feeling engendered by it has scarcely a parallel. Builders, district surveyors, and legislators, have alike admitted that an immediate and searching amendment of its provisions was required, and rumours of a new Act (*three* new Acts, to supersede the one, were even talked of) have long been current. The first amending Act, passed in the early part of last year, relates merely to the appointment, duties, and salaries of the official referees, and contains a blunder through which, one of these days, we may find after-referees acting as district surveyors also.

At last we have a bill to further amend the Act; and this we much fear, so far from simplifying and making clear the law, getting rid of uncalled-for interference with private rights, so much needed, and loosening useless trammels, will still further complicate matters, and lead to such uncertainty as cannot fail to be productive of bad results. Its chief effect will be to give a large amount of power to the official referees, and enable them to alter and modify the law from time to time, in such way as may seem to them desirable. Of this our readers will better judge when we have placed before them the heads of the bill, which we have carefully condensed.

Clause 1. enacts that the two former Acts and this, shall be construed as one Act, and comprehended in the term "Metropolitan Buildings Acts."

Clauses 2 and 3, being important, we quote in full:—

2. "And be it enacted, that it shall be lawful for all the official referees from time to time, by writing under their hands, and sealed with the seal of the registrar of metropolitan buildings, to give general instructions to the district surveyors, authorizing and requiring them to abstain from enforcing the provisions of the Metropolitan Buildings Acts, with respect to any buildings or structures of a trivial character, or intended only for temporary purposes or situate in rural places in their districts, and unlikely to be attended with danger, or with respect to any alterations or other works of a trivial character, in or about any building or structure, the general nature of the buildings or structures, and of the alterations or works so to be withdrawn from the operation of the said Acts, to be described or specified in such instructions, in such manner as shall appear to the official referees best adapted to carry their instructions into effect, and from time to time to alter, vary, or revoke such restrictions; and whenever, after the receipt of such instructions, any district surveyor shall receive notice of the intended erection of any building or other structure which shall appear to him to be within the scope of such instructions, or of any intended rebuilding, alteration, raising, or enlargement of any such building or structure, or of any alterations or works which shall appear to him to be within the scope of such instructions, he shall give notice thereof to the builder, who, after the receipt of such notice, shall be at liberty to erect such building or structure, or execute such work according to the terms of such instructions, without being subject to any of the penalties imposed by any of the Metropolitan Buildings Acts, so long as such building, structure, or work is erected or executed in conformity with the description thereof contained in his notice to the district surveyor, but not longer or otherwise; and with regard to any building, structure, or work which shall fall within the scope of any such instructions as aforesaid, the district surveyor shall not be entitled to receive any fees for the supervision or alleged supervision thereof, or such fees only as the official referees in such their instructions shall direct to be paid for the same: Provided always, That if an owner or occupier of property adjoining or near to any building or structure, or intended building or structure, comprised in or within the scope of such instructions, or the overseers of the parish in which the same is situate, be of opinion that the building or structure, or any work connected therewith, cannot be executed in the manner proposed, with safety or without injury to the adjoining property or to the public, it shall be lawful for such owner or occupier or overseers, to require the district surveyor to interfere and prevent such danger or injury; and if it appear to the district surveyor that such opinion is well founded, he shall give notice to the builder or other person by whom such building or structure or work has been or is intended to be executed, requiring such builder or other person to erect such building or structure or execute such work in accordance with the provisions of the Metropolitan Buildings Acts; and such builder or other person shall act in conformity with such notice, subject, nevertheless, to an appeal to the official referees by any party interested."

3. "And be it enacted, that if in any case, from the special circumstances thereof, a strict observance of the rules comprised in the aforesaid schedules, or of the provisions of this Act, or any of them, would be attended with great loss or inconvenience, or if the object of any building, rebuilding, alteration, or enlargement cannot be conveniently effected without deviating from one or more of the said rules or provisions, it shall be lawful for the parties concerned, previously to commencing any such works, or the part of the works to which the application is to apply, to make application, with reference thereto, to the official referees, who shall thereupon, if they think fit, direct the district surveyor to survey the premises with reference to the matters stated in such application, and to report thereon, in obedience to such direction; and if, upon consideration of the application, it appear to the official referees that a deviation from the said rules or provisions, or any of them, may in such case be properly authorized, then it shall be lawful for the said official referees, by a certificate under their hands, sealed with the seal of the registrar of metropolitan buildings, so to authorize the parties concerned to make such deviations from the said rules or provisions as shall in such writing be particularly specified and set forth, and to impose such terms, conditions, and restrictions with reference thereto as to them shall seem proper; and every such writing shall state the special circumstances or other matter which shall be considered to warrant such deviation; and the district surveyor shall be entitled to such fee as the official referees shall appoint on that behalf."

4. Makes it lawful for the registrar to publish, in such manner as he may deem proper, all the instructions issued by the referees, and such of the exceptions, exemptions, and modifications as may be made from time to time; pointing out the grounds of exception, &c., and giving such other information as he may think useful to the public.

5. Confirms all modifications and directions already issued by the Commissioners of Woods, and directs that new rules, made under same powers, shall take effect from the publication thereof in the *London Gazette*.

6. Makes the rules in a schedule (A) to this Act supplementary to the schedules of the original Act.

7. Abolishes the special supervision authorized by original Act, and requires the surveyors to have regard, in all but buildings exempted by schedule B of original Act (part II.), concerning which there is an after-provision, "to the stability and sufficiency of the structure," and gives instructions for their proceeding in the event of defective or insufficient building.

8. Empowers parties to unite buildings separated by party-walls, when in same occupation, by making openings in such walls, to be forthwith built up when structures become occupied by different persons.

9. Declares that walls, which have been used as separations between buildings in different occupations since January 1, 1845, shall continue to be deemed party-walls, whether the buildings remain in different occupations or not.

10. Provides that any building comprised in schedule B, part II., which shall not be *insulated*, shall be liable to the Buildings Acts, unless exempted by referees on special application.

11. Requires that notice of a proposed building or alterations, given to district surveyor, shall state such particulars as will enable him to determine the rate of the building, and the requirements of the Acts.

12. Makes award or certificate of the referees, declaring any work irregular, conclusive; and requires justices to proceed under the provisions of the Acts, and to take no evidence of removal of irregularity but referee's certificate to that effect.

13. Makes it lawful for the surveyor, in the event of any irregularity declared by the referees, to summon persons by whose directions such work was executed before a justice, who, if the person do not appear, or fail to shew good cause to the contrary, shall authorize the surveyor to abate the nuisance, and dispose of the materials to reimburse himself the charges. If insufficient for this, surveyor may levy on goods and chattels.

14. Authorizes Lord Chamberlain, justices, &c., before granting licenses to theatres and other places of public entertainment, to require surveyor's certificate that the building is secure.

Then, for the purpose of facilitating proceedings relative to party structures,—

15. Enacts:—"That in every case where the consent or award of the official referees is neces-

sary to authorize the building owner to pull down, repair, or rebuild any party structure, or to perform any other works incident thereto, the building owner shall in the first instance make application with reference thereto to the official referees; and such application shall contain information as to the locality and relative situation of the premises, and the persons and purposes by whom and for which the same respectively are occupied, and as to the character and nature of the works proposed to be erected, and the mode in which it shall be proposed to execute the same, and shall also state, to the best of the applicant's knowledge and belief, who is the owner of, or interested in, the said adjoining premises; and upon the receipt of such application, and upon being furnished with such further information relative thereto as the official referees or the registrar of metropolitan buildings may in any case require, the official referees shall direct the applicant to give notice of the application to such persons and in such terms as they shall think proper, and such notice to be served upon such persons and in such manner as they shall direct; and upon the official referees being satisfied that the notices so directed to be given have been duly given, they shall, with all convenient speed, direct the surveyor to survey the premises, as well of the building owner as of the adjoining owner, with reference to the matters stated in such application, and to consider any alteration or modification of the said works which any party interested may propose, with a view to render the same more suitable to the adjoining premises, and to report to the official referees his opinions upon the following matters, or such of them as shall be applicable; that is to say, first, as to the existing party structure, whether such party structure be wholly or partially of timber or brick-nogging, or have timbers laid in and running through, or be dependent upon timber supports or abutments, and to what extent; whether such party structure be insufficient or defective with reference to the provisions of the Metropolitan Buildings Acts; whether such party structure be either wholly or partially ruinous, unsound or out of repair, and to what extent; secondly, as to the work to be done, whether it be necessary for the purpose of forming a proper party structure to take down and rebuild such party structure, or whether any and what less amount of work would be sufficient for that purpose; whether the party-wall (if rebuilt) should stand equally on each side of the line of junction, and, if not, then to what extent it should occupy the ground of one owner more than the ground of the other owner; whether any and how much ground or soil, or other part of the premises, ought to be taken from the premises of the building owner or of the adjoining owner, and laid to the premises of the other, either on account of the substitution of party-walls for party arches or floors, or on account of the erection of a straight party-wall instead of a crooked party-wall; thirdly, as to the expenses of the work and the compensation, whether the expenses of the works to be done ought to be borne by the building owner or the adjoining owner, or by both of them, and in what proportion, having reference to the amount of work necessary to be done, in order to render such party structure a proper party structure, and having reference to the difference (if any) in the rates of the buildings adjoining thereto; whether any and what compensation ought to be paid by the building owner or the adjoining owner to the other, either in lieu of loss of ground or soil, or other part of either of the buildings by such works, or as a satisfaction for such other loss or injury (if any) as shall be occasioned or done thereby to either of the parties with regard to the internal finishings or decorations of such buildings, or with regard to loss of trade or otherwise, by whom and in what proportion the expenses of the survey and the fee of the district surveyor should be borne; and upon the receipt by the district surveyor of such direction as aforesaid, the district surveyor shall appoint a day and hour at which he will survey the premises, and shall give at least seven days' notice thereof to the applicant, and to such other persons as the official referee shall have directed him to give notice to; and at the day and hour so appointed he shall proceed to survey the premises, and all persons interested shall be entitled to attend such survey; and after such survey the district surveyor shall with all convenient speed report his opinion upon the matters aforesaid, and such other matters as may have been submitted to him, to the official referees, and shall give notice of such report being made to the applicant and to the other persons interested therein as aforesaid, and within seven days after the giving of such notice, it shall be lawful for any person interested to appeal to the official referees against such report, or any particular thereof."

If no appeal within seven days, award to be made.

16. Provides, that although consent of adjoining owner, or award of referees, shall have been obtained, not less than fourteen days' notice shall be given to *occupier*. If building owner desire to commence the works before expiration of three months' notice to adjoining owner, he may appeal to referees, who have power, after a hearing, to shorten the time.

17. Requires building owner, who may desire to excavate below the level of a party-wall, or within a certain distance from external wall belonging to adjoining owner, to give one month's notice, and to securely shore up the adjoining premises before making the excavation.

18. Enacts, that if the wall be injured by such operations so as to be ruinous or dangerous, surveyor may condemn it, and the building owner shall rebuild or repair it, or build an external wall against the party-wall. Referees, on application, shall proportion the costs.

19. Requires, that before any building owner take down any wall or building abutting on adjoining owner's building, he shall give one month's notice. If adjoining owner does not cause building to be shored, building owner may do so, and recover the expense.

20. Repeals so much of the first Act as relates to the stopping up of openings in external walls adjoining the ground of adjoining owner, and authorizes application to official referees to stop such as have been made within twenty years, in case of refusal to do so without: "Provided always, That nothing herein contained shall prejudice or otherwise affect the right of any person to make and retain any opening in any external wall in cases in which by grant, prescription, or otherwise, he is or may be entitled to the access of light or air from the adjoining ground or premises."

21. Requires the district surveyor to inspect any building supposed to be dangerous, and certify to official referees, also to local officers. If dangerous, notice to be given to the owner to pull down within fourteen days. Local officers or owner may appeal to referees.

22. Requires local officers to secure the building; and if within the stated time same be not taken down or secured by owner, they shall do so, and pay all the costs.

23. Provides for the recovery of costs.

24. That service of all notices may be proved by statutory declaration.

25. Sets forth that awards, &c., made by the referees need not recite formal matters.

26. Provides that all fees of office "shall be recoverable by the ways and means by the said first-recited Act provided, with regard to moneys charged in respect of any work, in the same manner as if such fees of office, costs, and other moneys had been expressly named therein."

27. Makes the Act a public Act; and

28. Admits the repeal of it in the present session.

SCHEDULE A makes certain alterations in the schedules of the first Act; the chief of which are as follows:—

"*Alterations in Schedule (C.) Part IV., under the head of 'Warehouses, &c.*'—If a building of the second, or warehouse class, be used exclusively as a manufactory or workshop, then if it be built wholly fire-proof, or if it should appear to the satisfaction of the official referees, or, in case of appeal, of the Commissioners of Works and Buildings, that no additional danger of fire would be incurred, it may be made of any dimensions without being divided by party-walls.

*Alterations in Schedule (D.), Part I., under the head of 'Thickness of Enclosing Walls to Stories of Buildings of whatever rate.*'—If a building of the first, or dwelling-house class, and of any rate, except the fourth rate, do not exceed the height allowed for a building of the next lower rate, and if there be at least one internal cross-wall extending from party-wall to party-wall, and carried up from the same level as such party-walls to the underside of the floor of the topmost story, the party-walls of such building may be built of the thicknesses prescribed for buildings of the next lower rate; but subject in all cases to the following conditions:—

First. That such cross-wall (if there be only one) be at a distance from the extremities of the party-wall of not less than one-third of the length of the party-wall.

Secondly. That if there be two such cross-walls, such cross-walls be at a distance from each other, and from the extremities of the party-wall, of not less than one-sixth of the length of the party-wall.

Thirdly. That such cross-wall be not less than 8½ inches in thickness; and that in buildings of the first-rate or extra first-rate, such cross-wall be not less than 13 inches in thickness wherever it meets a party-wall of the thickness of 17 inches or upwards, and to the same height.

Fourthly. That no openings be made in such cross-wall in any story of a greater height than three-fourths of the height of the story; and that all the openings in the same story taken together do not exceed one-half of the length of the cross-wall; and that over every such opening there be a discharging arch, tied with cradle bars, or a sufficient stone or iron lintel.

Fifthly. That bond or plates be not introduced into such cross-wall in such a manner as to break the vertical continuity of the brick-work in the piers.

Every cross-wall having the effect of diminishing the thickness of a party-wall under the above provisions, shall be subject, as well with regard to its original construction as to any subsequent alteration in or operation upon

it, to the ordinary supervision of the district surveyor.

The thickness of the party-wall is not to be reduced under the above provisions unless the building on each side thereof be furnished with a cross-wall in manner aforesaid; or unless one of such buildings be so furnished with a cross-wall, and the other be of a lower rate.

*Alterations in Schedule (D.) Part II., under the head of 'Construction and Materials.'*—Timber laid continuously into an external wall at a level below the plate under the roof, must not be of greater width than one-third of the thickness of the wall, nor of greater thickness than two courses of brickwork, and it must have at least four inches of brick or stone work on each of its sides.

No timber whatever, except templates and wood-bricks, may be laid into an external wall so as to be flush with the inside face of the wall; and with reference to templates and wood-bricks, two such pieces of timber may not be laid within 13 inches of each other in the direction of the length of the wall; and no template shall exceed 3 feet in length. [This will lead to much bad building.]

*New Rules in Schedule (D.), Part II., under the head of 'Openings.'*—If a building be situate within 16 feet of another building, not in the same occupation, the external wall of which last-mentioned building shall have any openings on the side towards the first-mentioned building, then no opening may be made in the opposite wall of the first-mentioned building. (?)

If a building be situate within 16 feet of another building in the same occupation, and such buildings afterwards cease to be in the same occupation, the openings (if any) hereafter made in the external wall of the first-mentioned building, on the side towards the other building, must be immediately built up; except where there are no openings in the opposite wall of such other building, or such openings (if any) are built up.

If an external wall of a building be less than 4 feet distant from ground not in the same occupation, no opening may be made therein.

If an external wall of a building be less than 8 feet distant [or, if the building be of the dwelling-house class, and do not exceed two stories in height, then less than 6 feet distant] from ground not in the same occupation, no openings, may be made in such wall above the height of 9 feet from the level of the lowest floor; and when an opening is made below that height, a wall must be erected opposite thereto at least as high as the top of the opening, and at least 18 inches wider on each side.

*Alteration of Schedule (D.), Part V.*—Except in cases of rebuilding, no building shall be hereafter built extending wholly or in part over a public way; and in cases of rebuilding, the building shall not be built so as to extend over a public way to a greater extent than the former building extended over such way.

*Alteration in Schedule (H.), under the head of 'Cesspools and Privies.'*—The sides of all cesspools and privies should be so constructed as effectually to prevent the escape of the contents thereof otherwise than by the drain into a sewer.

*Alterations in Schedule (K.); Rules to be substituted for the Rules under the head of 'Back yards.'*—Every building of the dwelling-house class, or the public building class, hereafter built or rebuilt, must have an enclosed back-yard or uncovered space in the same occupation as the building, and open from the level of *Six Inches below the lowermost floor upwards*, unless all the rooms of such building can be and are intended to be lighted and ventilated immediately from the street or open space in front of the building; and such back-yard or uncovered space must be, at least, of the following area:—Three-fourths of a square, if the building be of the fourth rate, and do not contain more than two stories; and one square, if the building be of a higher rate, or contain more than two stories."

We have left ourselves no room for further comment.

## ROYAL INSTITUTE OF ARCHITECTS.

The president, Earl de Grey, took the chair on Monday evening last, for the purpose of presenting the medals to the authors of the successful essays. Mr. Hadfield was elected a fellow. Other business having been disposed of, the president called Mr. J. W. Papworth, and said, "I have much pleasure in attending here to-day, to shew the opinion entertained of your essay, by presenting to you the medal of the Institute. I believe I did so on a former occasion, and I am glad to find that you were not satisfied with one success. Your father, who has now retired from the profession, was an early member of the Institute, and esteemed by us all. Personally I regret his retirement, because I think a trustworthy man, who has been long in the profession, still pursuing his vocation energetically, offers a valuable example to the younger members of it. I have great pleasure in handing you this medal, and hope you will persevere in a good course."

The president then addressed Mr. James Bell, and presented to him the medal of merit, with a suggestion that having mastered A., he should now try for B., and so on through life. The decision of the council, in respect of the royal medal, having been read, his lordship said it had been thought, that if the royal medal were appropriated in one year to one particular object, it would be wrong to change it, and might not be approved of by her Majesty. He himself felt quite sure that the Queen would not be particular in regard of its appropriation: her Majesty's object was simply to mark her sense of the importance of architecture, and was anxious the medal should be considered an object of ambition by all classes of members. To make sure, however, an audience was asked, and immediately granted by Prince Albert. The Prince at once assented to the mode of appropriation suggested by the council, and said he approved it highly, observing, "I think you would do better not to fix it to any one object." The president said he thought it his duty to mention this, and he trusted every member would consider the royal medal legitimately within his reach.

Professor Willis then delivered a lecture on the history and progressive alterations of the Church of the Holy Sepulchre, at Jerusalem, being, by the way, an amplification of a paper on the same subject, read by him at the Royal Institution last year, and reported by us at the time.* The lecturer said the investigation had occupied him many years; it was not a matter that could at once be followed out to the end. He need scarcely say this building excited great interest during the middle ages. Apart from the possibility of its site being that of the crucifixion, which many believed, he himself for one, and with which he need not trouble them, it was very interesting in an architectural point of view. It was curious to see how the architects of Constantine set about to decorate a spot considered so holy. The tomb became the centre of all pilgrimages, and of course the building there was extensively imitated elsewhere. His main reason for bringing it before such a meeting as was then assembled, was this,—that he thought much might yet be discovered as to the original church by investigation; and as some there knew the spot, and others would probably go to it, he was in hopes that what he threw out might lead them to examine it closely. Research was difficult there, indeed almost impossible; but fortunate opportunities might, perhaps, offer themselves.

* See Vol. iv., p. 330.

The history of the church in brief was this:—Constantine raised structures to preserve the memory of three spots,—the birthplace of the Saviour, the scene of the resurrection, and that of the ascension. The second, or church in question, remained till the invasion of the Persians in 614, when it was destroyed. It was re-erected by Modestus, soon after, but was much injured, though not destroyed, in 637, by the Mohammedans. The crusaders made considerable additions to it, and so it continued till 1808, when it was burnt down, and afterwards rebuilt in such a manner as to disguise its real character.

The problem was, to discover what Constantine's architects did; and to obtain knowledge of this it was necessary to go to documentary evidence. The writings of the pilgrims, one as early as 333, were of the utmost importance, and had been carefully examined by him. A minute plan of the present church, made by Mr. Scoles, he had found of great service. First describing the church as left by the crusaders, he said he considered the tomb not to be a built structure, as often supposed, but a genuine rock sepulchre, pared down and decorated externally; and he shewed the probability of this, by tracing the line of portions of the rock yet remaining at the west end of the circular building. About this the round church was built in the late Greek style, like the church of St. Sophia, and others. The appendage towards the east, added by the crusaders, was Romanesque, resembling many early buildings in Europe, and similar to those we call Norman. It had a semi-circular apse at the east end, with an aisle round it, and radiating chapels.

The original building, according to the professor's views, we described in our former notice as consisting of an enclosure of columns, with an apsidal termination towards the west (affording the foundation for half the circular building, afterwards erected), having at the opposite extremity a basilica, similar in plan to those of St. Peter and St. Paul. To learn what the crusaders added and altered, it was only necessary to look to William of Tyre, who is very clear, and shews how the round church and court towards the east, with other sacred spots, such as the site where the wood of the cross was discovered, were converted by them into a medieval church of their own fashion. In doing this they exhibited much cleverness. It should be remembered, he said, that the Knights Hospitallers had the custody of the sepulchre, not the Templars; the latter had charge of the site of Solomon's Temple.

For an account of the church raised by Constantine, he of course went to Eusebius, and gave a translation of some passages in that author, who was more an encomiast than an architectural critic, and must, therefore, be listened to sceptically. When Constantine proposed to commence a house of prayer on this site, he found there a Temple of Venus; and on pulling this down, discovered the cave. Eusebius says, that the walls of the basilica were coated with marbles, the roof covered with lead, and the inner ceiling gilded. He describes a propyleum to the east; and the lecturer said a Roman gate had recently been discovered there, which he had little doubt was the very propyleum so referred to. In this basilica the apse was at the west end,—it was not till afterwards that the altar was placed at the east end of sacred buildings. The cave then stood in the open air, surrounded by porticoes, as we have already said; and a passage in a sermon by St. Cyril, preached in this church, bears out this opinion. The professor concluded by soliciting information from any who might visit the spot.

Curious Project for Retaining Smithfield Market.—A scheme is now on foot for excavating beneath the whole area of Smithfield market, in order to form *abattoirs*. The plans are nearly completed, and we understand will shortly have to be brought before Parliament. A depth of not less than 25 feet is talked of, as capable of being applied to the purpose of slaughter-houses, and without any want of sufficient drainage or light. The cattle being driven into market during the night, will be slaughtered on the spot, and thus the projectors think obviate the main objection to the present locality. Mr. Andrew Moseley is the architect employed.

## DRS. REID AND FARADAY.

### VENTILATION OF THE HOUSE OF LORDS.

On the 15th, Dr. Reid delivered a lecture at Willis's Rooms, St. James's, in reply to Dr. Faraday's account of the mode of ventilation adopted by Mr. Barry in the new House of Lords, reported at some length in our journal.* It was very discursive and very dull, treating for the most part of generalities, as well understood by the majority of persons present as by the lecturer, and did little, we should think, to advance his cause in the estimation of those who heard him.

He said that nothing was attracting so much attention at this moment as matters sanitary; all were becoming alive to their value, and little as the subject of ventilation, one of the most important points in the inquiry, was at present understood, it was impossible to say how far our knowledge of it might be advanced through the number of minds now engaged upon it. The true foundation for all progress was education, and to prove that he had always felt the importance of extending elementary knowledge, he quoted passages from evidence given by him in 1835. He was satisfied that by education, a man's life might be lengthened, and his comforts increased. Elementary knowledge was of the first consequence. Though architecture had been practised thousands of years, it could not be rendered subservient to sanitary arrangements till the constitution of the atmosphere had been investigated and was understood. The grand object was to unfold to peer and peasant elementary knowledge, and his desire was to adapt a certain amount of elementary science to primary schools. The Doctor then traced his own progress, read various quotations to show his views on ventilation, and what he had done at the House of Commons. For two years he was scarcely out of the place night or day. While communications were passing between himself and the government, Faraday was consulted,—a very proper step, to which he could take no objection, and had never commented upon. But since then, Faraday had thought fit to make the matter a subject for a lecture in a public arena. He considered, therefore, he had now a right to answer it. He had always entertained great respect for Dr. Faraday, and he had no doubt, if the Council of the Royal Institution had thought of it, they would have sent him a ticket for the lecture, as he had done to them on the present occasion. As it was, however, he knew nothing of it until it was over, and must therefore take the published reports of it as a foundation for his remarks. It was necessary to say that the plan he had prepared for ventilation of the House of Peers was thrown out, and another adopted. The point was, if it were a better one. Before speaking of it, he must advert to the general question of ventilation. The grand object was to give fresh air without draughts. [Every one knows this, and nearly, indeed, every thing else that the Doctor said on the subject. The great thing is, "how to do it."] Air may be made to move in any direction, but there are many things in the architectural arrangement of a building to prevent the exact result desired. Various mechanical means may be used to produce motion, but spontaneous movements should be made available when practicable. He then made various experiments, familiar to all, to show the nature and properties of air, and at last described in brief the mode of ventilating the House of Peers, with which our readers are familiar. He might now be asked to say what he thought of it. His reply would be, that he had worked upon that plan (namely, ventilation by *descending* currents), *and claimed it entirely as his own*, although he was bound to say that the architect, having greater control over the arrangement of the building, had been able to give it greater advantages than he could have obtained for it. He agreed that the plan was a good one, but not the best. If Mr. Faraday, before giving his lecture, had called upon him, he might have seen a model with that plan in operation, which was made in 1845 and 1846. The arrangements he made in the temporary House of Lords, on the occasion of Lord Cardigan's trial, so long ago as 1841, would shew that this plan was not unknown to him even then, and he exhibited a series of drawings, wherein, he said, the ascent and descent of the air were shewn. He would not assert that these drawings had been seen by Mr. Barry, but the model referred to had been examined by ten or twelve thousand persons, and could hardly be unknown to the architect. The Doctor then exhibited various experiments with this model, shewing the power of driving in air, either from the top or the bottom, a power which we apprehend was perfectly well understood long prior to the advent of either the learned Doctor or the excellent architect. The *theory* of ventilation has long been tolerably well comprehended; it is just the *application* of it that is the difficulty.

The lecturer, towards the conclusion of his discourse, commented on the misrepresentations, as he termed them, of various journals, and hinted, if we understood rightly, at legal proceedings against the referees who were appointed to decide between him and Mr. Barry, namely, Mr. G. Stephenson, Mr. Hardwick, and Professor Graham.

* See p. 150, *ante*.

## DECORATIONS AT IRONMONGERS' HALL.

The large room in Ironmongers' Hall, Fenchurch-street, which is 70 feet long, 30 feet wide, and 30 feet high, has been decorated recently by Messrs. Jackson, of Rathbone-place, in the Elizabethan manner, by means of *papier mâché*, colour, and gilding. The ceiling is coved and divided into panels by massive ornamented beams, something like the well-known ceiling at Audley End. The entrance-door has Ionic columns, the fire-place caryatides, and the opposite end of the room an ornate gallery, all made to look like oak. The total amount of the contract was 1,563*l*. The character is well preserved throughout.

We should be glad to see the London companies spend part of their surplus funds in the encouragement of art, by commissioning some of our artists to adorn their walls. Cannot the Ironmongers (being men of metal) be induced to set an example? They would find it a good investment,—perhaps a main-stay and support for the company in future times.

## THE GAS MOVEMENT NOW A NATIONAL QUESTION.

It is by no means necessary for us to *claim* credit to ourselves for what a numerous and influential portion of the newspaper press has already, both directly and indirectly, accorded to us, namely, a faithful and impartial leadership of public opinion towards that complete exposure of the anomalous state of the statistics and the *economics* of the gas question, for which we were in turn indebted chiefly to materials gleaned from the provincial press, from reports of the Government surveyors, and from other sources, whence a careful digestion and comparison, by correlation and contrast, clearly established the generally excessive profits and mismanagement of some of the old companies. To the Guardian Gas Company of Liverpool in especial were we indebted for some of our sharpest weapons; and the progress of the movement at Liverpool accordingly merited, and has received, a considerable share of our attention. "Glancing over a highly scientific work published in London," says the *Liverpool Weekly News*, "and which is quoted as an authority by all classes, we observe the editor has made the labours of the Guardian Gas Company the foundation of a rigid inquiry into the whole principle on which the manufacture and supply of gas has been and ought to be governed, and that his appeal has been responded to, as stated by himself, by at least half a hundred of the provincial press of the kingdom. The subject has been taken up on principle, and it is fitting that so talented a publication as The Builder is allowed to be, should take the lead among the London press. We congratulate ourselves on having been instrumental, at an early stage of this important inquiry, in fixing public attention on it. As the editor of that publication remarks:—'It is quite clear that dust has been already thrown into the eyes of the public far too long for patient endurance.' Nor has the notice of this important subject been confined to newspapers and provincial communities: *the matter has now become of national interest, and, therefore, is to receive national attention.* * * * Parliament will take up the subject, and monopolists in gas, as in corn, must yield to the pressure of a stern necessity. *London trembles, for there the strong-hold of gas monopoly is. It is there where the union is concentrated and represented.*"

Yes, the metropolitan strong-hold of gas monopoly does indeed tremble; and a somewhat striking *proof* that it does so, has been manifested even since our Liverpool contemporary penned the able article whence the preceding paragraph is extracted. The alarum has been rung, and forthwith issues out a new defender of abuses, a *Gas Gazette*, an open and undisguised monopolist, who, militant in favour of the public plunder, ventures only to appeal to "an enlightened public" itself in the smallest possible compass, in the modest little closing paragraph—the "Q" in the corner—of an elaborate, and by no means brief prospectus, because it would be "wanting in respect to that public" to "conclude this prospectus without" the slightest recognition of their existence; although, of course, the monopolist who proposes, in the outset of his campaign, to introduce his subject to the proper quarter by "sending the first eight numbers of the *Gas Gazette* to every gas company he is acquainted with, unless he be expressly requested not to do so," has not the confidence to look to that public for support even while he *pro forma* "ventures" to "respectfully solicit subscribers."

Perhaps the pith of any thing *like* fair and impartial argument or axiom in favour of monopoly in this notable prospectus, and the only portion of it to which we need particularly to refer at present, is contained in the declaration that "had such a publication as the *Gas Gazette* is proposed to be been, in existence during the last twenty years, the idea that gas *can* in any one town or locality *be* permanently supplied at a cheaper rate by two companies than by one, would long ago have been regarded as an absurdity too gross to be entertained by any person possessing common sense."

Now that one company *could* or *can* permanently supply gas to any one town or locality at a cheaper rate than two, it requires very little common sense to perceive; but surely the monopolists must think their opponents possessed of very little of that useful commodity, indeed, if they imagine them to be incapable of distinguishing between what *can* be done and what *has been* done, *is being* done, or still *will be* done by old companies, wherever they are allowed to monopolize the sale of gas; and we are much mistaken if the anti-monopolists do not give *their* opponents full credit for the possession of much more common sense than that which shines forth out of such a gross attempt at humbug.

Since one company *can* do so much more then two, towards the cheapening of gas, the more incumbent is it on that one to *do* what it *can* do in this respect, and the more disgraceful is the fact that it had almost uniformly persisted in plundering the public to an *enormous* extent until compelled by sheer competition, as such companies have of late so often been, to reduce their charges to a more just and reasonable standard. The proofs of the truth of what is now maintained are numerous; but we shall only evidence two notorious instances, which, though already exposed by us and others to public reprobation, still stand altogether uncontradicted and unpalliated. Witness, we repeat, the fruits of monopoly and of competition at North Shields, where the Improvement Commissioners desired to moderate the enormity of the monopolist company's charges by a reduction from 52s. to 45s. per street lamp. The *one* company, who *could* afford to charge so much lower than two could, impudently and falsely maintained that '45s. could not possibly pay.' And yet, by virtue of competition alone, the charges for supplying these very lamps with, gas of the best quality, were reduced not merely to 45s., not merely to 35s., nay, not merely to 25s., but down all the way to 17s.! while even on that price the shareholders divided 3 per cent. in the very first year, 5 per cent. in the second, and a continuance of prosperity thereafter. Again, the Liverpool Guardian Gas Company compelled the old establishments at Liverpool to reduce their charges from 7s. down to 4s. 6d., and yet these very companies are solvent as ever; although deprived of 35,000*l*. a year in consequence of the reductions which competition, and competition alone, compelled them to make. Undoubtedly, as

we have ere now said, "fair competition" may resolve itself, in some cases, into "ruinous competition;" but we are probably a far way off a result so every way unprofitable to all. Were the old or solitary companies, however, compelled, by Act of Parliament, to reduce their charges to such a minimum as they *can* afford, or as fair competition would compel them to afford, then certainly we should expect not only such a reduction, but all that *additional* benefit which the monopolists admit that *one* company has it in its power to confer on a town beyond what two or more can fairly afford. It is therefore most disgraceful, we repeat, that monopolists or solitary companies which *can* do so much for the public benefit, *have* done, *are* doing, and *will* do so little, compelling wasteful competition, from which the public must ever be the either positive or negative sufferers, even while diminishing a greater evil by the institution of a less.

With the authority already quoted, and with reference to the whole series of our articles on the gas movement, we may conclude by saying, that "in our desire to have the question clearly understood, we have dwelt on local facts; but that these facts will no doubt be found of general application, and therefore may be of use in fixing the attention of all the towns in the kingdom on the present movement. Let each community investigate the subject of cost of gas, the management of the works in their localities, rates of dividend paid on stock of the company, who are the parties interested, and all particulars bearing on one and all of these points, and they will find much which it will interest them to know. *However powerful the old gas companies throughout the kingdom are, the day of reckoning has now come, and they* MUST *render an account.* Every constituency in the kingdom ought to take advantage of the present position of the gas investigation, and urge on their representatives in Parliament the necessity of seeing that the subject is thoroughly sifted and justice done, that the principle of cheap gas may be fully and finally recognised and established, and that there may once for all be an end put to one of the most abominable monopolies and means of extortion with which this country has been or is inflicted."

## AGRICULTURAL USES OF GAS, LIME, &c.

A SMALL pamphlet has been published by Mr. G. W. Johnson, on the application of the gas lime, ammoniacal liquor, and tar, obtained from coal in the manufacture of gas, to agricultural purposes. These articles are by many considered as mere refuse (as is at present the case with our sewage matter), whereas they may be, and in some few cases are, applied to agricultural and other purposes, with benefit to the gas maker, the farmer, and the public. Probably, in well-regulated gas-works, not a single article need be wasted. The clinkered fire-brickwork of the benches and the burnt-out retorts might also find a market. The former might be used for building rough walls, as the clinkers from the brick-fields are occasionally used; or it would serve as an excellent foundation for roads, &c.; and the latter, if of clay, might be applied to the same purpose; or if of iron, would of course always fetch its value.

If judicious economy were the order of the day in our gas-works, the price of gas might be everywhere materially reduced, and something might be spared for the establishment, on a small scale, of baths and dressing-rooms for the workmen. B. A.

MASONRY IN THE TEMPLE CHURCH.—Sir: relative to a statement by Mr. Malcott, in your journal of May 8th, under the head of "Ironwork in masonry," that iron cramps, &c., were not used in the bell turret of the Temple Church, I think it necessary to say, lest the above should meet the eye of any of the benchers conversant with Mr. Malcott's bills, certified by me, before reaching the architects, where iron cramps were always charged,—that this is not correct. Iron (dove-tail) cramps were used, but they were enveloped in thin sheet copper (welded), and run with lead. The joints were of the ordinary character used in all properly-constructed spires, namely, saddle joints: iron cramps were inserted in every joint, and in no one instance were they omitted.

I am, Sir, &c., JOHN KNIGHT.
Architect's office, New Terminus, Liverpool.

## BUILDING NEAR DANGEROUS MANUFACTORIES.

WE have received a long letter from Mr. Boulanger, contradicting statements in Mr. Sugden's letter, printed in our last, and confirming the general accuracy of our report. On the ground of "courtesy to foreigners," he claims the insertion, at all events, of part of it, and we can scarcely refuse it. We cannot promise space for any thing further on the subject.

"Mr. Sugden's assertion about having apprised the district surveyor that I had 14 years more to stay, has been sufficiently contradicted by the emphatic affirmation of that gentleman before the official referees, and the magistrate of Southwark, that, on the contrary, he had been told by Mr. Sugden that my time being expired, he would pull my premises down in a month or two, so as to form a continuous street.

The story about my having been offered £400 by parties to conduct my case, if meant to convey a slanderous intent, is disposed of by the respectability of the firm I have employed.

Mr. Sugden speaks next of his great surprise at having received, on the 12th ult., summonses to appear at the police court of Southwark on the 15th, believing that he was perfectly right in respect of his buildings! Could he have forgotten that on the 31st January, before those houses were roofed in, and four hardly begun, he appeared as defendant before the official referees? His meeting them on the ground on the 8th February, when they had the ground measured, my premises and drying stoves examined? and by adjournment to Mr. Hesketh's offices, where the case was heard, and the facts proved by sworn and competent witnesses, whom he cross-examined? and that there and then he examined in his behalf Stevens, his carpenter, who received such severe rebuke from the official referees for his indecorous way of giving his evidence? Has he forgotten his subsequent appearance before the official referees, their award in my favour, and that to Mr. Hesketh against the sixteen houses by him built, as being too glaring an infringement of the new Buildings Act?

But the real facts of the case are kept back. After the failure of Mr. Keasley, a new street being in contemplation, I was threatened to be walled in if I did not remove. I offered Mr. G. Foster to do so upon payment of a moderate compensation, which might be settled by arbitration, as I could then have found another spot where to build stoves, which is not now the case. My proposition was termed an absurdity. Several applications for the ground to build upon were made; but when it was found that I should have to be ejected any how, none but Mr. Sugden was found to be bold enough to attempt it. All sorts of schemes, and traps, were laid for me to give in. In the meantime, annoyances of all kind were resorted to."

The following article relates to the same proceedings.

## RECOVERY OF FEES BY DISTRICT SURVEYORS.

On Wednesday last Mr. Hesketh, the district surveyor of Bermondsey, appeared before the presiding magistrate (Mr. Cottingham), at the Southwark police office, to obtain his authority to enforce the payment of certain fees and expenses, incurred in obtaining an award of the official referees on an information laid by Mr. Hesketh against Mr. Sugden, for constructing houses in Alice-street, Bermondsey, such houses being built contrary to law.

Mr. Cottingham said, having carefully looked through the Act of Parliament, he had come to the conclusion that he had nothing to do but to call upon Mr. Sugden to pay the costs that had been incurred, as the words of the clause upon which he was called upon to act were the strongest that could possibly be used. His duty was simply ministerial, for upon proof of the award, and that the money was still unpaid, by the 107th clause of the Act, he had no discretion. If his decision was wrong, of course the parties had their redress in another quarter.

Mr. Drew, who appeared for Mr. Sugden, said the matter ought not to have been entered into at all by the official referees. Mr. Cottingham remarked, that they were shut out from this sort of defence by appearing to the after proceedings. Mr. Sugden said that he protested against the jurisdiction of the official referees. Mr. Cottingham.—Did you not stay in the room while the evidence was given? Mr. Hesketh could prove that Mr. Sugden on that occasion gave evidence in his (Mr. Hesketh's) case. Mr. Sugden required that Mr. Hesketh might be sworn to that fact. Upon being sworn, Mr. Hesketh repeated his assertion that Mr. Sugden did give evidence on that occasion. Mr. Sugden said, that he protested against the jurisdiction of the official referees, but his protest had not been received.

Mr. Cottingham repeated that he had nothing to do with the merits of the award. His duty was simply ministerial, to order the payment of the costs. If the official referees had made their award in the face of Mr. Sugden's protest, they might perhaps have done wrong, which it would be for them to answer hereafter.

Mr. Drew then took an objection, that expenses for "work done" could not be charged under the section for fees.

Mr. Cottingham.—Certainly they can. As to the award, it is perfectly good on the face of it, and if it is improperly made, it may easily be set aside. If you can prove that some collusion has taken place between the parties, the award may be set aside; but unless you do that, the award must stand. The official referees have been appointed by Parliament to take these matters into consideration, and it is very unlikely they will take them out of their hands, and place them in the hands of magistrates, who, of course, can know very little about the construction of streets and alleys. He would make out the order for the payment of the costs; but the warrant might remain unexecuted in the office for a week, to allow the defendant to offer any terms in the meantime.

## CONDITION OF CLERKENWELL.

A REPORT from a committee of the Clerkenwell Paving Commissioners, appointed to view the condition of such buildings as might seem to be in a dangerous state, direct the attention of the district surveyor thereto, and to take other measures for the public safety, has just been printed. The state of some of the courts reported on is frightful. The chief result at present has been the delivering of twenty notices to owners of ruinous buildings. In concluding the report, the committee say, they "feel it incumbent upon them to draw attention to the fact, that unless some legislative measure be passed for the removal of the confined, damp, and unhealthy courts and alleys hereinbefore referred to, they will doubtless long continue to remain as pest-houses, spreading disease among the surrounding neighbourhood, as on inquiry it appears that no law at present exists which would prevent the *rebuilding* of such courts and alleys by the owners thereof, in consequence of dilapidation, &c.; and while the law prohibits the building of such places in localities where they do not *already* exist, it appears to be inoperative as regards the places built before the passing of the Metropolitan Buildings Act, however unhealthy the locality may be, arising from its confined situation, and total abstinence of all means of ventilation and drainage.

MONUMENT TO CAXTON.—Press of matter led us last week to postpone the insertion of a proposal to erect a monument in Westminster to Caxton, submitted to Lord Morpeth by the Rev. H. H. Milman, and by this time it has probably reached the majority of our readers through other channels. It is certain that the printing-press in England commenced its operations within the precincts or sanctuary of the abbey. The reverend gentleman suggests for this monument, that "the open space, at the end of the new Victoria-street, in front of the abbey, would be admirably suited. The character of the monument might be this. A fountain (of living water) by day, out of which should arise a tall pillar, obelisk, or cluster of Gothic pinnacles, for light by night; the diffusion of light being the fit and intelligible symbol for the invention of printing." A large sum might speedily be raised for this purpose, there can be no doubt.

## A DESIGN FOR THE ARMY AND NAVY CLUB.

BY MR. G. TRUEFITT.



## THE ARMY AND NAVY CLUB DESIGNS.

The designs in the Gothic style, two only, which were submitted in the late competition, scarcely received that consideration from contemporaries to which their merits, as works of art, entitled them. To justify our previous commendation, we give in our present number a perspective view of the design sent in by Mr. George Truefitt. We do not wish, however, to be understood from this as pointing it out as one which should have been selected. Such is not by any means our object or desire. We have engraved it as well because it is a clever adaptation of Gothic to street architecture, as to afford deserved encouragement to a young and rising artist.

It may be seen that the Town Halls of Belgium are the models on which it is founded.

No steps have yet been taken by the Club towards carrying out the intention stated in our last.

## THE THOUSAND POUNDS PRIZE PAINTINGS.

We said some time ago that we viewed with distrust the whole proceedings connected with this much talked of competition. So far from this distrust being lessened, it is materially increased, and we shall be much surprised if the result does not prove the truth of our *presentiment*. The system of puffing, billing, and advertising adopted with the view of tempting the public to pay their shillings for a sight of the works submitted, shews clearly, as we ventured to think, the character of the whole transaction.

It will be remembered that the artists were themselves to point out the five best pictures, from which the proprietor was to select the one best entitled to the award. The first part of this has been done, not wholly satisfactorily; and the following are the selected five, in alphabetical order, namely, — Mr. Howard, Mr. Scott, Mr. Sebbers, Mr. John Wood, and Mr. Ziegler.

The voting, on the part of some of the artists, was not very creditable to them, and the omission of Mr. Fisk from the list, although his picture is far from satisfying us, is a manifest injustice. The chosen pictures, *oddly* enough, are numbered 1, 3, 5, 7, and 9; that is, the artists have taken every other one as they hung in the gallery.

The ultimate selection has now to be made, and it is to be hoped that the proprietor will see the importance of obtaining an opinion from some impartial professional men, before coming to a decision. Our own opinion, in favour of Mr. Wood's work, is confirmed by consideration.

Western Literary and Scientific Institution.—On Monday evening, a paper was read at this Institution by Mr. J. R. Hill, C.E., on the rise, progress, and present state of the manufacture of gas for illumination. The paper commenced by a reference to the earliest records of the existence of inflammable air, and after touching slightly upon the difficulties of its introduction to public use, and the imperfections attendant upon its manufacture, proceeded to notice the various improvements which have been from time to time adopted. This department of the subject was very fully illustrated by a series of diagrams, showing the forms, arrangement, and action of the various "machinery" of a gas-works, from the introduction of the coal into the retorts, to the flow of the gas into the meters of the consumers. A discussion followed the reading of the paper, which elicited much practical information on the subject. The Monday evening meetings at this Institution, some of which we have before noticed in our columns, are realizing for it a title which has been too long neglected, viz., that of a "Scientific" as well as a "Literary" Institution. We feel bound to commend the efforts of the committee in this respect, as those efforts most materially tend to a more general diffusion of really practical information in modern science, art, and manufacture. A dinner in aid of the funds of this Institution is talked of, and will, we trust, be well attended.

## WINDOW AT LA HAUSSAYE, BRITTANY.



### CURIOUS WINDOW FROM LA HAUSSAYE, BRITTANY.

The curious window here represented is in the church at La Haussaye, a small village near Pontivy in Brittany. Its stone work is of the granite with which most of the churches of that country are constructed, and in which may be cited as examples of excellent execution—although in so rebellious a material as granite—the clustered piers and isolated vaulting shafts of the cathedral at Dol (a building similar in style to Salisbury Cathedral), and the very beautiful capitals of the shafts around the cloisters of the abbey on Mont St. Michel.

This window is dated MCCCCXXXV., and the form of its tracery is not uncommon in Western France. It occurs also, but in composition, in the large windows of Orleans Cathedral, where, however, it is of much later date.

W. Bromet.

## THE GOTHIC STYLE, A DEVELOPMENT FROM THE ROMANESQUE.*

In investigating the causes of a phenomenon, of which the results alone are now familiar to our minds and perceptible to our senses, there is a singular tendency to overlook that which ought first to be taken into account, the natural workings and efforts of a nascent art, and to dive deeply into the mystic regions of symbolism and 'sacramentality;' in other words, to rest upon far-fetched speculations, rather than upon inductions from simple and common-place facts. * * *

It is necessary to premise:

1. That those buildings only are called *Gothic* which involve either pointed arches, or the vertical principles which were undoubtedly suggested by them; that these cannot generally be traced to an earlier period than the middle of the twelfth century; and that, in our country, they very rarely appeared until towards its close.

2. That the buildings which were erected previously to this date, are all more or less of a degenerate classical style called *Romanesque*, of which the Norman is the principal variety known in England.

3. That the leading features of Gothic architecture consist in upward or vertical tendencies; while those of the other consist either directly in the prevalence of horizontal lines, or indirectly in the subordination of the vertical.

4. That although the one principle is exactly opposed to the other, nevertheless the Gothic style arose directly out of the Romanesque or Norman, by a perceptible process which it is the object of the present paper to trace.

To some it may appear to be a *prima facie* difficulty, that such contrariety should be the distinguishing characteristic of two kindred and consecutive styles. But this is not at all more wonderful than the results we frequently see produced by the workings of the human mind: as when an ultra-Protestant becomes a Catholic; a bitter enemy a warm friend; a violent radical a strenuous conservative; and so forth. In all these, and a hundred other cases of the like kind, not only does the one feeling eventually become dominant, to the total surrendering of the other, but the one is generally produced directly out of the other. A tendency, a modification, a relaxation in the one habit or impulse, often grows into a development or ultimate acceptance of the opposite extreme. And when we have discovered the origin of the change, the earliest symptom of giving up the old principle, we look into the cause of the departure; and if we find it permanent, increasing, still urgent in its nature and demands, we are quite certain that it will lead on the tendency, and the tendency will follow it, to its legitimate results; even to a

* From a paper by Mr. F. A. Paley, in *Dolman's Magazine*,—a well-conducted monthly organ of the Roman Catholics.

final overthrow and rejection of the former method.

We trust that this brief preliminary statement does not seem dull, pedantic, or unmeaning; because it really involves the whole secret, if secret there be, of the formation of the Gothic style. The Romanesque carried out its stubborn system of horizontality for many, many centuries,—in the Basilican, the Byzantine, the Norman styles,—until at length, some time in the twelfth, a *tendency* to relax it was thrown in,—perhaps by accident, perhaps forced by circumstances,—but certainly acknowledged, accepted, and acted upon; the motive being, not the discovery of the pointed arch,—nothing can be a greater mistake than to imagine this,—but *the discovery of the suitableness of the pointed form* to the requirements, the now urgent requirements, of an enlarged system of church architecture.

The *application*, therefore, of a feature which had been not only known, but actually in occasional use, for centuries, the pointed arch, was the real era of the invention, or rather the development, of the gothic style. How its application was first perceived, it is very curious and instructive to observe.

The ancient church architects possessed an extraordinary sagacity in seizing upon a good idea, seeing through its capabilities, and fearlessly carrying it out to its legitimate results, however far it might lead them. They did not care how exorbitant its demands might be; if it *was* a good idea, and would stand the working out, they let it have its way, and made the most reckless concessions to its necessities. They overturned a whole primary principle; surrendered every prejudice, every radical propensity, every cherished idea, to humour it, and to satisfy its extravagant caprices. They knew its merits, and foresaw that they should get right in the end by following it out, even though a good many difficulties, some bungling experiments, and occasional failures, were to be encountered in the process.

So with the adoption of the pointed arch. It was like inserting a wedge into a crevice, which must end in the disruption of the mass, while yet the conscious workman still plies the hammer to drive it more and more home.

The gothic style commences with what is commonly called the Transition period; an intermediate point, which is justly considered to involve almost the only *sudden* change in the whole history of a strictly progressive art, from its earliest to its latest existence. Sudden it certainly must be called, because the entire duration of the mixed style, from the first infringement of the Romanesque to the final establishment of the pointed principle, was only for about thirty years, at the utmost. It was the critical point at which the art took a new turn, and made a mighty effort; and after a thirty years' struggle gained a complete, a glorious, a decisive victory. A style truly original, and hitherto totally unknown, was thus produced, and even fully matured, within the limits of that very brief but very active period of church building. In 1170, the Norman tower and western transepts of Ely Cathedral were in course of erection; in 1180, the Norman Galilee porch at Durham was built; in 1202, the eastern parts of Winchester; and in 1215, the western porch of Ely Cathedral were completed, both of the most perfect and well developed pointed style. And yet, in 1138, the abbey church of Buildwas, Salop, which is early Norman work with *pointed* arches, was finished. How can we reasonably argue that the discovery of the pointed arch was the direct cause of the gothic style, when the Romanesque was still prevalent in England for nearly half a century after that feature had been fairly introduced into the architecture of the country?

If we consider carefully the real differences between Norman architecture with the semicircular arch, and the same with the general or partial use of the pointed, commonly called semi-Norman, or Transition, we shall not fail to notice the following facts, which we will afterwards briefly follow out to their results in the complete gothic styles:—

1. That there is not any essential or radical difference in respect of detail, but only such as consists in modification. For the ornaments, mouldings, capitals, and columns, arcades and pilasters, are often actually identical in both styles; and are certainly never so materially different as *alone* to constitute a new kind of architecture.

2. That the proportions were more altered than the details in the progress of the change from the round to the pointed style; as by a manifest elongation, increased lightness, and subdivision of parts, by which the Romanesque was gradually prepared for the reception of the pointed arch, when the due time for its adoption arrived.

3. That the intermixture, or accidental and indiscriminate use of pointed arches with semicircular, does not so far change the character of a Romanesque building, as to attach to it the distinctive character of gothic. For instance, the naves of Fountains, of Buildwas and Malmesbury Abbeys, and of the Temple Church, have pointed arches, for the most part springing from pure Norman columns, and immediately surmounted by purely Norman semi-circular arches, either in the triforium or clerestory. On the other hand, the nave of Oxford Cathedral has semi-circular nave-arches, and early pointed clerestory windows. Kirkstall Abbey, and St. Cross Hospital, Hampshire, have also pointed nave-arches, with all the main features of Romanesque work, and little or nothing of gothic character about them.

4. That the immediate result of pointing an arch is to give a much greater height in proportion to the breadth between its two piers or columns, than would be obtained by a semicircular arch, borne by the same supporting masses.

5. That in attempting to gain the same lofty effects, the late Romanesque builders, as we know from documents and existing vestiges, uniformly heightened their columns by adding to or rebuilding the earlier ones; by which means the relative proportion between the arch and its pier was frequently sacrificed.

6. That the breaking up of solid and heavy masses into parts, by distributing the thrusts and weights in various divergent directions, borne by isolated members at various heights, was the first process of disintegration, by which multiplicity and minuteness of parts were produced out of vast, few, and heavy constructive features.

7. That the real criterion of a pointed building, properly so called, consists in the use of pointed arches in the vaulting; because in this case "the contiguous side-arches" are pointed by necessity to suit the vaulting, and no longer by caprice, that is, without particular relation to other and ulterior parts of construction.

8. That it was not the *discovery* of the pointed arch (which must be nearly as old as the use of a pair of compasses), that caused the introduction of the Gothic style, so much as it was the germinating and expanding principles of vertical ascension, which enforced the general adoption of the pointed arch; a feature already well known, and long practised in the architecture of many countries and several independent formations.

Let us now reconsider the above facts, in reference to the principles which they involve, and the results which they at length brought about.

1. It is clear, that as details form the decorative part of architecture, the adjuncts rather than the essentials of any style, they have not in themselves sufficient preponderance to constitute that actual contrariety of radical principles which distinguishes all Gothic from all Romanesque work. The utmost which even the completest change of details can effect, is to second and aid the development of new principles. This will be readily conceded by all; and it is perfectly easy to illustrate it by adducing instances on the one hand of early Gothic details co-existent with decidedly Norman outlines and primary features, as in St. Joseph's Chapel at Glastonbury; and on the other of gothic principles, such as pointed arches, either plain and massive almost to rudeness, or relieved and enriched by purely Norman ornaments, as the chevron, the beak-head, &c. Thus in the nave of Barneck Church, and the west front of St. Leonard's Priory, near Stamford, we have semicircular arches, mixed up with a great deal of first-pointed, or early English detail; and there are countless doorways, chancel-arches, &c., in existence, which are Gothic in all except the detail, which is Romanesque. Thus it appears that, although this incongruity between principles and details is a natural mark of a transition style, yet it is the former rather than the latter which constitutes the real difference between the old and the new; and that difference of details is rather an accident in both, only casually connected with their particular stage of development.

2. Although Norman details continued in all their original quaintness till fully as late as 1180, still buildings of that era are always marked by two decided tendencies to Gothicism,—lightness and elongation; that is, increased height with decreased bulk or diameter. This is very observable, even where the semicircular arch is still retained with all the Norman decorations. The complex wall-pier, with its surrounding nook-shafts and jagged rectangular capital, is now changed into the taper cylindrical column of perfectly gothic proportion, of which the north side of the nave at Barneck, the Galilee porch at Durham, the churches of Bourn, near Cambridge, Witham on the Hill, Lincolnshire, and Becket's Crown at Canterbury, &c., are examples; and the capital is much reduced in size by having the corners of the square cut off, so as to exhibit the octagonal shape. It is on these capitals that we first see an approximation to Corinthian foliage, which soon after was matured into the umbrageous luxuriance of the next style. The notion of greater height and slimness having been attained, it was found that the pointed arch surmounted these columns with much more propriety, convenience, and effect, than the semicircular form, because it much better preserved the dignity of relative proportion.

3. That many Norman buildings have the pointed arch, and yet remain Norman, is undeniable. The nave of Fountains Abbey, already cited, is as thoroughly Norman as any building can possibly be; and yet it has long ranges of equilateral arches on both sides of the nave. The western towers of Durham Cathedral have alternately Norman and early English arcades in several tiers one above the other; so also the great western tower at Ely has pointed and round arches similarly intermixed, and indiscriminately used; and the west fronts of Croyland, of Byland, and of Malton Abbey Church, Yorkshire, are of much the same composition. In these, and many such buildings, had all the arches been pointed, or all semicircular, it would be unsafe to assert that they would themselves have thereby become either more or less Romanesque than they now are. The pointed arch could not, on the contrary supposition, have been so long co-existent with the pure Norman style without superseding or overthrowing it.

4. The use of the pointed arch, however, operated extensively in two ways, which are completely Gothic; it imparted additional height without additional breadth, and afforded the very important facility of attaining the same height with different widths, i. e. greater or less span, or breadth. It converted, as it were, a square into a parallelogram set on end, and so far turned that which was as much horizontal as vertical into vertical predominating over horizontal. The former principle was immediately carried out to a considerable excess in arcading, where the shafts are often placed very close together, and support extremely tall, and yet extremely acute and narrow arches. Now in Norman arcades, the principal mural ornament of the style, when the shafts are placed, as they often are, very close together, no effect is gained but that of crowding, because the semi-circular arch is as much lower as it is narrower; and thus the due proportion, invariably observed in the Gothic, between the arch and the bearing-shaft, is totally sacrificed when the arcaded space is of considerable height.

5. The springing off of slender side-arches, forming groin-ribs to vaults, at right angles to the main row of nave-arches, introduced a principle which went far to overthrow the Norman style. To support this groin-rib, at first thrown off, as it were, from a spare ledgement of the capital behind or in front of the nave column, a small adherent shaft was soon added to the main pillar, forming the first element of the clustered, or complex Gothic column. This may be seen in its simplest state in the nave of Fountains Abbey, the transept at Ely, and the triforium of St. Sepulchre's, Cambridge; where the ribs which support the aisle-vault rest awkwardly on the capitals of the main columns, without any attached bear-

ing-shaft corresponding to that on the opposite wall. On the nave side, the vault (or at least the roof) being much higher, a shaft was first carried up from the top of the nave capital, but soon afterwards from the ground. Then a separate shaft was devoted to the bearing of each of the two nave arches between which the great column stood; and from these four accrescences we derive two forms of columns which were in frequent use in this and the next style: the first, a square central core, with a half shaft attached to each side, as in the nave of St. Mary's, Stafford, and Rothwell, Northamptonshire; and the second, a cluster of four equal and isolated shafts, which are generally united by a central band or fillet of stone, or (as at Worcester Cathedral) of metal, to prevent them from bulging away from each other; an effective and beautiful arrangement, which is seen in the Temple Church, and the almost identical examples in the chapel of the bishop's palace at Auckland, Durham. This afterwards led to the subdivision of the members, or recessed orders of the same arches; so that in pure gothic arches the bunches of mouldings are borne by shafts, or bunches of shafts, so nearly identical in size and position, that sometimes the intervention of a capital alone prevents their absolute continuity.

Thus, what we have called the "disintegration of Norman masses" was effected, and a repetition and isolation of parts was gained.

6. It is now generally admitted, that in the necessities of vaulting we must look for the true origin of the Gothic or pointed style. That this is strictly true, and that no amount of pointed arches scattered dispersedly, and without system, over a building, as in doorways, triforia, nave, and chancel arcades, &c., would ever have effected the same result, we will endeavour to shew. Our position is, that by the requirements of stone vaults the adoption of the pointed arch was *forced* upon church architects; not that there was any reluctance in adopting it, for they at once felt it was the very thing which suited their wants, not only in this but in all other respects; but that they actually had no alternative whatever but to accept it.

Although almost every compartment of vaulting suggests the pointed arch in one or other of its cells, or intersecting ribs, it is by no means every vault which was built on a distinct knowledge and recognition of the principle: *that* was reserved for the builders of the Transition period. It is well known to every one at all acquainted with the elements of architecture, that in covering a parallelogram with a stone vault, transverse or diagonal semi-circular ribs necessitate either *stilted* (or raised) or else pointed arches on each of the four, and especially at the two narrower, sides, in order that the crown of all the arches may be of nearly the same height with very different widths. Thus, to take a very simple example, the passage into the cloister towards the west end of Worcester Cathedral, of Transition Norman date, has semi-circular diagonal ribs; very slightly pointed arches thrown directly across the passage at intervals, at right angles with the side walls; and distinctly pointed cells, though without ribs. Now, supposing this to be part of the vaulting of an aisle, and not of a passage with dead walls on each side, it is clear that on one side of the bay, or compartment, the pier arch would come in, and on the other a window immediately opposite, though perhaps not quite so wide. As the cell on each side is pointed, so the window and pier-arch must be concentric, or pointed also; because, if a semi-circular arch is used, it must obviously come much lower than the top of the cell; producing at once a waste of space between it and the crown of the round arch, and a very awkward effect from the dissimilarity of the curves. This is well illustrated in the nave aisles of the Temple Church, where a semi-circular window is fitted into a pointed cell on one side, though a pointed nave arch occupies the other.

On the contrary, the choir of the very same building, which is advanced early English, affords a most convincing proof of this view. Here the pier-arches themselves actually form the groin-ribs of the vault, which is of such a construction, that no other form could have been adapted to it except the pointed; in other words, the pier-arches are *forced* into the pointed shape by the requirements of the vaulting.

7. That the *discovery* of the pointed arch (as it is perhaps erroneously called) did not by any means at once suggest, or even necessarily lead to, the formation of the Gothic style, is a fact which cannot be controverted. The pointed arch was long used in many buildings, and in many parts of them, without even a suspicion of its latent tendencies; as, for instance, in the several edifices before cited, in which the properties are, as it were, cancelled, and its language contradicted by a tier of the old semicircular form added immediately above the pointed row. It is really difficult to conceive that an architect, who was fully conscious of the difference between the two forms, as subsequently developed, would have done this. He undoubtedly would have carried out the new principle, had he felt it to be such, by avoiding so fatal a recurrence to the old. It is only when we find pointed forms introduced by the composition of the vaulting, that a building is really Gothic: thus, the nave of Fountains Abbey, with pointed pier-arches, but semicircular clerestory windows, and (as it probably had) a wooden roof, was purely Romanesque. But the same, with semicircular pier-arches and pointed clerestory windows, adapted to the cells of a pointed vault, would have claimed (at all events, in a much higher degree) the character of a Gothic building.

The pointed arch is, in reality, only one out of many elements of the pointed style. It was seized upon as a congenial feature, and the use of an important member became a principal means of effecting the complete and symmetrical development of the entire body. Church architecture had become, by a separate process, ready for its reception; and thus it occupied, with ease and natural dignity, the place which awaited it. It began, by actual necessity of construction, to be systematically used in lateral cells of vaults; then both aisle window-arch and pier-arch were made concentric with their curves, or groin-ribs; then the triforium was assimilated to the row of nave-arches, of which it was, as it were, the reduplication (the earliest pointed example being, perhaps, in the choir of Canterbury); and again, the clerestory windows were pointed to suit the vault of the nave. The nave-vault necessitated a high-pitched gable, and the vertical lines of vaulting-shafts within, and of bold buttresses without, to counteract the lateral stress, and of vertical pinnacles to counterbalance the strain upon these; and then came pointed doorways, as a matter of course, to suit the pointed windows and pointed arches within. Thus all the parts of a church involved vertical lines and pointed curves by one and the same process of advancement in the art.

Further than this, pointed vaulting has a lateral thrust, while Romanesque, or semicircular, has a vertical pressure: hence the great Gothic characteristic of sloping or pyramidal outline was attained by the gradations of the buttresses, and the inclination of the flying arcs thrown off from them to abut the clerestory. * * *

We trust that we have successfully demonstrated the reasons of the apparently singular fact, that not one of our many Norman abbatial or cathedral churches either has or ever had a roof vaulted in stone. We are aware that this can only be said of England, for there are instances abroad which it would be impossible at present to discuss.

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THE LIGHT AND HEALTH TAX.—Lord Duncan has given notice of his intention, on the motion for going into committee on the Health of Towns Bill, to move the following resolution:—"That whereas the committee of the Health of Towns Association, and the directors of the Metropolitan Association for Improving the Dwellings of the Working Classes, have reported, 'That no sanitary measure can be tolerably complete which does not embrace the subject of the window duties; that the said window duties, as at present levied, act as a direct premium on the bad construction of houses in general; and by their unequal pressure make the poor pay quadruple the amount of window-tax paid by the rich;' therefore, it is inexpedient to proceed with the Health of Towns Bill without a prior consideration of the unequal pressure of the window-tax upon the houses of the working classes in Great Britain."

## CHURCHES AND CHAPELS.

THE substitution of open benches for closed pews in the church of St. Margaret, Ipswich, has made it, said the Bishop of Norwich, what the Church of England ought to be,—the poor man's church, with sittings open to all; and he hoped in future to see the Church of England generally divested of its pews and incumbrances, so that rich and poor might alike have access. ——Woburn Church is now undergoing the extensive repairs determined on, at the cost of the Duke of Bedford.——St. Martha's Chapel, Guildford, is about to be restored. Of the early edifice, which is of great antiquity, a considerable portion still remains. It is mentioned by Bishop Wainflete A.D. 1463.—— The steeple of Wednesbury parish church has been injured by lightning.——The new church recently erected at Birmingham, in connection with the Roman Catholic convent in Hunter's-lane, from designs by Mr. Pugin, is a building consisting of a nave, north aisle, and tower, and is capable of containing about 400 persons. It is of brick, with stone facings, and is dedicated to the Virgin Mary and St. John the Evangelist. The estimated cost is about 2,000*l*. The opening will take place in August next. The inmates of the adjoining 'House of Mercy,' or refuge for unemployed servant-girls, and those of the convent, have access to that part of the church devoted to them, through an arched cloister on the north. The area of the church is to be paved with small tiles, alternately blue and red; and the chancel windows are to be ultimately beautified with stained glass.——The cost of the repairs and restoration of St. George's Church, Leicester, as allowed by the architect, Mr. Parsons, to the contractors, Messrs. Broadbent and Hawley, will be £1,430 odds, to meet which, contributions to the amount of £1,548 odds were received, besides a grant of £200, promised by the Church Building Society, and other offers, not required. The lightning conductor was examined and approved by Sir William Snow Harris.——The repairs of the parish church of Bridlington are said to be progressing very slowly and imperfectly. "The trifling iota of the building now under repairs, to all appearance, is still to be disgraced by half and totally blanked-up windows, &c."——The foundation stone of the new church intended to be erected for the district parish of Coldhurst, in Oldham, and dedicated to the Holy Trinity, was laid on Thursday week. Mr. E. H. Shelland is the architect; Mr. E. Whittaker, of Coldhurst, the builder.——The new church of St. Paul at King Cross, Halifax, consecrated on 26th ult., is built in the "Early English" style, according to the old, but "first pointed" of the new nomenclature. It was constructed by Mr. R. D. Chantrell. The plan is an oblong square divided into nave and two side aisles, with a spacious chancel at the east end, in which is a triplet window, filled with painted glass, executed by Mr. Thomas Willement, of Green-street, Grosvenor-square. The seats are low, and the wood-work has all been stained. The tower is massive, and is surmounted by a spire. The stone work is in regular courses of wall-stones with ashlar quoins, all squared and bedded, but not made to imitate marble or marine cobbles, as in some modern churches. The roof is covered with the common grey or stone slate of the neighbourhood. The interior of the walls is plastered, and the chancel is covered with cement, smoothed for paint or colour, but not jointed to imitate ashlar.—— The ancient church of St. Mary, South Leith, is about to undergo considerable repair. In 1836 the steeple was taken down: the rebuilding of it forms part of the contemplated improvements. This venerable structure was built about the year 1450, and has been the the scene of the labours of several gifted literary men.——During the last few weeks, the whole of the west front of St. Mary's Church, Nottingham, has been taken down, and matters are in a state of great forwardness for its re-edification.

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THE PAVING NUISANCE.—It is not many months since we had to remark upon the injudicious method of wood-paving adopted in Cornhill. The whole is now being relaid, the portion next the Exchange with granite.

## RAILWAY JOTTINGS.

Locomotives are to be substituted on the London and Birmingham line, for the stationary engines employed in pulling up the trains at the incline from Euston-square to Camden Town.——Locomotives in general are, nevertheless, about to receive their 'death-blow' in the 'turning of a crank' by the powerful hands of 'the National Philosopher,' who lately, if we mistake not, threatened, by regular advertisement in the *Times* newspaper, to demolish everything and everybody on the shortest notice. That he is to demolish the locomotives, at all events, and thus, too, to 'hobble Hudson,' as he expressively renders his fell design, there can be no mistake; for the *Gateshead Observer* has been honoured with a 'private view' of the 'remarkably simple' means by which the mighty end of superseding the locomotive is sure to be accomplished. By the mere "turning of a crank," as we have just intimated, two or three men, or the National Philosopher himself, "will move a train at the speed of greased lightning, as the Americans would say." Mr. Martin has been of course congratulated on the *engin*uity of his great and primitive mechanical achievement.——In the case of Chilton (Queen's counsel) against the London and Croydon Company for compensation, on account of false imprisonment and trespass, in circumstances already well known to have resulted from the loss of a ticket, the jury, in the Court of Exchequer, have just returned their verdict in favour of the plaintiff, damages 500*l.*!——Attempts are now being made to supersede the old atmospheric system by means of Clarke and Varley's newly-invented tube of wrought sheet-iron, by the elasticity of which, the opening along the top is closed air-tight, while by means of four wheels placed horizontally beneath the engine, and acting on two rails laid on either side of the tube, it is opened during the progress of the engine, half an inch in width, and about eight yards in length; thus affording space for the passage of the steel-sheet connected with the piston. The chief advantages aimed at are, the absence of leakage and of any necessity for using wax, &c., for closing the valve; the durability of the tube, which is even said to be improved by working (?); and the diminution of expense, the cost being only 2,000*l.* a mile. Successful experiments are reported.——The Southampton and Dorchester line, which is to be opened within a fortnight, has been constructed within twenty-one months by Mr. Peto from the designs of Captain Moorsom, and under his direction, at a cost of about 9,000*l.* a mile. The line is only partly double, though prepared so as to be readily doubled throughout. The only noticeable works in its course are a number of viaducts, which have been constructed of timber. A line on both the narrow and the broad gauge between Dorchester and Weymouth, is provided for by the Acts of Parliament for the Wilts and Somerset, the station of which, at Dorchester, is to adjoin that of the Southampton Company.——That portion of the South Devon line from Newton to Plymouth is nearly completed, together with the electric telegraph, which is finished nearly to the Totness station. The station, says the *Plymouth Journal*, is rapidly progressing, under the active hands of nearly 70 carpenters and masons, while about 200 labourers are forming the approaches.——On the Trent Valley line, which is laid throughout on sleepers of timber—the wood used for this purpose being usually either larch or Scotch fir, or a foreign wood called *hacmatac*, which is very much liked for this purpose,—all the sleepers have undergone a patented process, something like kyanising; having been subjected to immersion, and also to great pressure, in a preparation in which gas-tar appears to be a principal ingredient, at the works of Mr. B. theil, the patentee, near Nine Elms.——The New Holland branch of the Manchester, Sheffield, and Lincolnshire line, and the portion between New Holland and Grimsby, are in an advanced state of progress. The dock, now being formed at the Grimsby terminus, embraces an area of water space a mile in circuit, and hence considerably larger than that of all the existing docks and basins at Hull put together. Considerable progress has already been made with that work, and the immense coffer dam, which is to inclose, and keep out the sea from, the whole of the work, and which is upwards of a mile and a half in length, and includes an area of no less than 130 acres, is three-fourths completed. Mr. Linn is the contractor for that dam, as also for both the dock and the pier at New Holland; and Mr. Rendel is the consulting engineer. The dock at the latter point will take in both sides of the present haven, and will comprise three times as much space. There will be a strong embankment on each side, and the new pier, which will be 500 yards long, and terminate in the T form, in six feet water at low water of spring tides, will be on the west side of the dock, and a few yards westward of the present jetty. A line of rails is to be laid along its surface, so that passengers will land and embark at the terminus, where a spacious shed and platform are to be formed for the purpose.——On Thursday week, the viaduct of the Waterford and Kilkenny line, crossing the Dublin road at Aughmalog, near Kilkenny, fell, while at least fourteen persons were working on it, all of whom have been more or less severely injured. Upon arriving at Aughmalog, says the *Kilkenny Moderator*, a most distressing spectacle presented itself. The western stone face of the arch which crossed the road remained, but the entire of the brickwork and the other stone face lay in a heap, blocking up the passage. It appears that a small portion of the brickwork gave way the previous evening, but the upper surface remaining apparently uninjured, the workmen proceeded to labour on the top, as usual, in the morning, and continued there till twelve o'clock, when the weight of a horse and earth-waggon reduced the whole in an instant to ruin.——On the Belgian National line, on the 11th inst., H.M. the Queen of the Belgians narrowly escaped destruction in a violent collision of trains, during which two officers of her suite and a servant were seriously injured, one officer having had a rib broken, the servant an arm. Her Majesty, however, fortunately escaped without the slightest injury.——The whole of the extensive buildings, including Founders' Hall and Chapel, in Founders'-court, Lothbury, fronting the Bank of England, are being demolished, the Electro Telegraphic Company having purchased the property for the formation of their central metropolitan station.

## NOTES IN THE PROVINCES.

The Windsor Castle and Town Improvement Bill, Lord Morpeth has obtained leave to bring into the House of Commons.——The late Mr. Beckford's tower was "knocked down" by the hammer of the auctioneer on Monday week, together with an acre of the land surrounding it, for the almost nominal price of £1,000. The purchaser is Mr. Wm. Knott, the landlord of the Freemasons' Tavern, Abbey Green, Bath.——The surveyor of the Bedford Improvement Commissioners lately reported that some parties in the town had been using asphalte felt for covering roofs; and, as it was a cheap article, he had no doubt it would be much used if the commissioners did not interfere to prevent the use of an article both dangerous as far as fire was concerned, and contrary to the provisions of the Improvement Act. On reference to the Act, it was found that the statement of the surveyor was correct, and an order was thereupon passed for notice to be given to parties to remove the felt and substitute a proper material, according to the provisions of the Act.——The brickmakers of Cambridge struck on Monday week for an increase of wages.——The proposition for the formation of a museum at Bury St. Edmunds is said to be progressing in the right direction.——It has been resolved to drain certain parts of the town of Bungay, and to ascertain the expense of carrying out a general plan of sewerage.——The Liverpool Health Committee have in contemplation a comprehensive re arrangement of the sewerage there too. Their surveyor, Mr. Newlands, with a staff of assistants, has surveyed the levels, and prepared a plan for the proper sewerage of the whole through three main sets of sewers. The Building Act, of course, provides for the house drainage being effectually carried out. Mr. Newlands also projects the abolition of cesspools, and to substitute for them, even in cottage property, water-closets upon a self-acting plan. Ash-pits are also to be dispensed with.——Two houses at Stalybridge, under which a tunnel for the Manchester and Huddersfield Railway is in course of formation, have fallen from the giving-way of their foundations.——The plans for the alterations at Lancaster Castle are now before the Secretary of State, with an estimate for the work, by Mr. Edmund Sharpe, of about 5,000*l.* In addition to this expense, the erection of two lunatic asylums, and the purchase of land for the same, are being proceeded with.——At a meeting of commissioners held at the Guildhall, Beverley, on the 10th inst., it was resolved to reduce the price of gas from 10s. to 8s. 4d. per thousand feet.——It has been arranged between the parties who opposed the Sunderland Improvement Bill, and the corporation, that the clause to enable the latter to purchase gas and water works be struck out of the bill.——The Rutherford monument near Gatehouse, Wigtonshire, has been destroyed by lightning. It was a strong structure, 60 feet in length, and cost upwards of 200*l.*——A newly-finished iron-work chimney, 116 feet high, and built of brick, at Borrowstowness, North Britain, fell on Monday week, cutting two houses asunder, and killing one poor woman, and severely injuring 8 or 9 other persons, all of whom had persisted in their occupancy, although warned by the swerving of the stalk from the perpendicular a day or two previous to its fall. The damage done is estimated in all at 1,000*l.* or 1,500*l.*——From a return lately issued by order of the House of Commons, it appears that the total average daily number of persons employed on relief works in Ireland during the week ending 24th of April was 474,650, of whom 451,237 were employed on roads, and 23,413 on drainage. The total cost was 138,675*l.*; the cost of labour being 120,472*l.*, and that of superintendence charged to baronies 13,133*l.*, and charged to Government 5,070*l.* The number employed in Leinster were 80,442; in Munster, 205,837; in Ulster, 51,954; and in Connaught, 136,437.——The recent dismissals from the public works are being followed in various quarters by a series of tumults, latterly of a voilent and 'very serious nature,' especially in the county of Limerick, although at first the mobs in general dispersed on the promise of being replaced on the works as soon as communication could be had with the proper authorities. Employment, however, or rather amusement and wages, having been so long provided by the government, a continuance of these is now demanded as a right, while the most sovereign contempt is expressed for the 'porridge houses,' and the most unmitigated hatred—not to say ingratitude—towards 'those unfeeling committees,' who have been shovelling sterling money by millions into their pockets, and wholesome food by ship-loads into their mouths. The universal cry amongst these truly-injured denizens of what a Scottish journalist, Mr. Chambers, regards as a country smothered into inanity, like a spoiled child, with too much 'coddling,' is, 'Down with the English.' We thought, says the Gateshead Observer, with a surprise quite natural, that the cry was 'Down with the Dust.' The Dust, however, is already down, and now it is time to kick it up again into the faces of the 'unfeeling' Saxons.——The Limerick labourers have 'resolved not to accept the ration administered under the out-door relief-bill;' and they are determined to 'meet and let death or glory be their motto.' By the latest accounts 'a violent spirit of insubordination' had displayed itself in County Clare as well as in Limerick County, and collisions with the constabulary have led to fatal consequences.

To Remove Glass from Old Sashes.—Sir,—In answer to your correspondent for a receipt to take out glass, I have used the following:—American potash three parts, and one part unslaked lime; lay it on both sides with a stick, and let it remain twenty-four hours; the putty will then be soft enough to cut out easily. It will also take off tar and paint, as I had an occasion to prove in this neighbourhood, a gentleman having tarred the inside of his cottage in spite about three years since. The person who has recently bought it employed me to make alterations. The painter refused to undertake cleaning the tar off; the above receipt I used, and took the whole paint and tar off as clean as if the doors had not been painted at all.—Yours, J. G., Croydon.

## EARL DE GREY'S CONVERSAZIONE.

Lord de Grey, and his accomplished Countess, asked half London to meet the Institute of Architects on Wednesday evening last, and dispensed their hospitality with their accustomed kindness. The tables presented a fine collection of sketches, and the rooms were crowded, including a larger number of fair ladies than we remember on previous occasions. Prince Albert arrived about half-past ten, and remained there some time.

## SUNDERLAND HARBOUR.

INSTITUTION OF CIVIL ENGINEERS.

At a meeting of the institution on the 11th inst., the following paper by Mr. J. Murray was read, "An account of the progressive improvements of Sunderland Harbour and the River Wear." The memoir commenced with an account of the coal trade; license having been granted by King Henry III., in 1239, to the good men of Newcastle, to dig coals and stones in the common soil of the town and outside the walls. In 1384, permission was given to export the produce of the mines. During the civil wars in 1644, the export from Sunderland was greatly increased, as no coals were permitted to be brought from Newcastle to London, on account of that town being a stronghold of the royalist party. Between 1704 and 1711, the average annual export had reached 174,264 tons, and that of the last year, 1846, was 1,500,000. The census in 1802 gave 19,100 inhabitants, whilst the town at present contains upwards of 60,000 persons.

The management and improvement of the River Wear was naturally an object of great solicitude, as its entrance was much exposed. In 1669, Charles II. granted a patent to Edward Andrew, to build a pier, and erect light-houses, and forbade the casting of ballast, &c., into the river. An Act was obtained in 1717, appointing river commissions, for the conservancy of the harbour, &c., giving power to raise money by tonnage duty on ships entering the port. The jurisdiction of the commissioners is limited by the last Acts to an extent of about seven miles. Little was done to improve the river until 1719; at that time the entrance was very intricate, and the two main channels were both very shallow. The south pier was commenced in 1723, for the purpose of directing the full force of the current against the bar. Busleigh and Thompson's map, published in 1737, shews the bad state at that period. Labelye, the engineer of Westminster-bridge, was called upon for his advice in 1748. He pointed out the principal causes of the then state of the river, and suggested the contraction of the channel at the worst places, so as to increase the scouring power of the stream, deepening the Still by manual labour and by dredging engines, and constructing a north pier, so as to leave a distance of 200 yards between the point of that and the south pier. He stated, however, that, "after all, as no man could forsee the consequences of erecting the north pier, if it caused a greater obstruction than it removed, it must be unbuilt and taken up." He recommended also throwing all the force of the stream into one channel, and cutting away the bar by ballast-engines, and cautioned the commissioners against ever permitting sluices or locks to be placed upon their river.

Mr. Vincent, of Scarborough, was appointed engineer to the trust in 1752. Mr. Robin succeeded him in 1755, and under them the south channel was so much improved, that the north channel was warped up with sand. Mr. Smith, of Sheffield, proposed sundry further improvements in 1758. Mr. Wooler also reported in 1767 on Mr. Robin's plan of building moles on the north and south rocks. The work was commenced, and was abandoned for reasons which do not appear. Mr. Robert Shout was appointed in 1779, and in 1780 Mr. Smeaton's advice was sought. He recommended the prolongation of the piers, on Mr. Shout's plans. The consequence of the constant extension of the south pier seems to have been the warping up of sand into the harbour's mouth. Two timber jetties were therefore suggested by Mr. Shout in 1786, and were the origin of the present north pier. The effects produced were very beneficial, as in a few months a deep and spacious channel was formed by the rush of the water. The timberwork was then cased with stone, and the work was continued by Mr. Pickernell, who succeeded Mr. Shout in 1795. He also erected the light house at the point of the pier. The south pier was also extended. Mr. Ralph Dodd also reported on the works, and recommended chiefly the formation of a wet dock on the present potatoe gurth. Mr. Mathew Shout became the engineer in 1804, and he reduced some of the old works, whilst he extended the north pier. Mr. Jessop made a report in 1807, recommending further extension of the south pier, the reduction of the width of the entrance to 300 feet, and the construction of some embankment walls at various points, to increase the velocity of the stream, and at the same time form a scouring basin. Mr. Giles made a survey under the directions of Mr. Rennie, which was completed in 1823 under Sir John Rennie. This very complete plan is published, and was exhibited. In 1821 Mr. Rennie recommended certain lines of extension of the piers, and the reconstruction of some parts of the works with sounder materials, with other precautionary measures calculated to improve the port, some of which were carried into effect by Mr. Milton. Mr. John Murray succeeded Mr. Milton, and carried on the designs of Mr. Rennie and Sir John Rennie with great solidity, using the diving-bell for part of the foundations. The north pier was thus extended to a total length of 1,770 feet. He also removed in an entire mass the lighthouse to the extremity of the intended pier. In 1843, the south pier, being in a ruinous state, was partially removed, and rebuilt in a direction better calculated to break the swell of the sea.

The plans exhibited the changes that had taken place in the estuary, improving the channel, and giving at least 4 feet of water over the bar at low water of spring tides. It is narrow, and shelving, with deep water on each side. Formerly the large ships took in part of their cargoes beyond the bar, but now they all load within it, even when drawing 15 to 18 feet; and as many as a hundred ships have entered and departed from the harbour in one tide. A longitudinal section of the river shewed some remarkable changes in the bed, and corresponding improvements in the heights of the tides, affording, at the same time, increased facility for the drainage of the country around. Dredging has been carried on to a great extent, and from 100,000 to 150,000 tons have been raised annually.

The want of floating docks has been much felt, and several plans have been projected for them by Messrs. Dodds, Jessop, Stevenson (of Edinburgh), Giles, Brunel, G. Rennie, Walker, and J. Murray, but none have yet been executed. A small dock of about six acres in extent was finished in 1838.

A south dock, with tide basins, is now in course of construction under the direction of Mr. Robert Stephenson and Mr. Murray; and by its means it is anticipated that Sunderland will become the first port, as to depth of water at its entrance, between the Humber and the Frith of Forth.

## Correspondence.

WHY SHOULD THE CITY OF LONDON BE EXCLUDED FROM THE OPERATION OF THE "BILL OF HEALTH?"

Is it the Utopia of health? and is the "bill" an act of supererogation with respect to it?

Surely any one who has resided in the "city" will readily answer in the negative. Is it on account of what has been and is being done towards the *improvement* of its sanitary condition generally? Perhaps the corporation have made out a strong case to the Government on this ground; but what they could bring forward I cannot imagine, and should like to be enlightened on the subject.

Is the city so well supplied (as to quality, quantity, and price) with gas and water as to need no alteration? With regard to the first article (gas), the *immense* profits that are obtained by its supply clearly shew that a considerable reduction in its price may be afforded; indeed, in some of the *outskirts* of *London*, where there is not so great a demand for gas, it is supplied at a much lower rate; and this is to be attributed to a state of things amounting almost to a monopoly, as *one* company is allowed the almost exclusive supply of the city. There is also very much room for improvement in its quality.

As to the second article, water, the present state of things is very well known, as the gross monopoly in its supply to which we are subject presents one of the most crying evils of the day, which is the more remarkable, as its existence has been so long known. When any new or burdensome tax is imposed, the public voice is immediately raised against it; but in this case we are paying a heavy tribute merely to line the pockets of certain shareholders in a joint-stock company; and I may safely affirm, that the supply of water in the city is *niggard* in *quantity*, *wretched* in *quality*, and EXORBITANT IN PRICE.

Is the system of sewerage in the city so complete that we can point to it with pride, and say that there is no street, lane, or alley that is not *well drained?*

I wish that this were the case; but that it is not I have learnt from personal experience as an inhabitant of the city. I am sure our corporation have no occasion to boast of what they have done, but rather to regret what has not been done. The Commissioners of Sewers should long ago have applied to Parliament for powers to compel all landlords to make drains from their houses wherever sewers exist, and they should also have obtained an Act to enable them to apply the sewage manure to agricultural purposes, as proposed by the London Sewage Company, by which means they would have derived a very considerable revenue,—sufficient, I firmly believe, to cover all sewer rates, and to form a fund for the formation of new streets, or other sanitary improvements.

Certainly the system of paving and scavengering in the city has been improved of late; but it is still very far from what it ought to be, particularly the scavengering.

I will conclude with an old, and in this case very applicable, proverb:—"What is good for the goose is good for the gander,"—earnestly recommending our representatives in Parliament not to allow the city of London to be excluded from the "Health of Towns Bill;" and am, yours, &c.,

An Inhabitant of the City.

## Miscellanea.

The Statue on the Arch.—Much as the statue has been "taken off," it is not yet taken down. How much longer is taste to be outraged and public opinion set at nought? Lord Morpeth has assured the House of Commons, that it shall be removed, and Mr. Barry, as we know, has designed a pedestal for it, to be erected in Waterloo-place, yet still there it stands, and members of the committee begin to shake their heads knowingly, and think Government will yet permit the continuance of the abomination. They may rely upon it that if it be found that the Government are really winking at it, the people will wake up.

Caution to Builders, &c.—In the Court of Common Pleas, on Wednesday week, "Barnes *v.* Ward," an action brought under the recent statute, 9 and 10 Vict., cap. 93, was tried. Jane Barnes, a charwoman, had fallen into an unguarded area, in October last, in the night-time, and was killed. Proceedings were brought for damages to her husband and children. The case was tried before Judge Coltman, and a verdict for 300*l.* was given against the owner of the houses:—100*l.* to the husband, 25*l.* each to two daughters, and 50*l.* to a son.

Engineering.—A correspondent says,—"There is a new code of laws and regulations coming out immediately, with regard to engineers in the Government service, that will demand a much more respectable knowledge of the principles of engineering than is generally at present acquired, the salary being augmented to 16*l.*, 18*l.*, and 20*l.*, per month, thirteen months in the year, with a grade still higher, at 25*l.* per month, so as to induce the best talent to enter the service."

Art-Union Purchases.—"Our Saviour, subject to his Parents at Nazareth," by Mr. Herbert, R.A., has been added, with many others, to the list of purchases.

PROJECTED WORKS.—Tenders have been called for by advertisement, for re-building the parish church of Cranoe; enlarging Wenden church; re-pewing St. Peter's church, Bengeworth, Evesham, and fixing gas apparatus; altering a ward in Lambeth workhouse; erecting national schools at Southampton; making additions and alterations at Farnham and Aldershot workhouses; erecting two new school-rooms, two new vagrant-wards, and other building, at Ledbury workhouse; repairing the Ross district of turnpike roads, Herefordshire (43 miles); also for maintenance of way on coast branches of London, Brighton, and South Coast Railway (extension of time); and for erecting a street at Wainfleet St. Mary; and restoring a tower and erecting stables at Cardiff.

ST. ANNE'S CHAPEL, FREDERICTON, NEW BRUNSWICK.—A church in the Early English style, built here under the direction of Mr. Frank Wells, was consecrated on the 18th ultimo. The style in question was adopted on account of its simplicity, and the absence of the elaborate tracery which belongs to the later styles, the workmen in this province having, as yet, been unused to work Gothic mouldings in stone. We obtain the following particulars from the *English Churchman*:—The building consists of a nave 54 feet by 21 feet, a chancel 20 feet by 16 feet, a porch on the south side of the nave, and a sacristy on the north side of the chancel, and will accommodate upwards of 200 worshippers. Above the west window is a stone-bell gable, rising about 64 feet from the ground with openings for three bells, which though but small, will form, at present, the only chime in the province. The roof is constructed of butter-nut, covered with zinced tin;—from the steepness of its pitch, being equilateral, its arched braces, battlemented cornice, moulded rafters, and the beauty of the wood, good effect is given to the interior. The seats (open ones), pulpit, prayer-desk, lectern, altar, &c., are likewise of butternut carved. The seat-ends are of sixteen different patterns; those designed for the choir terminated in poppyheads. The pulpit is on the north-east corner of the nave, and is entered from the sacristy by a doorway through the wall. The prayer-desk and lectern are opposite to it in the south-east corner. Between the chancel and the nave is the stone chancel archway, around which is inscribed, in illuminated and black letters, a text. Across this archway will be the chancel screen, not yet finished. The chancel is raised above the nave by three steps, two at the arch and the other at the rail. The altar, as before stated, is of butternut carved with Gothic tracery, and relieved with gilding. Crimson velvet is suspended at the back of the open panelled work. Above the altar is the eastern window; it is a triplet, the centre division rising above those on the sides, and contains painted glass, executed in London by Mr. Warrington. The stone font is coming from England.

OPENING OF FRENCH PORTS TO IMPORTATIONS OF SHEET-IRON.—There is now before the Chamber of Deputies a bill authorising the importation of sheet-iron, and other descriptions of iron destined for ship-building. The passing of this measure will no doubt be followed—and probably preceded—by orders to England and Scotland, and especially the latter for large quantities of these articles.—*Edinburgh Register.*

## TO CORRESPONDENTS.

"*J. C.*"—The question is unsettled. There is no penalty, and the result of an action would be doubtful.

"*R. C.*"—Gibbon's Treatise on the Law of Dilapidations (Weale, Holborn).

"*W. S.*"—If our correspondent will state his principles clearly, we will insert them.

"*J. T.*"—We have not time to recommend books. To answer the dozen letters on sale subject which we sometimes receive during the week is not in our power.

"*Construction of Grooves in Gothic Architecture.*"—A correspondent refers Mr. Wright, on this subject, to the "Transactions of the Society of Arts," Vol. XXXVIII., page 83, plates 9 and 10, published in 1821; also to THE BUILDER, 23rd of August, 1845, "Examination of Curves," page 405.

"*Ships.*"—Our correspondent on this subject is wholly illegible.

"*F. Wells.*"—The air within our sewers is at times much rarefied.

"*P. W. A.*"—Refer to the number wherein the notice appeared.

"*R. K.*"—Shall hear from us shortly.

"*French Polish.*"—A correspondent asks for a recipe for making French polish.

*Received.*—"P." (Brighton).—"J. B."—"G. M."—"A Professional."—"L. H. I."—"J. B."—"R. S."—"An Essay upon various Arts of the Middle Ages," by Theophilus; translated, with notes, by Robert Hendrie (Murray, 1847); "Charitable Cookery; or the Poor Man's Regenerator," by A. Soyer (Simpkin and Marshall, 1847); "Practical Rules for ascertaining the Relations between Alterations in Gradients and the Changes in their Contents," by D. J. Ibbetson (Weale); "A Letter on the Prospect of a further Appeal for the Restoration of the Cathedral Church of Hereford," by R. B. Phillips, Esq., M.A. (London, J. Masters, Aldergate-street).


## ADVERTISEMENTS.

TO ARCHITECTS, BUILDERS, PLASTERERS, AND OTHERS.

W. HUGHES & Co., Ornamental Plasterers, Modellers, &c., are enabled to supply, at reasonable prices, all kinds of Cement and Plaster Ornaments for architectural purposes, they having a large quantity of Moulds and Patterns, consisting of Trusses for shop fronts, Cantilevers, Caps for Columns and Pilasters, Queen's Coat of Arms, Pediment Scrolls, Ballusters; a great variety of Animal and other Figures, Vases, &c., for gardens and pleasure grounds; Ballustrading for Terraces, &c.; a variety of Centre Flowers, Soffits, Bed Moulds, &c., for internal decorations. Modelling executed with strict attention to Drawings. Workshops at No. 1, Brewer-street North, near Sadler's Wells, St. John-street-road, Clerkenwell, where specimens can be seen.

J. W. WILKINS'S PATENT SILENT WATER-CLOSET, Manufactured by CHAS. BOTTEN, Brass and Cock Founder, 10, Crawford-passage, Clerkenwell, London. The peculiar advantage of this closet is, that it may be fixed in any part of the house without communicating the sound of a water-closet to any of the surrounding apartments. Prices, drawings, &c., may be had on application to the Manufacturer, where the closet may be seen in action.

SHEET LEAD AND PIPE WAREHOUSE.
BUILDERS, PLUMBERS, &c., supplied on wholesale terms with Cast and Milled Lead and Pipe, cut to any dimensions, at MESSRS. BURTON AND DENT'S, Wholesale Plumbers and Lead Merchants, 21, Newcastle-street, Strand; where may be seen A NEW PATENT URINAL BASIN, of a simple and compact description.

ARTISTS, DESIGNERS, and Amateurs are informed that the General PRACTICAL SCHOOL OF DESIGN, 134, Maddox-street, Hanover-square (Master J. M. Leigh, Esq.), is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female—with Weekly Lectures on Art—Terms, One Guinea per Quarter. R. W. HERMAN, Hon. Sec.
24, Green street, Grosvenor-square.

ARTISTS, Architects, Engineers, and others, requiring the finest qualities of Drawing Pencils, are respectfully informed that BROOKMAN and LANGDON are in the habit of making the same to order, and have never failed in any case ultimately to give satisfaction, as they spare no pains or expense to suit the taste of each customer.

The various purposes to which Pencils are applied, together with the difference in the surface of the paper to and hour on which they are used, occasion various complaints when Pencils are purchased without a statement of these circumstances. For instance, a free-working H B would be highly commended by one artist, whereas, another, who used drawing paper of a rougher description, and required the lines would complain of the very quality which the former commended as essential. These observations are illustrated by an explanation of the purposes for which the Pencils are intended; and, after a trial of samples, by having them made to order.

Manufactory: 26, Great Russell-street, Bedford-square, where every kind of Cedar Pencils may be obtained; also Ever-Pointed Pencils and Points for the same.

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WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Arcade, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-rd., near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The prices have been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE-MAKERS.
THE AINSLIE BRICK and TILE MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's Office, 193A, Piccadilly, from Ten A.M. to Five P.M. Mr. ROBERT SCRIVENER, who has been appointed manager in the room of Mr. JOHN AINSLIE, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr Shields, Leith-walk, Edinburgh; Mr. Lawrence Hill, 135, Buchanan-street, Glasgow; Mr. Robert Charles, Millhill, Leeds; Messrs. Finch and Cope, Penkeridge, Staffordshire; and Messrs. Drummond and Son, Dublin.

MUTUAL LIFE ASSURANCE, ANNUITIES, &c. The INDUSTRIOUS CLASSES may effect Assurances on Life for 50*l.* and upwards. Annuities for themselves in Old Age, or for their Widows, and Endowments for Children. Premiums may be paid Quarterly or Monthly. Assurers will have the security of a Guarantee Fund.

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|---|---|---|---|
| | £. s. d. | £. s. d. | £ s. d. |
| 30 | 1 4 1 | 1 0 1 | 2 1 4 |
| 35 | 1 7 2 | 1 3 4 | 2 16 6 |
| 40 | 1 10 4 | 1 14 6 | 3 3 8 |
| 45 | 1 14 8 | 2 1 0 | 4 14 6 |
| 50 | 2 2 10 | 2 12 11 | 4 7 3 |
| 55 | 3 0 11 | 3 15 4 | 5 5 0 |
| 60 | 4 2 3 | 5 1 8 | 6 7 2 |
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BONUSES. The two first divisions averaged 22 per cent. on the Premiums paid. The Third, 28*l.* per cent. The FOURTH Bonus, declared January 1847, averaged rather more than 36*l.* per cent.; and, from the large amount of profit already realized, will be also reserved for future appropriation, and other causes, the Bonuses hereafter are expected considerably to exceed that amount.

The Society's income, which is steadily increasing, is now upwards of 116,000*l.* per annum.

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Best Patent Cut Clasp.

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Self-acting Kitchen Ranges, with Oven and Back Boiler.
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Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
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| £3. 6s. | £3. 12s. | £3. 18s. | £4. | £4. 10s. |

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 8s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

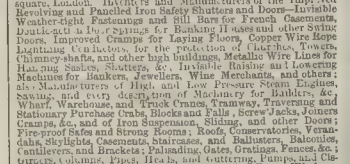
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PIERCE has Invented and Registered various improvements for the Ventilation and Fitting-up of KITCHENS, BATH ROOMS, LAUNDRIES, with other points of domestic economy, which may be found worthy of notice.
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HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, or any drying number, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were erected are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 83, Dorset street, Fleet-street.

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F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace doors, Pan and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash pit, Doors and Frames, Bollers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

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168, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER),
BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

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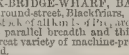
Apply at W. CLEAVES' Timber Yard, Wilton-road, Pimlico (late C. Mc[illegible]'s), and 6[illegible] at Smith-street, Westminster

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MUIR'S PATENT



PLANING MACHINE.

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**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the Docks and carted home free of charge.

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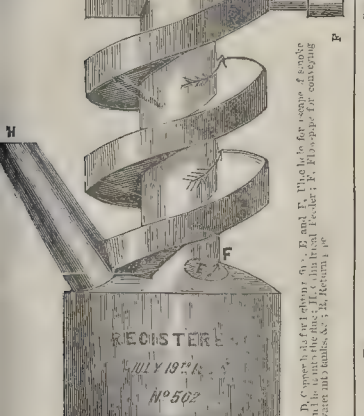
**CARVING BY MACHINERY.**
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TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decorations, to the peculiarities of their Machinery and the proofs of its efficiency, which are to be found in the fact of its having employed at the Government Workshops for the interior decorations of the New Palace at Westminster, and at the offices of the Palace Press (the only Establishment of the Society of Arts).

The Committee of Management, in their Report of the Specimens of Carvings produced from Jordan's Patent, says, "These were really astonishing. A bunch of Hops and three of Partridges were worthy to hang by the side of Grinling Gibbons's Works. A portion of the Ghiberti Florentine Gates were also very successful. The Machinery employed accomplishes precisely the task assigned to the chisel—it does away all the servile mechanical labour of the finishing touches to the Artist. No matter how high the relief or how low or intricate the undercutting,—no difficulties with the Machinery."

The Proprietors find it to be due to themselves and to the Public to state that they have at present only one Establishment which is their Model and Show Work, at Belvedere Road, Lambeth, where the Machinery may be seen at work, and where specimens may be obtained.

**J. B. SAMPSON'S SELF-FEEDING,** LOCOMOTIVE HOT-WATER APPARATUS for warming horticultural buildings, dwelling houses, churches, chapels, &c. &c.




SPIRAL WATER HEATER.

Mr. B. SAMPSON, Engineer, &c., Maidstone, Kent, Inventor and Manufacturer of the recently-improved REGISTERED SPIRAL WATER HEATER, begs to call the attention of the Public and those who require a powerful and economical Boiler to the peculiar construction of his Apparatus, which possesses great advantages over all others. 1st. Forming as it does, the exposing of the largest surface to the action of the fire, and presenting the least possible surface, 2nd. Requiring for heating only the least possible quantity of cast-iron, renders it more durable, not burning out as copper or wrought iron. 3rd. A saving of 50 per cent in the consumption of fuel. 4th. Having only two joints, with a further saving in the fire kept unbroken by the simplicity of its construction enables any person to fix it with the greatest ease.

These Boilers are made five sizes: No. 1, 8l.; 2, 9l. 7s.; 3, 8l.; 4, 9l. 9s.; 5, 12l. The large size will heat 1,000 feet of 4-inch pipe; they may be used in connection with any other kind. All workmanship and materials warranted direct. All particulars for fixing, and references to parties in all parts of the kingdom, post free, on application to the Inventor.

N.B. The conical boilers, which some is an improvement on, are supplied at the following prices: No. 1, 4l. 4s.; 2, 5l. 5s.; 3, 7l. 7s.; 4, 9l. 9s. Cast-iron tanking for bottom-heat, single and double, 3 and 4-inch cast-iron pipe, with bends, &c. &c.

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**CHARLES LONG begs to inform his Friends** and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King-street, Portman-square. Terms, cash only

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**EDWARDS and PELL, 15, Southampton-**street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the first style, and on the lowest terms: Embossed Borders from 8d. per foot run. Architects and Builders are respectfully invited to inspect their patterns which, for novelty, will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

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TO THE BUILDING WORLD.

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N.B. Glazed goods securely packed for the country.

**THE UNION PLATE GLASS Company** beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.

N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three-quarter-inch thick.

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TO PLUMBERS, PAINTERS, AND GLAZIERS.

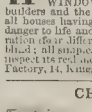
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| Crown Glass cut to size from one foot upwards, at 9d. per foot. | Thirds ..... 4 4 0<br>Fourths ..... 3 13 0<br>C C ..... 2 8 0<br>C.C.C..... 2 0 0 | Squares of Small Crown Glass, at 1d., 1½d., 2d. and 2½d. per foot. |

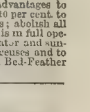
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| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | which also renders it very |
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| Garden Walks and Terraces. | Barn Floors. | The only effectual method to prevent the percolation of water. | |
| Cottage Floors. | Granaries. | | |
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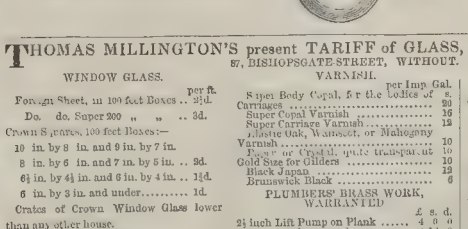
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They are of the most durable ware, and are recommended, in preference to iron, account of their

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| Foreign Sheet, in 100 feet Boxes | 2½d. |
| Do. do. Super 200 " " | 3d. |

Crown Squares, 100 feet Boxes:—

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| 10 in. by 8 in. and 9 in. by 7 in. | |
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| 6½ in. by 4½ in. and 6 in. by 4 in. | 1½d. |
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Crates of Crown Window Glass lower than any other house.

COLOURED GLASS FROM BOHEMIA,

of the most brilliant colours, 1s. 6d. per foot.

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| Super Body Copal, for the bodies of Carriages | 20 |
| Super Copal Varnish | 16 |
| Super Carriage Varnish | 12 |
| Elastic Oak, Wainscot, or Mahogany Varnish | 10 |
| Paper or Opaque Hard Transparent | 10 |
| Gold Size for Gilders | 10 |
| Black Japan | 12 |
| Brunswick Black | 6 |

PLUMBERS' BRASS WORK, WARRANTED

| | £ s. d. |
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| 2½ inch Lift Pump on Plank | 4 0 0 |
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| Wall Pumps on Square Tails, with Iron Bow, equally low. | |
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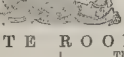
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PRICE ONE PENNY PER SQUARE FOOT.

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ST. JAMES'S, WESTMINSTER.

THE Commissioners for Public Baths and Washhouses in this Parish are about to purchase the Premises at present occupied as the Vestry Hall, Orchard-street, and to erect thereon a Building for the purposes of the Act, and they are desirous of receiving Tenders for the same. Plans and Specifications may be seen at the Vestry Hall, on and after Monday next, the 31st instant, between the hours of Ten and Four o'clock; and Tenders, sealed up and addressed to the Chairman of the Commissioners, at the Vestry Hall, will be received by the Clerk, at the Vestry Hall, on or before Thursday, the 3rd of June next, at Twelve o'clock at noon precisely.

GEORGE BUZZARD, Clerk.

50, Poland-street, Oxford-street

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A JOURNAL FOR

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T. J. BUCKTON, Secretary.

London Terminus, 27th May, 1847.

TO BUILDERS.

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**PARTIES** desirous of Contracting for all or any of the works, viz., Masons', Carpenters', Slaters', Plasterers', Plumbers', Glaziers', and Painters', required in building a New Church at Sutton, in the parish of Prescot, Lancashire, can see the plans and specifications by application at the office of Messrs. HEYES, PEMBERTON, and HEYES, Solicitors, Prescot, from Monday, the 31st of May, until Monday, the 14th of June, inclusive. Tenders to be sent in to Messrs. SHARPE and PALEY, Architects, Lancaster, on or before Wednesday, the 16th of June. The site of the proposed church is within fifty yards of the line of the Liverpool and Manchester Railway.

TO BUILDERS.

**THE** Guardians of the Farnham Union are desirous of receiving Tenders for additions to, and alterations of, the Farnham and Aldershot Workhouses. The plans and specifications may be seen at the Farnham Workhouse, any day (Sundays excepte I between the hours of eight and four, and information obtained on application to Mr. W. YOUNG, Architect, 14, King William-street, West Strand, London. Th tenders to be delivered at the board room, at the Farnham Workhouse, before ten o'clock in the forenoon of the 4th of June next, after which hour no tender will be received. The Guardians do not pledge themselves to accept the lowest tender.—By order of the Board,

Farnham, May 14th, 1847. W. HOLLEST, Clerk

### CONTRACTS.

TO BUILDERS AND OTHERS.

**NOTICE IS HEREBY GIVEN**, that the Commissioners of Sewers for Holborn and Finsbury Divisions, Middlesex, will meet at their Office, No. 7, Hatton Garden, on FRIDAY, the 11th day of June next, at One o'clock in the afternoon precisely, to contract for building new Sewers, viz.: in Wilderness-row and Cross-street, Clerkenwell, for a length of about 800 feet, and in Bunhill-row, St. Luke's, and Courts adjacent, to the extent of about 1,200 feet, conformably to plans and specifications, which may be inspected daily between the hours of Ten and Three. Separate tenders for each of the above lengths on printed forms, which will be furnished at the Office, are to be delivered at or before the above time of meeting, and which must contain the names and addresses of two responsible persons as securities for the due execution of the works.

The Commissioners will not consider themselves bound to accept the lowest tenders.—By the Court,

24th May, 1847. STABLE and LUSH, Clerks.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.—COURT OF SEWERS, TOWER HAMLETS'.

**NOTICE IS HEREBY GIVEN**, that the Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting, to be held on WEDNESDAY, the 9th day of June, at Two o'clock in the afternoon precisely, at the Office of Sewers, No. 16, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS sealed up from any persons or persons willing to enter into contract for the works necessary in extending the sewer in Assembly-row, Mile End-road, for a length of 400 feet or thereabouts, in the hamlet of Mile End Old Town. A plan and specification of the said several works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. Tenders to be indorsed "Tender for Works." The contractor will be required to sign a provisional agreement to secure the due execution of the said contract, and to give the names and addresses of two persons to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners. No tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon

Dated this 27th day of May, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B.—The Commissioners do not pledge themselves to accept the lowest tender.

SAINT GILES-IN-THE-FIELDS and SAINT GEORGE' Bloomsbury. To Stone-merchants, Gravel-diggers, Scavengers Rakers, Engineers, and Gas-light fitters.

**NOTICE IS HEREBY GIVEN**, that the Committee for Paving, Cleansing, and Lighting these Parishes, will meet in the Vestry Room of St. Giles-in-the-Fields, on THURSDAY, the 10th day of June next, at Ten o'clock in the forenoon precisely, to receive PROPOSALS from such person or persons as may be willing to CONTRACT for all or any of the following MATERIALS, pursuant to orders to be given by the Committee, namely, for supplying the Committee with the best new, squared Aberdeen, Mount Sorrel, and other Granite, of certain widths and depths, at per ton for each sort; also best Eland-edge, Yorkshire, and other foot paving, at per yard superficial. A full particular of the several widths, and depths, and thickness of the Granite and York to be supplied, may be had by applying at the Clerk's Office, 21, Hart-street, Bloomsbury square; or of Mr Birch, Surveyor to the Committee, at his office, 33, Little Russell-street. Also the best yellow screened binding gravel, at per yard cube; the said several last-mentioned articles to be delivered in such quantities, at such times, and in such places within the said parishes, or either of them, as the Committee may direct. Also to receive proposals and contract for Cartage for the Committee within the parishes, of old Stone, Gravel, Slop, &c., at per load; the cart used for this purpose must not measure less than 10 cubical feet. Proposals for the above to be for the term of one year from Midsummer next. Also to receive proposals from such person or persons as may be willing to contract for one, two, or three years from Midsummer next, for cleansing daily, and twice, or oftener if required in every week, certain streets and places in parts of the parishes of St. Giles-in-the-Fields and St. George, Bloomsbury, a list whereof may be seen at the Clerk's Office. And also for cleansing once in every week or oftener if required the remainder of the squares, streets, and other places within these parishes. And also to receive proposals from such person or persons as may be willing to contract for the like period (if thought expedient by the Committee) for cleansing and taking away, once or twice daily, the horse droppings, street manure, filth, soil, and the dirtings which may from time to time be collected on the foot and carriage ways of the said several squares, streets, and other places in these parishes (Lincoln's Inn-Fields, and the streets and places built upon land belonging to the Foundling Hospital excepted), and for taking away the dust and ashes, &c., from the houses and buildings of the same respectively; and the proposals for the last-mentioned works are in addition to contain three seperate and distinct tenders, namely, two distinct and separate tenders for cleansing the squares, streets, and other places in the manner respectively before-mentioned alone, and another distinct tender for the privilege of taking away the dust and ashes, &c., alone; also to receive proposals from such person or persons as may be willing to contract for one, two, or three years, from Midsummer next, for the repairing and keeping in proper working condition the several pumps, suction, and horizontal pipes, boxes, brackets, &c., and all the iron-work appertaining to the said pumps, in the said parishes; and also to receive proposals from such person or persons as may be willing to contract for one, two, or three years, from Midsummer next, for supplying the committee with new gas-posts and columns, bracket irons, copper lanterns, service pipes, fittings, &c., and for fixing the same, and also for removing the said gas-posts and columns, &c., and refixing the same complete, in such situations as may be required by the Committee; the tenders for the last-mentioned articles and work to contain the fixed prices to be charged for the said several respective articles and works in accordance with the specification to be seen at the Clerk's Office, and also at the Surveyor's Office.

The secretaries of Companies and persons sending tenders are required to attend at the Vestry-room at the time of the meeting. The contractor or contractors not to let or assign his or their contract, work or works to be done, or any part or parts thereof respectively, with out the special consent of the Committee in writing to the satisfaction of the Committee will be required for the performance of the several contracts, and the names, places of abode, &c., of the persons to be offered as sureties to be sent with the proposals, sealed, to be endorsed as the case may be. Drafts of the several contracts to be seen at the Clerk's Office. The Committee will not bind themselves to accept the lowest tender, and will defray the charge for each of the contracts and bonds. Payments to be made quarterly. Printed particulars for the persons proposing for the supply of stone, gravel, and cartage, may be had of the Clerk or Surveyor, as above.

By order of the Committee,

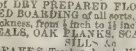
May 17, 1847. ROBERT FINNIS, Clerk to the Committee.

PREPARED FLOORING BOARDS.

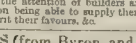
ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1½ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.
Apply at W. CLEAVES Timber Yard, Wilton-road, Pimlico late C. Moore and Son, and Great Smith street, Westminster

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of prepared FLOORING and Matched Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.
A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.




SAW MILLS, GILLINGHAM-STREET, PIMLICO.
TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and watercarriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.
Address to HENRY SOUTHAN,
Saw Mills,
Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge.
THE GENERAL WOOD CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method yet proposed for boarding, matched lining, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or rounding and tonguing a board although curved, the machine always follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, are connected with any trade but that of sawing and planing, and depending solely upon the profit for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.
Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.
In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.
Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 54, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON
The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water pipes, Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray or sea water
PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of covering is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If tinted with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.



H. MORRELL'S FINE PREPARED DRAWING PENCILS. Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East India Company.
The attention of artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly finished drawings.
Sold wholesale at the Manufactory, No. 146, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

ARTISTS, Architects, Engineers, and others, requiring the finest qualities of Drawing Pencils are respectfully informed that BROCKEDON'S MARS PENCIL unites in the habit of making the same to order, and have never failed in any case ultimately to give satisfaction, as they spare no pains or expense to suit the taste of each customer.
The various purposes to which Pencils are applied, together with the different kinds of the paper or card board on which they are used, occasion various complaints when Pencils are purchased without a statement of these circumstances. For instance, a free-working H B would be highly commended by one artist, whereas another who used drawing paper of rougher description, and required fine lines, would complain of the very quality which the former considered essential. These objections are obviated by an explanation of the purposes for which the Pencils are intended; and, after a trial of samples, by having them made to order.
Manufactory, 28, Great Russell-street, Bedford square, where every kind of Cedar Pencils may be obtained, also Ever-Pointed Pencils and Points for the same.

STEPHENS'S CONCENTRATED and SOLUBLE INK POWDERS, which instantly make the best Liquid Ink by the addition of water only. The genial fitness of these articles may be estimated when it is considered that one part of the Powders will make nearly twenty times its weight in bulk of Liquid Ink
N.B.—All the varieties of the Proprietor's well-known Inks or Writing Fluids can thus be obtained in powder. Samples of the smaller packets can be sent by post to those who may wish to make a trial of them
Prepared and sold by HENRY STEPHENS, Inventor and Proprietor of the Writing Fluids, 31, Stamford-street, Blackfriars-road, London; and by Booksellers and Stationers, throughout the Kingdom.

PLATE GLASS Shop Front and Shop Fittings WANTED, either new or second hand. Persons having such to dispose of may address, giving lowest cash price, and every particular, to E. G., 34, Cockspur-street, Charing Cross.

A HANDSOME SHOP FRONT, with Plate Glass in the two Sashes, to be Sold, together with all the excellent Grocers' Shop Fixtures, with a Nest of very superior Tea Bins, all in good condition. To be seen at 61, Lowndes-terrace, Knightsbridge.

DUTY OFF ORNAMENTAL WINDOW GLASS.
CHARLESLONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 3d. per foot run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square. Terms, Cash only.

FOREIGN WINDOW GLASS, of good sound quality, adapted for Churches, Schools, and other buildings, in cases of 200 feet, 25 feet each, being the first pot-pressed. Sample pieces of 1 foot by 1 foot may be had on receipt of post-office order, or by application to E. S. MANICO and Co. 7, Trinity Square, Tower Hill, London.

EMBOSSED GLASS.
EDWARDS and PELL, 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms. Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee it being properly executed.

BUILDERS, PAINTERS, GLAZIERS, and Others are respectfully informed that J. WINCH, many years foreman to Mr. R. COGAN, is able to supply them with BRITISH and FOREIGN CROWN, SHEET, and PLATE Glass. Colours—Varnishes—Brushes—Pipe and Sheet Lead Pumps—Closets—Basons—and all other materials used in the Trade, on the best wholesale terms. Prices will be forwarded on application at the Warehouse, 15, High-row, Knightsbridge. ORNAMENTAL GLASS always in stock.

SOHO PLATE GLASS WAREHOUSE, 25, SOHO SQUARE. A GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Rolled, Cast, and Sheet Glass, either cut to sizes from two and a-half cases, Boxed Glass to Load in London. Having a large stock on consignment as his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE, depot for the sale of the PLATE GLASS manufactured by the St Gobain and St Quirin and Cirey Companies, Paris. The attention of Private Families, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance, and polish, and possesses almost faultless quality This Plate Glass can be purchased and delivered at Alphabetical for sale plus, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT Agent 26, Soho square

THE UNION PLATE GLASS Company beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which, stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.
N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three quarters inch thick.
H. CHRISTIE, Agent, 99, Hatton-garden, Holborn.

TO PLUMBERS, PAINTERS, AND GLAZIERS.
CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ..... £ 2 5 0 | Squares of Small Crown Glass, at 3d. 3½d. 3d. and 2½d. per foot. |
|---|---|---|
| | Fourths ..... 3 10 0 | |
| | C.C. ..... 2 8 0 | |
| | C.C.C. ..... 2 0 0 | |

SHEET GLASS of all descriptions equally low.—White Lead Oil, Tints, Colours, and Varnishes, at WILLIAM FREDERICK PENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 96, West Smithfield, London.

CHAS. WM. WATERLOW,
MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed deals securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.




SHOP FRONTS, SASHES AND FRAMES, DOORS, &c.
MADE FOR THE TRADE
JOHNSON and PASK,
1, Anwell street, Clerkenwell, near the New River Head.
Beg to inform the Trade and the Public generally, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners work, on the most reasonable terms. All Orders executed with punctuality and dispatch, and every description of work made on the very best manner. Prepared, painted, and carefully packed for the country. A full list of prices forwarded by return of post, to any part of the country

TO ARCHITECTS, BUILDERS, AND CONTRACTORS
THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond-street Works, late Sir F. Chantrey's Foundry, 12 doors in place, Pimlico

CARVING BY MACHINERY.
JORDAN'S PATENT.
TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decorations, to the peculiarities and the perfection of the principle of the efficiency which are to be found in the fact of its being employed at the Government Workshops for the interior decorations of the New Palace at Westminster, and in the offices of the Public Press adapted to the Exhibitions of the Society of Arts.
*The Athenæum* of March 6th, in speaking of the Specimens of Carvings produced from Jordan's Patent, says, "These were really astonishing. A bunch of Hops and brace of Partridges were worthy to hang by the side of Grinling Gibbon's Works. A portion of the Gothern Phœnician tracery were also very successful. The Machinery employed accomplishes precisely the task assigned to the Sculptor, casting all dross away, all the superfluities, and prepares the object for the final touches of the Artist. No matter how high the relief or how low or intricate the undercutting, no difficulties affect the Machinery."
The Proprietors find it to be due to themselves and to the Public to state that they have at present only one Establishment at which is their Machine Carving Works at Belvedere Road, Lambeth, formerly Coade and Sealy's Terra Cotta Works, where specimens may be seen and estimates for large works obtained.

TO BUILDERS, PAINTERS, AND OTHERS.
MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only, 67, WATERLOO-BRIDGE-ROAD.

ROYAL ACADEMY of ARTS, Trafalgar-square.—The Exhibition of the Royal Academy is now open. Admission (from Eight o'clock till Seven), One Shilling; Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Dep. Sec.

THE ELECTRIC TELEGRAPH COMPANY has just deposited at the ROYAL POLYTECHNIC INSTITUTION a complete series of APPARATUS, illustrating the Principles of the ELECTRIC TELEGRAPH as now worked on the leading lines of Railway. Also, superb Specimens of their ELECTRIC CLOCKS, the NEEDLE TELEGRAPH, PRINTING and WRITING APPARATUS, ALARUM, &c. This highly-interesting addition to the Exhibition and Lectures is afforded to the Visitors for a limited time. The EVENING MUSICAL, under the Management of Mr. Willis, commences at Seven o'clock.—Admission, 1s.; Schools, Half-price.

PAPER-HANGINGS to the TRADE.—French Papers superseded.—Messrs. HENNELL and CROSBY, Paper Stainers, Queen-street, Southwark-bridge-road, beg to inform the Trade that they can enable them to sell Satin Papers, Elegant Designs, at 2s. 6d. per French piece, Retail.—Cheapest house for Panel Decorations and Clouded Papers.

FRENCH PAPER HANGINGS.—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS and CO.'S, 28, Princes Street, Leicester Square, established 1833, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

PATENT WINDOW BLINDS, far more beautiful than Wire or Zinc, at about one-fifth of the cost: Parlour Window Blinds in Mahogany Frames, elegantly ornamented, 5s. each; Bed-room do. 4s. each; Long Roller Blinds, very elaborately ornamented, 8s. to 7s. each. At the Depôt of Patentee Inventions, 147, Strand, near Wellington-street, Waterloo-bridge.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS
Manufactory, 96, Rosoman-street, and 141, Chancery-lane.
THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction on account of their connected both for security and durability, the sashes being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent raising gear now used for iron shutters will have it removed, and have it made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

JENNINGS'S PATENT WATER CLOSET.
JENNINGS'S PATENT PIPE CONNECTION.
JENNINGS'S REGISTERED SHUTTER FASTENER.
ARCHITECTS, Builders, and all Persons connected with the Building Trade, are informed by GEORGE JENNINGS, of 29, Great Charlotte Street, Blackfriars Road, that he has obtained HER MAJESTY'S ROYAL LETTERS PATENT for a WATER CLOSET of simple construction, and every way different to any closet now manufactured. The many hooks by the end of June can be made to supply the Trade with a closet superior to anything ever yet produced, and at prices LESS than the present Pan Closet.
GEORGE JENNINGS begs to inform Engineers, Plumbers, Gasfitters, and others, that he has Patented an entirely New Connection for readily attaching Cocks, Lead, Iron, Copper, or any description of Pipes, &c., to Steam Boilers, Wood, Iron, or Slate Cisterns, Safes, &c., superseding the old Screw Joints, Pieces, and the present tedious mode of Lapping and Screwing one Pipe into another.
JENNINGS'S SHUTTER SHOE and FASTENER is now so generally used, that it is only necessary to say it supersedes the Shutter Bar, and is sold at 1s. 6d. each. References may be had to upwards of 800 Fronts, by applying to the Inventor, 29, Great Charlotte Street, Blackfriars Road

INJUNCTION.
BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.
THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.
Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge competition with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.
B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable
BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.
Shop Fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stallboard Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.
Metal Drawing and Stamping for the Trade.
Office at No. 46, Bombay-street, London-road, Lambeth, Works, at Deptford, Kent.
Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, upon application obtained at the London Agency, Messrs. GREIVE and GOELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.
N. B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.
THE AINSLIE BRICK and TILE MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machine, which can be seen at work at Alperton, and at the Company's Office, 193A, Piccadilly, from Ten A.M., to FIVE P.M. Mr. ROBLEY SERIVENER, who has been appointed manager in the room of Mr. JOHN NEILSON, will explain the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly.—March 1, 1847.
These Machines may also be seen at Mr. Slight's, Leith-walk, Edinburgh; Mr. Lawrence Hill, 135, Buchanan-street, Glasgow; Mr Robert Charles, Millhill, Leeds; Messrs. Finch and Cope, Penkeridge, Staffordshire; and Messrs. Drummond and Son, Dublin.

The Builder.

No. CCXXV.

SATURDAY, MAY 29, 1847.

ARCHITECTURE may be well described as the monumental representation of history and civilization,—a reflect of the sentiments, manners, and religious belief, of the people practising it. The artistic feeling of antiquity, the religious spirit of the middle ages, and the "useful knowledge" of the present day, are exhibited in the structures of these various times as fully and indisputably as in written documents.

Amongst us, even at this moment, the Useful and the Beautiful are considered as two entirely distinct and separate matters. A small minority know better. They know full well that the greater includes the less; that what is beautiful *must* be useful: but in the minds of the majority, these properties have no connection, and are regarded as widely differing in importance. To the useful they will attend: with the beautiful they have no concern. The influence of the latter in the production of happiness is not yet fully seen. One of these days we shall all be better informed. Efforts are being made to effect a coalition between fine art and manufactures,—to increase the value of the useful, by adding the beautiful,—and can scarcely fail to succeed; but the progress is slow, and the results at present comparatively small.

When we compare the products of our industrial arts with those of the ancients, the difference which the comparison makes evident is surprising. Ancient industry identifies itself so completely with art, that it would be difficult to separate them. The most beautiful vases and the finest amphoræ are contemporaneous with the most admirable statues; and the best works of the secondary art were produced at the same period, during which the genius of Phidias and Praxiteles created the sublime works which will ever be our models. Modern industry, on the contrary, appears to stand aloof from art, which can best sustain and guide it: endeavouring to obtain an injurious freedom, it forgets the immutable laws of the beautiful. Until very lately it was not uncommon to see all styles of ornaments mixed together, without regard to fitness or chronology, and contrary to the laws of unity.

"The incontestable superiority of the ancients has its source in the principles which governed their works. The Greeks observed religiously the laws of the beautiful. And thus it followed, that a general character of fitness and elegance distinguishes the productions of the antique period."*

The production of ugliness,—incongruity, inharmoniousness,—is little short of a crime against society; the neglect of an opportunity to set before the general eye that which is harmonious, fitting, beautiful, is only less so in degree. We would have taste displayed in every implement. A public building which is devoid of beauty, however completely it may serve the one object for which it was erected, does but half fulfil its purpose.

We have been led to these remarks by the feeling generally entertained and manifested in England; but more immediately by a visit to the baths and washouses in Goulston-square, Whitechapel, where a large sum of money (many thousands) has been spent without the slightest attempt at architectural effect. The building is apparently a sound and honest piece of construction, fitted up scientifically, with every convenience for washing and for bathing, except a plunging bath; but its appearance, both externally and internally, is not simply plain and unpretending, but downright ugly. Should any foreign architects go there, with their minds full of remembrances of the baths of the antique time (the *rendezvous* of men of letters, the galleries for sculpture and painting, the nurseries of taste), the fall will be a sudden one—the revulsion of feeling most complete; for certainly nothing more directly the reverse than this, the model establishment, can easily be conceived.

We do not make this a charge against the committee, but adduce it as an illustration, much to be regretted, of the feeling to which we have alluded.

To the value of the labours of this committee we have, on more than one occasion, borne honourable testimony; the importance of the movement they have aided cannot be overrated, and we would not willingly put ourselves in opposition to them. We had occasion in October last, when we described very fully the building as it then stood, to complain of the length of time that had been spent in obtaining it.* This was in some measure explained and palliated by an accomplished member of their body,† and we unwillingly appear again in the light of an objector. Let us turn now therefore to that of which we can speak approvingly,—the general arrangement, the supply of water, the drying closet, and the regard that has been paid to the necessity for ventilation; of the efficiency of the provision in this latter respect, we shall have to speak when it has been tried.

For a description of the building we must refer our readers to the former article, adding here some few particulars, of which we have now fuller information than we had then. The whole area covered is 130 feet long, by 81 feet wide, half of which is appropriated to the baths, and half to the washing department—these are kept perfectly distinct, and are entered one at the front, the other at the back of the building. There are 96 baths (our former account said more), and the same number of washing places, each enclosed by slate partitions, so that the washers are unseen by each other, and supplied with a boiling-tub, a washing-tub, and a drying-horse. The latter is pulled down, by the hand, out of a flat enclosure or closet suspended over-head and kept heated by hot air; and when filled is pushed back into its receptacle, where its contents are speedily dried. To heat the irons for ironing, gas is employed.

Each bath is surrounded by slate partitions of a sufficient height, and covered in at the top with galvanized gauze. Turning the same handle, to points marked on a plate, supplies hot water, or cold water, or empties the bath, by means of a three-way cock. The baths are sunk in the ground, and are made of cast-iron, after various trials of other materials. A step is formed in the side of the bath, for the convenience of the user. The means of warming the towels is given by a simple arrangement. To Mr. Baly (under whose superintendence the whole has been executed), regarded as architect, our praise would be modified; but considered simply as engineer, we offer it without qualification.

Of the fire-proof nature of the building (consisting wholly of brick, iron, and slate), and the enormous tank beneath, which holds 80,000 gallons, and is formed of brickwork in cement, tied together by iron rods, and lined with asphalte, we have elsewhere spoken. It only remains for us to say that the total cost, according to the engineer, will be about 12,000*l.*, and that the building will probably be ready for public inspection some time in the next month.*

We must express our earnest hope, that in any future "baths and washhouses," whether erected in our provincial towns or the metropolis, some attention will be paid to architectural character, and that in these and all other matters the *usefulness* of the *beautiful* will be remembered and acted on.

* "Transactions de la Société Libre des Beaux Arts." M. Gallimard.

* See Vol. iv., p. 470. † Vol. iv., p. 496.

## AWARDS OF OFFICIAL REFEREES.

CONSTRUCTED FOUNDATIONS.—IMPORTANT.

WITH regard to eleven fourth-rate buildings in Winchester-street, Clerkenwell, commenced by William Dennis, the district surveyor lodged an information to the effect, that the footings of the party and external walls were "on embanked foundations, and not based on solid ground or other artificial foundation, to the depth of 3 inches below the surface of the ground."

At the survey and hearing which followed, the said William Dennis contended, that the ground having been banked up with concrete to the height of 9 inches above the surface under the footings, and to the extent of 9 inches on each side, a sufficient foundation was formed; and the ground having been opened, the official referees ascertained the extent of such banking up, and the materials with which such work had been done; and the said William Dennis admitted that the ground below was made-ground to the depth of 14 feet, or thereabouts.

The award was,—"That the party-walls and external walls of the several buildings referred to in the said information are not based on solid ground, or other sufficient foundation; and that the same are in that respect contrary to the first-mentioned Metropolitan Buildings Act; and we hereby direct the said William Dennis forthwith *to take down the said party-walls and external walls;* and inasmuch as the ground upon which the buildings in question are built is made ground, we hereby further direct, that if such walls be rebuilt, a sufficient foundation of concrete be formed in trenches within the ground under the footings of such walls, or otherwise, to the satisfaction of the district surveyor."

CUTTING CHASES IN PARTY-WALLS.

With regard to a party-wall separating Nos. 43 and 44, Green-street, Grosvenor-square, in the district of St. George's, Hanover-square, the owner was adding a story to No. 43, and for this purpose had raised the front and back walls; but the said party-wall being already of sufficient height, no further raising thereof was required. He proposed, however, to cut certain chases in the wall (shewn by a plan to be five in number, and in no case nearer than 4½ inches to the centre of the wall) for the insertion of the brickwork of the jambs, and of the withes of the flue from two small chimney openings in the said additional story, but was prevented from so doing by his neighbour, the owner of the house No. 44, who required that such cutting into the said party-wall should have been signified to him by notice in writing three months previously to the commencement thereof; and threatened, that if the cutting should be begun without giving such notice, and before the expiration thereof, he would apply to the court for an injunction. The architects of the owner of 43 accordingly referred the matter to the official referees, and requested them to determine whether, if the said chases were cut in all respects conformably with the rule headed "Recesses and chases," in schedule D, part III., any previous notice thereof was by the provision of the said Act required to be given.

The referees determined,—"That inasmuch as the proposed operation is a work incident to the connection of the party-wall with the premises adjoining, if the consent of the adjoining owner be not obtained, *notice of such work must be given* by the building owner to the ad-

* The lowest tender, as originally sent in, was over 20,000*l.* Material alterations must have been made.

joining owner three months before commencing the same, and that such notice should be in the form No. 14, in the schedule M, to the Metropolitan Buildings Act annexed, or to the like effect, specifying therein the kind of operation intended; but that if a survey of the wall be required, then such notice should contain an intimation that the building owner intends to have such wall surveyed pursuant to the statute, and that he has given notice to the district surveyor to survey the premises for the purpose of certifying the circumstances and condition of such wall, and whether the proposed operation may or may not be done; and if it may be done, in what manner it ought to be done. And we are of opinion that every such notice should contain such particulars as to the nature, extent, situation, and purpose of the proposed operations, as would enable the adjoining owner to consider the same with regard to the stability of the party-wall, and the security of his premises."

We are unable to discover on what grounds the referees came to this decision, which is likely to cause much unnecessary hindrance and inconvenience.

ANCIENT LIGHTS IN PARTY WALLS.

The Marylebone district surveyor having received notice from Mr. J. H. Edwards, the building owner of No. 80, Oxford-street, on the 26th day of December last, proceeded to view the wall in the line of junction between No. 80 in Oxford-street, and No. 79, in the same street, and certified to the official referees, amongst other points, that the wall was a party-wall and was ruinous, so far as the line of the back front of No. 80, and 4 feet further, and ought to be rebuilt; and if rebuilt, should be rebuilt at the joint expense of the owners of the two buildings, and beyond that distance northward requires to be amended as to the eaves of No. 79, and in two several places where *there are windows or openings therein.*

Further, that no compensation should be made by either the building owner or the adjoining owner, the one to the other, for lessening either of the said buildings by the party-wall about to be constructed, nor for any other injury, unless it could be shewn that the windows hereinbefore referred to had been in existence twenty years, or that the said projecting eaves had been of equal duration; in the first of which cases, viz., that respecting the windows, he certified that fifty-pounds was a fair equivalent for the loss thereof, the same to be paid by the building owner to the adjoining owner.

The adjoining owner appealed against this certificate on various grounds, setting forth that it could be proved that the said two window openings were ancient lights, having existed since the year 1818, and that in consequence, the northern portion of the said party-wall beyond the 4 feet further than the present line of the back front not having been condemned or condemnable, it was submitted that the work proposed to be done, so far as the same affected the northern portion of the said party-wall, ought not to be done if the performance of it interfered with the said lights. And further, that the district surveyor had not the power to award compensation for stopping up ancient lights or for directing such ancient lights to be stopped up, particularly as the portion of the party-wall containing such ancient lights was not condemned or condemnable under the said Act.

At the hearing, the district surveyor contended, in defence of his certificate, that the whole of the wall except the part containing the openings was condemned for structural defects, and the latter part on account of its having such openings, which, in his opinion, made it inefficient as a party-wall. Mr. Jas. Lockyer, on the part of the adjoining owner, contended that a sound party-wall was not condemnable solely on account of openings therein, and that such had been held to be the law under the statute 14 Geo. III., cap. 78, and that by the statute (2 and 3 Will. IV., cap. 71), for shortening the time of prescription in certain cases, the parties had acquired a right to the openings and could not be deprived of them; and further, that the deprivation of lights was not a matter contemplated by the 24th section of the Metropolitan Buildings Act; and that if it was, the amount of compensation provided in the said certificate was not adequate. On the part of the building owner, it was urged in reply, that the wall, not being condemnable for structural defects was an unimportant consideration, as the building owner had the right to rebuild a sound party-wall upon paying all expenses, and in that case a wall with lights might be rebuilt without such lights, although sound.

The referees decided, with regard to that portion of the said wall which extends from the front, so far as the line of the back front of the said house and premises No. 80 and 4 feet further, that the work specified in the said certificate of the district surveyor was proper to be done, and so far they confirmed the certificate. With regard to the two lights, they determined "that if the said Willougby Methley [the adjoining owner] be lawfully entitled to the lights in question (and having regard to the statute hereinbefore referred to for shortening the time of prescription in certain cases, we consider that he is so entitled), the district surveyor, as such surveyor, has no power to direct such openings or lights to be stopped up; but that the space before the two windows from the level of the underside of the sill of the lower of such two windows upwards, is of the nature of intermixed property, and that the said James Hurd Edwards must in building against the said wall and under such windows, construct a party arch or arches, or a floor formed of proper and sufficient incombustible materials, in accordance with the rules of the first-mentioned Act in that behalf, as a covering to any building so to be built as a separation of such intermixed property; and further, that if the said Willoughby Methley be not lawfully entitled to the lights in question, the said surveyor has no power to award compensation to the said Willoughby Methley, for the stopping up the said windows, but such windows ought to be stopped up as defects in the said wall, which it is incumbent upon the said James Hurd Edwards to amend in building against and using such wall, in the part in which such windows occur as a party-wall; and lastly, we do by this our award, authorize the pulling down and rebuilding of the first-mentioned portion of the said wall to be proceeded with by the said James Hurd Edwards, the building owner, as if the consent of the adjoining owner or owners had been obtained."

## THE THOROUGH IMPROVEMENT OF LONDON.

SIR,—The formation of new streets, the widening and improving of old ones, and the opening up of narrow courts and alleys, may be regarded as beneficial not only for the convenience of traffic, and in an architectural point of view, but also in connection with the improvement of the sanitary condition of the inhabitants. It is this latter position that I would wish to press more particularly upon the attention of that excellent body of men our "Sanitary Reformers," who, while labouring in the good cause of the improvement of our huge metropolis, have almost overlooked this absolutely necessary measure, or to say the least, have not assigned it that conspicuous place in their category which its importance deserves. I can only account for this (apathy I might almost call it) in one way, and it is this, that hitherto the formation of new lines of streets has had a bad effect, in one respect, upon our poorer neighbours, by overcrowding the localities through which they pass. That this has been and is now the case all must admit; but if the comprehensive scheme which I now advocate were properly carried out it would not again occur, as it would be a fundamental principle in every instance, to encourage the investment of money in the erection of wholesome dwellings for the labouring classes, by providing suitable sites at moderate rents as an inducement to companies and private individuals to supply the want which would be created by the destruction of such numbers of the houses of the poor. If this were made a paramount consideration, the inconvenience, if any, sustained by the masses, would be very temporary, and in exchange for their present unwholesome undrained habitations, they would obtain houses fit to live in at perhaps a less rent and in airy and well-drained situations. As to convenience of traffic, any one who has been in the habit of riding, driving, or even walking through the streets of London, must be fully aware of the necessity which exists for new lines of thoroughfare in every direction. It is the crowded state of our streets which enables the steam-boats to compete so successfully with the omnibusses, and it is becoming quite notorious that a person may walk through the city in the middle of the day in less time than he can ride, and in consequence of the immense traffic, both road and footways are continually requiring repair, which makes the matter still worse.

Perhaps it might be here objected, that we already possess what I have been contending for, viz., a "Metropolitan Improvement Commission;" but any one who has read my two former letters will at once perceive, that although there is a government commission with that name, yet they have neither the power nor the means to carry out what is really wanted. That they have not the power, is evident, from their being obliged to apply to Parliament for an "Act" to enable them to carry out every new line of street that they decide upon from time to time, and also from their stopping short whenever they come to the City, as if they dared not venture into the very part of London which requires improvement more than any other. And that they have not the means, is shewn by their over-parsimoniousness in carrying out their projects. If this were not the case, New Oxford-street would have been considerably wider than it is; Endell-street would not have been, as it is, a mere widening of an old crooked lane: and the opening from Long-acre to Coventry-street would have been more direct. A reference also to the report of the commission respecting the intended park at Battersea will pretty clearly shew this.

One of the effects which may be traced to the present inefficient means for the improvement of London, or rather the want of efficient means for that purpose, is the application to Parliament of the inhabitants of several parts of London for powers to carry out *piecemeal* that which ought to form part of one great whole, and be carried out as such.

With a government commission whose efforts are cramped by want of sufficient funds and want of sufficient power, and several other distinct bodies, none of whom are acting in concert, a satisfactory result cannot ever be expected; and (in my humble opinion) it is only by some such means as I propose, viz., one directing body, with a spice of the energy which our railway directors display—and with a well-digested and considered plan, and the power and the means to carry out such a plan in a certain period (say eight or ten years at the utmost), that we can ever hope to make our metropolis keep pace with its trade or with its extent; by its facilities for traffic, by its healthiness, or by its architectural elegance; or make it deserve its title of the "Metropolis of the World," as much by the three latter qualifications as it does at present by the two former. As to the city corporation "Improvement Committee," their whole system is so radically bad that, although many of its members are men of business habits, the only remedy I can propose is its entire abolishment, and the application of the funds at its disposal to the "general scheme" of the proposed new improvement commission, who could then act without respect to what London used to be two or three hundred years ago, merely regarding it as it at present exists; and of course all other existing bodies of the same nature would be likewise superseded or merged into the single "improvement commission." At present, the common council of the "City," a portion of whom form the "Improvement Committee" are elected annually, so that nearly a quarter of the year is lost after the elections before the committee is chosen, and get into working order; and, as they only meet once a month, just as they get into the routine of the business, round comes St. Thomas's-day again, and the members of the committee are changed, so that it is not likely they can take much interest in the thing when their power lasts so short a time. Besides, their meetings being only monthly, the business has to stand over long before it comes before them, and hence arises the delay and consequent waste of the public money and injury to the neighbourhood, which characterise all their operations. One very prominent case in point your readers will no doubt remember, viz., the widening of Fetter-lane, where one house was allowed to remain for some years after the houses on both side-

of it had been pulled down, and even now the improvement is not finished.

No one, that has not lived in the neighbourhood of some of their operations, can fully appreciate the great injury which is done to the inhabitants of the localities by their enormous delays, and the public purse also suffers very materially from the same cause, as the ground generally remains unlet till the opening, or whatever it may be, is finished, as witness Victoria-street, the site of the Fleet Prison, and vacant ground in several parts of the city, the rent of which is completely wasted.

On this ground, at least, the public have a right to demand an alteration; and that alteration, to be effectual, must strike at the roots of the weeds, or they will again spring up; for if the "Improvement Committee" is merely reformed, the greatest evil will still be left untouched,—that of several irresponsible bodies attempting to do that which can only be done properly by one directing body. Victoria-street forms a striking instance of the badness of this mode of acting. Merely because part of the new street passes through the "city," and part lies without the "city," it appears it was necessary to have two separate bodies to carry it out; and the consequence is, that it lingers as we see it, and the effect of this is, as I stated before, that the ground does not let, and the expense is increased to a prodigious extent. As regards the injury to the neighbourhood, any one living in the locality through which the street passes can fully bear me out on that point. However, to enter into the details of the proposed general scheme.

With respect to Smithfield-market, I think there is now very little doubt, that before many years that monster nuisance will be removed to a more convenient locality; and the questions will arise, what is to become of the hay and straw market? and what is to become of the site? With regard to the former, I propose that it should be removed from its present position to some other locality, to be provided for the purpose in the neighbourhood. Perhaps the site of the Fleet Prison, which has so long lain idle, might be turned to account for this purpose. I think if it were somewhat enlarged, it might be easily adapted for this end, and as it lies between the two great thoroughfares of Holborn and Fleet-street, and would be entered from a wide street with very little traffic (Farringdon-street), I do not think it would be objectionable, unless the proposed new street from Cheapside to Long Acre would require the situation. I should here remark, that this is merely thrown out as a suggestion, and if not practicable, I think another site in the neighbourhood of Victoria-street (late new Farringdon-street), Clerkenwell, might be provided. Then comes the second question, what is to become of the site of the market? I think that this is so fitted, for many reasons (which I will presently shew), for a railway station, that it ought not to be applied to any other purpose.

In the first place (when the market is removed), it will be the only vacant space of any considerable extent in the middle of London suited for that purpose. It is also convenient for the traffic, which would, of course, be brought by the railways, as it does not lie in any of the principal thoroughfares, and is convenient for them all, having streets branching off in every direction; and the Surrey side of the river could easily be gained by vehicles through Victoria-street, Farringdon-street, and Bridge-street, over Blackfriars-bridge. It could also be easily extended (as regards expense, which is now the only criterion on such matters), and the enlargement for the station would abolish the horrible slaughter-houses and yards which abound in the neighbourhood. The formation of a central terminus here would, also, tend to compensate the inhabitants of the vicinity for the loss of business consequent upon the removal of the market, and upon which ground they would otherwise strenuously oppose such a step. To return to the "commission" again, of course it would be requisite for them to have sufficient control over the gas, water, and electric telegraph companies, and the Sewer and Paving Commissioners, &c., to make all their operations harmonize, so as to form one beautiful whole. The commission, too, should include the formation of parks in their scheme as a very essential portion of it, for I consider what has been done under this head as yet, as merely a small instalment of what is due to the public of this large city. Hitherto (with the exception of Victoria-park at Hackney, and the park now in course of formation at Battersea), the higher classes have had the greatest share of these necessaries in their neighbourhood, the "West-end;" thus there are St. James's, the Green-park, Hyde-park, Kensington-gardens, and the Regent's-park, all in that locality, while, as I said before, there are only two in course of formation in other parts of London. Greenwich, of course, cannot be called London at present. I think a great deal of good might be done by obtaining narrow slips of ground by the side of the river and planting and laying them out, somewhat in the same manner as the Temple-gardens (which, by the bye, I could wish were always open to the public). There are many vacant plots of land, particularly in the neighbourhood of Rotherhithe, which, if properly embanked and laid out, might be turned to very good account in this way.

While on the subject of parks, I would observe that, I believe it is intended to impose a toll on the bridge about to be built from Battersea-park to Chelsea. Surely this might be dispensed with; and as it is to be built with the public money, the public ought not to be obliged to pay for it again, particularly as it is to be formed for the express purpose of affording access to a public park, and the use of which will be virtually denied to many of the poorer inhabitants of that vicinity, if a toll is to be levied on the bridge.

In the laying out of new streets, care should be taken to provide ample space for cab and omnibus stands, the want of which in some parts of London is very great. Some of the principal of the new thoroughfares, which of course it would be necessary to make of considerable width, might be divided in the middle by a double row of posts, about eight or ten feet apart, with foot-paving between them, so as to afford facilities for crossing. Here and there it would be necessary to leave openings for the carriages to cross from one side of the road to the other; and I think it would be found to work well if one division of the street were appropriated exclusively to the carriages going in one direction, and *vice versâ*, so that there would be two distinct currents, neither of which would interfere with each other.

Another suggestion that I have to make is, that the footways of some of the chief of the new thoroughfares should be roofed in with a covering of glass, supported either by light metal columns, which would also serve as lamp-posts, or by metal brackets projecting from the fronts of the houses. The great reduction in the price of glass would enable this plan to be carried out at a comparatively small cost, and it would not present the objection which there is against the Regent's Quadrant, of darkening the ground and basement floors of the houses.

A Londoner.

## THE CEMETERIES' CLAUSES BILL.

The bill which has been brought into the House by Sir W. Somerville and Sir George Grey, for consolidating in one Act certain provisions usually contained in Acts authorizing the making of cemeteries, is not sufficiently stringent in respect of the mode of burial.

Section 50 provides that, "No body shall be buried in any vault under any of the chapels of the cemetery, or within (a certain number of) feet of the outer wall of any such chapel." And 51, "No body shall be buried in any grave, not being a vault or catacomb, at a less depth than thirty inches from the ordinary surface of the ground to the upper side of the coffin; and if the sexton or other person having charge of the preparation of the grave allow any body to be buried in such grave, or if the undertakers allow any body to be buried in any grave at a less depth than thirty inches from the ordinary surface of the ground to the upper side of the coffin, every such sexton or other person and the undertakers shall for every such offence be liable to a penalty not exceeding five pounds."

A clause should be inserted to prevent the interment of more than a certain number of bodies in a given area, or presently we shall find the same atrocities perpetrated that have disgraced some of our metropolitan churchyards.

Section 58 provides a penalty on every person who shall wilfully destroy or injure any building belonging to the cemetery, or injure or deface any monument, tablet, or gravestone within it.

Relative to the prevention of interment in towns, Lord Morpeth said in the House the other night, that he entertained no hope of being able to pass any bill to this effect in the present session, but a very confident one of doing so in the *next*. There was loud laughter in the House, and well there might be!

## THE ARTS OF THE MIDDLE AGES.*

The treatise by Theophilus, priest and monk, *De Diversis Artibus, Seu Diversarum Artium Schedula;* is well known to those learned in ancient art. Didron, the Abbé Texier, and others, ascribe it to the twelfth or thirteenth century, while Lessing and Emeric David place it in the tenth. The present translator, Mr. Hendrie, places it between the two, and gives some sufficiently good arguments in support of his opinion. It belongs, unquestionably, as Guichard remarks, to a period of transition,—"*de renouvellement et de renaissance;*" but who this artist-monk was, and at what precise time he lived, cannot be determined with certainty.

In the early part of the eleventh century, a new impulse was given to the arts; churches were raised and decorated with sumptuous shrines and costly gates in metal. "In England, France, and Italy, a great number of manuscripts, ornamented with miniatures, and otherwise illuminated, were executed. The ornaments for the Roman altars, desks of gilt bronze, and objects which ornamented the choirs, much favoured the arts of casting metals modelling, enamelling, niello, damascene-work, and often produced works of surpassing execution." And it is to this period that, according to our author, the work of Theophilus upon "The Divers Arts" is to be ascribed.

It consists of three books, each divided into a number of short chapters in the shape of recipes, and contains a large amount of curious information on colours, gilding, works in glass and metal, casting, &c.

Amongst the chapters are many relating to stained glass, concerning which the translator speaks in his notes as follows:—

"There are many processes here described which will repay the trouble of perusal to the most scientific of our artists; those, however, are not of the class which would turn from any inquiry upon the subject during the present state of conflicting opinions, when the very principles of the art which formerly led to its perfection are questioned or neglected.

The principles laid down by Theophilus must be studied by the glass-painter, and again placed as the foundation of his labours; modern chemistry has doubtless supplied him with means, in many instances far beyond what his predecessors have enjoyed, in the pursuit of this art; but there are yet conditions to be fulfilled which principally depend upon himself. The glass-painter should well weigh the propriety of striving to rival the grey demi-tints of the oil-painters, or aiming at the production of effects to which the nature of his art is in opposition.†

It was from careful consideration and long experience that the art of glass-painting became digested into the excellence of the 15th and 16th centuries; impotency, assuredly, had no share in principles followed. That the apparent simplicity of the methods of the Byzantine and Gothic glass-painters, the powerful and harmonious effects resulting from a skilful arrangement and breadth of colour, to which Theophilus directs the attention of the artist, although allied to meagre invention, poor drawing, and incomplete execution, carried them triumphantly through their ordeal, the remains of the works executed under the influence of this school attest. When upon this foundation were superadded the pure and vigorous outline, and simple, elegant conception of the early Italian artists, the art appears to have reached a climax which it must have

* "An Essay upon various Arts." By Theophilus. Forming an Encyclopædia of Christian Art of the 11th century. Translated, with Notes, by Robert Hendrie. London, 1847. John Murray.

† In offering these remarks, the writer has only in view the grand or church decoration; to the small subjects, calculated for our habitations, they will not universally apply, as these are viewed from a nearer point.

required an influence as powerful as perverse to depress.

The unfortunate rivalry which existed between the glass and the oil-painters appears to have had no small share in this; anxious to excel, and emulative of accomplishing what had previously been apparently unattempted, the glass-painters wandered from the legitimate conditions of their art in striving to rival the delicacy and gradations of the air tints, which they so much admired in the productions of their brother artists, totally forgetting that the means by which their works were rendered visible, a transmitted light, demanded a treatment so widely different. The experience of the past was neglected, and the art gradually sank, only to be revived by a return to the practice which elevated it."

Mr. Hendrie has performed his task with considerable ability. The original Latin is given on one side (freed from the obscurity thrown over it by the character and contractions of the MS.), and a translation on the other. In the notes, which are very voluminous, he shews much learning, research, and judgment.

We will conclude our notice with a piece of wisdom amiably expressed by the old monk, in his preface to the second book. "In the preceding book, dearest brother, through a disposition of sincere affection, I have not hesitated to convey to your virtuous disposition how much honour and perfection there is in avoiding indolence, and in contemning ignorance and sloth; and how sweet and agreeable it is to indulge in the exercise of divèrs usefulness, after the word of a certain author, who says:—'To know any thing is praiseworthy; it is a fault to be unwilling to learn.'

Nor let any one be slow to understand him, concerning whom Solomon has said, 'He that increaseth knowledge increaseth labour,' because whoever carefully meditates may mark what perfection of mind and body may result from it."

## ST. MARY, SHENFIELD, ESSEX.

The village of Shenfield lies one mile north-east of Brentwood. The church stands on the left-hand side, at a short distance from the road to Chelmsford. It consists of western tower, with shingle spire, nave, and chancel, north aisle and chapel* (under a continuous roof), and a south porch.

*Exterior.*—At the west end is a three-light window, with foliations and dripstone under a slightly curved arch, the angles of the wall being supported by buttresses of two stages, placed diagonally. This window is in the wall of an erection at the west end of the nave, built apparently to cover in the frame-work which supports the tower and bells. The roof is three or four feet higher than that of the nave, and is "hipped" with the tower on the point, so that it is not over the extreme west end. The tower is of wood, and the spire, of shingle, and both present a modern appearance, the former from its square lights, the latter from its extreme slenderness. On the north side is a vestry.

The nave has on the south side two plain square windows, one large, and the other very small, both on the east side of the porch. The south porch is perhaps the best feature on this side, though it is certainly poor enough. The lower part is of brick, on which rests the frame-work that supports the roof. This frame-work at the sides is quite plain. The porch is entered by a plain pointed doorway. The roof has but one principal, which consists of tie-beam and king post, with four struts, two supporting the ridge piece, and two the rafter. The south doorway is very late in style; it is pointed, with dripstone, the terminations of which are very rude. The door is studded with large nails. The chancel has on the south side two square windows, similar to the larger one on this side of the nave; here is a plain four-centred doorway. The east window is simply pointed with mullions, running straight up into the head. At the south-east corner of the chancel is a buttress of two slopes, placed diagonally.

The north aisle has on the north side a pointed doorway under a square dripstone, returned: the whole set in a very shallow projection, which does not reach the eaves, but terminates in an embattled parapet. On the east side of this doorway is a three-light square-headed window, under dripstone. The mullions run straight up into the head. The chapel has a similar window on the same side, and only separated from the other by a buttress. This side has buttresses (set diagonally) at the north-east corner of the chapel, and at the north-west angle of the aisle: one between the doorway and the next window, and another between the two windows. These are all quite plain, of two stages, reaching nearly up to the eaves.

The east window of the north chapel is of three lights under square head, without foliations, and dripstone returned. The chancel projects some few feet further east than the chapel. The roof of the nave is of lead; the remainder of the church is tiled. The roof of the chancel is not quite so high as that of the nave, but the wall is continuous. Three or four squares of marble, with inscriptions, decorate the walls externally.

*Interior.*—Of the interior, it may be truly said "The glory is departed." It is filled with pews up to the very communion table. The font, which is small, late, and plain, is partly cut away, and let into a nook in one of the pews. The arches that separated the nave and chancel from the north aisle and chapel are no more. There is a division of something (perhaps lath and plaster) which rests horizontally on half of the original piers; and the half pillars on the north and south sides, which have been thus left uncovered, have been ornamented with a large ball. These piers, apparently of *wood*, are in the perpendicular style, and consist of four half-pillars with a cavetto connecting each, and good octagonal capitals and bases. Many of the bases have been cut away, the only palpable reason being, that before, there could not have been room for the persons who sat in the corners of the pews (enclosing the piers), to arrange their legs comfortably. On the south wall of the chancel is part of the wall-plate of an early roof: it is about five feet long, and cut with the tooth moulding. The church is ceiled and white-washed. Of the old roof of the chancel one tie-beam is left; it is moulded, and embattled: and one principal of the nave roof remains; it consists of a horizontal tie-beam, with king post and four struts. Against the east wall, on the south side of the communion table, stands a stone credence table (?) about four feet high. It is half an octagon, with moulded capital and base: the former has a shallow square leaf cut on each face of the capital. At the west end is a large gallery. The frame-work, which supports the tower and bells, is well worthy of observation; it is intricate, and the beams are very thick.

On the left-hand side of the communion table is a recumbent figure of a lady, with a child in her arms, cut out of marble; the inscription is hidden; the date is stated to be 1754. There are no other monuments of interest.

### HISTORICAL NOTICE.

In this parish there are two manors, Shenfield and Fitzwalters.

*Shenfield.*—In 1086 it was held by Eustace, Earl of Boulogne. In 1298 by Humphrey de Bohun, Earl of Hereford and Èssex, who died in this year. Another Humphrey de Bohun held it, who died in 1361. His nephew, Humphrey, held it in 1372. By the marriage of the daughter of this last Humphrey it was brought to her husband, Thomas Woodstock (sixth son of Edward III.), who held it at the time of his death in 1397. His daughter Anne married three times; to Thomas and Edmund, Lords Stafford, and Sir William Bourchier. This manor was held by Edmund, who died in 1403, and by Sir William Bourchier, who died in 1408. Her son, Humphrey Stafford, Duke of Buckingham, succeeded: he was killed at Northampton in 1460. This estate was seized by Edward IV., who settled it on his queen, Elizabeth. She presented to the rectory (which was always appended to this manor) from 1466 to 1495. It remained in the crown till either Henry VIII., Edward VII., or Mary, granted it away. It was in private hands for some time, as appears by the following presentations to the rectory:—Humphrey Tyrrell presented in 1545; Francis Rylie in 1559; and William Walton in 1562. But, before 1559, both manor and advowson had been granted to the Lucas family; for they were held by John Lucas, who died in 1556; Thomas, his son, knighted, died in 1611; John, his son, succeeded. He was followed by Charles, who was created Baron Shenfield. John's daughter and heiress, Mary, brought it by marriage to the Earl of Kent. She was created Baroness of Crudwell, in Wiltshire, by Charles II. Their son Henry succeeded. He was created Earl Harold and Viscount Goodrich by Queen Anne. His son Antony had the title of Baron Lucas of Andwell conferred upon him. After him it passed to Philip York, son of Lord Hardwick.

*Fitzwalters.*—This manor derived its name from its possessors, the family of Fitzwalter. It is situated about a mile and a half from the church. In 1301, Robert, Lord Fitzwalter, had license to inclose his wood at Shenfield within the forest of Essex, to make a park—supposed to be this estate. Circa 1363, Joan, wife of Robert Fitz Walter, held this manor for the term of her life, of the king *in capite*, by the service of a pair of gilt spurs at the coronation. 1386: Walter Fitz Walter died. He held this manor of the king *in capite*, as parcel of the barony of Fitz Walter. 1435: Elena, wife of Robert Knyvrett, died. She held this manor of the king *in capite*, by the service of the twentieth part of a knight's fee. 1450: John Herson died, having held it in the same manner. We know nothing of it till the middle of the seventeenth century, when John Morecroft possessed it. And then there is a blank till 1718, when it belonged to Sir Thomas Ambrose, a brewer, of London, succeeded by his son Thomas. His son, also named Thomas, followed; he was made sheriff of Essex in 1735.

John Basset had license to inclose his wood in this parish in Edward II.'s reign.

AMATEUR.

* I have called these north aisle and chapel: probably this is [illegible]

## FREDERIC VON GAERTNER, ARCHITECT.

GAERTNER, the well-known German architect, director of the Academy of Fine Arts at Munich, who died in that city on the 23rd of April last, was born at Coblentz in 1792, and was, consequently, 55 years old. Many important buildings in Munich were executed by him,—namely, the Basilica of St. Louis, the Triumphal Arch, the Palace of the University, Temple of Victory, and the Catholic seminary. The works on which he was engaged at the time of his death are the Temple of Freedom, near Keltheim, the Pompeian house at Aschaffenbourg, the palace of Wittelsbach, and the arcades at Kissengen. He published some erudite researches upon the arts of design among the ancients, especially on their moral paintings, and a course on architecture. He enjoyed general esteem, and had the especial friendship of the King of Bavaria.

MR. WARNER'S LONG RANGE.—Notwithstanding the entire failure of Mr. Warner to make good his statements in respect of the asserted "long range," as clearly shewn by the parliamentary returns recently moved for by Sir Howard Douglas, Lord Ingestre again threatens a renewed inquiry into its merits, with the view of proving its value. The "long range" turns out to be a balloon, whence shells are dropped on the enemy, unless, indeed, the wind should change, when they might return to their owners without leave, and damage the wrong quarters. The result appears to bear out fully all that Sir Howard Douglas, as chief of the commissioners appointed to inquire into the invention, said long ago, and will, we fear, have the bad effect of preventing the inventors of really useful matters from receiving that attention from Government which they deserve.

ALTERATIONS IN MEASURES AND MONEY.—The recent steps in favour of a change in our complicated system of money lead us to direct attention to an able volume, published in 1834, by Colonel, now General, Pasley, which well deserves attentive consideration.* In the measuring and reducing of artificers' work, the writer shews how much trouble would be saved by an alteration which would be but a slight deviation from our present national standards.

* [illegible] plifying and Improving the Measures, Weights, and Money used in this Country." Egerton's Military Library, Whitehall.

## FAILURE OF A BRIDGE ON THE CHESTER AND HOLYHEAD RAILWAY.

An extraordinary sensation, to use a hackneied phrase, has been caused by the failure of the new iron bridge which crosses the river Dee, at the end of the Chester race-course, nearer the city than the well-known one-arch stone bridge built by Harrison, and the sacrifice of many lives. It demands a searching and serious inquiry. The bridge in question is a flat-girder bridge of iron, divided into three spans by two massive stone piers, at equal distances in the stream; and each span is formed of three lengths of cast-iron beams or girders, joined together by bolts, with a semi-circular iron cap over each joint, and the beams being further trussed on the sides by tension or suspension rods, consisting of a number of parallel wrought iron plates. The beams or girders are, in the rib, of two-inch metal; in the flange, 2½ inches. Each beam is about thirty feet in length, and weighs probably thirty tons. Like the Menai suspension bridge, this one has, or rather had, two roadways, the one used for the up trains, and the other for the down trains; and each roadway was carried over the river on two parallel lengths of the beams we have been describing. According to our informant, the roadway and rails used for the trains from Ruabon, &c., to Chester is still entire and uninjured; that used for trains from Chester to Ruabon, is uninjured for two-thirds of its length (viz., the two spans nearest Chester), and for the remaining third, only one of the two parallel beams supporting that roadway (viz., the outside one next the Roodee) has given way, the other remaining apparently uninjured. The length of beam between the abutment and the next pier (95 feet span) has three joints in it, and each joint is secured in various ways, viz., by bolts, legs underneath it, with clips, &c.

The entire length of the bridge is 300 feet; the length of the fallen compartment is 100 feet, its width, 10 feet; and the height above the river at high water is 22 feet.

Although only one girder broke, the weight of the carriages bore down the rails and the horizontal beams, which with the girder, now broken into several pieces, fell into the river. It also tore with it a portion of the stone-work in which it was fixed on the Welsh side of the river.

The bridge and river presented a singular spectacle after the accident. The whole of the easterly roadway between the south abutment and the next pier had fallen, that portion of the beam next the pier resting its upper part against the pier, the lower part in the river; and the upper course of masonry of both pier and abutment had been carried down by the beam in its fall. The three carriages and the van were lying, much smashed, in the river; and the south bank was covered with fragments of the roadway.

We find the following particulars in the *Manchester Guardian*:—"Upon examining the beam as it lay in the river, we could perceive two fractures in it,—one of which, in the middle length, had to all appearance been the result of the fall, and not anterior to it. The other, doubtless the immediate cause of this frightful accident, was from 17 to 20 feet distant from the south pier of the bridge; and, as the engine-driver said he felt the giving way beneath him, allowing for the length of the tender, there can be no doubt that this was the fracture which caused the calamity. The fracture was directly across the beam, from its upper to its lower flange; and connected with this was another fracture, running in a line nearly parallel to the bottom flange for about four feet, and then curving across to the upper flange for a length of four feet more. This, however, might have been caused by the fall, the flat side of the beam striking against the rock or other hard substance. The trusses or tension rods, so far as we could see them, appeared to be entire. Until this massive girder is got out of the water, which in part conceals it, it is impossible to say what may have been the cause of its fracture. So far as it could be seen, it did not appear to be from any flaw or defect in the metal. In one account we have seen, the accident, it is suggested, may have arisen either from the piers not being sufficiently consolidated, or the stone defective, or the iron bearings becoming warped by some heavy trains of iron from Ruabon passing over them, or from an unstable foundation. So far as we could judge, and in the opinion of those more competent to judge than ourselves, none of these appeared likely to be the real cause of the accident. The piers are quite firm and still standing, and just so much of the masonry has gone as the beam would be certain to drag downwards with it; and as to heavy trains of iron from Ruabon, we learn that there had been nothing of the kind—no waggon bringing more than four or five tons of iron. Indeed, the bridge was most severely tested before it was opened to the public, by trains of ballast waggons passing over it,—probably 30 loaded waggons of seven tons each, or 210 tons altogether over the whole structure. There is not the slightest appearance of the foundations having 'settled' in such a manner as to endanger the structure, and it being only one beam that has given way—just one-sixth part of the girders of the bridge—the inquiry seems considerably narrowed. It is said that there was considerable vibration experienced in passing over the bridge, and it has been suggested that, as the beams or girders, &c., are of cast-iron, and the trusses or tension rods and the clips at the joints of wrought-iron, there may have been unequal expansion of the two forms of metal during the late two or three days of hot weather, tending to throw all the resistance upon the cast-iron beams. But a more probable cause seems to be that the trusses have exerted a straining force upon the beam; and we believe there is at least one instance in which these trusses or tension rods have been pronounced injurious rather than beneficial to a flat-beam or girder bridge. We trust the inquiry into the cause by more than one scientific man will throw some light upon this subject, as bridges on the same principle now exist on various railways—one, we believe, the first of the kind, on the Newcastle and Darlington line, one of the oldest in the kingdom, and we know that they are intended to be extensively used on other lines now in progress of construction."

"The Dee Railway bridge was erected by Mr. Betts, who contracted for its construction; but we have not heard who supplied the iron castings, &c. It appears that the bridge was opened on the 1st of November, 1846, as a single line; and about two months ago one of the girders on the same side of the bridge, but in the centre span, was observed to have a crack in it. The westerly roadway being finished by that time, that line of rails was alone used for a time, and the cracked beam was replaced by a new one." It is estimated that the loss sustained by the Shrewsbury and Chester Railway Company, by the damage done to the carriages and tender, will be about 2,000*l.*, and that sustained by the Chester and Holyhead Railway Company, by the damage done to the structure, will be 2,000*l.* at least.

On Tuesday, the inquest on the sufferers was opened, but no evidence was taken. The coroner gave notice that he should require the attendance of Mr. Stephenson, the engineer; Mr. Betts, the contractor; and Mr. Lee, the resident engineer. He also advised the jury to appoint an engineer, unconnected with any railway, to inquire rigorously into the cause of the failure; and Mr. Yarrow, who was present, was accordingly appointed for that purpose.

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Restoration of Hereford Cathedral.—Mr. R. B. Phillips, of Longworth, has issued a letter to the landowners of the diocese of Hereford, urging them, in strong terms, to make further efforts for the completion of the works. It is written in a praise-worthy spirit, and can scarcely fail to have the effect intended. Mr. Phillips draws a striking parallel between the sums subscribed by the Herefordshire gentlemen for the restoration of the cathedral, and the amounts against the names of these same gentlemen in certain railway subscription lists.

Screw-Pile-Patent Extension.—The Privy Council have granted Mr. Alexander Mitchell an extension for fourteen years of his patent for screw piles, on which to erect light houses, beacons, &c., on the ground that it is one which would not be expected to come into general use for some years, and which, consequently, will not till then remunerate the inventor even at the most moderate rate.

## A FRAGMENT ON THE ORNAMENTAL IN ARCHITECTURE.

[TRANSLATED FROM WINCKLEMAN'S TREATISE ON ANCIENT ARCHITECTURE.]

The essential in architecture was followed by the ornamental, of which I shall speak in this chapter; first making some general observations, and then entering more into detail.

A building without ornament is like health in poverty, which none consider sufficient by itself, as Aristotle says; and uniformity or monotony can—in architecture, like in the style of writing and other art-works—become blameable. Ornament has its causation in variety; in composition as well as in architecture, it serves the mind and eye as a means of diversification, and if in architecture ornament is coupled with simplicity, *beauty* arises: because any thing is good and beauteous, if it is what it ought to be! Ornaments of a building, therefore, ought to be appropriate as well to their general as essential aim; in relation to the former, they are to appear as accessories: in relation to the latter, not to interfere with the nature of the locality, and its nearer adaptation. They are to be considered like vestments, which serve to cover nudity; and, therefore, the huger a building is in its plan, the less ornament is required: like a precious stone, which is merely to be encircled by a golden thread, that it may shine forth in its full lustre.

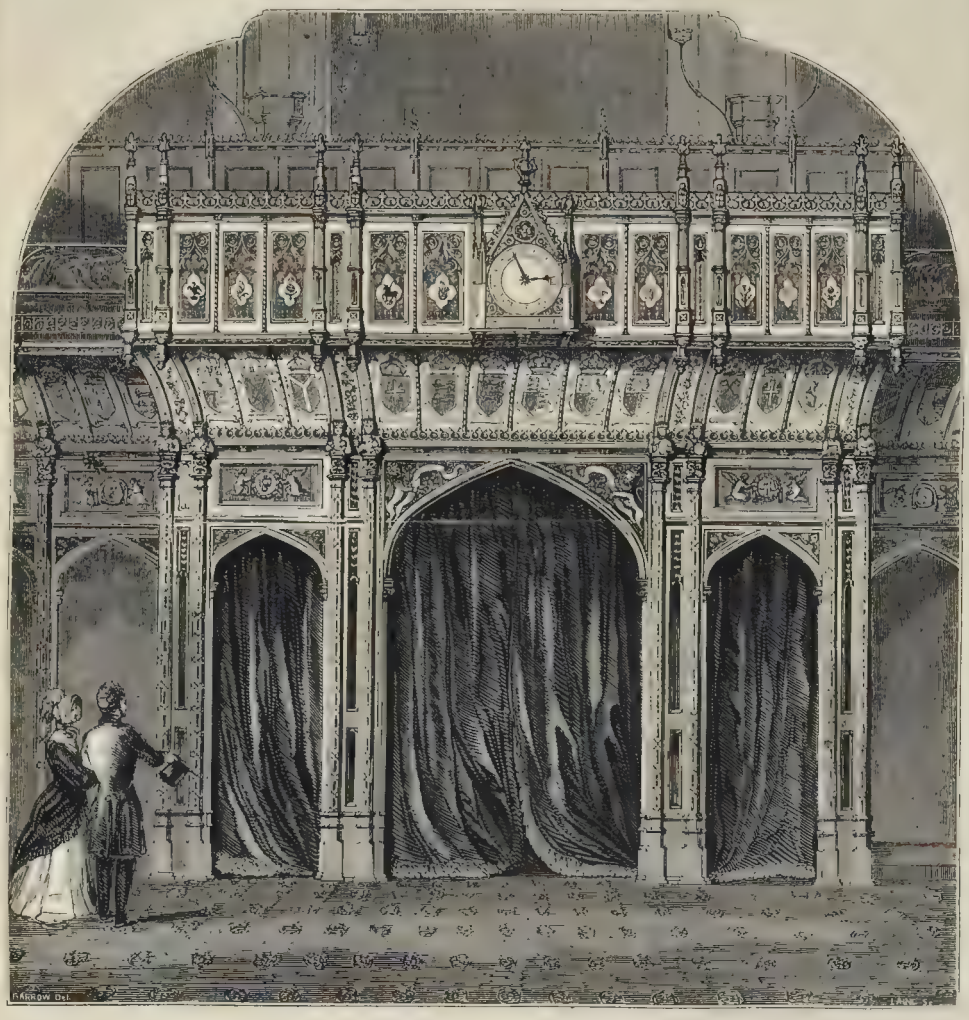
Ornaments were as rare on ancient buildings as they are on statues, but the members on which those ornaments were placed afterwards were either straight, or but little concave or convex. Not long before the times of Augustus (under the consulate of Dolabella), an arch was erected on the Claudian aqueduct on Mount Cœlius in Rome, on which the projecting beam, or cornice of Travertino, extends above the inscription *obliquely*, still in a straight line, which silliness would not have happened at a subsequent period.

When, however, variety was sought for in architecture, which arises from depressions or elevations, or by concave or convex lines, the straight members and orders were broken through, and by this some variety was achieved. This variety, however, which was imparted to every order of architecture in a different way, was, properly speaking, not considered as an ornament, which, in fact, was so little sought for by the ancients, that the word for it was only used by the Romans for ornament in dress. Because, as genuine good taste was failing, and appearance was preferred to reality, ornaments were no more considered as accessories, but the spaces, which had hitherto remained empty, were filled with them. Thence arose the *littleness* in architecture; because, if every part is little, the whole is little too, as Aristotle said. Architecture underwent the same changes as the old tongues; they became richer as they declined from their beauty, which can be proved as well of Greeks as Romans; and as architects could either not reach the beauty of their predecessors, or not surpass it, they endeavoured to appear at least richer.

The superabundance of ornament began probably under Nero; because in the times of Titus, this fashion was prevalent, as we see in his arch; and under the following emperors it went on increasing. What architecture had become in the reign of Aurilianus, the palaces and temples of Palmyra shew; because all that remains of them was probably built shortly before or in his times, as all these buildings exhibit the same style. Whether that immense piece of a marble architrave in the gardens of the palace of Colonna be of a temple of the sun built under that emperor, cannot be decided.

The architraves of doors and windows were formed as of wreaths of flowers and foliage, as it appears in the temple of Baalbec, and many such doors are also to be seen in Rome. The columns were not exempt from this encroachment; the whole base with its members was surmounted with wreaths, as are those under the porphyry columns on the so-called Battisterio Constantini at Rome, and another base of uncommon size in the church of St. Paul, near Rome, which is seven palms in diameter. Similarly carved were those discovered in our times on the Palatine hill.

REPORTERS' GALLERY, IN THE HOUSE OF LORDS.



## REPORTERS' GALLERY, IN THE HOUSE OF LORDS.

THE accompanying engraving represents the reporters' gallery, at the bar end of the new House of Lords. Behind the middle curtain are the brass gates, of which we gave a representation some time since, leading into the peers' lobby.

This gallery, like the rest of the woodwork, is wholly carved in oak. It shews, more clearly than our previous illustrations, the details of the coved soffit of the gallery which runs round the house, already described by us as being blazoned with the arms of the Chancellors. Behind the reporters' gallery is seen the strangers' gallery. Space occurs here for three frescoes.

In continuation of our series we shall speedily give the Victoria lobby, and probably some external views, when we shall continue our observations on the structure generally.*

* I take this opportunity to acknowledge the politeness of Sir Sutton, usher of the black rod.

## A LOST CITY.

AT a meeting of the Society of Antiquaries, some time since, Sir Henry Ellis brought under notice an account of a lost city, near the coast of Pomerania, said to have been overwhelmed by the sea in the eleventh century.

These ruins lie between the Danish island of Bornholm and the Island of Rugen, opposite to Swedish Pomerania. It seems that the streets have been laid out, like Babylon, at right angles. According to Lubeccius, alderman of Triptow, this ruined city, situate on level ground, was visited by travellers with attention about the year 1564; among other visitors was the then Duke of Brunswick, and his chaplain. A vessel had come from Gothland, and took away all the marble and metal then to be found. Among other things were a pair of very large city-gates, made of metal, concerning which there existed a popular song. President Keffenbrink tells us, that on the 14th of August, 1771, two Dutch vessels were shipwrecked on the ruins of this city. There were then standing several pillars of white marble, or alabaster. The Counsellor M. Jordan went thither with Commodore Baarts from Swinnemund, who endeavoured to save the vessels; as the weather was fine, all the company went on board and inspected the pillars, one of which by the shock was brought from its vertical position. Some old men declared, that they had formerly seen these white pillars above water. A certain master of a vessel at Swinnemund said that, eleven years before that time, an English ship was lost on the ruins of Vineta, and on that occasion he went thither to assist the vessel in distress. He said he had discerned two walls of brick, which he supposed were about four feet thick, and 60 or 70 feet distant from each other, but only some parts of them reached so high as the water's edge.

Sir Henry adds, that the oldest map on which he has as yet found the site of Wineta or Vineta laid down, is that in C. de Jode's "Speculum Orbis Terrarum," 1593; and in 1650, it was described as *Wineta emporium olim celeberrimum aquarum æstu absorptum.* In Zedler's great Lexicon, 1748, there is a full account of this "principal and most ancient town." Its origin is derived from the Phœnicians, and it appears to have attained to great wealth and importance in 470; but intestine broils induced them to call in the Swedes and Danes, who are stated to have ruined this fine city about A.D. 796, or thereabouts.

## GATE TO KEEP OUT CATTLE.

Sir,—Although I do not know whether the subject of the inclosed sketch is within the scope of your most useful and excellent publication, I venture to send it you, thinking that it may be novel to many, if not to most, of your readers.

In the summer of 1845, during a short visit to Ireland, I saw in the grounds of a friend at Bray, near Dublin, a gate, which so pleased, and I may say amused me, from the quaintness of its construction, that I made a sketch of it; and on my return home I had a gate made on a similar construction, leading into a shrubbery walk I was then forming here, where it has excited some wonder and admiration, and goes by the name of the Irish gate, although I have since heard that there are similar gates in some parts of England.

The drawing represents the gate when open, the rails moving in grooves cut through the posts upon pivots in one of them, and their ends being fixed in a third, which is divided between each rail by a chevron, cut so that each piece fits on to that below it. To pass through the gate, the hand being placed on the upper rail, presses it with the lower rails down, when the gate assumes the form shewn in the drawing, which is easily stepped over, the pressure being withdrawn, the parts of the third post, being formed of oak or some heavy wood, fall into each other, and the gate is self closed against cattle, which of course is its principal use, as in some respects it is less useful than a common gate, because it does not admit the passage of a barrow, or any thing that cannot be lifted over the rails when lowered.

If any of your readers should be induced to have one of these gates constructed, I should recommend the cuts in the third post, to be made upwards, as in the drawing, instead of downwards, or valley shaped, as my gate is, to avoid the lodgment of water; and from side to side, instead of from front to back, which will give greater firmness, and prevent a degree of oscillation, to which my gate is subject.

I remain, Sir, &c., Geo. R. Corner.
Eltham, Kent.

GATE TO KEEP OUT CATTLE.



## ARCHITECTS AND ARCHITECTURE IN PARIS.

M. Caillat, architect, author of a fine work upon the Hotel de Ville of Paris, has received the riband of the Legion of Honour.——M. Victor Baltard, late a *pensionnaire* of the French Academy at Rome, is about to publish a fine work under the title of "*La Villa Médicis à Rome.*" It will consist of six parts, of large size, each containing three or four plates, and one or two leaves of text.——The chapel of the Virgin, in the church of St. Germain l'Auxerrois, has been cleared of the scaffoldings erected for the construction of the altar, and the execution of paintings in fresco and encaustic, by M. Amaury Dewal. The altar and the parts adjacent, ornamented with rich sculptures, and wholly painted, were executed from the designs of M. Lassus, architect, who was charged with the direction of the work by the Minister of the Interior. The statue of the Virgin is a piece of sculpture belonging to the fourteenth century, which was brought here from Champagne.——The principal architectural works, in the present *Exposition* at the Louvre, appear to relate to the restoration of ancient buildings.——For this purpose, and the maintenance of the cathedrals and churches, repairs of royal palaces, &c., according to the *Moniteur des Architectes*, fifteen millions of francs will be asked for by the Government!——For a long time it has been thought, that an architect who had superintended any building whatever was responsible personally, or conjointly with the contractor, for defects in it which might become apparent in construction or otherwise; but the *Cour de Cassation* has recently decided to the contrary, and henceforth architects in France will be freed from a responsibility which has in some cases been of serious consequence to them.——M. Visconti will probably be the architect employed in the reconstruction of the *Bibliothèque Royale.*——Four statues in stone, of large size, executed by M. Petitot, have been placed on the bridge of the *Saints-Pères*. They represent the city of Paris, the Seine, Industry, and Abundance. Our authority inquires, why allegory was resorted to? and suggests, justly, that statues of Ducerceau, Philibert Delorme, Jean Goujon, and Perrault, might have been substituted in that locality with advantage.——Paris is losing its venerable and pleasant air of antiquity; old houses are being pulled down, new streets are being formed, and great *improvements* are everywhere being effected, at the expense of picturesque appearance and pleasant associations. It would be a departure from our duty to deplore this, but we cannot yield without a sigh, the few remnants of former days which Time has left us.

## SANITARY STATE OF LONDON.

Dr. Lynch and some of the inhabitants of Farringdon Without waited on the Lord Mayor last Tuesday, to urge the immediate adoption of sanitary measures. In the course of his address the doctor said:—Of all the thirty-six metropolitan districts, the ward of Farringdon Without is perhaps the worst, as to its narrow localities. The houses are built back to back, and admit no ventilation. The privies are situate under the staircases, and communicate with cesspools of the most horrible description, which poison the air and pollute the dwellings of the poor. In such places where there are sewers, they become the source of disease, in consequence of the want of traps and an adequate supply of water to cleanse and to facilitate the escape of pestiferous gases from the decomposition of animal and vegetable matter. In Crown-court, within a few yards of Fleet-street, the cellars of the houses are in a most revolting condition, from the overflowing of cesspools and the accumulation of impurities of every description. In some instances we found that the dust-contractors had not removed the offal from one to nine months, and that they refused to perform that duty unless they received a gratuity. We found the poor inhabitants sensible of the injury which such abomination inflicted, and heard them complain of the inadequate supply of water, which visited them for no more than one hour three times a week, and which their poverty prevented them from keeping vessels to save. They complained, too, of the quality of the water, confined as it was in heated rooms and absorbing the animal exhalations and foul air. We found that the drains run under a stack of houses, instead of into the main sewer, and there is at present no power to compel the landlords to open these drains direct to the sewer, by which arrangement an essential cause of malaria and disease would be removed. The inquest of St. Sepulchre beg to state that the courts around Smithfield and the Old Bailey are undrained; that in several of the courts there is but one privy, to which the inhabitants of both sexes and all ages resort, to the great detriment of common decency and morality; that the houses in such places are a disgrace to the sanitary supervision of the city of London; that the operation of the window-tax is seriously injurious to the poor; that all the remonstrances of previous inquests have been neglected; that there is no proper authority or board which understands the subject in its magnitude to be found in the city; that in several places the cesspools overflow the cellars; that in some cellars under the privies eight people lodged in a space twelve feet square; and that cow-sheds, slaughter-houses, and knackers' yards are suffered to exist in the midst of a crowded population. The gentlemen of the inquest, after enumerating other horrors, and showing that the wretched habitations are full of plague-vapours, express their fear that if sultry weather supervene, fever will make awful ravages amongst the poor. They find that every steamer which arrives from Ireland imports immense numbers of the poor Irish direct from Cork, where malignant typhus and dysentery abound, and are carrying off all classes of the community.

After showing the effect of scarcity of provisions in lowering the system and predisposing it for disease, the speaker urged the mayor to assist them in procuring a constant supply of water, and the immediate cleansing of such places; and entreated his lordship to name an early day for the consideration of the subject of the public health, included in the memorial of the ward, urging the corporation to adopt sanitary measures for the benefit of the poor. They suggested the propriety of calling a common council as soon as possible to apply to parliament for a short bill empowering the city authorities to enforce the abolition of cesspools and similar nuisances, which are of mortal injury to the community, to compel landlords to trap and open the drains of every house into the sewer, and to appoint an inspector who should take care that this law was enforced.

After statements by Mr. Alderman Hughes and others, bearing testimony to the facilities afforded by the Commissioners of Sewers,

The Lord Mayor said he certainly thought the public were greatly indebted to the gentlemen who had brought so important a subject before him, and he assured them that so far as he could render any service to the cause, he should be completely at their command. He was glad to find that justice was so willingly yielded to the Commissioners of Sewers. He knew how warm they were in the just cause of sanitary regulation; but they could not, he declared, do what was necessary by compelling landlords to make drains from their houses to the common sewers. For the purpose of giving to the deputation an opportunity of accomplishing the object, he should appoint Monday next for holding a court for the discussion of the merits of the petition of the ward.

## RAILWAY JOTTINGS.

The railway calls at present average about one million sterling a week. New calls and loans to the amount of 124,675,655*l.* were authorized by the Acts passed during the last two sessions. Of this sum 28,320,020*l.* have been already raised, leaving 96,855,635*l.* yet to be called up in order to complete the lines granted in 1845 and 1846. By the bills of the present session, moreover, capital to the extent of 47,486,674*l.* is proposed to be raised,—31,141,674*l.* for extensions and other improvements of lines already opened, and 16,325,000*l.* for lines not yet opened. The calls for May, it is calculated, will not fall short of 3,000,000*l.* ——During the present session, too, the mere expenses for bills in Parliament have been estimated at half a million sterling, and during the two last sessions at 8,000,000*l.* sterling!—— We should like to have a return of the expenses, or the dead loss both of money and time, incurred in futile attempts to save both, by that obstinate persistance in hasty and insufficient *construction*—if such it can properly be called —which is almost every day exposing engineers or architects, builders or contractors, companies, and the art and science of construction in general in this country, to shame and degradation—and which no ridicule, exposure, or reproach appears to check or to diminish. Certainly, so far from shewing any thing like a saving of either time or money, such a return would only prove the decided loss of both, as well as of national and individual reputation. ——In order, it is said, to save the expense and time necessary in the erection of supporting centres, as usual, in the construction of a bridge 'of considerable span' at Dudley, on the Oxford, Worcester, and Wolverhampton line, near to the Dudley tunnel, the brickwork of the arch was completed, as is sometimes done in arches of small span, before the earth was excavated; and the consequence has been, that no sooner was the excavation from beneath the arch begun than the destruction of the arch itself commenced; and notwithstanding the stoppage of the excavation, and the proppage of the work, so soon as this 'unexpected event' took place, the weight of 'some boys' seems to have been all that was necessary to its consummation: the brickwork gave way under them, and they were scarcely warned off the premises when five yards in length of the middle of the arch, and about two yards in depth, fell in with a sudden crash. 'Props and supporters' were then multiplied 'in all directions' for the protection of what remained; but the bridge, to be considered safe, will require, it is thought, to be entirely rebuilt, and at all events many say it will take at least 1,000*l.* to repair it (over and above the expense of all the props and supports, of course, which ought to have been applied in the form of centering in the outset). The expense, it is stated, 'will fall upon the company, in consequence of the work having been duly certified as complete.'——And this reminds us, by the way, of another of the latest batch of botch-work catastrophes, namely, that on the Waterford and Kilkenny line, in which, while Mr. James Walker, the Government engineer, was in the act, it seems, of commenting most favourably on the 'substantial character of the works,' one of the 'largest viaducts on the line,' unable to stand any longer in the face of such misrepresentation, was itself in the very act of tumbling to pieces, maiming or killing fourteen or fifteen individuals in its own downfall. A considerable portion of this structure was of brick, although in a locality abounding in the finest mountain limestone.——A melancholy realization of Elihu Burritt's romantic incident, which *all but* happened in America, has just occurred in our own country, by the plunging of a whole train through a 'noble structure' into the river beneath: but this is too serious a matter for a mere jotting.—— A wooden-bridge near Hanwell, on the Great Western, burst suddenly out in flames the other day, and was considerably injured, the heat being so intense, that eight out of ten iron girders that were supported by cast-iron columns on which the timber was laid snapped asunder during their expansion. The origin of the fire is still a mystery, although the officials still attribute it to the fall of a piece of burning coke from an engine. Perhaps the only wonder is, so few accidents of a like nature happen on wooden railway works.—— The bricklayers at work under Messrs. T. and S. Walton, at the new station on the Trent Valley line, at Tamworth, struck work on Monday week for an advance of wages from 4s. to 4s. 6d. a day, on account of the continuance of the famine prices of provisions, as we presume. Messrs. Walton summoned nine of them for neglect of weekly service, and the magistrates, instead of imprisonment, decided that they should forfeit the wages due to them for a day and a quarter's work, and pay all expenses. ——At Derby, the joiners employed by Messrs. Smith and Dagley, railway carriage builders, have struck work for an advance of 2s. a week, paid by all joinery establishments in Derby not in the same line of trade.——The Electro Telegraphic Company, says the *Manchester Advertiser*, intend immediately to commence laying their wires from the Victoria station to the Exchange.——A rumour is prevalent, says the *Newcastle Guardian*, that the ceremony of laying the foundation-stone of the high level bridge across the Tyne, at Newcastle, is to be performed shortly, by the Right Hon. the Earl of Zetland, as Grand Master of the Freemasons.——At Carlisle, where the Caledonian line starts northward, workmen are busy near the jail, founding the terminus, in which the Caledonian, the Newcastle, the Lancaster, and the Maryport lines converge. A great number of men are busy in forming the 'stupendous' bridge of stone across the Eden. To prevent inundations, the contractors have, as it were, indented palisades, or dry bridges, into the mound at three different places, through which the waters will disperse. Crossing the river, upwards of a hundred labourers, for the length of a mile, are engaged in bringing this part to the required level. Between the bridge at Eden and Blackrigg, three or four stone bridges over the line on public roads are completed, and in use. Blackrigg moss embankment is formed partly of a soft, light peat-like earth, taken from the bog, and partly of sand brought from a distance, which have been mixed together, the latter by itself, floating on the light stratum beneath, and forming the upper stratum in which the sleepers are embedded. Temporary rails have only as yet been laid over it, but it may soon be made ready to receive them permanently, unless, indeed, it disappear,—rails and all,—as so many others have done, the only surety against such a mishap probably being the light and boggy texture of the turf or peaty-earth on which the sand and rails are floated. After passing Gretna, the line for about a mile in extent is carried over an embankment. On Colonel Graham's property there is a difficult and extensive cutting, at which a great number of men have been engaged for the last twelve months, the earth being conveyed to fill up a deep hollow at a short distance. From Langholm to Ecclefechan no labourers are now at work, operations in this quarter having been nearly completed; while on to Beattock the line is in a very forward state. At this place the station-house is rising high above its foundations, and onwards to Harthope all the mason work is entirely finished.——Mr. S. B. Rogers, of Nantyglo, has published a pamphlet on the practicability of constructing 10,000 miles of railway through Europe and Asia, and thus connecting London and Paris with Canton and our East Indian possessions, and all the great cities and provinces on its route. The route proposed is by Paris, Munich, Vienna, Belgrade, and Constantinople; thence through Syria, Persia, Beeloochistan, and Scinde, to Oodipoor, Calcutta, through the Birman Empire, and the north part of Cochin China, to Canton.——The new railway bridge over the Susquehanna, at Harrisburg, United States, is about 4,000 feet long, and consists of 23 arches, averaging 173 feet each, and two arched viaducts, one 53 feet, the other 84 feet long. The entire cost is said to be short of 100,000 dollars.

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The Dustman Interest.—Lord Morpeth's Bill for putting down typhus, and carrying off dirt, is meeting with the violent opposition of the City Corporation and the Marylebone vestry. We propose that the friends and opponents of this measure be in future known as the "Health of Towns Party," and the "Filth of Towns Party."—*Man in the Moon.*

## BLASTING WITH GUN-COTTON.

In reply to a correspondent who asks for some hints as to blasting with gun-cotton, we quote the result of some experiments made with it on the works of the Stour Valley Railway. The first experiment took place at Bingley Park, in a heading about forty feet from the surface. The rock here is merely compacted sand, difficult to excavate, but from its semifriable character not favourable to the action of the explosive cotton. To test the comparative powers of cotton and powder, shot-holes were formed in opposite headings, as nearly as possible alike in their depth and situation. Into one of these holes a charge of gunpowder, weighing 50 oz., was placed, and in the other 8 oz. of cotton, being nearly in proportion of 6 to 1. The cotton is inclosed in a pasteboard case, and in appearance very much resembles a large rocket, the fuse being introduced at one end. The arrangements having been completed, the cotton was fired, and a sharp report, accompanied by no perceptible vibration, and no smoke excepting that from the fuse, immediately followed. The powder caused the usual amount of noise, smoke, and vibration. On examining the rock, it was found that the powder had dislodged a greater quantity of sand. A second and third experiment were made, at an open cutting in Swallow Street, where the results were more accurately and more successfully tested. The soil was of the same character, though less compact. Into holes 5 feet 3 inches deep, charges of 50 oz. of powder to 10 oz. of cotton, being in the proportion of 5 to 1, were placed. In the case of the cotton, the rock was heaved at once from its bed almost in one compact mass, while the powder seemed to shake and loosen the soil so far as its action extended. This experiment was also considered to be in favour of the powder in its application to this description of blasting; as, although the cotton upheaved an immense mass, it was not broken up into conveniently removable portions like those dislodged by the powder. In the third experiment, also in the open cutting, charges of 62 oz. of powder and 15 of cotton, being a little more than a proportion of 4 to 1, were used. Here the advantages were decidedly in favour of the cotton. The fourth and last experiment was tried in the tunnel under Broad-street, with charges of 62½ oz. of powder to 13 oz. of cotton; the latter being placed in the hole loose. The greater depth of the hole in which the powder was placed was in favour of the powder, and the results were against the cotton. It appears, therefore, from these experiments, say the local papers, that used in the proportion of 4 to 1, the cotton is a more powerful and efficient explosive agent than powder, and its noise and vibration is in the inverse ratio to its dislodging power; while in badly ventilated mines, and in railway excavations, during certain states of the atmosphere, its freedom from smoke is a strong recommendation.

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## COMPETITION DESIGNS FOR A PAIR OF COTTAGES.

In the above competition, advertised for some time since in The Builder, the successful competitors, out of nearly 200 designs submitted (alack, alack!), were—1st, Mr. H. W. Burgess, of Reading; 2nd, Mr. J. A. Robson, of London; and 3rd, Mr. C. A. Gould, of London.

A country correspondent complains that the parties advertising for these designs have not returned his plans, although he simply asked them to send the drawings to the nearest coach-office. He must request some friend to call for them. Architects are sufficiently honoured if gentlemen wanting plans will even *look* at the result of their labour. They must be very unreasonable to expect to have them returned.

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The Amended Buildings Act.—Sir: According to my interpretation of the new Act, the supposed consent of about 650 members of Parliament is necessary to pass an Act of Parliament, called a Buildings Act; and when so passed, a council of two or three are empowered to upset it at discretion. It is only in The Builder that the Trade can watch these blunderings, and through your columns may hope to check them.—Yours, &c.

May 25, 1847. Vigil.

## DISTRICT SURVEYORS' FEES.

Sir,—I beg to lay before you an idea that has arisen in my mind for making the fees charged for *alterations* to buildings more consistent with the amount of work done. The idea arose in my mind from the frequent complaints made by builders of the inconsistency, and, too frequently, the exorbitance of the fees they are charged by district surveyors for alterations. How often do we hear builders complain of being charged a fee of thirty shillings for merely raising the chimney of a second-rate building? yet, by referring to the Act, you will find that the district surveyor charging such a sum made a legal claim; though, had the same amount of work been done to a fourth-rate building, notwithstanding his trouble would have been equally as great, he could only have claimed *ten* shillings. I will not say that it is the practice of every district surveyor to charge the full fees in all cases, yet, unfortunately, there are some who, carrying out the letter more than the spirit of the law, do so; whilst, however, the above inconsistency exists, nothing further is wanted to prove to your readers the necessity of a change.

I would have *time* the means of regulating the fees charged for alterations. Nothing, in my opinion, could be a surer index of the amount of work done than the time spent in doing it. Under this plan, then, I would have the fee for alterations to a building of any rate that were completed within seven days from the commencement of the work (which should be, as now, two days after the date of the notice), ten shillings. Thus, for many small jobs, such as the raising a chimney shaft, the restripping and retiling part of a roof, which scarcely ever take more than seven days in performing, a fee of ten shillings could only be charged; but which would, at the same time, amply compensate the district surveyor for the one survey only he would, most likely, find it necessary to make in this instance. For an alteration that took more than seven days, but not more than fourteen, a fee of a guinea. Under this head, the fixing of new shop fronts, and such like works, would come; for which a fee of a guinea is moderate and reasonable. For an alteration that took more than fourteen days, but not more than twenty-one, a fee of one pound ten shillings. Additions to buildings, such as wash-houses, and rooms made for increased accommodation, could be erected in this time, at least so far as the Act is concerned, and for which a fee of thirty shilling would be likewise moderate. Lastly, for an alteration that was not completed within twenty-one days, a fee of two guineas. There should be, in my opinion, no higher fee for alterations than two guineas. The above table only applies to alterations made to *one* building; when alterations were made to more than one building, it should be legal to charge for the alterations made to each building according to the above ratio. I am, Sir, &c.

May 18, 1847. L. H. I.

## MEANS OF LESSENING ATMOSPHERIC RESISTANCE TO RAILWAY TRAINS.

In a brochure just published by Weale, High Holborn,* Mr. H. Bessemer proposes, instead of increasing the size, power, and consequent expense of railway engines, to diminish the resistance they have to overcome, and thereby to reduce the power required to propel a given train much below the present standard of duty.

Pointing out how we have obtained from the direct experiments of persons of the highest authority, 'a most indisputable confirmation of the fact, that at the high rate of travelling now common on all lines throughout the kingdom, by far the greater portion of the required power of an engine and its cost of working is due to the resistance of the atmosphere;' and having, as he conceives, 'clearly demonstrated this much—that the resistance of the atmosphere to railway trains is exerted on the ends of each of the carriages forming a train, and amountsin each case to four-tenths of the power exerted on the first, and also, that by filling the intermediate spaces between the carriages, this pressure on them will be most materially diminished;' he thus develops the means which he recommends for lessening that resistance. "In order to carry out practically the results of my experiments," says he, "I have constructed a hood or covering of leather, gutta percha, or any other like flexible and durable material, similar to the hood of a britska or hooded chaise. The frame of this hood is attached by hinges to the projecting head of the buffer, and properly strengthened from within by diagonal braces. The upper part may be moved up or down on carriage-head cranks, and with suitable springs, made to assume either an erect or a sloping position, so that when the carriages are not used, the head may be thrown back. But when several such carriages are required to form a train, they are first connected in the usual manner, and the carriage-hoods then thrown up. * * They thus come in contact with each other, and being attached to the buffers, they yield to any pressure of the carriages, while by means of the crank-head levers and springs, they will reach and keep continually the spaces between the carriages closed, whatever may be the position of the buffers, and so prevent the atmosphere from acting on the ends of the carriages. The train is at the same time provided behind with a pointed or wedge-shaped carriage. * * In order still further to carry out the principle of diminishing the atmospheric resistance, I also cover with thin sheet metal, or other suitable material, the entire under surface of the carriage frames, and thus prevent any obstruction from the transverse portions of the framing, and various parts which project below the carriage."

Among the many advantages to be derived from the adoption of this plan, he adds, "it may suffice to mention generally, that it will enable many engines to be brought into work that are now out of use on account of deficiency of power; reduce the weight, size, and cost of all new engines; diminish the quantity of fuel in proportion as the load is lessened; give facilities of the most rapid transit; and render two engines for passenger trains wholly unnecessary."

* "On the Resistance of the Atmosphere to Railway Trains, and a means of lessening the same; together with an account of some Improvements in Railway Carriage Axles." By H. Bessemer, C.E. Weale.

## NOTES IN THE PROVINCES.

Lord Morpeth is to lay the first stone of the Fishmongers' and Poulterers' Asylum at Woodgreen, Hornsey, about the middle of next month.——The first stone of a new church at Henley-upon-Thames was to be laid on Whit-Tuesday.——The spire of the new church at Weston-super-Mare is now completed. The tower, including the spire, is 115 feet high. ——The restoration of St. Nicholas's Church, Yarmouth, which was temporarily delayed, is to be forthwith resumed, an arrangement having been made with the churchwardens and the architect of the restoration committee. During the reparations a quantity of stained glass was found on the recently-discovered staircase at the north side of the organ.——It has been resolved forthwith to ascertain from competent judges the present state or stability of St. Thomas's Church, Newport, I.W., with reference to its proposed restoration.——A new literary and scientific institution has been established at Newport. ——A college is to be built at Jersey. The first subscription towards the end in view was the sum of 77*l.*, which ought to be able to build a college of itself by this time, interest and compound interest included, inasmuch as the subscription-list for this very college was headed first of all by a contribution to the amount now stated from his Majesty Charles I. at the time when the pier was built at Jersey.——A large Roman Catholic temple is now being built at Guernsey, with money *supplied*, it is said, *by France*. The stones are imported from Caen, but the Guernsey granite also figures in the work.——A lighthouse is forthwith to be erected on the 'Bishop,' a dangerous rock, forming the most westerly of the Scilly Islands. ——The carpenters and masons in Taunton have struck work for an advance of wages.—— The Beckford six-and-thirty thousand pounds tower at Bath is to be turned, by the 'beer-house keeper' who has purchased it, into a tea-drinking place for pleasure parties! *Sic transit gloria mundi*.——The Cheltenham Gas Company have offered to supply all the gas to public and private lamps at one uniform charge of 4s. 8d. per 1,000 feet, instead of at their present scale of 3s. 6d. to the public and 6s. 6d. to the private consumer. ——Antiquaries are informed by advertisement in the *Hereford Times* that, in consequence of contemplated alterations, the upper portion of the east window in St. Peter's Church, Hereford, containing several feet of very ancient painted glass, and to be seen in its present position only till 26th inst., is to be sold.——The streets of Worcester are said to be in a "dangerous state of darkness from nightfall till dawn," although the New Gas Company, in negotiating for the supply of the public lamps with the City Commissioners, offered to "light up the streets during the whole year for the same sum per lamp which was charged by the Old Gas Company for nine months only;" an offer which the commissioners declined,—on what rational grounds we know not,—thus, however, taking on their own heads the responsibility of plunging the streets into a state which none, one would think, but thieves and other evil-doers can be benefited by,—unless, indeed, it be the Old Gas Company itself, who certainly also benefit thus by the darkness rather than the light.—— Studley Castle, Warwickshire, is to be 'knocked down' next month by auction, like the Beckford Tower, but not 'to such base uses,' let us hope. ——Complaints having been made respecting the delay in the return of the subscriptions raised for the purpose of establishing public baths, says the *Birmingham Gazette*, or in their appropriation to the providing of places of recreation, we are requested to state that the committee have not received the purchase-money from the town council, and that the payment of this money is waiting only for the solicitors to complete the title and conveyance from Sir Thomas Gooch of the land in Kent-street. It is understood that when this business is brought to a close, the town council will be prepared to carry on the work [which work?] with vigour.——A range of almshouses is now erecting near Lincoln Minster, at the expense of the Rev. Richard Waldo Sibthorp. ——Nearly eighty of the Lincoln bricklayers, who have been earning 4s. a day, have struck work for an advance of 6d.——The quarrymen at Quorndon and Mountsorrell, too, lately stood out for an advance, which they obtained in a few hours, as the granite trade is very brisk. ——Other strikes also are noticed in our Railway Jottings.——The site of a new town hall for Loughborough is said to be fixed at the top of the Market-place. The *Nottingham Review* says this is too good to be true.——The foundation stone of the new markets at Doncaster was to be laid on Whit-Monday, by Sir William B. Cooke, Bart., first mayor of the new municipal borough. —— It is expected that the erection of a church at the Bank Top, Darlington, will soon be commenced, the plans having been approved of.——A permanent theatre is to be erected at Gateshead, for Mr. Thorne, by Mr. C. J. Pearson, builder. ——The Whittle Dean Water Company are hard at work in Gateshead, breaking up and replacing the pavement with creditable rapidity, so as to give very little interruption to the traffic.——The Commissioners of Woods and Forests are about to repair the venerable abbey of Dunfermline.

## THE HEALTH BILL.

A petition from Birmingham in favour of Lord Morpeth's Bill is in course of signature. It sets forth,—"That the principal improvements required are—a constant, universal, and cheap distribution of pure water; complete street and house drainage; removal of the refuse, and prevention of any accumulation of decomposing filth. That these improvements would diminish sickness, suffering, and death, and obviate the severe privations and misery entailed on widows and orphans, owing to premature loss; an occurrence which is one of the most distressing and frequent results of the present want of a systematic measure for improving the health of towns. And that the consolidation of the several authorities under which the paving, lighting, cleansing, and sewerage of towns are now intrusted, would tend to introduce greater efficiency, as well as greater economy."

A petition to the same effect has been voted by the inhabitants of Kingston-upon-Hull. The editor of *The Hull Packet* remarks:—

"If the Registrar General be right—if it be possible to make the inhabitants of towns

approach the longevity of those in the country, then can no man have a more urgent call to promote to his utmost all sanitary measures than is afforded by the condition of Hull, now, and for years past. Suppose it possible, for instance, to place Hull on a level with Beverley in point of mortality. Why, they who could effect this would effect *a saving in the lives of the inhabitants of Hull to the number of* 600 *or* 700 *a year!* Yes. If it be possible, by civil regulations, to improve the health of Hull till it reaches the level of Beverley, then the *neglect* of such regulations has caused the sacrifice of *six thousand lives in this town alone* during the last ten years!"

And that this is positively the fact, and a fact which applies with even more startling force to other towns, no one can deny with truth.

## SCREW PROPELLORS.

At the Institution of Civil Engineers, on the 18th, "An account of the *Sarah Sands*, and other iron vessels, with direct acting auxiliary engines and screw propellors," by Mr. John Grantham, was read. The object of the paper was to shew that a propellor might be constructed of such dimensions that the number of revolutions it would require to make, in order to obtain a high velocity, would not much exceed that of the ordinary paddle-wheel, and that hence the usual marine condensing engine might be applied direct to the propellor-shaft, without the intervention of a secondary motion. It appeared from the statements in the paper that this opinion was found to be correct, and that Woodcroft's expanding pitch screw propellor was the best form that had hitherto been employed. In a paper read to the institution upwards of three years since, Mr. Grantham gave his views on this subject, and several vessels had been since built, the results of the trials of which were communicated to the meeting. The principal of these were the *Emerald* and *Diamond*, three-masted schooners, of 300 tons and sixty-horse power; the *Nautilus*, of the same dimensions; the *Antelope*, of 600 tons and 100-horse power; and the *Sarah Sands*, of 1,000 tons and 180-horse power. Drawings of these vessels were exhibited to the meeting. The capabilities and performance of these vessels were described in the paper, but particular notice was taken of the last-named vessel, which had performed a most successful voyage to New York during bad weather and adverse winds. The passages made by the ordinary New York liners, which were out at the same time, were very long, averaging forty days each; and the Boston and Liverpool steamers were much longer than usual on their passage. The *Sarah Sands* used her steam about seventeen days, and sailed the remainder, making her voyage in twenty days ten hours. On her arrival she had about enough fuel remaining for four days steaming. The paper did not enter minutely into particulars of the screw itself, as it was considered that too much attention had been given to that branch of the subject, to the exclusion of the consideration of the plans for working it, which, after all, had been the stumbling block to the general adoption of the system. It was necessary with the screw, the theory of which, as a propellor, was so little understood, to proceed with experiments perseveringly in one direction, as variations in the results were frequently attributed to causes which really did not exist. After the paper was read, Mr. Grantham added some facts which he had recently gathered, and which confirmed what had been stated. The *Diamond* had lately made a very rapid passage to Madeira, deeply laden, but during the whole passage the engines maintained a very moderate speed, and quite removed the impression that, under such circumstances, they would run too fast from their being connected directly to the screw. An account of the last successful voyage outwards of the *Sarah Sands* was also given, and it appeared that, in spite of most severe gales, which had driven back almost all other vessels, her passage had been made in a satisfactory manner.

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The Late Mr. Collins, R.A.—Christie and Manson will sell the sketches of this excellent artist on Monday next. The sale comprises nearly every thing that he did in water-colours, and merits attention.

## EXHIBITION OF THE ADELAIDE INSTITUTE.

The simultaneous opening of this and the Free Exhibition at the Egyptian Hall shews that artists feel the want of more room for the display of the works of the year. The Committee of the Adelaide Institute say in their preface:—

"Considering that during the last forty years about fifty new artists have annually offered themselves to the notice of the public, while not five established favourites have been in each year lost to the artist world, and that during those forty years scarcely any space, excepting the galleries in Suffolk-street and Pall Mall, has been added to that originally provided for the Royal Academy, several gentlemen, anxious to afford increased facilities to artists, and with an entirely disinterested view, have formed the Royal Adelaide Institute."

The want is not to be questioned, and the disinterested views of the committee we can readily admit and praise; but the statement put forth, to the effect that it was to be regarded as a refuge for the rejected, with other concurrent circumstances, has militated greatly against its success. Amongst the 250 works, of which the exhibition consists, there are many pictures by young or unknown artists of very considerable promise; but this is all we feel justified in saying.

The gallery is fitted up very nicely, and offers ample accommodation for a much larger collection.

## CENTRAL STATION AT NEWCASTLE.

The railway-station about to be erected in Newcastle-on-Tyne is to be of the Roman Doric, and according to a corespondent of the *Newcastle Guardian*, the architect, Mr. Dobson, seems to have adopted the general proportions of the antique example at Albano, near Rome, and modified it to his purpose. The structure is composed of three general masses, comprising a grand central portico or vestibule, 180 feet by 68, and 55 feet high internally (forming a direct communication to the railway platform, and under which passengers may be discharged from carriages, omnibusses, and other vehicles, *under cover*), and two terminating masses, connected by arcades, in length 190 feet each, which form the principal entrances for omnibusses, &c., forming a total external length of 584 feet, which, with the clock tower and contemplated hotel in connection with the station, will form a line of building 770 feet long; the external heights of which will be as follow, viz., the central mass, 62 feet; the terminating masses, 59 feet; and the clock tower carried to an altitude of 90 feet from the ground. The building, as a whole, is formed by an elongated parallelogram, the monotonous line of which is broken by the projecting portico, and masses at the termination of the structure, which, together with the portico, are relieved by 38 detached columns, 30 feet high. The intervening spaces are filled up with twenty-four columns, attached to the walls, producing a variety in the work.

The writer says in his notice:—"It is a lamentable fact that, from the death of Vanbrugh to the close of the reign of Geo. IV., no buildings were erected safely laying claim to perfection, as an inspection of the works of Gibbs, Chambers, Nash, James Wyatt, Wyattville, and Soane, will sufficiently illustrate; for, if we traverse, with a critical eye, the unharmonious productions of Gibbs, the feeble conceptions of Chambers, the abominations of Wyatt, the contemptible structures of Nash, the eccentricities of Soane, and the conglomerated mixtures of Wyatville, we find nothing worthy of the true genius of architecture. Let us hope, however, that within the last ten years we distinguish the dawning of a brighter era on the gloomy architectural horizon of this country, and that works may be eventually completed, laying claim to an immortality of fame, which may serve as future models, and that may call forth not only the praises of the connoiseur, but also the applause of the multitude."

A model of the new station has been made by Mr. Robson, of that town, and is being exhibited there.

## WESTMINSTER COURT OF SEWERS.

A general Court of the Commissioners of Sewers was held on Friday last. The solicitor to the court reported, that Lord Morpeth had intimated that it was not the intention of the Government to interfere with the bill introduced into the House of Commons for conferring additional powers upon this commission. The bill had, therefore, been read a second time, and referred to a select committee.

*Award of Official Referees as to Sewers.*—The clerk (Mr. Hertslet), laid before the court documents from the Metropolitan Buildings Office, in reference to certain houses erected in the Fulham-road, near to Stamford-bridge, built by Mr. Manning, in which a question had arisen as to the necessity of draining the same into the common sewer in the Fulham-road. The following is the award: "That there is a common sewer within 100 feet of each of the four houses in question, viz., the four houses on the east side of Waterford-road, and that it is a common sewer into which it is lawful and practicable to drain, and that therefore it is contrary to the Act to drain the said four houses into any other outlet than the said common sewer. And we do hereby direct the said Joseph Manning to construct drains in the manner required by the said Act from such four houses to the said common sewer."

A long discussion ensued upon this subject, in which several commissioners took part, and as a new bill was in progress through the House of Commons, it was suggested that Lord Morpeth should be invited to embody some alterations upon the subject in the same.

*Arching over the King's Scholars' Pond Sewer. Tenders for Works.*—The court then proceeded to open the tenders for arching over 1,190 feet of the King's Scholars' Pond Sewer, which work is to be done at the joint expense of this court and the Westminster Improvement Commissioners. The tenders delivered in were as follow:—

| | | | |
|---|---|---|---|
| W. Crawshay | £2,223 | 7 | 6 |
| W. Dethick | 2,059 | 0 | 0 |
| Scisson and Co. | 1,928 | 12 | 0 |
| H. Perkins | 1,768 | 0 | 0 |
| J. Hill and Sons | 1,758 | 0 | 0 |
| Humphreys and Thirst | 1,660 | 0 | 0 |
| J. Yeomans | 1,647 | 0 | 0 |

After discussion it was carried unanimously, that Mr. Yeomans do have the contract.

The court then confirmed a former order for works to the amount of 500*l.*, for increased accommodation in the surveyor's department of this office, Mr. Harrison volunteering to give any assistance in his power during the progress of the works.

A small new sewer was ordered to be made in South-terrace, Brompton.

*The proposed New Sewer in the Fulham-road.*—The court then proceeded to consider as to the course to be pursued in consequence of James Hobbs not proceeding with the works in the Fulham-road, for which he received the contract some time ago.

The brother of the contractor appeared, and stated that the reason why the work had not been proceeded with was, that Mr. Hobbs believed that some person opposed to his contract had been instrumental in preventing his obtaining the bricks that were required. He expected to receive credit for them, and failing to do so, he was authorized to state, his brother wished to abandon the contract.

A desultory conversation ensued as to the course to be adopted, it being suggested that the work might be given to the next lowest contractors (Messrs. Humphreys and Thirst), and on the other hand, that all parties should be permitted to send in fresh tenders for the same.

Mr. Hawkes said he wished to rescind the order for the work being done at all, and he saw no necessity for it whatever. Mr. Harrison thought they ought to go on with the work, as he was opposed to the upsetting of the decisions of former courts by any subsequent proceedings.

The solicitor said, it was his opinion that three days' notice in writing was necessary to be given to Mr. Hobbs to proceed. This was agreed to; and it was also ordered that, in the event of his not doing so, at the next court

further steps would be taken for the performance of the work.

Mr. Hawkes complained of being thus shut out of moving his amendment, and gave notice that, at the next court, he should move that the order for the works in question be rescinded.

## New Books.

*Rome, in its Ancient Grandeur; presenting the Architectural Antiquities of the Imperial City.* By Antoine Desgodetz. With Notes, Architectural, Classical, and Historical. Under the superintendence of Mr. Charles Taylor. Sherwood, Paternoster-row. Nos. 1 to 10.

Amid the present *run* on pointed architecture, when there really seems a probability of students forgetting the classical style altogether, we gladly welcome this singularly cheap edition of Desgodetz's well-known work, now being published in fortnightly parts.

It consists of a series of examples selected from the remains of the most celebrated edifices of ancient Rome, with admeasurements, details, descriptions, and every requisite for the instruction of the artist.

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The original work resulted, as many of our readers know, from an expedition sent out by the French government, in the reign of Louis XIV. Every subject is measured with accuracy, and the work has always held a high rank.

This edition is wholly rewritten. Desgodetz occupies a full half of his work in his remarks on his competitors: this is now entirely omitted as being needless: again, the former edition, in folio (published originally at a high price), was half occupied by the French version of Desgodetz: this is now expunged.

The measurements were formerly in the French standard, which is to the English scale as 12,788 to 12,000, therefore greatly puzzling to the English student or artificer: this is obviated now completely. Inability to comprehend his admeasurements has prevented the work from obtaining the same estimation and patronage in England that it has on the continent.

Our student-friends cannot better spend a shilling every fortnight than in purchasing this work. Each number contains three engravings and two pages of letter-press.

## Miscellanea.

Dealers-in-the-Fine-Arts' Provident Institution.—A general meeting of this Association was held on Wednesday evening, Mr. H. Graves in the chair. A report, which was read by the honorary secretary, Mr. Lambe, shewed that the society had 600*l.* and upwards on the credit side. Office-bearers having been appointed, the Secretary remarked that it was extraordinary that, while butchers, poulterers, bricklayers, &c. &c. had Provident Institutions, a community so closely connected with the higher sphere of art should only now have awakened to the necessity or advantage of establishing such an institution; but he was delighted to think that, though at present in its infancy, the Institution, whose progress they had all so much at heart, was in a flourishing state, and promised an useful and beneficent maturity. Mr. John Scott gave 10*l.* 10s. as his life subscription at this meeting.

Institution of Mechanical Engineers.—The second meeting of the members of this institution was held at Birmingham, on Monday week. Some interesting papers were read on the fan-blast, the economy of introducing heated air into steam-boilers, &c. and the new institution appears to be going on successfully.

Durham Cathedral.—We have already alluded to recent works in Durham Cathedral, thought by one of our correspondents to be no improvement. We are now given to understand that the principal object has been to open the transept and nave as a real place of worship for the people. This is a novelty in English cathedrals deserving consideration.

Schools in Cardiff.—On Wednesday, in last week, the foundation-stone of a building which is to be devoted to the purpose of public schools, for the youth of both sexes of the parish of St. Mary, Cardiff, was laid. The site was given by the Marquis of Bute. The building is in the old English style, built with the stone of the county, with freestone dressings, from designs furnished by Mr. George Clinton, of Cardiff, resident architect: Daniel Thomas, the builder. Tenders were advertised for, and the following is a list of those received:—

| | |
|---|---|
| Thomas Reece ..... | £895 |
| John Dunn..... | 897 |
| John Whinstone ..... | 889 |
| Daniel Thomas (accepted) .. | 885 |
| Pryce Davies..... | 855 |
| Noah Jones ..... | 820 |

A correspondent complains much of the course pursued by the Diocesan Society of Llandaff. He says:—"It is well known that the Diocesan Church Building Societies, established in each diocese, have an architect to examine and report upon all plans or designs submitted for aid to such society from the different parishes, the latter employing whom they choose as their architect. Now the diocese of Llandaff, about twelve months since, established one in this diocese, but desiring to be more absolute than the other societies, have appointed, besides a consulting architect (to which there can be no objection), a very young man, a son of one of the clergy of Llandaff Cathedral, as their architect, whose duty it is to provide all plans, specifications, and superintend all churches, chapels, &c., in the whole diocese; to the exclusion of all others."

The Grey Friars, Reading.—The Grey Friars Estate, Reading, was formerly the site of the buildings belonging to a religious foundation of the order of St. Francis, of which the church is the only portion in any tolerable state of preservation, and that is used as the "*Bridewell.*" The estate has been purchased by a townsman, and is being laid out for building purposes, under the superintendence of Mr. Poulton. In some necessary excavation on the estate, various parts of the original buildings have been discovered. The ruins are roughly built of chalk and flint, and at present about 3 feet above the ground, but the level of the flooring is not yet reached; for on the west, at a much lower level, we find the remains of a buttress, or arch-pier, with the three sides of a splayed plinth perfect. Encaustic paving in a very perfect condition, fragments of tracery, &c., and a corbel head well carved, but much mutilated, have been found, and most of these indicate the building to have been erected subsequently to the church, which is middle-pointed, and has been already described in our pages.

Institute of Fine Arts.—On Saturday and Monday last, conversazioni were given by the Institute, and were very fully attended by artists and lovers of art. A very interesting collection of works of art filled the walls and tables, including Etty's fine picture "Cleopatra" (which report says is going out of the country); the first picture exhibited by Maclise at the Royal Academy (in 1833), "Mokanna unveiling his features to Zelica" (a splendid piece of colour); a capital collection of sketches by Mr. Pyne, &c., &c. Mr. L. Pocock contributed some fine specimens of Turner and Hunt. If Mr. Maclise would now exercise his early knowledge of colour, in conjunction with his present power over form and cultivated imagination, he would be the first living artist of our time.

Birmingham Metal Market.—This market suffers considerably from the continued depression of the money market, and business in all metals has been very limited. Copper is dull, and tin equally so; the general impression is that this article will be much lower ere long. Spelter barely maintains its price. Tin plates are firm, but the demand is exceedingly flat.—*Birmingham Journal.*

Competition Designs for Terminus at Newhaven.—The first premium of the London, Brighton, and South Coast Railway Company of 100*l.* has been awarded by the directors to Messrs. J. W. and W. A. Papworth; and the second, of 50*l.* to Mr. Martin Stutely, for their competition designs for the company's terminus at Newhaven.

Dispatch.—The following instance of dispatch in the execution of an order is not unworthy of being chronicled. It shows how much can be accomplished in the course of even a few hours by effective machinery, convenience, and a complete establishment, in every department of the business, of expert and willing workmen. On Thursday last an order was received by Messrs. Banks, Foster, and Co., of Keswick, by the London mail, which reaches that town a little before midday; but as the locomotive engine by which the letters in that place are conveyed from house to house is not on Mr. Crampton's principle, the order in question would probably not reach its destination, a distance of about 150 yards from the post-office, much before four o'clock in the afternoon! When the order came to hand there was not a single pencil of the kind required—"Slate in cedar"—in stock, and fifty gross were wanted in London at an early hour on Saturday morning, otherwise they would be useless. The work was set about instanter. The unshapely pieces of stone were cut into the required scantlings; the wood was cut up, and grooved to receive the pieces of slate, but before a sufficient quantity of "grooves" and slate were ready to put into the hands of the "fitters-in," six o'clock had arrived. Shortly after that hour, however, the fitters-in commenced their portion of the work, and before three o'clock on Friday morning, the whole were fitted-in and glued together! The men resumed their work at the usual hour on Friday morning, and immediately commenced with the various processes of rounding, polishing, cutting into the required lengths, stamping, tying up in labelled packages of a dozen each, and finally into parcels of half a gross each, the whole of which operations were gone through with perfect ease, and the fifty gross, or 7,200 pencils, were dispatched by the mid-day mail to Kendal, from whence they would be forwarded by the mail train to London the same evening, and thus reach the metropolis on Saturday morning some hours before the usual hum of business was heard in the streets of that great city! So much for what can be accomplished by the extraordinary powers of water and steam! By the aid of the former, upwards of 7,000 pencils are carried through their various processes in one establishment and completed within *sixteen hours;* and by the still more marvellous power of the latter, the said pencils are conveyed from Keswick to London in the short space of fourteen hours.—*Cumberland Pacquet.*

Domestic Luxuries in Rome.—My bedroom door and window open upon a terraced garden, at least forty feet above the street, full of orange and lemon trees, magnolias, myrtles, oleanders, and camelias, roses, and violets, in bloom; a fountain of the acqua felice trickles, under the superintendence of a statue, into a marble sbell, and thence escapes under the garden. The view from thence of the eternal city, and its beauteous girdle of hills, surpasses all description, and the twin towers of the Trinita rise close to it up into the blue sky, which looks through belfry arches as through windows, down into my sleeping-room. The coloured tiles of all our ante-rooms and passages enchant me; so do the gay-painted ceilings. The little room where I bathe is a perfect delight to me, with its Latin inscription on the lintel, its marble bath, its walls covered with fresco cupids and dolphins, and altars with flames, and baskets with flowers, all strung together by waving patterns of wreaths and garlands.—*Mrs. Butler's* "Year of Consolation."

To Remove Glass from Old Sashes.—Sir, I send you another way of effecting the above. Take the sashes and lay them singly on a stable dung heap, cover them with dung and straw, as taken from the stable, from twelve to eighteen inches in thickness: in one week the putty will be soft. Take them out and saw the sashes apart at the corners. The sash may then be taken away from the glass with ease. I have cut up a number of old sashes in this way without breaking a pane.—J. C.

London School of Design.—The evidence recently taken relative to the management of the school is printed, and will be laid before the House of Commons in a few days. It is very voluminous, and contains much curious matter.

PROJECTED WORKS.—Tenders were called for by advertisement in last week's newspapers for extensive additions to the Newmarket union-house; erection of a coal storehouse and coke-shed on the works of the Gosport Gas and Coke Company at Newtown, near Gosport; repairing Bow bridge, in the parish of Godshill, and widening and repairing Shide bridge, in the parishes of Carisbrooke and Whippingham, Hampshire; various works necessary in building a new church at Sutton, Lancashire; building new sewers in Clerkenwell (1,200 feet and 800 feet) in separate tenders); extending sewers in Mile End-road (400 feet); covering over the Brook Course at Derby by an arch 24 feet in span, with an inverted arch; supplying quantities of granite, gravel, and other materials, pump iron-work, gas posts, copper lanterns, pipes, fittings, &c, in St. Giles's-in-the-fields, and St. George's, Bloomsbury. Also for the execution of the works on the London and North Western Railway branch from Coventry to Nuneaton; and on 16 miles and 7¾ miles of the Reading and Riegate line; for the erection of stations between Melton Mowbray and Manton on the Midland line; and for the excavation and formation of a tunnel and other works for the Bristol Water-Works.

ELY CATHEDRAL ALTERATIONS.—Various reparations have been executed in the cathedral and collegiate buildings connected with this closing scene of poor Mr. Basevi's life; and the Dean and Chapter are cutting out new work for fresh subscriptions, to the roughly-estimated amount of 8,000*l.*, for which they are now appealing to all who are interested in the thorough restoration of this venerable old national property. The Bishop himself gives 500*l.*, the Dean and Chapter, 1,000*l.* &c. The *Cambridge Advertiser* says:—

"We have been favoured with a plan of the improvements now projected by the Dean and Chapter—one being to throw open all the arches of the present choir to the side aisles, restoring the tombs of Bishops de Luda, Redmayn, Kilkenny, Hotham, Barnett, and Northwold; and of Tiptoft, Earl of Worcester; and bringing into view the magnificent series of monuments, as well as the beautiful monumental chapels of Bishops Alcock and West, to restore and polish the great marble piers of the choir, and to effect many other necessary and admirable improvements. Another and a more extensive and expensive plan is, to extend the restorations to the great lantern, and completely restore that glory of the building, and complete the corona of turrets and pinnacles of the exterior octagon as originally designed. The former of these improvements would cost at least 8,000*l.*, while the latter would require a much larger sum."

NEW CHURCH AT KIMBERLY.—The church just completed at Kimberly, and consecrated on Thursday week, is a plain building, in the early pointed style, consisting of a nave and chancel, the former lighted by four single lancet windows on each side, and a double one with quatrefoil over at the west end. The chancel is of the apse form, divided from the nave by a lofty arch, and lighted by three single lancet windows over a colonade. The walling stone used in the erection of the edifice is from the Kimberly quarries. The buttress, quoins, window and door-dressings are from Coxbench, forming a contrast in colour. The whole length of the building exteriorly is ninety-three feet, and in width thirty-four feet, exclusive of buttresses, and it is forty-eight feet high to the ridge. It has an open timber roof, the principal trusses supported by stone corbels. The nave has a passage down the centre; the divisions filled up with open benches; sittings free. The woodwork in the interior is stained in imitation of oak. The works have been performed by Mr. R. Barber, of Eastwood.

BRITISH GLASS.—A parliamentary paper, just printed, shews that in the year ending the 5th of January last, the following quantities of British glass were exported from the United Kingdom:—14,695 cwt. of flint glass, 20,345 cwt. of window glass, 19,625 superficial feet of plate glass, 217,557 cwt. of common glass bottles, and of looking-glasses and mirrors the declared value exported in the year was 3,671*l.* To China 290 cwt. of flint glass, 140 cwt. of window glass, 3,299 superficial feet of plate glass, and 5,893 cwt. of common glass bottles, besides 370*l.* worth of looking-glasses and mirrors, were sent from the United Kingdom.

OFFICE FOR PUBLIC RECORDS.—It appears that a site has not yet been selected. Sir G. Grey, however, states that a decision on the most eligible of four sites recommended will be now speedily come to.

## TENDERS.

Delivered at Messrs. Charrington's brewery-office on Friday last, 21st, for building about 670 feet of second-size sewer, with drains to front of intended houses,—gullys and street gratings,—also about 640 feet of boundary wall, and 475 feet of road to be made up 3 feet above the present level of Charrington's park.

| | |
|---|---|
| Livermoore | £1,137 |
| Curtis | 1,129 |
| Jay | 1,123 |
| Munday | 1,098 |
| Hill (accepted) | 1,090 |

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, May 31.—Institute of British Architects, 16, Grosvenor-street, 8 P.M.

TUESDAY, June 1.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 2.—Society of Arts, Adelphi, 8 P.M.; Architectural Association.

THURSDAY, 3.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*B. B.*"—We shall be glad to hear *early* from our correspondent, relative to a recent disaster.

"*H. A. M.*"—We cannot afford the information desired.

"*Subscriber.*"—If the quantity of water which fell on one inch superficial of the earth on a given day be obtained, it is, of course, easy to calculate how much fell on a roof of a stated size.

"*A. B.*"—There is no such Act. The hints would be endangered without precaution.

"*J. B. R.*"—It is not the practice.

"*Constant Reader.*"—There is no duty on two windows only. If these are added, and will leave the charge is too high. Look to any pocket book.

"*A Subscriber.*"—"Tables and Rules for Calculating Earthwork, Land Curves, &c. By J. B. Huntington. Weale.

"*Cymro.*"—A copy will be sent regularly, upon receipt of post-office order.

Other Correspondents must excuse us till next week.

*Received.*—"R. O. H." "G. A." "P." "Henri." "W. T." "Constant Reader." "O. W." "R. R." "Amator Veritatis." "Remarks on the Right of Property in Mechanical Invention." By T. Turner.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

MUTUAL LIFE ASSURANCE, ANNUITIES, &c. The INDUSTRIOUS CLASSES may effect Assurances on Life for 20*l.* and upwards. Annuities for the benefit of Widows and Children. Endowments for Children. Premiums may be paid Quarterly or Monthly. Assurers will have the security of a Guarantee Fund.

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| 20 | 1 1 1 | 1 6 2 | 2 11 4 |
| 30 | 1 7 2 | 1 9 3 | 2 16 6 |
| 40 | 1 16 | 1 15 0 | 3 3 8 |
| 45 | 1 14 8 | 2 1 3 | 3 13 0 |
| 50 | 2 4 0 | 2 9 11 | 4 7 1 |
| 55 | 3 0 14 | 3 1 | 5 5 0 |
| 60 | 4 2 4 | 5 1 3 | 6 7 2 |
| 65 | 5 10 1 | 6 19 11 | 7 16 9 |

Every description of Assurance may be effected with this Society, and Policies are granted on the Lives of Persons in any station, and of every age.

BONUS.—The first Bonus declared was 12½ per cent on the Premiums paid. The Third, 25*l.* per cent. The FOURTH Bonus, declared in 1847, was 37*l.* 10*s.* per cent, called in this Report the Seventh Bonus, which has been reserved for future progress, in order that whenever the Bonuses hereafter are expected considerably to exceed that amount.

The Society's business, which is steadily increasing, is now upwards of 1,100 in annual

GEO. H. PINCKARD, Actuary.

78, Great Russell-street, Bloomsbury, London.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times apply, personally or by letter, to the Secretary, from 10 to 4, to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the office as above.

N.B. To expedite the proceedings, personal application at the office would be all essary; if by letter, the party bringing with them the abstract of title, plans, &c.

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney shafts in the Elizabethan style, any of the Orders, pedestals, vases, capitals, &c., trusses, consoles, trusses, &c., on the most reasonable terms, by JOS. HERBERT & SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers Ex. 1 complete 33 per cent cheaper than paper mache.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size casks contain a bona fide Five Bushels, made to a trade measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT.—WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cements, Blue and White Lias Lime, Walls, HYTHE-STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, owing to its state of hardness in damp situations, and is not affected upon by frost.

Being perfectly hydraulic, it is the best cement to use for building in all manner of situations, such as docks, lighthouses, &c. &c.

Manufactured by J. B. WHITE and SONS, Mill-bank-street, Westminster.

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Pastor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts: Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricklayers' hair for sale.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, both of which it will bear the same description. Sand is the only thing required in addition to the Cement.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster Road, and Scot-street, Limehouse.

GREAVES'S LIAS LIME and CEMENT. RUTTY and VEREY, 3, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic railway, and other works; its adhesive qualities being strong and lasting.

AS CONCRETE, it has little power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour similar to Portland stone, and not affected by extremes of heat or cold, by exposure to the atmosphere, and is well adapted for external stucco.

Metalhe sand obtained.

MARTIN'S FIRE PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this valuable Cement with others, which is used to the disappointment of those who employ it, and to the detriment of the manufacturers themselves. MARTIN'S CEMENT is totally distinct in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but effectually resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout the entire fat kind.

3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS UP DUST, SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds; to all of which purposes it has been extensively applied by Sir Thomas Cubitt, in the new houses, &c.

For these purposes, it possesses great advantages over all, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by the Patent Stucco Cement, lately introduced to the public:—It will not shrink. It will not crack. It will not blow green. It requires no drawing. It will not decay. It is not liable to vegetate. It will not harbour vermin. It will not retain damp. It will not absorb moisture. It will be found equally applicable to internal and external work, and is laid or repaired with the same facility and with equal success. It is unaffected by the severest storms. Any plasterer may apply it, the instructions for its application being clear and concise. It is a most valuable material for the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mixes by hot and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It takes a fine polish like Marble, and receives Paint in four days, which cannot be laid upon any other Cement under six months. It is impervious to damp, and is unaffected by the severest Storms. Any Plasterer may apply it, the instructions for its application being clear and concise. It is a most valuable material for the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mixes by hot and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It takes a fine polish like Marble, and receives Paint in four days, which cannot be laid upon any other Cement under six months. It is impervious to damp, and is unaffected by the severest Storms. Any Plasterer may apply it, the instructions for its application being clear and concise. It is a most valuable material for the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mixes by hot and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It takes a fine polish like Marble, and receives Paint in four days, which cannot be laid upon any other Cement under six months. It is impervious to damp, and is unaffected by the severest Storms. Any Plasterer may apply it, the instructions for its application being clear and concise. It is a most valuable material for the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mixes by hot and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It takes a fine polish like Marble, and receives Paint in four days, which cannot be laid upon any other Cement under six months. It is impervious to damp, and is unaffected by the severest Storms. Any Plasterer may apply it, the instructions for its application being clear and concise. It is a most valuable material for the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mixes by hot and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It takes a fine polish like Marble, and receives Paint in four days, which cannot be laid upon any other Cement under six months. It is impervious to damp, and is unaffected by the severest Storms. Any Plasterer may apply it, the instructions for its application at the office of Mr. Bedford, Parliament-street, Westminster, London; of whom also may be had.

JOHN'S and CO.'S PATENT STONE-COLOUR PAINT, expressly intended for the first coat over cement. Without this paint, the Cement will be found to have a mottled appearance, and should have become partially stained. Paint prepared and adapted for this purpose than White Lead Paint, which will frequently colour the first coat of Cement, and cannot be used with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

PATENTEES and SOLE AGENTS for the Patentees, 3, Maiden lane, Queen-street, Cheapside, London.

# THE BUILDER.


TO BUILDERS AND CARPENTERS.

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| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

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Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.
Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

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R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 147, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
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| £3. 6s. | £3. 12s. | £3. 18s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. | £3. 15s. | £4. 5s. | £4. 10s. | £5. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., 5d. 6d., and 6d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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(Late HENDRY and GLOVER),

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PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

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PUMPS.—The attention of Architects, Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brick-fields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 10-inch kept for hire. Estimates given to Drawings if required.—M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

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PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

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Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

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SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or bed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

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LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, South-wark-square, Borough, London.

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The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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PAVING, 2s. 9d. PER SQUARE YARD.

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PHILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 13, WHARF-ROAD, (CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

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| 2½ inch Lift Pump on Plank | 4 0 0 |
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| Well Pumps on Square Tails, with Iron Bow, equally low. | |
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Strong Gun-Metal Steam Cocks, with Union S, and every article in the Trade made to order.

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Best White Lead, 27s.; Seconds, 25s. Thirds, 23s.

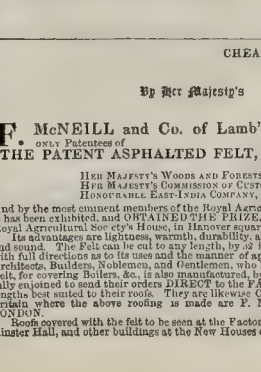
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Brunswick and Navy Greens, Cromoe; Blacks, Blues, Reds, Patent Dryers.

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Brushes, and Plumbers and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.



N.B. The above are also made without the discharge hole being turned downwards.



CHEAP P N FOR WATER-CLOSETS, With Trap in One or Two Pieces.

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Manufacturers of the annexed in super GLAZED STONE WARE.

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their

CLEANLINESS AND CHEAPNESS.

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By Her Majesty's  Royal Letters Patent.

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# THE BUILDER.

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**THE Committee for Letting the Bridge** House Estates will meet at Guildhall, on FRIDAY, the 11th day of June next, at Twelve o'clock precisely, to receive proposals for Building Leases of several Plots of Ground, situate on the south side of Effingham Place, leading from Rich Street to Church Street, Deptford, in the county of Kent. Plans, elevations, and conditions for letting, may be seen at the office of Works, Guildhall. Dated the 27th day of May, 1847.

FERDINAND BRAND,
Comptroller of the Bridge House Estates.

**ELIGIBLE BUILDING GROUND.**—CITY OF LONDON. The Commissioners of Sewers of the City of London will meet in the GUILDHALL of the said city on TUESDAY, the 15th of June next, at Eleven o'clock in the forenoon precisely, to receive Proposals for a Plot of Ground, now vacant, on the east side of Fetter-lane, near Fleet street, on which the said Commissioners will grant Building Leases for a term of Eighty Years on certain conditions, which may be ascertained at this office.

JOSEPH DAW, Prin. Clerk.
Sewers Office, Guildhall, 4th May, 1847.

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**MR. BRAY, Jun.** is favoured with instructions to SELL by AUCTION, on the premises, No. 9, High Holborn (opposite Middle-row, on WEDNESDAY, June 2nd, at 11 o'clock (on account of the number of lots), by order of the Proprietor, the entire business, a genuine stock of Rope, Line, Twine, Cocoa fibre, Matting, Hair-seating, Horsehair, and Long Hair A large size Marquee, Bed-sacking, Webb, Scaffold-cord, Tarpaulin, Hops Mats, Wired Covered ordered Mats, Russia Matting, Shears and Blocks, together with the implements in trade May be viewed one day prior to the sale, and Catalogues had on the premises, and of the Auctioneer, 259, High Holborn.

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**MR. J. J. CLEMMANS,** on the Premises, Byde's Place, near the Eastern Counties Railway, Shoreditch, on MONDAY, June 7th, 1847, at Eleven o'clock precisely, on account of the number of Lots. The Stock comprises nearly 100,000 feet Prime Deal logs of Pencil Cedar, 6in Spruce and Pine deals and battens; 40,000 feet of 11 in., 14 in., 1 in., and 4 in. American Ash; 20,000 feet of Birch and Pine in all thicknesses, yellow battens, and usual stock. May be viewed, and Catalogues had, on Friday and Saturday previous to and morning of Sale, upon the Premises, and of the Auctioneer, Holywell.

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FREEHOLD BUILDING LAND, MERTON, SURREY.

**MR. ROBERT KING** is instructed to SELL by AUCTION, at the Mart, on MONDAY, 7th of June, at Twelve o'clock, several Plots of Building Ground, Land-tax redeemed, eligibly situate on the London-road, in Nelson-grove, in the road leading from the Epsom-road to the Abbey-road, Merton, in the county of Surrey, well suited for the erection of shops or a genteel class of residences.—Particulars, with plans annexed, may be had at the Nelson Arms, Merton, and the principal Inns in the neighbourhood; at the Auction Mart, London; and of the Auctioneer, 22, Great Winchester-street, Old Broad-street, City.

FREEHOLD BUILDING LAND, CROYDON, SURREY. LAND TAX REDEEMED.

**MR. ROBERT KING has received in**structions to SELL, at the Auction Mart, on MONDAY, 7th of June, at Twelve o'clock, in Lots, several acres of most Valuable Freehold Building Ground, Land-tax redeemed, situate near the Town of Croydon, a short distance from the Station of the Brighton and Dover Railways, commanding fine and interesting views, and presenting several charming sites for the erection of Villa and Cottage Residences, which are in great request in the neighbourhood; offering to the Builder, Speculator, and Capitalist, a rare opportunity. The land is rich and dry, with excellent water at about 20 feet from the surface. Particulars, with plans annexed, may be had at the principal Inns in the neighbourhood; at the Mart; and of the Auctioneer, No. 22, Great Winchester-street, Old Broad-street, City.

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LAXTON'S BUILDERS' PRICES, containing nearly 11 000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Buildings Act, and the modification of the Act.—To be had at the office of the "Civil Engineer and Architects' Journal," 10, Fludyer-street, Whitehall; WEALE, High Holborn; SIMPKIN, MARSHAL, and Co., Paternoster-row; and at the office of "The Builder," 2, York-street, Covent-garden.


### PUBLICATIONS.


JOHN WILLIAMS & Co., Architectural and Engineering Publishers, Removed from 193, Strand, to more extensive premises, 141, Strand, late Cahill's, have in the Press several Important Works on Architecture and Engineering; full particulars of which will be given in "The Builder." J. W. & Co. have recently published

The 3rd Edition of the Railway Practice of Great Britain, containing the Works of Brunel, Stephenson, Rennie, Cubitt, McNeill, Locke, and others, with 150 Steel Plates. Price 5l. 5s., or each series 2l. 12s. 6d.

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W. & Co. have now ready a Classed Catalogue of Architectural and Engineering Works, which can be had gratis. The following are selected from it:—

PIRANESI, complete 29 vols. 130 guineas.
STREET ARCHITECTURE OF ROME. 7l. 17s. 6d.
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N.B.—The above four works are all engraved in the finest style of outline, with plans, sections, details, and views, drawn to a large scale by the celebrated Architects, Letarouilly, Gauthier, Cicognara, and Mormand.

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J. W. & Co. are authorised to treat with any first-rate Clerk of Works, who can produce testimonials of integrity and ability, at 5l. 5s. per week, to superintend several Railway Stations.—Application to be made to J. W. & Co. by letter, stating where last employed, and qualifications.


### CONTRACTS.

TO BUILDERS.

PARTIES disposed to Contract for the Erection of a new Chapel in the East India Road, Poplar, can view the Plans and Specifications at Mr. NYE'S, No. 3, New London-street, City, until the 12th inst., from Ten to Four o'clock. Tenders to be delivered at the above place on the 13th inst., before Four o'clock. The lowest tender will not be necessarily accepted.

TO PLUMBERS, &c.

PERSONS desirous of contracting for the conveyance of water to Kimbolton Castle, Huntingdonshire, the seat of His Grace the Duke of Manchester, may learn particulars on application to the architect Mr HABERSHON, the Priory, St. Neots, Hunts. It is estimated that near 4,000 feet of 1¼ strong lead pipe will be required with stop cocks, joints, &c. The present pipe is to be taken in exchange at per cwt. Sealed tenders are to be delivered to the Architect, on Thursday, June 17th.

TO BUILDERS AND OTHERS.

PARTIES desirous of Contracting for all or any of the works, viz., Masons', Carpenters', Slaters', Plasterers', Plumbers', Glaziers', and Painters', required in building a New Church at Sutton, in the parish of Prescot, Lancashire, are to see the plans and specifications by application at the office of Messrs. HEYES, PEMBERTON, and HEYES, Solicitors, Prescot, from Monday, the 31st of May, until Monday, the 14th of June, inclusive. Tenders to be sent in to Messrs. SHARPE and PALEY, Architects, Lancaster, on or before Wednesday, the 16th of June. The site of the proposed church is within fifty yards of the line of the Liverpool and Manchester Railway.

TO BUILDERS, IRONMASTERS, AND OTHERS

THE Directors of the Commercial Gas Light Company will meet at the Works, Ben Jonson's Fields, Stepney, on WEDNESDAY the 23rd day of this present month, to receive TENDERS for the erection of Coal Stores, with Iron Roofs, &c. of an area of 13,000 feet, with Lay-bye adjoining. Plans and Specifications can be seen, and Particulars obtained, on application to Mr. J. MERCER, Engineer, at the Works, between the hours of Ten and Two. Tenders, sealed and endorsed "Tenders for Coal Stores, &c." to be delivered to the Secretary by Twelve o'clock on the above-mentioned day. The Directors do not bind themselves to accept the lowest Tender.—By order of the Board,

Stepney, June 2, 1847. G. JAQUES, Secretary.

FREEHOLD BUILDING GROUND, ISLINGTON.

THE Ecclesiastical Commissioners for England are willing to receive proposals for building leases of a plot of ground comprising about Four Acres, situate in the New North-road, Islington The Plan and Particulars may be inspected at the Office of Messrs. CLUTTON, 3, Whitehall-place, where proposals are to be delivered on or before Monday 21st instant.

ELIGIBLE BUILDING GROUND.—CITY OF LONDON.—The Commissioners of Sewers of the City of London will meet in the GUILDHALL of the said city on TUESDAY, the 15th of June next, at Eleven o'clock in the forenoon precisely, to receive Proposals for a Plot of Ground, now vacant, on the east side of Fetter-lane, near Fleet-street, on which the said Commissioners will grant Building Leases for a term of Eighty Years on certain conditions, which may be ascertained at this office.

JOSEPH DAW, Prin. Clerk.

Sewers Office, Guildhall, 4th May, 1847.

BUILDING LEASES, EFFINGHAM PLACE, DEPTFORD.

THE Committee for Letting the Bridge House Estates will meet at Guildhall, on FRIDAY, the 11th day of June next, at Twelve o'clock precisely, to receive proposals for Building Leases of several Plots of Ground, situate on the south side of Effingham Place, leading from High Street to Church Street, Deptford, in the county of Kent.—Plans, elevations, and conditions for letting, may be seen at the Office of Works, Guildhall.—Dated the 27th day of May, 1847.

FERDINAND BRAND,
Comptroller of the Bridge House Estates.

### CONTRACTS.

TO ARCHITECTS.

NEW Church, Brompton, Kent. The TIME for sending in plans, &c., has been EXTENDED to Friday, June 25th, at noon, when they must be delivered at 4, Exeter Hall, Strand

TENDERS are required for the works to be done in various alterations and repairs to Shenditch Farm House, King's Langley, Herts The plans and specifications may be inspected and copied, by applying to Mr ANDREWS, on the premises, at any time previous to the 12th June, on which day Tenders are to be delivered free of expense at the office of Mr. THOS LAVENDER, Surveyor Watford, Herts The person whose Tender may be accepted, will be required to enter into and give the requisite sureties of the due performance of the works; and the proprietor will not bind himself to accept the lowest or any Tender whatever

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.—COURT OF SEWERS, TOWER HAMLETS'.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting, to be held on WEDNESDAY, the 9th day of June, at Two o'clock in the afternoon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS sealed up from any persons or persons willing to enter into contract for the works necessary in extending the sewer in Assembly-row, Mile End-road, for a length of 400 feet or thereabouts, in the hamlet of Mile End Old Town. A plan and specification of the said several works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. Tenders to be indorsed "Tender for Works." The contractor will be required to sign a provisional agreement to secure the due execution of the said contract, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners. No tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon Dated this 27th day of May, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B.—The Commissioners do not pledge themselves to accept the lowest tender.

SAINT GILES-IN-THE-FIELDS and SAINT GEORGE Bloomsbury.—To Stone merchants, Gravel diggers, Scavengers Rakers, Engineers, and Gas-light fitters.

NOTICE IS HEREBY GIVEN, that the Committee for Paving, Cleansing, and Lighting these Parishes, will meet in the Vestry Room of St. Giles-in-the Fields, on THURSDAY, the 10th day of June next, at Ten o'clock in the forenoon precisely, to receive PROPOSALS from such person or persons as may be willing to CONTRACT for all or any of the following MATERIALS, pursuant to orders to be given by the Committee respectively, for supplying the Committee with the best new, squared Aberdeen, Mount Sorrel, and other Granite, of certain widths and depths, at per ton for each sort; also best Bland-edge, Yorkshire, and other foot paving, at per yard superficial. A full particular of the several widths, and depths, and thickness of the Granite and York to be supplied, may be had by applying at the Clerk's Office, 21, Hart-street, Bloomsbury-square; or of Mr. Birch, Surveyor to the Committee, at his Office, 33, Little Russell-street. Also the best yellow screened binding gravel, at per yard cube; the said several last-mentioned articles to be delivered in such quantities, at such times, and in such places within the said parishes, or either of them as the Committee may direct. Also to receive proposals and contract for Carting for the Committee within the parishes, of old Stone, Gravel, Slop, &c., at per load: the cart used for this purpose must not measure less than 40 cubical feet. Proposals for the above to be for the term of one year from Midsummer next. Also to receive proposals from such person or persons as may be willing to CONTRACT for all or any of the following MATERIALS, pursuant to orders to be given by the Committee respectively, for supplying the Committee with the best new, squared Aberdeen, Mount Sorrel, and other Granite, of certain widths and depths, at per ton for each sort; also best Bland-edge, Yorkshire, and other foot paving, at per yard superficial. A full particular of the several widths, and depths, and thickness of the Granite and York to be supplied, may be had by applying at the Clerk's Office, 21, Hart-street, Bloomsbury-square; or of Mr. Birch, Surveyor to the Committee, at his Office, 33, Little Russell-street. Also the best yellow screened binding gravel, at per yard cube; the said several last-mentioned articles to be delivered in such quantities, at such times, and in such places within the said parishes, or either of them as the Committee may direct. Also to receive proposals and contract for Carting for the Committee within the parishes, of old Stone, Gravel, Slop, &c., at per load: the cart used for this purpose must not measure less than 40 cubical feet. Proposals for the above to be for the term of one year from Midsummer next. Also to receive proposals from such person or persons as may be willing to CONTRACT for one, two, or three years from Midsummer next, for cleansing daily, and twice, or oftener if required by the Committee, the streets and places in parts of the parishes of St. Giles-in-the Fields and St. George, Bloomsbury, a list whereof may be seen at the Clerk's Office. And also for cleansing once in every week, or oftener if required the remainder of the squares, streets, and other places within these parishes. And also to receive proposals from such person or persons as may be willing to contract for the like period (if thought expedient by the Committee) for cleansing and taking away, once or twice daily, the horse droppings, and other manure, filth, soil, and the drippings which may from time to time be collected on the foot and carriage ways of the said several squares, streets, and other places in these parishes (Lincoln's Inn Fields, and the streets and places built upon land belonging to the Foundling Hospital excepted), and for taking away the dust and ashes, &c., from the houses and buildings of the same respectively; and the proposals for the last-mentioned works are in addition to contain three seperate and distinct tenders, namely, two distinct and separate tenders for cleansing the squares, streets, and other places in the manner respectively before mentioned alone, and another distinct tender for the privilege of taking away the dust and ashes, &c., alone: also to receive proposals from such person or persons as may be willing to contract for one, two, or three years, from Midsummer next, for the repairing and keeping in proper working condition the several pumps, suction, and horizontal pipes, boxes, buckets, &c., and all the iron work appertaining to the said pumps, in the said parishes; and also to receive proposals from such person or persons as may be willing to contract for one, two, or three years, from Midsummer next, for supplying the committee with new gas meters and columns, brackets, frames, copper lanterns, service pipes, fittings, &c., and for fixing the same, and also for removing the said gas posts and columns, &c., and refixing the same complete in such situations as may be required by the Committee, the tenders for the last-mentioned service and work to contain the fixed prices to be charged for the said several respective articles and works in accordance with the specification to be seen at the Clerk's Office, and also at the Surveyor's Office

The secretaries of Companies and persons sending tenders are required to attend at the Vestry-room at the time of the meeting. The contractors or contractors not to let or assign the whole or any part of their contracts, work or works to be done, or any part or parts thereof respectively, without the special consent of the Committee. Security to the satisfaction of the Committee will be required for the performance of the several contracts, and the names, places of abode, &c., of the persons to be offered as sureties to be sent with the proposals, sealed, to be endorsed as the case may be. Drafts of the several contracts to be seen at the Clerk's office The Committee will not bind themselves to accept the lowest tender, and will deliver the charge for each of the contracts and bonds. Payments to be made quarterly. Printed particulars for the persons proposing for the supply of stone, gravel, and cartage, may be had of the Clerk or Surveyor, as above.

By order of the Committee,

May 17, 1847. ROBERT FINNIS, Clerk to the Committee.

# THE BUILDER.

LITHOGRAPHY—IMPORTANT TO CONTRACTORS AND BUILDERS.

M. COON having discovered a new method of lithographing Designs and Plans of every description, in at most half the time required from a Draftsman's tracing, is now prepared to execute the same by this method in a superior manner, and on reasonable terms. Estimates of any number required will be given on application, and all orders, whether in town or country, promptly attended to.—Lithographic Printing Office, 15, Cheapside

PLASTER of PARIS of the very best quality, Manufactured and Sold by WRIGHT and Co., 8, Upper Ground street, Blackfriars.

LIME AND CEMENT WHARFS. — Grey stone, Flame-proof and Pasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney pots, Fire bricks, Lumps, Fire clay, and other Building Materials may be obtained on the most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Holland street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland road.—Ground Lime for Concrete.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not rot stucco or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds &c &c

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS JNO GRUDGEON, Factor, 8, Laurence Pountney Hill, Cannon street, London Depots.—Three rails, Wharf, 68 Upper Thames-street; 86 George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich

N.B. Plaster of Paris and Bricks at reasonable prices.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust

It is a cheap and efficient substitute for the use of wood for skirting, architrave and other mouldings, in its application to which purpose it also possesses the great recommendation of being

KEENE'S CEMENT has been in use for upwards of 20 years, and is manufactured by JAMES WHITE and SONS, Millbank-street, Westminster, and Steel street, Liverpool.

GREAVES'S LIAS LIME and CEMENT.

BUTTY and VERRY, 2 South Wharf, Paddington.

LIAS LIME, as Cement, is especially adapted for basses, dock walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement

ARCHITECTURE is of more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel

LIAS CEMENT is easily worked to a beautiful fine colour similar to Portland stone, does not vegetate or crack, it rises by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others erroneously assuming the name of the Patentees, and to guard themselves that WARRANTED GENUINE can only be had of the Patentees and manufacture from every other, and being a neutral compound is entirely free from chemical agency, and no substance with which it may come in contact, is injured by the application of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1 Its great superiority in the hardness of stucco.

2 Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3 Its surface work may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint 1 hour less with it, rendering work ready in 24 hours.

It is peculiarly adapted for internal stucco in walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform colour is of the greatest importance over stone, being at the same time much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 29, FENCHURCH LANE, Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL

JOHN'S and CO.'S PATENT STUCCO CEMENT The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—

It will effectually resist Frost, and will not crack, turn green nor otherwise discolour. It will not crack, flake nor peel off. It will form a complete Stone casing to any Building covered with it. It will resist the action of Water, as a test to detect it. It never requires either to be painted or coloured. It will keep fresh and clean in the wall, and any Cracks that may be of years' standing in the old Cement may be repaired equally for ever. It is the only Cement that can be used with safety in the season. It may be used in the hottest or coldest climate at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It mixes easily, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no other upon it. It may be used in the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or repaired with this Cement can be relied upon by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all these important and valuable advantages nothing can approach it in point of economy

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred

Specimens may be seen and its Properties fully proved at the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom may be obtained on application at the Office of The Public, 2 and 3, Mansion House Buildings

SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT WHITE STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman Cement, and also white Paint becomes very much injured. It is superior, and better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement, whereas MESSRS. JOHN'S and CO.'S PATENT PAINT has no such effect, but by a chemical union it stops the Cement from ever cracking, the walls are rendered weather proof, and this finish produces a pure stone like effect, producible by no other Paint whatever. It can be put on by any Painter, in any climate, even in the most exposed Marine situation.

TO ARCHITECTURAL DRAUGHTSMEN.

AN Architect in the Country is immediate want of an Assistant. He must be a clear, rapid draughtsman, well acquainted with the details of the Gothic and Classical styles, and capable of working from sketches. The requirement is permanent employment to a steadily suitable Person. Address A. Z., Post Office, Cardiff, stating terms, &c

IRONMONGERS' Draughtsman, Designer, and Pattern maker. J. B. SMITH, No. 2a5, Tottenham court-road, London

Registration of Designs effected.

TO SOLICITORS AND ARCHITECTS

WANTED £20,000 on Mortgage of First-rate Freehold Buildings in progress of construction; and Building Land of ample value for the same required. The property lies close to the Regent's Park, and is free from risk. Apply to A. Z., 20, New Bond-st., W. Part-time

AN ENROLLED SOCIETY, consisting of upwards of 300 Members, are in WANT (Country) of a RESPECTABLE ROOM to meet in Two Nights per Month, with occasional accommodation for a Committee. The situation must be easy of access, and within half a mile of the Middlesex side of Waterloo-bridge. A Room unfurnished with a Public House would be preferred. Address, free, stating terms, &c. W. F., 4, Glister Buildings, Alfred Place, Walworth-road.

SEVERAL PLOTS of Building Ground TO BE LET, on Wandsworth Common. For particulars apply to Messrs. PANSON, 9, Laurence Pountney-lane, Cannon-street.

ELIGIBLE BUILDING LAND.

SEVERAL PLOTS of Building Ground in the vicinity of Regent's-park, abutting on the new park, enclosed on Primrose-hill, TO BE LET on long Leases. Apply at Mr THOMAS LITTLE'S Offices, 36, Northumberland-street, New-road

BUILDING GROUND, in and contiguous to New Pier street, Chelsea, directly opposite to the Champ-er, to be let, for a term of 84 years. Apply to Mr RICHARD TRESS, Architect, 23, Little St Thomas Apostle, City

ST. JOHN'S WOOD PARK !!! IMMEDIATE CONNECTION WITH REGENT'S PARK

BUILDING PLOTS TO BE LET in this most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument with the best approaches from all parts of and direct near the metropolis, and greatest facilities of access to all the fashionable resorts and places of amusement in the West End and the City. For particulars and plans, apply to W. H TWENTYMAN, Esq., 14, Regent's villas, Avenue road, Regent's park

BUILDING GROUND TO LET in Kingstreet, Kingsland-road, about a mile from the city, for fourth-rate houses, four rooms, a kitchen and room over. A very eligible plot of ground for the erection of ten houses, to be let for 72 years, at a low ground rent. It is very advantageous for Builders and speculators, as the ground is partly built on, and could be let or sold in the present state. A plot on King-street, Regent's-ground, Kentish-road, and the ground fronting from the Canal Bridge.—Three rents small plots.

TO BUILDERS CONTRACTORS &c

VERY eligible Premises TO LET, in Blackman-street, Borough. For particulars apply at the office of R A WALLINGTON, Esq., Architect, Gresham-street; or Messrs J ANSON, 9, Lawrence Pountney-lane, City.

BUILDING GROUND

TO LET on advantageous terms, some good eligible Building Apply at the offices of Messrs. FOWLER and FISH, Architects, 28, Sackville-street, Piccadilly, where plans and particulars can be seen.

CASSLAND ESTATE.

FREEHOLD LAND to LET on Building leases, for a term of 80 years, divided into speculations of any magnitude. The estate adjoins Victoria park, and arrangements are in progress for a direct communication into the city. This property possesses the requisite advantages of a large amount of land on the south and east, being inalienable for building or manufacturing. Trees and ornamental timber, and a noble range of the finest healthy suburban residences, distant about 3½ miles from the Royal Exchange. For particulars apply to Mr. WALLIS, at the Estate office, Cassland-road, Hackney.

TO BUILDERS, WHARFINGERS, AND OTHERS.

TO BE LET, a very compact Wharf, being No 2, Eagle Wharf Road, City Road (near the Britannia Bridge) It has been fitted up for a builder with every convenience, having a handsome dwelling-house, shop room for ten benches, ironmongery and store rooms, sheds, saw-pits, stabling, &c., and every thing required for carrying on the building business, or any other trade requiring waterside premises as there is room for three barges alongside, or to float timber.—For particulars, apply to Mr. G. SINCLAIR, Finsbury Terrace, City Road; or to Mr. LEADBETTER, at the Blockmakers' Arms, near the premises, where a person is on the premises.

MANOR PARK ESTATE, STREATHAM, SURREY.

TO BE LET, on Building Leases, in the above Park, in this favourite and select district close to the Parish Church, upwards of Sixty Plots for Villas, Fifty for Terraces, and several for Shops and Stabling, the whole forming a belt round the interior of the Manor Park, which from its combination of woodland surface, ornamental water and walks, and undulating form, is of peculiar beauty. Private roads, well drained, gravelled, and lighted, communicate with the Park. Fine timber, both White and Red, Stone and other of an excellent quality, and in any quantities, may be had on the Estate, and an allowance will be made for the value where used in the Estate roads and Sharpsand of a superior description are found in abundance on the ground and water is laid on. The healthiness of the situation, and other accommodation afforded to respectable builders taking an adequate interest in the property, which is likely to be immediately remunerative to them, from a great and increasing demand for houses existing on this part of the road—for Terms, and Plans, Sections, and Particulars, apply to Messrs. BANKES, FORD, and DUNCUMB, and WICKERMAN, No. 4, South-square, Gray's Inn; Messrs GOUGH and ROUMIEU, Architects, No. 16, Lincoln's-inn-fields; or Mr WILKINS, at the Manor park Office, Streatham.

CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and only Patentees of THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c. Patronized by

HER MAJESTY'S WOODS AND FORESTS.
HER MAJESTY'S COMMISSIONERS OF CUSTOMS,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC SOCIETY GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Houses of Parliament, and in all parts of the kingdom.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 28 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full particulars, sent free by post. Testimonials from eminent engineers, architects, and others, may be seen. Agents in all parts of the country. Any person can fix it, and it may be tarred and gravelled, and will last for many years. A Dry-rot Felt for covering Rollers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully cautioned against PIRATICAL ORDERS. DIRECT to the FACTORY, as the purest means of having supplied with the genuine article and in lengths warranted of the rolls. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as it is the great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactory, LAMB'S BUILDINGS, BUNHILL-ROW LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Verandah and Carts the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade

BRICKS.—For Sale, 100,000 Bricks, lying at Mitcham Grove, Mitcham.—Apply to Mr. GOLDING, Builder Wandsworth-common on the Premises.

## SALES BY AUCTION.

TIMBER SALE, Audley End, near Saffron Walden, Essex.—About 170 Timber Trees, consisting of 120 Beech, 15 Ash, 8 Elm, 8 Oak, 7 Sycamore, and 15 Alder; 63 very fine Larch Trees, upwards of 70 years' growth, 30 Spruce Firs; also 400 Ash and other Poles, and a quantity of Firewood, to be Sold by Auction, by

MARTIN NOCKOLDS, upon the Premises, on MONDAY, June 7, 1847, at Eleven o'clock. May be viewed by applying to Mr HORTON, at Audley End, of whom Catalogues may be had, and at the office of the Auctioneer, Saffron Walden, Essex. Six months' credit will be given on approved security.—Sale to commence on the Fulvan Green, near Mr. Smith's Farm

FREEHOLD BUILDING LAND, MERTON, SURREY.

MR. ROBERT KING is instructed to SELL by AUCTION at the Mart, on MONDAY, 7th of June, at Twelve o'clock, several Plots of Building Ground, Land-tax redeemed, eligibly situate on the London road, in Nelson grove, in the road leading from the London road to the Abbey road, Merton, in the county of Surrey, well suited for the erection of shops or a genteel class of residences.—Particulars, with plans annexed, may be had at the Nelson Arms, Merton, and the principal Inns in the neighbourhood; at the Auction Mart, London; and of the Auctioneer, 22, Great Winchester-street, Old Broad-street, City.

FREEHOLD BUILDING LAND, CROYDON, SURREY, LAND TAX REDEEMED.

MR. ROBERT KING has received instructions to SELL, at the Auction Mart, on MONDAY, 7th of June, at Twelve o'clock, in Lots, several acres of most Valuable Freehold Building Ground, Land-tax redeemed, situate near the Town of Croydon, a short distance from the Station of the Brighton and Dover Railways, commanding the most interesting views, and presenting several unrivalled sites for the erection of Villa and Cottage Residences, which are in great request in the neighbourhood; offering to the Builder, Speculator, and Capitalist, a rare opportunity. The soil is rich and dry, with excellent water at about 30 feet from the surface.—Particulars, with plans annexed, may be had at the principal Inns in the neighbourhood; at the Mart; and of the Auctioneer, No. 22, Great Winchester-street, Old Broad street, City.

STOCK OF A TIMBER MERCHANT Peremptory Sale, the lease having expired

MR. T. TIMS will SELL by AUCTION, on the premises, 50, High-street, St. Giles's, on MONDAY, June 14 at eleven o'clock, the whole of the numerous Lots, the capital dry Stock of Timber, including many thousand feet of fine quality, seasoned Mahogany, Rosewood, Satin, Oak, Maple Rose, Box, Sycamore, Lime, Beech, Cedar, Coromandel, Pine, Mast and other woods in Logs, Planks, and Boards of various thicknesses, about 60,000 feet of Veneers; also Pine Boards, Deals, and useful wood and effects. The whole to be cleared from the premises before Midsummer day.—May be viewed on Saturday, the 12th and Morning of Sale. Catalogues had on the premises, and at the Auctioneer's Offices, 63, Upper Charlotte-street, Fitzroy-square.

MIDDLESEX. To Brickmakers. Four Acres of Freehold Land full of rich brick earth, near the Grand Junction Canal, at Yeading, in the parish of Hayes.

MR. ROBINS is instructed to SELL by AUCTION, at the Mart, on THURSDAY, June 17th, at Twelve in one lot,—a snug little Freehold Property at Yeading, comprising five cottages and barns, and four acres of rich orchard and meadow land, full, plashy, with the choicest fruit trees and ornamental trees, in the exception of ash sapwood. It is near the Church Bridge Road the turnpike being at the closest available distance to the Grand Junction Canal, and presents a capital opportunity for brickmaking, as the land is abundantly rich. It may be viewed, and particulars had of Mr. Wood and House, Hayes, the land agent, Yeading; of J. ALDRIDGE, Esq., Solicitor, 27, Montague place; at the Mart, and at Mr ROBINS's three Counter-garden.

Freehold Building Land at Slough, with Votes for the County, not far from the Railway Station, in a capital situation, opposite Upton Park, on the Patchet-road.

MR. ROBINS is instructed to offer to public SALE, at the Auction Mart, on Thursday, June 17, at twelve, in 38 lots, a most eligible PLOT of FREEHOLD BUILDING LAND at Slough, divided into lots, each giving a vote for the county, with 80 feet each of frontage and a depth of 150 feet, and with ready access from the Paddington railway station to secure the advantages of the country. The principal front is the road leading to Datchet and Windsor, and Upton Park, one of the pleasing features of the design for which, combined and partaking of all the advantages derivable from a close proximity to this interesting property. The situation of the ground offers strong temptations to a speculator, both with regard to the excellence of the air and soil, being in high request for residences on a moderate scale, whilst the Castle and town of Windsor, the venerable College of Eton, and the Great Western Railway, add their importance to the value, and certainty of success of the scheme.—Particulars, with lithographed plans, may be had at the Royal Hotel, Slough; White Hart and Castle, Windsor; of Messrs. PARKE, FREETH, and PARKE, Solicitors, 63, Lincoln's-inn-fields; at the Mart; and at Mr. ROBINS's offices, Covent-garden.

BUILDING LAND, PECKHAM, ADJOINING THE ROSEMARY BRANCH RACE COURSE.

MR. SINGLE will LET by AUCTION, at the Mart, on the Site the Bank, on FRIDAY, June 18th, at One precisely, 43 Plots of very valuable Building Land, desirably situate, adjoining the Rosemary Branch Race Course, and presenting unique and eligible building sites. Long Leases will be granted direct from the freeholder, for terms of 99 years.—Particulars may be obtained of THOMAS HARVEY, Esq., Solicitor, 11, Artillery Place, Finsbury Square, and at the Office of Mr. SINGLE, Land Agent, 34, Coleman Street.

INTERIOR DECORATIONS. — Designs prepared for Dining and Drawing Rooms, Libraries, Halls, &c., adapted to every style of architecture, and painted in a superior manner in Distemper. Also Bas Reliefs, &c., by J. GOODISON, Designer and Practical Decorator, 29, Lake street, Grosvenor-square.

A Pupil wanted.—A Premium required.

The Builder.

No. CCXXVI.

SATURDAY, JUNE 5, 1847.

THE failure of the cast-iron girder-bridge at Chester, and its frightful consequences, cannot fail to cause much anxiety to every man engaged in construction, whether director or operative. Planned by one of the first engineers of the day, executed *without regard to cost*, the girders tested singly (at least so say the witnesses), the structure in use ever since *November last*, and yet on the instant, without a moment's warning, failure takes place, the whole is a ruin,—and property, and human life, and the happiness, perhaps welfare, of surviving relatives are sacrificed.

If security cannot be obtained with certainty under the circumstances attending the erection of this and similar constructions, how can it be looked for in those buildings where, cheapness being of necessity studied, the devisers and contractors are cramped and confined, and the *just enough* is all that is proposed: where the inquiry is, how little will do? and provision against extraordinary accidents cannot be considered.

A very rigorous inquiry into the cause of the failure which is now agitating the public is the first thing necessary. Is it to be looked for in the foundation, the masonry, or the iron? At present opinions vary considerably, but we have little doubt in our own minds that it will be found in the latter. Was the design of the girder a good one, and sufficient for the largeness of the span,—nearly 100 feet? How was the casting conducted? and, in short, where does the blame, if any, rest? Efforts will of course be made to shift it, but the public safety demands that it should be *correctly* arrived at. For some time past, as we happen to know, an impression has prevailed in the neighbourhood of the bridge that it was unsafe; the grounds for this impression will probably appear during the inquiry which is now going on, and in which many able men are engaged. In addition to those mentioned in our last, Captain Simmons, of the Engineers, and Mr. James Walker, have been sent down by the Railway Board, and Major Foster is watching the proceedings on the part of the Admiralty. General Pasley is also there, and Messrs. Locke, Vignolles, and other engineers.

Before making any further observations, we proceed to lay before our readers such portions of the evidence already given, as bear most strongly on the questions wherein we are more particularly interested.

The engine driver proved that the speed at which the train was travelling when it reached the bridge was about 15 to 20 miles an hour. He had been on the line about six months, and had never felt any particular vibration or subsidence when passing over this bridge.

Sir E. S. Walker, acting as foreman of the jury, said that reports had described the deflection of the bridge to be at times as much as from 3 to 6 inches. The jury wished that a pole should be fixed under one of the arches with a painted top, and a train passed over, so as to ascertain its precise state. This was promised.

Thomas Frith, who was fishing in the Dee, within a 100 yards of the bridge, when the accident occurred, saw a large piece of the iron girder fall from the middle buttress, and the train follow amidst a heap of stone and rubbish. He had been under the bridge on the same day, when a previous train was going over, and then saw *the same iron girder bend, which afterwards broke.*

Mr. Thomas Alfred Yarrow, who was selected by the coroner and jury to examine the bridge, said:—

I have been a civil engineer for the last 12 years. I have held the appointment of bridge-master for Chester for some time, and have no connection at present with any railway. I have made the construction of bridges my entire study. I have made an examination of the railway bridge over the Dee, and I now read my report of the inspection:—"Upon examining the bridge, I found that the masonry and ironwork, with the exception of that part of each which has fallen, were in an apparently sound state. The principle of the bridge is that of trussed girders of cast metal resting upon stone piers and abutments, which are parallel to the course of the river, but askew to the railway above. Each girder consists of three pieces, having vertical flanges, with bolts at the joints, and, in addition to being bolted to the full depth of the girder, each joint is surmounted by a segmental piece, to receive which, notches have been cast in the upper surface of the girders. The tension rods descend in an oblique direction to each joint, and are carried horizontally between them; they consist of separate bars of wrought iron, which are secured to each other laterally by clips. The portion of the bridge which has fallen consists of one outside girder on the Salteney side of the river, with the attached platform and transverse tension rods. Two stones, composing part of the string course, and acting as a bed for the girder on the Salteney abutment have fallen, and also the corner stone at the acute angle of the opposite river pier upon which the broken girder rested. The girder itself is broken, having two fractures in the length near to the Salteney abutment, and one in its centre. Having premised this short description of the construction of the bridge, and its present appearance, I may proceed to detail the facts which I have remarked during my investigation, and which have enabled me to arrive at a confident conclusion as to the cause of the accident. My attention was in the first instance directed to an examination of the fractured ends of the girder, for the purpose of ascertaining whether any defect had existed in the castings. The appearance of the broken surface led me to conclude that the castings had been sound, and the tension bars, as far as they have yet been recovered from the water, are unbroken. From calculations which I have made of the strength of the girders, taken from an actual measurement of the section at the point of fracture, I find that, independent of any additional strength that may be obtained from the tension bars, the girders alone are capable of sustaining a much greater weight than could under any ordinary circumstances be placed upon them. The breaking weight of each girder I calculate at 74 tons, supposing the weight to be concentrated over one point, and of both girders 148 tons. But it is an admitted principle that a beam will carry twice the weight, distributed over its whole surface, that it will bear upon one point. We can therefore conclude, that twice the above weight, $148 + 2 = 296$ tons, is the breaking weight of one bay or opening of the bridge for one line of rails. The weight of girders and platform is, at a rough calculation, about 90 tons, which must be deducted from the foregoing quantity; we have therefore 296, less 90, equal 206 tons as the breaking weight; and this is altogether without reference to the tension bars. From the above facts, I concluded that the accident did not arise from the breaking of the girder as a primary cause, and I therefore directed my attention to the state of the masonry and to a consideration of its sustaining power. Having carefully examined all the displaced stone and their respective beds, I found that one, previously named as forming the acute angle of the river pier, and upon which one end of the broken girder rested, was totally inadequate, in its form and bearing surface, to its important situation. This stone had sustained nearly three-quarters of that portion of the flange of the girder which rested upon the pier. The area of its lower surface is 24 feet 6 inches, of which 11 feet 6 inches only was bedded on the pier, leaving 13 feet to overhang as a cornice. The stone was not connected by cramps or ties with the adjoining masonry of the pier. The railway over the whole bridge is curved. The broken girder supporting the outer side, and being subject to a greater lateral force than the girders forming the inside radius of the curve, I consider that this lateral force, acting during the passage of each train, must have so far loosened the inefficient masonry as to cause a displacement of the girder itself and its consequent fracture."

When examined, he said:—If I had had the management of the bridge I certainly should have had a greater strength of masonry round the girder. Considerable vibration would be likely to disturb the masonry. I tried the deflection of the arch opposite the third one. An engine and loaded ballast waggons, in weight about 50 tons, passed over it, and the deflection was about one inch and a third.

Mr. Robert Board, superintendent of the Mansley Iron Works.—The girders of the Chester railway bridge over the Dee were manufactured at those works. They were tested before sent to the railway. Each girder was placed side by side and tested by 50 tons of iron being put on them in the centre. We took the deflection on every five tons, but have not got the particulars of those deflections. The ordinary pressure on the girders passing over them would not exceed 50 tons. After the girders had been tested we found a flaw in one of them: it was a mere honey-cake, and it was rectified before it was sent away. I have since examined the girder, and found that the accident had not resulted from the flaw. The fractures were in the sound metal. I superintended the fixing of the girders. There are many railway bridges of the same kind. On the Trent Valley line there are eight of the kind. It is not opened to the public as yet, but on the Blackwall Railway there are several that have had heavy trains passing over them for years. The one over the Dee is the largest. I never heard of any of them giving way. Have been several times to view the bridge when trains were passing over it, and found the deflection very trivial, not much more than an inch. Have heard that it was considerable.

Mr. Tyrrell said, that as there seemed to have been a feeling that the bridge was dangerous, and as the line was leased to the Chester and Shrewsbury Railway, probably the gentleman who represented that company would state whether they had received any communication to that effect.

The coroner remarked—Most certainly the notion had prevailed for some time that the bridge was unsafe. He did not know from whence it emanated, but it was a well-known fact that many had declined to cross it. He had laboured under that impression and had not risked himself on it.

Several who were present made a statement to the same effect. Major Robe, being examined, said he had watched the construction of the bridge, and had expressed apprehensions as to its security. [We should like to know the major's reasons]. He differed from Mr. Yarrow as to the cause of the accident, and attributed it rather to the breaking of the girder than the insecurity of the masonry.*

Mr. Lee, clerk of the works of the Chester and Holyhead Railway, said—I superintended the construction of the bridge. The abutments on the Salteney side are piled for a foundation. Upon the piles were placed a strong flooring of timber, and upon that platform we built the abutment with ashlar stone facings, 10 feet in thickness; the piles are built on hard clay, and all the materials are of the

* According to the newspapers, the Rev. A. Rigg, the principal of Chester Training College, says, there are three causes for the accident:—1st, the defect in the masonry; 2nd, the peculiar vibration, brought about by accidental circumstances; the bridge, although not a suspension-bridge, was a structure that would vibrate in three ways—vertically, horizontally, and also with a slight and almost inappreciable longitudinal motion; 3rd, the horizontal vibrations from the centrifugal force of the train passing over.

soundest description. He believed the accident had been caused by a lateral blow, such a blow as the tender striking the girder might produce; but it was difficult to say. The breaking of the girder would cause the fall of masonry. Tested the deflection of the bridge before and since the accident, and found it to range from an inch to an inch and three-eighths.

At a further investigation, on Wednesday, a full report of which appears in *The Times*, three witnesses, who had been employed in painting the girders of the bridge, gave evidence that when trains went over it, the deflection was from one inch to *five inches*.

Major-General Sir Charles William Pasley, having been sworn, said:—

I was the Government Inspector-General of Railways when the Chester and Holyhead Railway was opened. I surveyed the bridge over the river Dee on the 20th of October, and reported it as safe. I compared the plans with the actual building, and examined it in such detail as I deemed necessary. It is an iron girder bridge, of three openings or spans of 98 feet each; wrought-iron tension rods are used to strengthen it. I always was of opinion, and am so still, that these tension rods are not of great use, because I consider that the expansion of wrought and cast-iron from heat differs in some degree, although not very greatly; but that iron girders being very massive and the tension bars thin and of small dimensions, the sun may act on the wrought-iron rods very considerably and less on the cast-iron girders; and, supposing them to be adjusted for a moderate temperature, the intensity of hot weather may destroy their proper proportion and do away with the benefit of the tension. I may here state that wrought-iron, when acted upon, will elongate considerably without breaking, but cast-iron will not without breaking. There have been a number of bridges of this description erected on railways in various parts of England, both before and after I held the appointment of Inspector-General of Railways, none of which, with the exception of this one, ever failed. They were not quite of the same extent, but I will allude to a cast-iron girder bridge at York, over the river Ouse, of the York and Scarboro' Railway, which has two openings of 70 feet span. The least depth of the iron girder on that bridge is 3 feet. The least depth of those on the Dee bridge is 3 feet 9 inches; and as the bridge at York and other similar bridges have stood, I concluded that this one would, as it had an extra depth. I may also mention another bridge over the Tees, at Stockton, although I have not seen it. I may vouch for what I state to be correct. It has a span of 83 feet 4 inches, and the least depth of iron is 3 feet.

Mr. R. Stephenson said it was 87 feet.

General Pasley.—I thought it was what I stated, but you may be correct. The flange on this bridge is greater than on others. I have frequently mentioned to engineers that wrought-iron tension rods would do little good. In my inspection of a cast-iron girder bridge, on the Syston and Peterborough Railway, built by Mr. Liddle, the resident engineer, I found that he had omitted tension bars, and in my report to the Earl of Clarendon I approved of the omission, and considered it a preferable construction. It appeared that Mr. Liddle could not get the tension rods in time, and therefore he built the bridge without them. Having mentioned this repeatedly to engineers, and having been given to understand that Mr. Bidder and Mr. Gooch, two gentlemen for whom I entertain much respect, have made experiments with a view of testing the strength of girders without rods, I am informed that the trial was in favour of the latter. As to the cause of the accident; — it has been stated that some time after the Shrewsbury and Chester Railway was opened, and after I had inspected it, a girder was cracked and replaced by a new girder. This circumstance, which I did not know, and which was never reported to Government, coupled with the fracture of this one, induces me to think they are not safe, and that it is the mere cast of a die between their safety and danger. They are on the verge of danger. By examining the bridge on Thursday last and to-day, I consider that the tension rods are of very little use indeed. The tension rods are connected with the girder alone, as if they were part of it. They have no independent support, and there is a difference between this bridge and Mr. Stephenson's former iron girder bridges. In all his former girder bridges there is a connexion from girder to girder, on the central pier or piers, from one end of the bridge to the other, so that when the pressure is on one girder, the other girder in the same line contributes to assist. That is the case with the one on the river Ouse at York. The horizontal portion of these bars appears to be useless. The oblique tension bars would be of use if the upper ends were fixed to some independent support to each pier, and similar independent support on each abutment, and if the standards or support over the abutments had tension bars extending inland to resist the heavy weight going over the extreme bays or openings of the bridge. There is a swing bridge over the river Wensham, at Norwich, strengthened on this principle, and which is extremely judicious. In this case I consider that the girder broke on a train passing over, added to the weight of the ballast that had been thrown on it in the course of the morning. The masonry gave way from the girder breaking, and from that cause alone. I examined the girder; and the castings seemed very good, and I believe it is generally admitted that they are good; but the girder was too weak after the ballast that was put upon it. The girder was far enough in the masonry to support it. There was quite bearing enough to render it secure. I do not think the engine driver suddenly putting on the steam would cause the engine to bound with such force as to break the girder. I saw nothing to throw the carriages off the rails on the bridge, which had strong guard rails. I should say that no girder could have withstood a deflection of $5\frac{1}{2}$ inches, as stated by a witness this day. It would have broken short at once. A continued deflection of four inches must have broken it long before this occurred.

Mr. Robert Stephenson put in a written report on the accident; from which it appeared, that on the day it occurred, and only a few hours previously, he had narrowly inspected every part of the bridge, and saw nothing to indicate weakness. He had carefully examined into every circumstance connected with the disaster since, and for reasons which he gave, was satisfied that it arose from a violent blow against the girder, near to the abutment on the Salteney side, caused by the train getting off the rails. The report said:—

"It has been suggested that the unequal expansion and contraction of the girder, during great changes of temperature, might probably interfere with the uniform strength of the metal. It is impossible to deny that this circumstance does sometimes interfere with the strength of cast-iron beams, but generally this influence may be regarded as confined to castings where the thickness of the different parts vary considerably. In the present case, the form of the castings was carefully studied, and with only such small deviation from absolute uniformity in all the thicknesses of the different parts of the section, as practice has long proved to be justifiable.

With regard to the competent strength of the structure, I concur generally in the deduction drawn by Mr. Yarrow, in which I am confirmed by an extensive experience in the construction and use of similar structures, tried under circumstances that demonstrate their capabilities to meet all the ordinary contingencies of railway traffic."

When the remainder of the evidence is before us, and more accurate details of the construction of the bridge, we shall return to the subject.

At the present moment, when several iron bridges of a very peculiar construction are in progress, when cast-iron girders are being most extensively used, as well in important public and national buildings as in private houses, and a general desire seems apparent to substitute this material for wood wherever it is practicable, it is of the utmost importance that a continued series of experiments upon it should be instituted, and our knowledge of its properties increased.

The difficulty of obtaining uniform texture in castings (on which its strength so much depends), the effect of improper treatment of iron in casting, such as removing it red-hot from the moulds, and the impossibility of judging from external appearance alone, make it imperatively necessary that every cast-iron beam should be subjected to some efficient proof, before it is employed in buildings. To obtain the best *forms* for beams, we need scarcely say, is of the utmost importance, and these are as yet far from determined on.

On a previous occasion we urged the desirability of substituting *wrought* iron for cast, in building, wherever it is possible; as much greater reliance may be placed on the former than on the latter. Exactly two years ago, we reviewed at some length an able report by Sir Henry de la Beche and Mr. Thomas Cubitt, on the fall of the cotton mill at Oldham, wherein the importance of this substitution was forcibly expressed.*

It cannot be other than useful, at this moment, to quote the following passage in that report:—

"While on the subject of cast-iron for beams, we would state our strong conviction, founded on a general view of the subject, of the importance of substituting wrought-iron for cast-iron whenever it can be accomplished, and we anticipate that wrought-iron will be rolled into a sufficient size for all the uses to which large cast-iron beams are now applied, judging from the present size of rolled pieces of iron. When this shall have been accomplished, a great advance will have been made in the use of iron, seeing that beams, or other large pieces of that metal, may, with confidence, be relied upon. We consider that when wrought-iron can be thus rolled and employed, its use will become most extensive, and that the consumption of iron for building purposes would be greatly increased, to the benefit of an important branch of our national industry.

Seeing the increased and increasing employment of cast-iron in buildings in various parts of the country; considering that there is frequent neglect of the form and strength of the cast-iron beams and columns so employed, placing many lives in peril, a neglect not unfrequently arising from an absence of sufficient information on the subject; and regarding extensive knowledge on this head as not only of great importance to your Majesty's corps of Royal Engineers, but also as more likely to be advanced by rendering available the knowledge possessed by that able corps, than by applying to any other body of men in your Majesty's service, we would recommend that, at such times as may be deemed proper, experiments respecting the best and strongest forms of cast and wrought-iron beams and columns should be conducted by officers of the Royal Engineers, at your Majesty's arsenal at Woolwich, or elsewhere, as may be considered expedient, under the control of the Master-General and Board of Ordnance.

We would venture to anticipate that such experiments, so conducted, would be of great public importance, not only by testing the value of those hitherto made, but also by leading to highly beneficial and practical results, the more beneficial in proportion as a knowledge of them could be disseminated by publications of a moderate price, thus spreading the needful information so as to aid those requiring it, and check those who may wilfully neglect, or not be sufficiently thoughtful of the risk of human life."

The hinderance in the way of obtaining wrought-iron beams of sufficient size, is the expense of the works necessary for their production. The demand at this moment is not sufficient to induce individuals to risk the large capital that would be required for such an undertaking; and unless the government lend their aid, it may be a long time before any thing is done in this behalf.

* See Vol. III., p. 277 and p. 289.

Mr. Cubitt, in a postscript to the report alluded to, dwelt on this at some length, and was quoted by us at the time. He suggested for the consideration of government, the expediency of devoting 1,000*l.* or 1,500*l.* to this purpose, and proposed that premiums should be offered for the best and strongest rolled iron beams, calculated for the use of floors, to sustain a load not under twenty-five tons, with bearings not less than 24 feet apart. We would strongly urge this very important subject on the attention of men in power. We are far from desiring to be alarmists, but we only express what we have often felt (long before the fall of this bridge on the Chester Railway), when we say, that there are many structures wherein the cast-iron employed is the germ of a disaster, and that the stability of such during even several years is no assurance against the occurrence of an accident, instantaneous and terrible.

## ROYAL INSTITUTE OF ARCHITECTS.

On Monday evening last, at an ordinary meeting of the Institute, Mr. Charles Fowler, V. P., in the chair, Mr. Clayton forwarded drawings of the remains of the round church in Ludlow Castle, and various other presents were announced. The Dean of Hereford, in presenting a copy of Mr. Phillips' appeal in favour of the restoration of Hereford Cathedral, made some observations on the works, and on the growing desire felt by the laity, as well as the clergy, to see our fine old churches restored. The Foreign Secretary presented a copy of a work by the Chev. Canina, on the structures of a part of Italy, from the Dowager Queen of Sardinia; and from Canina himself, a copy of his work on Rome, in the Christian times. M. Cæsar Daly forwarded a number of parts of the *Revue Generale de l'Architecture;* and Mr. Allason, his work on the Antiquities of Pola, Stanhope's Travels, and a paper from the *Quarterly*, establishing Mr. Allason's claim to the discovery of the *entasis* in Greek columns.

Mr. Brown exhibited a very curious marble panel found in Pompeii, which was beautifully sculptured on both sides. Some persons had thought that such decorative panels were hung up between columns, during the festivals of Bacchus, but Mr. Brown considered it had been used to fill a window opening; and that it had turned on a pivot, top and bottom. The heads carved upon it shewed very high art.

A cast of a bust in zinc, by a process recently discovered in Paris, was exhibited. The appearance of bronze was given to it, and it was stated to be very cheap.

Mr. J. G. Crace then read an account of the Palaces of Blois and Chambord, which will be found at length in our present number, and exhibited a variety of interesting illustrations of the Renaissance style of art from those buildings.

In the course of a long discussion which ensued at the close of the paper, Professor Donaldson observed that we had few works of the Renaissance in England to compare with those in France. There were two or three at Cambridge, of which the details were very good. At Blois, while the details were classic, the pervading sentiment was Gothic. To study works of this character, wherein there was much fancy and imagination, architects must go to France. The severe style of art was losing ground in England, and he thought it very probable that that of the Renaissance would be more practised here than it had been. He could not conclude without remarking how ably Mr. Crace, to whom they owed the paper of the evening, had carried out the views of Mr. Barry at the House of Lords.

Mr. I'Anson agreed in the opinion that we had no specimens of the Renaissance comparable with those of France. The screen in King's College Chapel, Cambridge, occurred to him as one of the few good examples. If we recalled the history of the countries, the reason of the difference was obvious. France, always fond of war, invaded Italy, and Francis I. brought thence Italian artists and a love of art. The Gothic of France of the period preceding the Renaissance, and practised contemporaneously with the style of the latter, was better than ours of the same period. For the great beauty of the ornaments and details in works of the Renaissance, France was indebted to the *cinque-centists* of Italy. The Renaissance was now and had been for some time the prevailing taste of Paris.

The Dean of Westminster remarked that there were some good decorations at Thornbury, which might stand fairly by the side of those at Blois. The desolation of Chambord had been mentioned: it was worth stating that one fragment of art there had been preserved. This was, the side-board of the founder. The last use made of it was for the embalming the body of Marshal Saxe! It was of stone, and had escaped destruction through its worthlessness. The Dean then made some observations, incidentally, on the use of the lias stone: several old towers near Bristol were constructed of it, and had lasted well. He thought it desirable the quarries should be again looked to. There were other stones, too, which might be made available, being more durable than the Bath oolite. Several of the Bath stone bridges on the Great Western Railway were already scaling and splitting.

The Chairman thought it most desirable that new materials, opened to us by the gigantic works of railroad companies, should be tested and made available.

## AN ACCOUNT OF THE PALACE OF BLOIS AND PALACE OF CHAMBORD, FRANCE.

ESPECIALLY OF THE DECORATIONS.

Having been much interested during an excursion made to Touraine, in the autumn of last year, by visits to Blois, Chambord, Chenouceaux, Amboise, and other monuments of the Renaissance style of architecture, which abound in that district of France, I am induced to lay before you a description of what I saw at the two former of those places, Blois and Chambord.

The town of Blois, on the river Loire, is of very considerable antiquity, and contains many objects highly interesting to the lover of mediæval art. It lies between two hills, on one of which is the cathedral, on the other the palace or castle.

The Castle of Blois is supposed to stand on the site of a Roman camp. Mention is made of it in history about the ninth century. I do not attempt to detail to you its various possessors, but merely observe, that in the year 1292 it first came to the De Chatillons, who are supposed to have built parts of the castle. Froissart, who was chaplain to Guy de Chatillon, Count de Blois, says, that it was "grand and strong, and one of the handsomest in France." By this Count Guy it was sold, as indignantly mentioned by Froissart, to Louis d'Orleans, brother to King Charles VI., who took possession in 1397. The Orleans retained the property till their descendant became King of France under the title of Louis XII.; it then remained crown property till Louis XIII. bestowed it on his brother, Gaston d'Orleans, at whose death it seems to have reverted to the crown, and at the Revolution to have become public property. Viewed as you ascend from the town, the castle appears rising from a mass of rock, on which is an imposing base of solid masonry, giving the idea of a fortress of considerable strength. Passing the west front of the building, you arrive at the Place des Jesuites, when the eye is struck with the magnificent north front of the quarter erected by Francis I. This front is entirely of stone; partly in two and partly in three stories. The windows are in arched recesses, relieved with deep colouring, producing a rich and powerful effect; between the windows are pilasters, and where these are double they are separated by niches and deep recesses. Picturesque bays also project in various parts of this façade. A large circular tower marks the old *tour des oubliettes*, or the *donjon*, considered one of the oldest parts of the building. The roof is separated from the entablature by a series of columns, thus forming an open gallery, and from the pedestals of these columns project tremendous gargels. To my mind the effect of this front is truly beautiful, and a successful example of the introduction of colour to architectural exterior. Part of the building was erected by the architect Mansard, by direction of Gaston d'Orleans, in the reign of Louis XIII., in a style of art seen to great disadvantage beside the beautiful front I have attempted to describe.

Leaving the *Place*, we approach the east front of the exterior, constructed by Louis XII. It is of brick, with ornamental stone dressings. I regret not being able to shew a view of this front, which is very picturesque, I sketched one window, and also—what is the principal object—the canopied recess that formerly contained the equestrian statue of King Louis XII. This recess, surmounted by its canopy, is of stone beautifully wrought. I have ventured to restore, in the drawing, the colouring to the back-ground, powdered with gold *fleurs-de-lis*, and to replace the statue as it existed previous to the Revolution, from a drawing in a manuscript by Felibien. On the fascia under the statue was formerly placed an inscription, in Latin, which may be thus translated:—

> "Where by the grace of God Louis was born,
> Here also, with a noble hand, he assumed the royal sceptre.
> Happy the day which announced the coming of so great a monarch.
> France could not have found a king more worthy of her."

That statue and the inscription are alike removed, and on the same fascia is now written "Caserne d'Infanterie." The palace of Louis XII. "the father of his people," is now a barrack.

Under this canopy is an archway, forming the principal entrance to the interior court of the palace. This court consists of an irregular square, the four sides of which are in as many styles of architecture. On the south, the Gothic of the fifteenth century; on the east, the elaborately ornamented Gothic of Louis XII.; on the north, the elegant *renaissance* of Francis I.; and on the west, the Franco-Italian style of Mansard: all these, full of irregularities, produce an *ensemble* picturesque and charming to the eyes of all, and most interesting to the lover of art.

The south side of the building, looking towards the interior court, was altered and partly rebuilt by the old Dukes of Orleans. It is of an unpretending style of domestic Gothic, the outer walls being of brick, the windows and dressings of stone. In this quarter, in addition to various apartments, is the old chapel of St. Calais, which dates from a much earlier period; a view of it can be seen in Androuet Ducerceau.

The east side of the court is the building erected by Louis XII.; it is of red brick, with window dressings, string courses, and enrichments of stone richly carved; above, rises a high roof formerly crested with gilt metalwork, from which project dormers in stone of beautiful tracery, the whole resting in front on a colonnade, forming a sort of cloister; the stone pillars being diapered with trellis work, in which were formerly *fleurs-de-lis* and ermines. This quarter contains the apartments occupied by King Louis XII., which, though now under one universal coat of whitewash and all in the occupation of soldiers, were formerly fitted up with regal splendour.

Here, in the year 1501, King Louis XII. received in this building the Archduke Phillip of Austria, and a chronicler of the period gives a most complete and interesting description of the palace as it then appeared. The east front was then just finished, its network of stone shewn in all its brilliant freshness on its bright brick ground; the carvings were seen in all their perfection; a profusion of *fleurs-de-lis* and ermines, sculptured or painted, were spread over the building; gold, purple, and azure dazzled the eye in every direction, even up to the roof, whose crestings and enrichments were also gilt; over every door was seen the royal badge of the porcupine spreading out its quills, and over the entrance archway was the splendid statute of the king himself, young and handsome, noble and full of grace, as he then was.

Nor was the interior less magnificently decorated: rich tapestries, wrought in figures or flowers, or ornaments, furnished the walls; over the floors were spread thick carpets. The chimney-pieces were blazoned with heraldic shields, paintings, and devices; the joists of the ceilings (for they were unplastered then) glittered with gilding and elegant decoration; furniture, carved with the utmost delicacy of finish; beds, covered in the richest stuffs, embroidered in gold and in silks of all colours

—these ornamented the apartments. And as if to recall the salutary thought of death, in the midst of all that was gay and joyful there was painted, as was usual then, the celebrated dance, *Macabre*, on the walls under the piazza or colonnade.

The king was proud of his palace, and right royally did he receive his visitors. Our chronicler, after describing with much interesing detail the procession by torchlight, the reception of the archduke and duchess, and the ceremonies of introduction to the king and queen, continues his description of the apartments of the palace.

"The Grand Hall, by which the archduke and duchess entered, was of great size, and hung with a tapestry of the Destruction of Troy; and in the like manner also a chapel at the end of the hall. The room where the king dined, and where the archduchess was, was hung with a tapestry of a battle. Over the chimney was a grand mantle of cloth of gold, craped very rich. The chamber of young Madame Claude was next to the king's, and was hung with a tapestry of pastorals, all small, with inscriptions, which was very fine. Afterwards came the chamber of the queen, hung with a tapestry of strange beasts and birds, with figures from foreign countries; and in said room was a bed, all dressed out with cloth of gold, craped very rich; and above the bed a canopy of crimson damask. In the lodgings of the archduke there was a gallery, hung with tapestry of the deeds of the Trojans; after that a grand chamber, hung with tapestry of the actions of Alexander the Great, and a mantle over the chimney, of cloth of gold, craped. From the ceiling of this room hung two chandeliers, marvellously large, of silver, made crossways, for placing on each four flambeaux, which chandeliers hung by great chains of silver. At the end of this room was the chamber of the archduchess, where the said lady and gentleman slept, which was hung with cloth of gold, wove with black and red. Here were two beds, of which the one in which they slept was of stuff embroidered in gold, and curtains of the same, lined with white damask: and above this bed was a canopy, the top of cloth of gold, the curtains of taffetty, yellow and red.

The other bed was furnished in the same manner, and on each were coverlets of cloth of gold, and inside them sheets of linen from Holland. All around the beds, and on the buffet were carpets of cloth of gold. In the corner by the bed was a gilt chair, admirably wrought by Italians, of which the seat, &c. was covered with cloth of gold, fringed all round with fringes of gold and silver. Before the chimney was another chair, also covered with cloth of gold, and there was carpet of the same stuff under it; also, there were many rich cushions in the room to sit upon."

And thus goes on our chronicler, describing every room: one hung with crimson velvet embroidered with K's and A's, crowned; another with crimson embroidered with cords and the arms of Burgundy; another with brocade, yellow and grey, powdered with S's in black velvet; another with crimson satin embroidered in flames of fire, and at the angles and in the centre were lions in wreaths, entirely covered in pearls, and which were mighty rich to see, and cost 40 to 50,000 ducats. And the chronicler further takes care to remark, that all the said stuffs and tapestries were as fresh and good as new, and that the floors of all the rooms were covered with carpets of velvet, so that nothing of the floors was seen.

Thus was furnished this palace of a king of France at a time contemporary with the reign of our Henry VII.

At each extremity of the front of Louis XII., and forming part of the work erected by him, is a square tower of picturesque appearance. It contains a staircase of considerable elegance. The stairs radiate round a centre shaft, which is formed of clustering columns terminating in a crown at top, from which rises a vaulted ceiling. Though the construction and many of the details are Gothic, yet some of the ornaments partake of an Italian character.

From this staircase we pass to the part of the palace the most historically famous, the ancient *Salle des Etats*, a large building, of somewhat plain appearance, dating about the thirteenth century, although several alterations of a later period have been made to its windows, &c. In this spacious hall the three estates of the kingdom used formerly to assemble. It has a rude and bare appearance; down the centre range a series of pointed arches, resting on columns supporting the roof, and dividing the ceiling into two parts, which are arched, and simply covered with flat boards. In the reign of Henry III. the states were summoned to meet here; and it was during their assembly that the powerful Duc de Guise was murdered in one of the apartments of the palace. The hall was then richly ornamented; the walls were hung with splendid tapestry, worked in figures, relieved with gold; the columns covered with purple velvet, powdered with gold *fleurs-de-lis;* and the ceiling was also covered with tapestry. A platform was raised nearly in the centre, behind one of the arches, on which was placed the throne of the king, all being covered with purple velvet, powdered with gold *fleurs-de-lis*, and on this, and on the steps to it, were seats for the blood royal; behind stood the archers of the guard; in front, and on either side, were the three estates, and in galleries at the end were seats for ladies;—the common people were also allowed to enter within certain barriers. The king descended from his apartments into the hall by wooden stairs at the end, but which stairs are now removed.

Adjoining the ancient *Salle des Etats*, and forming the northern side of the quadrangle, is that quarter of the palace erected by Francis I. This front, by the elegance of its proportions, the beauty of its details, and the grandeur of its effect, is by far the most imposing feature in the whole building, and a most tasteful specimen of the Renaissance style of architecture. The exterior front, towards the *Place des Jesuites*, I have already described; this, towards the interior court, is altogether different: here we have more elaborate decoration and greater delicacy of finish. It is entirely of stone, and composed of two principal floors, decorated by pilasters and panellings; round the windows are interlaced enrichments, and the reveals are panelled, and were, I suspect, formerly relieved with colour. Above is an entablature of considerable richness and beautiful effect. Its modillions project to some extent, and above them is a kind of machicolation, containing shell enrichments in its recesses; over this rises an ornamental balustrade, formed of the letters F and C, for the initials of Francis I. and Claude of France. From the roof project dormer windows of graceful outline; and even the chimney-shafts are enriched, and by no means unworthy of remark. The roof itself was formerly crested with an ornament composed of *fleurs-de-lis*, gilded. Below was formerly a colonnade supporting a gallery, as given by Ducerceau, which, although now removed, is about to be restored. But the principal object in this front, and which gives a charm to the whole, is the grand open staircase, situate about the centre of the façade, and projecting in front of it. This has lately been restored, and now shines forth in the full beauty of all its delicate and tasteful workmanship. The balustrades are formed of open carvings of foliage and the crawling salamander. Niches of most elaborate detail and elegant arabesques adorn the shafts of the pilasters; twining foliage is sculptured round the mouldings of the window openings;—in every part does ornament seem to clothe this magnificent work of art like the delicate foliage and clinging tendrils of the ivy clustering round a tree, yet nowhere does it superabound or appear misplaced.

The interior of this staircase is also ornamented with carved niches and enrichments; mounting its steps, we enter the suite of apartments on the first floor, being those formerly occupied by Queen Catherine de Medici. The first is called the *Salle des Gardes*, or guard chamber, a room of considerable size. The chimney-piece of stone, though massive in construction, is to be noticed for the elegance and richness of its ornaments; the stair door-frame is decorated, and has over it the salamander in flames, the badge of Francis I. The ceiling here, as in most of the rooms in this building, is formed of beams, which are, in fact, the floor-joists of the room above; the effect of these, when painted, is by no means unpleasing. I made a sketch of the decorations lately executed on this ceiling, in which the initials, arms, and badges are mingled, with forcible contrasts of colour; whether the precise pattern is a restoration or not, I had no means of discovering; but there are many old examples of this mode of ornamenting the ceilings still remaining at Chenouceaux, Fontainbleau, and other places; and in Venice, almost all the older palaces have the ceilings decorated in this way, with arabesques and inlaid ornaments of great variety and beauty. The walls of this chamber are now bare, so they are all, in fact; nothing now remains of the splendour that dazzled the eyes, or the works of art that delighted the mind, during the time of Francis I. We pass through a multitude of rooms, but all are desolate alike—each has suffered the distressing calamity of whitewash—not a vestige of furniture, not a hanging remains. The chimney-pieces alone attest the magnificence and beauty with which the remainder must have been ornamented. I anticipated the pleasure of sketching these, which possess a rich fund of *renaissance* art, but a custodian abruptly prohibited my making further drawings; and I was thus prevented taking many details in the interior that might have proved interesting. The state-rooms seem to have been situated on this court-side of the building; and on the other, looking towards the *Place des Jesuites*, were the large bed-room and private apartments of the queen; amongst others, her cabinet. In this the walls are covered by carved panelling, the details of which are executed with much spirit and taste.

Again mounting the open staircase, we reach the floor above, the disposition of the rooms on which is exactly similar to the one we have left. These were the apartments occupied by King Henry III. You enter first the *Salle des Gardes*, which served also as a council chamber; from hence you pass into the king's bed-room, a very spacious apartment looking towards the *Place des Jesuites*. Here occurred the tragedy of the murder of the celebrated Duc de Guise.

The cabinet of the king is next this chamber; it is a small room, which still retains some traces of decorations. On the ceiling are to be distinguished slight remains of colouring, and arabesque ornament in fresco may still be seen on the linings of the window recess. On the left of the bed-chamber you enter a sort of passage which leads to the old Tour des Oubliettes or Donjon, of which so many horrors are retailed; at present nothing but bare walls of considerable thickness are to be seen.

Above this second floor are a range of rooms in the roof, but these contain no ornamental or interesting feature of any kind except that a most extensive view of the adjoining country is to be obtained from the open gallery outside them.

Of the west front I have little to say; it is that erected by Gaston d'Orleans, in the time of Louis XIII. As a structure away from these middle age remains, it would probably be admired, but here it is thoroughly out of place. It stands on the site of a part of the ancient château erected by the old Dukes of Orleans.

Before leaving the Château de Blois, I must not omit to call attention to an old tower, used subsequently as an observatory and astrological study by Catherine de Medici.*

JOHN GREGORY CRACE.

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THE BRITTON TESTIMONIAL.—One of a series of dinners, to which we have before referred, arranged by those gentlemen who are interesting themselves most in the testimonial to our excellent old friend, Mr. Britton, was given at Long's Hotel, on Wednesday evening last. Mr. Britton was there, and Mr. William Took, Mr. Gould, Mr. Thomas Cubitt, Mr. Herbert, Mr. Lewis Pocock, Mr. Grissell, Mr. Gibbons, and Mr. William Jerdan. Mr. Peter Cunningham and Mr. Godwin were the hosts. Mr. Britton read a pleasant sketch of the progress of what has become the "Britton Club;" and "Literature," "Art," the "Constructive Sciences," and "Friendship," were duly honoured and responded to. Her Majesty the Queen has forwarded a subscription of ten guineas to the fund, and Lord Lansdowne, the Dean of Westminster, Sir Edward Bulwer Lytton, Mr. Crofton Croker, the Rev. Thomas Dale, Sir Thomas Phillips, Sir Thomas Dean, &c., have added their names to the list of subscribers.

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The account of Chambord next week

## ART-UNION OF LONDON.

The council being deputed to select a work of art for a 150*l.* prizeholder, have purchased Mr. L. Haghe's fine work at the New Water Colour Gallery, "Meeting-room of the Brewer's Corporation at Antwerp," which, strange to say, had remained until this time without a purchaser. They have also selected one of the best of Mr. Hurlstone's works, from the Society of British Artists.

A beautiful plate, by Bacon, after Wehnert, "The prisoner of Gisors," has been bought by the council. A print of this, in addition to the illustrated "Allegro" and "Penseroso," will be presented to each subscriber of the current year. Mr. Herbert, R.A., and Mr. David Roberts, R.A., have added their names to the list of artists by whom these illustrations will be executed.*

## THE STATUE STILL UPON THE ARCH.

The further removal, last week, of the scaffolding by the side of the arch at Hyde Park Corner, alarmed many of our readers out of their propriety, and produced us a crop of violent letters on the subject. Our former correspondent, "An Inhabitant of May-fair," expresses the feelings of horror with which, on returning to town after a visit to the country, he saw the statue still in its place, and the means of removal taken away. He continues, "I must confess, however, notwithstanding these feelings, mixed with anger, at the breach of faith on the part of Government, in not having removed the statue, that a degree of satisfaction came over me, when I saw this most absurd conjunction thus fully exposed; I felt what a length of wordy warfare would have been spared, had the "whole hog," as it is now, been shewn at first. But, Sir, despite of this, despite of the declared, decided opinions of the Royal Academy, of the Institute of Architects, of very many others of the highest knowledge of art, and of the Government itself—in the face of all these, is this obstinate committee, now actually taking away more of the means for the removal of the statue, seeming determined, *nolens volens*, that this defacement of the metropolis shall continue, in open derision of all public taste, and in insolent defiance of public opinion."

In the House of Commons, on Monday, Mr. C. Berkeley, who was to have asked a question relative to the Wellington statue, stated that he had received a communication from the noble lord the Chief Commissioner of Woods and Forests, requesting him to postpone doing so. Would the noble lord be able to answer the question on Friday or Monday next? Lord J. Russell replied, that the hon. gentleman would be aware that the committee for erecting the statue had declared, that the effect could not be seen till the scaffolding was removed. The scaffolding having now been removed to the extent they wished, he would be ready to answer the hon. gentleman's question on Friday or Monday next.

All London has already answered the question pretty conclusively; and, for our own part, we thought that the Government had done so too.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Francesco Inghirami*—the noted Italian antiquary, lately dead—was born at Volterra in 1772, and passed his first years of maturity in the military service of the order of Malta. Returned to his native place, it was the quarries of alabaster of that city, and the works made thereof, which first attracted his notice. They occupy nearly 300 persons, and the columns, capitals, vases, &c. made there, are conveyed over the whole of Europe. It is in eight different places that the hills above Volterra are opened for this purpose, which whitens the houses, as those of Lüttich are blackened by other sorts of industry. Having been thus directed towards art, Inghirami made a complete course of drawing at the Academy of Florence, and subsequently became a constant companion of Philip Hackert, and thus improved much in landscape and other painting. His acquaintance with Lanzi turned him towards antiquity; and, on his return to Volterra, he became librarian and director of the Etruscan Museum. About this time (1810) he published his remarks on Micali's splendid work, "L'Italia avanti il dominio dei Romani." This induced him to devote his whole time to the study of Etruscan antiquities, to which his transfer to Florence was very favourable. For, combining all his purposes in one establishment, he employed about forty draughtsmen, engravers, &c., in the old abbey of Fiesole (a work of Brunelleschi), under the name of Poligrafia Fiesolana. Here he brought out: "Monumenti. Etruschi o di Etrusco nome," 10 vols. 4to., 1820—1826. Then "The Galleria Homerica," 3 vols. 8vo., 1831—1835, at which Tischbein, and subsequently Schorn, co-operated. An entirely new vein of antiquarian knowledge was developed in Inghirami's "Etrusco Museo Chiusino," *2 vols. 4to.*, 1833, which represented and described a very rich collection of the ruins of this place, distant from the general road of antiquarian research. Another work of original stamp was his "Pitture di vasi fittili," 4 vols., 1835—1837, in which he intended to give a complete selection of all vase pictures interesting for the history of art or civilization, or ancient mythology. His works on the antiquities of his native town and Tuscany are many—as *Sulle ricerche di Vetulonia*, his description of Fiesole and its Badia, of the Palazzo Pitti, &c. The only fruit, however, of an activity of sixty years' duration, says Mr. Polidori, was *poverty*.—[*Archivo storico Italiano.*]

*The Paving of the Champs Elisées and of the Avenues des Invalides.*—The great avenue of the Champs Elisées is to be provided with a substantial, uniform macadamising instead of the present pavement, which is to be transected by bitumen foot-paths for the easier crossing of promenaders. There are also behind the Hotel des Invalides several large avenues planted with trees, such as A. de Vilars, Saxe, &c., which are to be included in this plan. All these well-sited places will increase in importance and value by the present amelioration.

*The Eglise of St. Denis*—will receive an additional ornament in two niches, which formed part of the front of the old church near the Caserne des Célestines, now demolishing. They contain the statues of Charles V. and Queen Jeanne de Bourbon, and have been presented by the municipality of Paris to the Minister of Public works.

*Covered Street Arcades at Paris.*—A huge company, with a capital of fifty millions of francs, has just been formed, for constructing a series of *passages couverts* from the Boulevard St. Denis to the Place du Châtelet. The company to be called *C. des Galéries du Commerce.*

*New Houses of Parliament at Berlin.*—As the procedures of this body turn out satisfactorily both to themselves and Government, plans for the erection of a permanent locale have been of late canvassed. The meeting of the representatives of a nation within the precincts of a royal residence might have done very well in the middle ages, but is quite incongruous now—even considering the mere rooms required for the diverse committees, the spaces for the library, and the piling and classifying of documents and records. As Berlin has (*under* Schinkel) grown up rather in a classic style of architecture, the same was, at first, thought of for the projected new houses. But the saying of Goethe, that "columns and windows will never agree," seems to be thrown in the scale—and thus it may be, that the new Houses on the banks of the Thames may serve as a model for the Imperial Parliament of Prussia.

*Art Union of Bonn.*—Since the great Dusseldorf Gallery had been *abducted* to Munich, the Nether-rhine was deficient in any larger collection of pictures. Still a great many artworks had remained behind from the time of the art-friendly electors, as well as the mediæval art-bloom of Cologne and Westphalia. On this account a society has been formed at Bonn to start an exhibition. The committee have invited many art-friends with the best success, where a number of paintings, most interesting for the history of art—even some Italian and Spanish works—have been found. Thus a room of armoury, also one for engravings, and another for modern paintings, will be arranged; for which latter object the Dusseldorf Steam Navigation Company have granted an exemption from freight. The exhibition will take place in the progressing building of the *Hospital.*

*Artesian Wells at Venice.*—As the first well of the kind bored on Campo St. Paolo has yielded satisfactory results, another has been made, of late, on the same locality. At a depth of 60 metres, strata of grit were attained, which being perforated, yielded an abundant stream of water. The column rises eight feet above ground, and yields every minute 160 litres of water. It created a thorough astonishment with the assembled multitude, that the stream of water, being brought in contact with a flame, burnt in a most vivid manner, which is produced by the carburetted hydrogen gas it contains. This gas, which is often a concomitant of artesian springs, has been used for ages past as a means of lighting coal-mines in China, where it astonished some of the French missionaries, even before the introduction of gas-lighting in Europe. It is, however, an important question, whether such hydrogenized water as that of Venice will turn out potable.

*Grand Viaduct over the Garonne, at Bordeaux.*—This extensive plan had occupied, for some time, the study of a *commission nautique*, instituted by order of the secretary of public works. The commission have decided on the execution of this great structure, by the means of which the Paris Railway will pass the Garonne, near Paludate, where a great terminus is to be erected for the combined three lines of Paris, Bordeaux, and Cette. The commission have formed a plan, which will neither influence the *regime* of the stream, nor encroach on the interests of navigation. The viaduct will be at a distance of 1,000 metres from the bridge of Bordeaux. The length of the span for crossing the main of the river to be 600 metres; but this length will have to be much extended on both sides, where the floodings of the stream take place, and would interrupt the communication with the lines. This work will be one of great difficulties, on account of the driving of the piles, as there is no solid ground but at the depth of 17 metres under the middle height of the river. The expense is estimated at ten millions of francs. [The French press begin already to *grumble* at the injudicious planning of so many *costly* works, surpassing the financial capabilities of the land.]

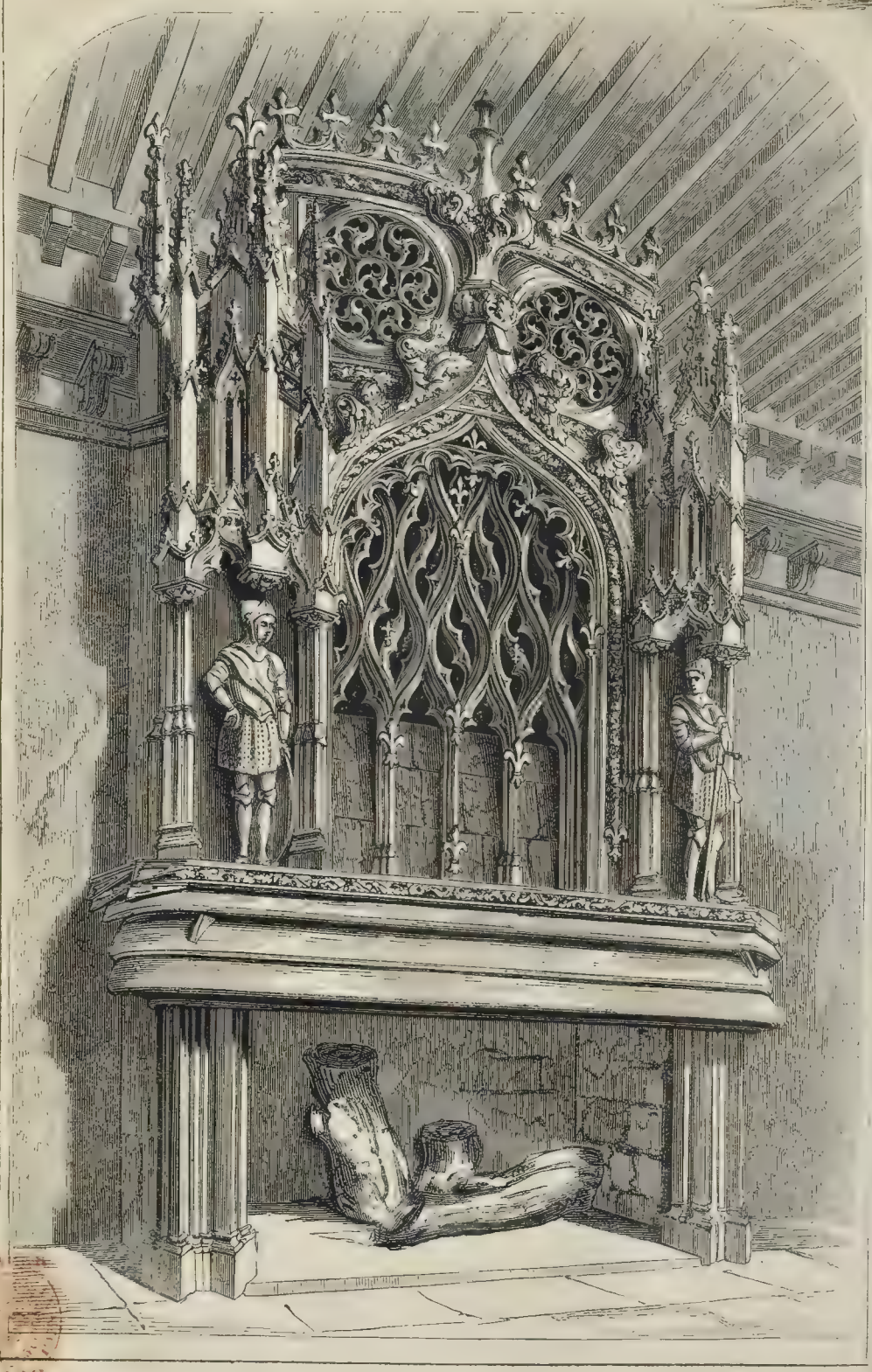
*The great European Railway Festival.*—A German journal proposes the celebration of a festival of a novel character. It is to be celebrated on the completion of "*the great European lines*," as that from Berlin to St. Petersburg; St. Petersburg to Moskow and Odessa; Berlin to Vienna; Vienna to Triest; Paris to Marseilles. Simultaneous trains are thus proposed to start from all the *maritime* termini on the Mediterranean, the Baltic, the Adriatic, and the Black Sea, and to centre in some city to be afterwards agreed upon, where this converging and combination of man's traffic and industry (an emblem of their social and political brotherhood) ought to be solemnised by appropriate popular and state festivals. Our cotemporary thinks, that the distance from St. Petersburg to Marseilles (about 1,200 miles) can be safely done in three days.

*Improvements in China.*—[From the *Peking Gazette.*]—The paving of this metropolis has been hitherto so bad, that after rain, horses waded up to their hips in mud, even in the principal streets. The means with which this improvement is to be effected are most characteristic, and worthy of notice. China was, at former times, so overburthened with specie, that whole cases of gold and silver ingots were sunk in the canal of Mukden as a reserve for future emergencies. In the present case, the Emperor orders that some capital (lying idle) should be placed on interest, to be employed in the paving of Peking, the improvement of the Imperial Canal, &c.

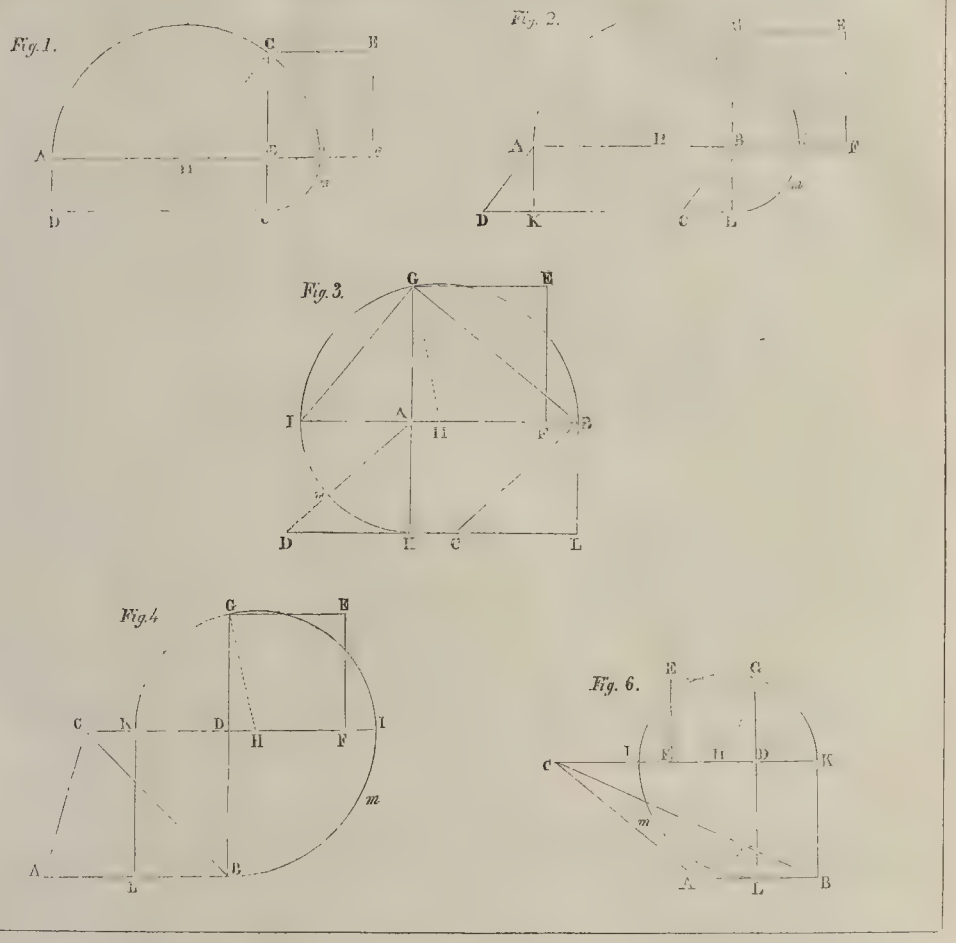
New Works in Egypt.—Mougel Bey, the chief engineer of the Nile barrage, has 12,000 men day and night driving piles with the steam pile-driving machines recently got from England, and which, with other machinery from France, also in use, are valued at 14,000*l.* sterling. A project has just been set on foot at Alexandria to erect a building, to comprise a theatre, exchange, and casino.

* Mr. Dominic Colnaghi, of Pall Mall East, has just now published two very good lithographs of the honorary secretaries.

FIRE-PLACE IN THE PALACE OF THE DUKES OF BURDUNDY, AT DIJON.



## GEOMETRY OF THE SQUARE.




## GOTHIC STONE CHIMNEY PIECE.

IN THE GUARD CHAMBER OF THE ANCIENT PALACE OF THE DUKES OF BURGUNDY, AT DIJON IN FRANCE.

The palace at Dijon was erected by Philip the Good, at a time when the latest French Gothic, or Flamboyant, was beginning to be debased by an admixture of Italian detail. Mr. Dawson Turner terms the style thus formed, "Burgundian:" it was wholly employed in domestic buildings; "no distinct examples of it can be dated anterior to the reign of Philip the Good, and buildings bearing its characteristics are found in all the states which were under his authority" (Britton). The fire-place illustrated, appears not a very pure specimen of any distinct style; it has an admixture of the earlier French Gothic or Rayonnant. The flat arch, the cavetto of the arch filled with running foliage, and the decorated niches on each side, are of the Flamboyant character. There does not appear to be any Italian detail at all in it. The date is probably the latter end of the 15th century. Fire-places of the Gothic period generally projected considerably into the room, having the upper portion of a pyramidal form to convey the flue into the wall. The decorated stone-work in the French example conceals this contrivance effectually, and it is probably the most elegant specimen remaining. There are several ancient Gothic fire-places with the pyramidal upper part existing, in this country, but they are all undecorated. In France, a small concealed place or chamber was often constructed behind the fire-place. The Duchess De Berry and her attendants were captured in one of these hiding-places, having crowded more into it than the space was intended to hold, and the soldiers having made a large fire in front of them.

The view given is made from materials preserved in the library of the School of Design, Somerset House. C. J. Richardson.

## GEOMETRY OF THE SQUARE.

INTRODUCTION.

In our last volume we inserted several papers of a useful nature on the "Conversion of Areas," with the solution of one or two problems allied to the same principle, intended to illustrate its utility in practical constructions. We have since had occasion to refer to these papers in consequence of inquiries from several of our correspondents; we therefore feel inclined to consider the subject somewhat more at large; but in the first place, it is necessary to draw the reader's attention to the following exposition of the motives which have induced us to resume the inquiry.

The object of these papers is to inculcate the universal employment of the scale and compasses in the solution of geometrical and mechanical problems, and thereby to avoid the tedium and prolixity which generally attend the necessary operations when performed by numbers. The great aversion which practical men in general have ever evinced for long and prolix numerical calculations is very well known, and in consequence of this aversion, it frequently happens, that in cases of very great importance, and where the most delicate results would be required for the purpose of ensuring efficiency and safety, no calculation whatever is made, every thing being performed at random, or at best by a rude and imperfect imitation of works already executed, which bear the least resemblance to the cases in hand; and thus it is, that so many failures occur in works, which, to appearance, are perfectly safe; whereas with a little attention to the requisite theoretical maxims, every contingency might be averted and perfect efficiency and safety readily ensured.

But it is not necessary for this purpose, that practical men should be expert calculators, a qualification which, it is to be regretted, but very few of them possess; for by a dextrous use of the scale and compasses, all the necessary operations can be performed with the greatest ease, and to a degree of accuracy more than sufficient for every practical undertaking. Nor is it necessary that the operator should be an expert geometer, for nothing is requisite beyond a knowledge of a few of the very simplest practical problems, which are to be found in every work on common mensuration.

The grand mystery of the subject lies in reducing figures, of whatever form, to one universal standard, thereby rendering the mensuration and comparison of different figures a matter of the greatest ease, and thus avoiding all tedious investigations, and all long and elaborate numerical operations.

By the adoption of this method, the ultimate

process is the same in every case, whatever may be the original form of the figures proposed; for by terminating the process of conversion in a square, the result is always obtained by the simple multiplication of two quantities, or factors, which are equal to one another.

Land-surveyors have long been in the habit of reducing their figures to a triangle; this is, indeed, a very convenient process for the purpose of calculation merely; but it is not at all adapted for a criterion or standard of comparison, because the triangle is a figure of which the magnitude is not easily assignable by the eye, nor does it lead us to that principle by which a given figure may be increased and decreased in any proposed ratio at pleasure, or even multiplied and divided geometrically, in the same manner, and with greater ease and facility than the same processes can be performed by numbers themselves.

The process of conversion, which these papers are intended to illustrate, is not limited in its application; it extends to all plane figures whatever, and in some instances even to the surfaces of solids, such as the cylinder, the sphere, the cone, the conic frustum, and to almost all the solids of revolution, as well as to those contained under regular plane boundaries. It is likewise applicable to the demonstration of a numerous class of geometrical propositions, thereby constituting a very delightful exercise.

Could practical men be therefore induced to direct their attention to the subject, it would be found materially to their advantage, not only as regards the solution of problems which offer themselves in the course of their operations, but also as a means of rendering them familiar with the chief propositions of elementary geometry, without being subjected to the tedious and irksome drudgery of tracing the demonstrations after the strict logical method in which they are usually given. It is true that the demonstrations given in this way are merely tentative, or at the most mechanical, but they are not the less convincing by being derived from measurement; and the ease with which they are obtained by the principles of conversion is a very high recommendation as regards its practical utility.

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PROBLEM.—*To construct a square that shall be equal in area to a given rectangular parallelogram; that is, to convert a given rectangular parallelogram into a square of equal area.*

*Example.* Let ABCD (fig. 1) be the given rectangular parallelogram, of which the containing sides are AB and BC; it is required to convert the rectangular parallelogram ABCD into a square of equal area.

*Construction.* Produce the side AB directly forward to any convenient length at pleasure, or as far as may be found necessary, and on the point B as a centre, with the side BC as radius, describe the quadrantal arc $1mC$ meeting AB produced in I, and making BI equal to BC, so that AI is equal to AB and BC taken together, or equal to the sum of the sides of the parallelogram continued out in one straight line.

Bisect the sum of the sides AI in H, and on H as a centre, with HA or HI as radius, describe the semi-circle AGI meeting the production of the side CB in G; then is BC the side of the square sought. Therefore, if upon BG, thus determined, the square BGEF be constructed, it will be equal in area to the rectangular parallelogram ABCD, as required by the problem.

*Demonstration.* Since the straight line, AI, which is equal to the sum of the sides of the rectangular parallelogram AB and BC, is equally divided in the point H, and unequally in the point B, the rectangle under AB and BI together with the square of BH, is equal to the square of HA or HG, the radius of the semi-circle; but the squares of BH and BG are together equal to the square of HG, because GBH is a right angle; therefore, the squares of BH and BG are together equal to the rectangle under AB and BI, and the square of BH; take away from these equals the square of BH, which is common, and there remains the square of BG, which is equal to the rectangle under AB and BI, or AB and BC, because BI, by construction, is equal to BC; consequently, the square upon BG, that is, the square BGEF, is equal in area to the rectangular parallelogram ABCD. This construction may be otherwise more briefly and elegantly demonstrated, but we prefer the method here employed, as being most in accordance with the plan of our present undertaking.

PROBLEM.—*To construct a square that shall be equal in area to a given rhomboid or oblique parallelogram; that is, to convert a given oblique parallelogram into a square of equal area.*

*Example.*—Let ABCD (fig. 2) be the given rhomboid or oblique-angled parallelogram, of which the containing sides are AB, BC, CD, and DA; it is required to convert the parallelogram ABCD into a square of equal area.

*Construction.*—From A and B, the extremities of one of the longer sides, AB, let fall the perpendiculars AK and BL, meeting DC in K, and its extension in L, thereby forming the rectangular parallelogram ABLK, equal to the given rhomboid ABCD. Produce AB directly forward to any indefinite extent, and on B as a centre, with BL as a radius, describe the quadrantal arc $LmI$, meeting AB produced in I, and making BI equal to BL, the side of the derived rectangular parallelogram, so that AI shall be equal to the sum of its containing sides extended in the same straight line.

Bisect AI in H, and on H as a centre, with HA or HI as a radius, describe the semi-circle AGI meeting the side LB produced in G; then is BG the side of the required square. Upon BG, as thus determined, construct the square BGEF, and it will be equal in area to the given rhomboid ABCD.

*Demonstration.*—Since the rhomboid ABCD and the rectangular parallelogram ABLK are placed upon the same base, AB, and lie between the same parallels, AB and DL, they are equal to one another, the right-angled triangle ADK, which is cut off from the rhomboid by the perpendicular AK, being equal to the triangle BCL, which is applied to it, by CL, the extension of the side DC, and the perpendicular BL meeting that extension. Again, since the straight line AI, which is equal to the sum of the sides AB, BL, of the rectangular parallelogram, ABLK, is divided equally in the point H and unequally in B, the rectangle or product under the two unequal parts AB, BI, together with the square of BH, the part between the points of section, is equal to the square of HI or HG; but the square of HG is equal to the sum of the squares of BH and BG, since HBG is a right-angled triangle, of which HG is the hypothenuse; consequently, the rectangle, or product, under the parts AB and BI, together with the square of BH, is equal to the sum of the squares of BH and and BG; take away the square of BH from these equals, and there remains the rectangle or product, under the parts AB and BI, equal to the square of BG; but BI, by the construction, is equal to BL, the side of the rectangular parallelogram ABLK; therefore, the square of BG, that is, the square BGEF, is equal in area to the rectangle ABLK, and, consequently, to the rhomboid ABCD.

PROBLEM.—*To constitute a square that shall be equal in area to a given rhombus, or an equilateral four-sided figure; that is, to convert a given rhombus or equilateral four-sided figure into a square of equal area.*

*Example.*—Let ABCD (fig. 3) be the given rhombus or equilateral figure, of which the containing sides are AB, BC, CD, and DA; it is required to convert the rhombus ABCD into a square containing the same or an equal area.

*Construction.*—From A and B, the extremities of the upper side of the rhombus AB, let fall the perpendiculars AK and BL, meeting the opposite or lower side DC in K, and its extension in L, thereby forming the rectangular parallelogram ABLK, equal in area to the given rhombus ABCD. This is obvious, for parallelograms upon the same base and between the same parallels are equal; but the rectangle ABLK and rhombus ABCD are upon the same base AB, and between the same parallels AB and DL; therefore they are equal.

Upon A as a centre, with AK as a radius, describe the circular quadrant $KmI$, meeting BA produced in I, and making AI equal to AK, the side of the rectangle ABLK, so that BI shall be equal to the sum of its containing sides extended out in the same straight line. Bisect BI in H, and on H as a centre, with HB or HI as a radius, describe the semi-circle BGI, meeting KA produced in G; then is AG the side of a square containing an area equal to the rectangle ABLK, and consequently equal to the given rhombus ABCD. On AG describe the square AGEF, and it will be equal to the rectangle ABLK.

For draw GB and GI; then because BGI is an angle in a semi-circle, it is a right angle, and since GA is perpendicular to the diameter IB, the triangles IGA and GBA are similar, and consequently, their corresponding sides are proportional, so that IA is to AG, as AG is to AB; that is, the rectangle under IA and AB is equal to the square of AG; but IA is equal to AK; therefore, the rectangle under AK and AB is equal to the square of AG; hence the square AGEF is equal to the rectangle ABLK, and consequently, equal to the given rhombus ABCD.

PROBLEM.—*To constitute a square that shall be equal in area to a given right-lined triangle; that is, to convert a given right-lined triangle into a square of equal area.*

*Note.*—The solution of this problem branches itself into three cases, for the triangle may be either acute-angled, obtuse-angled, or right-angled; but in all the cases, the principles of solution are the same, excepting only the simplicity of operation.

*Example.*—Let ABC (fig. 4) be the given right-lined triangle of which the sides are AB, BC, and AC; it is required to convert the triangle ABC into a square of equal area.

*Case 1st.*—When the triangle is acute-angled.

*Construction.*—Through C, the vertex of the given triangle ABC, draw the indefinite straight line CI parallel to the base AB, extending it both ways if found necessary so to do, in consequence of the form of the triangle. Bisect the base AB in L, and at the point of bisection L, and also at B, the extremity of the base, erect the perpendiculars LK and BD, meeting the indefinite parallel CI in the points K and D, and constituting thereon the rectangular parallelogram BDKL equal to the given triangle ABC. On the point D as a centre, with DB as a radius, describe the quadrantal arc $BmI$, meeting the straight line CI in the point I, and making DI equal to DB, the side of the equivalent rectangle; then is KI the sum of the two sides KD and DB continued in one straight line. Bisect KI in H, and on H as a centre, with HI or HK as a radius, describe the semicircle KGI intersecting BD, the side of the rectangle produced in G; then is DG the side of a square of equal area with the rectangle BDKL, and also the triangle ABC. Upon DG, as thus determined, construct the square GEFD and the thing required by the problem is accomplished.

*Demonstration.*—Since the base AB of the triangle ABC is bisected in L, and because the straight lines AB and CD are parallel to one another, the rectangular parallelogram BDKL, which is constituted on half the base BL, is equal to the triangle ABC. Again, since the straight line IK is equally divided in the point H and unequally in D, the rectangle or product under ID and KD, together with the square of DH, is equal to the square of HI or HG; but the square of HG is equal to the sum of the squares of DH and DG, because the angle GDH is a right-angle; consequently, the rectangle or product under ID and KD, together with the square of DH, is equal to the sum of the squares of DH and DG; from these equals take away the square of DH which is common, and there remains the rectangle under ID and KD equal to the square of DG; but DI by construction is equal to DB, the side of the parallelogram; therefore, the square of DG, that is, the square DGEF, is equal to the parallelogram BDKL, and consequently to the triangle ABC.

*Case 2nd.*—When the triangle is obtuse-angled, as ABC (fig. 6), the sides being AB, AC, and BC, respectively, it is required to convert the triangle ABC into a square of equal area.

*Construction.*—Through C, the vertex of the triangle, draw the straight line CK parallel to the base of the triangle ABC, extending it as far as necessary to accommodate the construction. Bisect the base AB in L, and through L and B, the middle point and the extremity of the base AB, draw the straight lines LD and BK respectively perpendicular to the base AB, and limited by the parallel line CK passing through C; then is LDKB a rectangular parallelogram equal to the triangle ABC.

On the point D as a centre, with DL as a

radius, describe the circular quadrant LmI meeting the straight line in I, and making DI equal to DL, the side of the rectangle LDKB, so that IK is the sum of the sides DK and DL, extended out in the same straight line. Bisect IK in H, and on H as a centre, with HI or HK as a radius, describe the semicircle KGI, meeting LD produced in G; then is DG the side of a square of equal area with the rectangular parallelogram LDKB, and consequently, equal to the given triangle ABC. Upon DG describe the square DGEF, and the thing required by the problem is done.

*Demonstration.*—Because the base AB is bisected in L, and the straight lines AB and CK are parallel, the rectangular parallelogram LDKB, which is constituted on half the base, is equal to the triangle ABC; for when a parallelogram and a triangle stand upon the same base and are between the same parallels, the parallelogram is double of the triangle; consequently, when the parallelogram subsists on half the base, it and the triangle are equal. Again, because the straight line IK is equally divided in the point H, and unequally in D, the rectangle or product under ID and KD, together with the square of DH, is equal to the square of HI or HG; but the square of HG is equal to the sum of the squares of DG and DH; therefore, the rectangle under ID and DK, together with the square of DH, is equal to the sum of the squares of DG and DH; from each of these equals take away the square of DH, and there will remain the rectangle under ID and DK, equal to the square of DG; but DI is equal to DL; therefore, the rectangle LDKB is equal to the square DGEF, and, consequently, the triangle ABC has been converted into a square of equal area agreeable to the conditions of the problem.

## THE VALUATION OF CARPENTERS' AND JOINERS' WORK.

We, long ago, urged the importance of effecting such a change in the mode of measuring and valuing artificers' work, as should lead to a more general adoption of this means of settlement between employers and tradesmen. A work by Mr. Browning, of Stamford, has been recently published, to which, as having this object in view, it seems desirable to direct attention.* We will let the author speak for himself.

"Setting out with the general and acknowledged principle, that, whatever be the variation in the values of work, as depending on changeable and local prices, the average amount of labour and materials in the same examples must in all cases be alike, I concluded that the only permanent and universal guide to correct valuation is a knowledge, by experience or calculation, of the time and materials consumed in each description of work.

With regard to the value of labour only, I found, after having carried my own researches to a considerable extent, that a system, based on the constant quantities of time employed, was long since proposed by Mr. Peter Nicholson, and subsequently extended by writers of more recent date: but whether the other no less important, and certainly more difficult, division of the subject has been similarly treated, I am not aware; and on this ground I venture to offer the following treatise, illustrative, as far as it goes, of the system in question, but capable of extension to numerous examples of ordinary occurrence which hitherto I have had neither time nor opportunity to include."

"In calculating the materials used in the different kinds of joiners' work, I have, as a general rule, reduced the several thicknesses of each description of wood to a standard thickness of 1 inch; the total quantities of which, divided by the contents of the work in superficial feet, give the quanties of inch stuff per foot superficial, whether of fir or oak: these charged at their respective prices, inclusive of the usual allowance for waste and a trifling addition for nails and glue, determine the total value per foot superficial of the materials used. Waste in the length of each piece in cutting off the horns of tenoned joints is calculated in each example.

In order to avoid the great labour attending a separate calculation of each description of framing in its several thicknesses, I determined the surface of stiles and rails, and the surface of panelling to a superficial foot; which, multiplied by their respective thicknesses, gave the quantity of inch stuff per foot superficial in each example. For instance: a door, whose surface is 18 feet sup., with 12·6 feet sup. of stiles and rails, and 9·0 feet sup. of panels, contains ·70 feet sup. of stiles and rails, and ·50 feet sup. of panels per foot superficial: if, then, the example required be 1¼ in. thick, with ¾-in. panels, the quantity of inch stuff per foot superficial is as follows, viz.:—

$$\cdot 70 \times 1\tfrac{1}{2} = 1\cdot 05$$
$$\cdot 50 \times \tfrac{3}{4} = \cdot 38$$
$$1\cdot 43 \text{ feet super.}$$

And a similar process applied to thicknesses assumed at pleasure, multiplies examples with comparatively little labour."

"When panels of various thicknesses are introduced in the same example, the most correct method of arriving at the quantity of materials, unless by actual measurement of the stuff consumed, is to equalize their thicknesses, and find the quantity of stuff per foot super. by the tables given. Take, for example, a six-panel door, whose two lower panels are 1¼ inches and the four upper panels ¾ in. thick: it is clear the medium thickness is between ¾ in. and 1¼ in., but nearer the former (because the surface of the upper panels exceeds that of the other two)—say 1 inch, which cannot be far wrong: then the quantity of stuff per foot super. is the same as when all the panels are of that thickness."

We take an example of his system from "Framed and ledged doors."

"Doors, 7 feet 3 inches × 3 feet 6 in., with stiles and top rail 5½ inches, and three ledges 9 inches deep.

INCH STUFF PER FOOT SUPERFICIAL.

| Thickness of Boarding. | Thickness of Framing. | | | | | If Rebated or Matched add— |
|---|---|---|---|---|---|---|
| | In. 2 | In. 2¼ | In. 2½ | In. 2¾ | In. 3 | |
| In. | Ft. sup. | Ft. sup | Ft. sup | Ft. sup | Ft. sup. | Ft. sup. |
| ¾ | 1·67 | 1·84 | 1·92 | 2·19 | 2·37 | ·08 |
| 1 | 1·72 | 1·89 | 1·96 | 2·24 | 2·41 | ·07 |
| 1¼ | 1·76 | 1·94 | 2·11 | 2·28 | 2·46 | ·08 |
| | .... | 2·03 | 2·20 | 2·38 | 2·55 | ·10 |

His application of the table is as follows:—

"1. Required the value per foot superficial of materials in 2-inch framed and ledged chaise-house doors, filled in with ¾-inch rebated boarding. Inch stuff (say) 3½d. per foot superficial.

1·67 + ·06 = 1·73 feet super. at 3½d. = 6d. —the value required.

## PHOTOGRAPHIC PICTURES.

NEW PROCESS.

At a recent Thursday evening meeting of the Western Literary and Scientific Institution, a lecture on the chemical influences of the solar rays was delivered by Mr. Robert Hunt. The immediate subject of the lecture was the phenomena of "photography" as exhibited in the daguerreotype, and the numerous sensitive processes now employed for obtaining representations of natural objects by means of the camera-obscura; and also by the more simple method of copying by direct radiation. Among the most interesting of the photographic processes described as being the most simple and certain, was the chromatype, discovered by the lecturer. It consists in washing good letter-paper with the following solution:—

| | |
|---|---|
| Bi-chromate of potash | 10 grains, |
| Sulphate of copper | 20 grains, |
| Distilled water | 1 ounce. |

Papers prepared with this are of a pale yellow colour; they may be kept for any length of time without injury, and are always ready for use. For copying botanical specimens or engravings nothing can be more beautiful. After the paper has been exposed to the influence of sunshine, with the objects to be copied superposed, it is washed over in the dark with a solution of nitrate of silver of moderate strength. As soon as this is done a very vivid positive picture makes its appearance; and all the fixing these photographic pictures require is, well washing in pure water.

## RAILWAY JOTTINGS.

A 'false prophet' of the name of Cort, in a work called 'Railroad Imposition detected,' published only thirteen years since, or in 1834, declared that "long before the Birmingham is ready, such are the improvements now making in canals, that not only may the charge be expected to be many times less than the railway, but the time now lost will be considerably saved; and as a proof of the impotency of the Manchester and Liverpool to compete with water lines, it has not been able to obtain at the end of three years, three months and a half, much above one-sixth of the whole traffic; nor even that, without a total failure as to profit. But granting the Birmingham secured even one-half instead of a sixth, the income estimated at 92,820*l.* would be reduced to 46,410*l.*! The only chance, therefore, for the latter railway in the waggon department, must be confined to goods requiring extraordinary expedition; and these, comparatively, are very few. The Great Western, though probably it may reach as far as Bath from Bristol, after having, like a mole, explored its way through tunnels long and deep, the shareholders who travel by it will be so heartily sick, what with foul air, smoke, and sulphur, that the very mention of a railway will be worse than ipecacuanha!!" In 1825 (nine years before that time), the *Quarterly Review* had earnestly trusted that Parliament would, "in all the railways it may sanction, limit the speed to eight or nine miles an hour, which, we entirely agree with Mr. Sylvester, is as great as can be ventured upon with safety!"——Now that we have dipped amongst the prophets, we may remind our readers of one of a somewhat more truthful stamp than the preceding, uttered, too, by a reverend father of the church, as all truthful prophecies might be expected to be. The Rev. Sidney Smith, of facetious memory, predicted that proper means of safety would never be adopted to secure the rescue of railway passengers in cases of extreme peril, especially from fire, until a bishop should happen to be burnt. Now this prophecy or prediction seems to be on the fair way towards fulfilment, inasmuch as no bishop has yet been burnt, and no efficient means, accordingly, have as yet been adopted for the total prevention of such accidents. But will it be credited by those who have not yet been convinced of the fact, that a right reverend bishop who has both stirred up and had to withstand a good deal of the *fire* of red-hot ire in his time, namely, Bishop Philpots, of Exeter, was on Saturday week within an ace of being burnt alive in an incipient *auto da fe*, got up by a "rude fragment of iron irritating by violent and incessant attrition the excitable wood which composed the floor of the carriage," in which his Right Reverend Lordship was seated, on his way to Exeter, and which rude instrument of wrath had "chafed it into a violent heat, which speedily increased till, lo! the fire burst forth, and the wood under the feet of the Right Reverend Bishop was blazing without and intolerable within, where the smoke and burning odour (of the incensed wood of this burning and nearly sacrificial altar) ascended." The Reverend Father in God dashed down the glass, and threw open the doors, and raised his voice, and cried aloud for help; but the terrible shriek of "hell in harness," his own fiery nostrils breathing flame, and the rushing sound of the whirling wheels of the 'express' completely drowned the reverential uproar in the ears of the guards and engineers, who heard not the slightest murmur till it was all but too late. We earnestly hope we shall have no reason to repent that this living sacrifice was not consummated; that a Bishop has not been burnt; and that *now*, at length, as if by anticipation, railway companies will be compelled, as we ourselves have so often insisted, to adopt some means by which passengers may communicate with the guards, and these with the engineer, in cases of emergency,—an appeal to which same effect has just been made in *The Times* newspaper on other grounds, relating indeed to the association with passengers in general of those unfortunate beings—the insane—amongst whom it is a wonder we have not now the melancholy duty to chronicle him who has thus been so providentially "plucked like a brand from the burning."——A point of considerable importance to railway workmen and employers was raised at the last

* "A proposed System for the more ready and correct Valuation of Carpenters' and Joiners' Works, as depending on the Prices and Quantities of Materials used." By H. B. Browning, M.I.B.A. Weale. Printed in Stamford. A very creditable specimen, by the way, of provincial typography!

Petty Sessions at Brackley. Mr. H. Friend, a sub-contractor, late on the Oxford and Rugby Railway, was summoned by two labourers for sums alleged to be due to them for work and labour on this railway. Mr. Maley, solicitor for the defendant, argued that the subject was not within the jurisdiction of the magistrates, inasmuch as the case did not come within the act 4th Geo. 4, c. 34. The chairman said, if such was the case, railway labourers were virtually unprotected. The magistrates adjourned the case for a month, and said they should in the mean time obtain counsel's opinion on the subject.——The opening of the Brighton and South Coast Railway, from Havant to Portsmouth, a length of 8 miles, was to take place on Tuesday last. The line has been inspected and approved. On this line, which is nearly a level throughout, the only work requiring notice is the bridge, and its approaches, across the creek at Portsbridge, which has been built in accordance with the wishes of the officers of the Royal Engineers, is flanked by batteries on both sides, and has a magazine connected with it, so arranged as, in case of need, to destroy by explosion the entire bridge and all means of access into the Island of Portsea at that part of it.

## NOTES IN THE PROVINCES.

The Windsor Castle and Town Improvement and Removal of Datchet Bridge Bill, which was read the first time in the House of Commons on the 14th inst., will not be further proceeded with this session.——The restoration of the great east window of the chancel of St. Peter's Church, Sudbury, is about to be commenced. The whole frame-work and glass is to be taken out, and the stone-work completely restored with new, from a design by Mr. Sprague, architect, of Colchester, at the expense of Dr. Maclean, patron of St. Gregory's and St. Peter's. During the past winter, an examination of the interior of St. Gregory's chancel was made by the same architect and others, in order to find the piscina and sedilia, but in vain; but shortly after, both were discovered by a bricklayer, who was sent to repair the breaches in the walls, and both are now open to view, after having been enclosed from the time of the Reformation. ——The Portland Breakwater is now about to be proceeded with by Mr. Rendall, the engineer, and the land for the fortifications has been surveyed. These works are to be of such an extensive character as must give permanent employment to a great many persons.——The Admiralty have ordered an increase of the wages of the extra-hired labourers of the Portsmouth dockyard from 12s. a week to 14s., in consequence of the high price of provisions. ——A Taunton 'Mechanic' has been good enough to draw our attention to the fact of a strike having taken place amongst the Taunton masons and carpenters, but he will find that we had already noticed it in last week's Builder. He also informs us, however, of the result, viz., that "the masons have gained their point (an advance from 16s. to 18s.), but the carpenters only 1s. advance." The credit of these advances, our correspondent gives to "Messrs. Pettit, Pollard, Webber, and Vincent," and how can masters, he asks, who refuse to show a like sympathy with their workmen under the pressure of the present high prices of provisions, "expect them to strain a nerve" in their favour? It may indeed be a question for masters in some cases to consider whether they may not find their workmen willing, as well as able, to repay, or even more than repay, their generosity under present circumstances by this very "straining of a nerve," so significantly hinted at by a 'Mechanic.'——The Unitarians at Taunton intend to build a school, and thoroughly repair their chapel. Plans, adds our correspondent, have been drawn out by Mr. Ingle, architect.——A great number of the limestone getters in the neighbourhood of Dudley have been also 'standing out' for a rise of wages, but they are said to have returned to their work.——The bricklayers' strike at Lincoln, by the way, is now at an end, an advance of 3d. a day having been agreed to.—— A very different sort of result has been come to by the nail masters at Dudley, where a meeting of the two classes who pay low wages and high was lately held, for the purpose of making "a new list of workmen's prices, which shall be satisfactory to all parties, and be adopted by the whole of the trade, such prices to be consistent with the present prices of provisions, coal, &c." Only four persons were present, and of these, not one of those who pay low wages. The meeting, thus finding that no sympathy for the workmen was shown by low-priced masters, declared their inability to continue paying the present rate of wages, even although they felt that the present high prices of provisions, coal, &c., demanded at least no reduction. This resolution, however, is of course itself tantamount to a notice to the poor fellows of reduction of their present wages; and what a time this is, to be sure, for reducing wages!——At the recent sale of timber on the estate of the Duke of Marlborough, prices did not average more than 1s. 6d. per foot.——In *The Times* city article, a new project, named the 'Pantdrainiog Quarry Slate Company,' with a capital of 40,000*l.*, for working a new field in the Bangor Slate formation, is favourably noticed. Most of the material is already provided, and the capital includes the purchase of the lease.——That 'monstrous piece of workmanship,' the new landing stage, at Liverpool, was to be tugged to its place, opposite St. George's Pier, on Tuesday last, by seven team-tugs.——After an agitation of nearly two years, the Lincoln Corn Exchange project is at length so far in progress that the plans are drawn, and tenders are advertised for. To the back of the present Cornhill, a three-story building, with Corinthian capitals, is to be erected, containing various public rooms. To the rear is the Corn Exchange, to be lighted from the roof with skylights. On the south side of the newly-laid-out street is to be a covered market, and on the north an open one. The plans and elevations have been prepared by Mr. W. A. Nicholson, the city surveyor. On Monday week, as was announced, the first stone of the New Markets at Doncaster was laid, with masonic honours.——The foundation-stone of the Gateshead Mechanics' Institute was to be laid on Monday last by Mr. William Hutt, M.P.——The proprietor of the Durham Glass Works at Gateshead, Mr. Joseph Price, has undertaken to provide an air-tight bottle, illustrative of the present state of the art of glass-making in England, to be deposited in the foundation-stone of the Institute, with a list in it of the subscribers to the Building Fund, the committee, &c., &c. ——The baths projected at Dundee are about to be commenced.——The Dublin Corporation have also resolved to erect baths and wash-houses for the poor.——The Chancellor of the Exchequer, in moving for a further advance of 600,000*l.* from the Consolidated Fund, towards the removal of the destitution of Ireland till next harvest, admitted that "the Public Works Act had been abused by all classes in Ireland. The relief committees, instead of rigidly revising the lists, had only added numbers to numbers, and the consequence was, that upwards of 700,000 persons had been placed on the public works. The Government had found it impossible at first to get persons withdrawn from the public works; and it was not till the 20th of March that it had succeeded in obtaining the forcible reduction of their numbers. By that reduction the Government had got the spring crops sown. The Government had since made another reduction, and he was not sure that it would have been able to make it, if it had not threatened to stop all the works on the 1st of May. The result had been, that the expenditure of the public works had been diminished from the sum of 259,000*l.* expended weekly in March last, down to 53,000*l.*, expended weekly at present. The new system of relief was now in operation in 1,900 out of 2,050 electoral divisions, and we were now affording 2,253,000 rations a day in Ireland." Meantime the destitute Irish are continuing to shew their gratitude for all these Saxon mercies in their own peculiar way. A check clerk under the Board of Works at Kilkenny was requested the other day by three gentlemen, armed with the official baton of Irish law, viz., the fire-arm, to contribute his quota to the payment of the enormous debt due by England to Ireland, which was accordingly done to the amount of 15s., or the sum total probably of his week's wages. That he was not required to yield up more than mere money he had reason to be thankful. At Glenfin, in County Derry, an agent of the Board of Works, and agriculturist of an estate, who had made arrangements for expending about 400*l.* or 500*l.* on the property in works, for behoof of the destitute, was attacked a few days since by upwards of a hundred armed men, headed by a man in woman's clothes, and forced to put out his tongue, while they cooly cut away an inch of it!

## THE CHARTER-HOUSE, LONDON.

The Charter-house will afford a pleasant and instructive ramble to those who like memorials of the past. Quite apart and distinct from the busy world without, upon "13 acres and 1 rod of land," appropriated by Sir Walter de Manny, of Hainault, as a place of interment for the poor and needy destroyed by the plague in 1349, the present structure stands, including many parts of the earlier buildings which preceded it. "Sir Walter de Manny erected in the present Charter-house-square a chapel for masses on behalf of those who were interred; and it is apparent, from a bull which he obtained of Pope Clement VI., that he had intended to add a college.

In 1361, Michael de Northburgh, Stratford's successor to the bishopric of London, purchased of Sir Walter the whole cemetery, and at his death, on the 9th of September in the same year, bequeathed it, with all his property, for the founding, building, and furnishing a monastery of Carthusians,—an order instituted in 1080, by Bruno, at Chartreux, in the French district of Grenoble.

In 1371, Sir Walter de Manny, with the consent of the then bishop of London, Simon of Sudbury, to whom Michael de Northburgh had left the patronage and care of his foundation, took on him the charge, and founded a monastery of twenty-four Carthusians. He died in 1372, and was buried in the monastery: his funeral being attended by the king and his children, and the barons and prelates of England."

The monastery was surrendered to Henry VIII. in 1537; and after passing through various hands, was purchased in 1611, by Thomas Sutton, a wealthy merchant of London, who obtained letters patent, authorizing him to endow an hospital and school within its precincts.

In illustration of the buildings and foundation, we have now before us two books. One is a folio, entitled *Memorials of Charter-House*, which consists of a series of views drawn and lithographed by Mr. C. W. Radclyffe, and accompanied by brief descriptions, which was published * for little more than private circulation, in 1844, and is now brought before the public. The second is an octavo volume, called *Chronicles of Charter-House*, by a Carthusian, which was issued quite recently.† The latter goes more fully into the history of the monastery and Sutton's noble foundation, and is illustrated by several small etchings.

Over the present porter's lodge is the house formerly occupied by the physicians of the Charter-house. The wooden gates there are the ancient gates of the monastery. The building which stands on the right hand, in the Entrance Court, is thought to be a part of the "fair dwelling" erected by Sir Edward North on the ruins of the monastery, about 1537. The middle court, now called the Master's Court, was also part of North's building. The Long Gallery, which looks into the Entrance Court, was formerly more than 100 feet long, but is now reduced to 45 feet by partitions.

The "Washhouse Court" is one of the few remnants of the old monastery, and will be regarded with interest. The "Preacher's Court" is the most important in appearance. The site of the chapel, from an old plan now in existence, bearing date about the year 1500, seems to be in a great measure identical with that of the monastery. The south wall is probably the oldest portion of the building; but the east wall, now standing, may doubtless lay claim to considerable antiquity: for on the removal of the wainscoting, in the course of repairs which took place in 1842, an old ambrie was discovered towards its south corner. The Ante-Chapel, which, like the Evidence Room above it, has a groined roof, bears the date 1512.

The Great Chamber, or Old Governor's

* By James Moore, Carthusian-street.
† By George Bell, Fleet-street.

Room, appears to have been either built or decorated by Thomas, fourth Duke of Norfolk, between 1565 and 1571, and still preserves much of its original appearance. Its principal ornament is the chimney-piece, which is of wood, and consists of a centre and two wings, in two stories, Tuscan and Ionic. The Great Hall has a curious screen and galleries of the time of Elizabeth.

Both these books will be found interesting, especially to those who owe their education to the valuable institution of which they treat.

## Correspondence.

MODEL BATHS AND WASHHOUSES.

SIR,—Your strictures on the want of architectural beauty of the model establishment at Goulston-square are well deserving of general consideration. I fully admit that (as you justly say) "a large sum of money (many thousands) has been spent without the slightest attempt at architectural effect;" but though you candidly say that you "do not make this a charge against the committee," yet it is a charge requiring explanation.

The simple fact is, that the committee have not had a single shilling to spend on what is not, in the direct commercial sense, "useful." Their total expenses, including the purchase of land, will exceed 15,000*l.*; while the subscriptions intrusted to them amount to little more than 10,000*l.* They have been obliged to borrow 5,000*l.* in anticipation of future subscriptions. Under these circumstances, they have been compelled to avoid every expense which was not essential for the efficient working of the establishment.

The committee will rejoice with you, if, in the erection of other baths and washhouses, "the *usefulness* of the *beautiful* be remembered and acted on." If the funds placed at the disposal of the committee had been adequate, not only would they have been saved months of anxious endeavours to reconcile despatch with economy, but they would not have neglected "the beautiful." I may, without want of courtesy, say, that in giving Mr. Baly, "considered simply as engineer," your praise "without qualification," you have expressed as much approbation of the model establishment as the committee could reasonably desire—their chief aim having been to display in their most unpretending building (I cannot admit that it is "ugly") that engineering perfection which will render its working arrangements worthy of being generally followed. They have great reason to hope that their lengthened labours will tend very materially to the saving of time, trouble, expense, and disappointment, wherever similar arrangements are adopted.—I am, Sir, &c.

A MEMBER OF THE PARENT COMMITTEE.
May 28, 1847.

## Miscellanea.

BECKFORD LIBRARY AT HAMILTON PALACE.—Mr. Beckford's son-in-law, the present Duke of Hamilton, has built a library at Hamilton Palace (to receive the books collected by Beckford) from the designs of Mr. Goodrich, architect, and the interior artistic embellishments in colour have been executed by Sang. According to a Scotch journal, the style is Greco-Italien, and the plan consists of three avenues meeting in a quadrangle, covered by a dome. The dome is formed by four spandrils, in which are portrayed allegorical figures representing the Sister Arts, while the names of the greatest intellects are emblazoned and decorated in the numerous compartments of the ceiling. Brilliant colours, gold arabesque embellishments, massive pilasters in red granite, and lapis lazuli friezes, are described as producing a fine *ensemble*.

MONUMENT TO CAXTON.—The subscription is proceeding well. Messrs. Clowes have sent 100*l.*, and the Dean and Chapter of Westminster 25*l.* Lord Morpeth will preside at a public meeting in furtherance of the object, on the 12th of June, at the Society of Arts.

PROVINCIAL ARCHÆOLOGICAL MEETINGS.—The Gloucestershire Archæological Association were to hold their annual congress this week, at Cirencester.—The Sussex Archæologists will meet at Chichester, on the 1st of next month.

PROJECTED WORKS.—Tenders have been called for by advertisement for the erection of a chapel at Poplar; a lunatic asylum at Cork; and a school and master's house at Cadby; for altering and repairing a house at King's Langley; for deepening the Buss creek at Southwold, and raising 560 rods of mud wall; erecting a brick wall, and forming drains in Poplar; extending sewers (400 feet) in Mile-end-road; erecting offices, passengers' sheds, and other buildings, at Newhaven harbour on the London, Brighton, and South Coast Railway; executing the works of the London and North-Western branch line from Coventry to Nuneaton; supplying 30,000 larch or baltic sleepers for the York and North Midland line; 4,000 to 5,000 cubic yards of broken Guernsey granite, or other hard stone, for repair of roads in Regent-street, Whitehall, &c., and 2,000 to 2,500 yards of same for Regent's-park-roads; also for supplying 500 tons of new blue Guernsey granite at St. Luke's, Chelsea; and a quantity of British iron and ironmongery to the East India Company; and for enclosing Islington church-yard with wrought iron railing; and painting and keeping in repair the lanterns and fittings of gas lamps in Islington.

NELSON MONUMENT, TRAFALGAR-SQUARE.—On the vote of 2,000*l.*, towards defraying the expense of completing this interminable work, being taken in the Commons the other night, Mr. Brotherton objected to it as a useless work, since he could not approve of the deification of our heroes. Lord Morpeth, in reply to the ever-watchful Mr. Hume, acknowledged that he was afraid the sum now wanted would not finish the monument, as it would only complete 10,000*l.* out of 12,000*l.* estimated to be necessary for that purpose. Indeed, if the original design were carried out, the expense would be 16,000*l.* or 17,000*l.* Mr. Borthwick said he would like to know what design the Government meant to carry out, and asked whether it would not be better to pull down the monument altogether, and erect a respectable one, instead of leaving a structure standing which would proclaim our bad taste to all Europe and to posterity? It savoured of the bad moral taste, as well as of the bad architectural taste of the country, he thought, that a monument to its greatest *naval* hero should have risen so slowly. Yet the metropolis was filled with statues in honour of their great *military* hero, which, indeed, crowded that hero's very windows—things of bronze, which one might worship without breaking the second commandment; for they were like nothing that was in Heaven above, or in the earth beneath, or in the waters under the earth. Perhaps the wisest course would be to take the advice of *Punch*, who thought the best place for them would be where they would least be seen—the Thames Tunnel, for instance. The vote was agreed to.

SHAKESPEARE'S HOUSE.—Shakespeare's house, the house in which the great poet of all time first saw the light, and lived, is to be sold by auction to the highest bidder, and an American show-man threatens to become the purchaser, and cut it up into little morsels for profitable sale. Apart from its positively *holy* character, and regarded simply as a specimen of the English yeoman's habitation of 200 years ago, it would be truly scandalous unnecessarily to destroy it. The Shakespeare Society are interesting themselves in the matter: if it be necessary, a subscription should be commenced; and yet we would not have its vandalic owner too well paid.

CHRIST CHURCH, BATTERSEA, SURREY.—Last week, the first stone of this edifice, which is being erected from the designs of Messrs. Lee and Bury, was laid by the Hon. and Right Reverend the Lord Bishop of Sodor and Man, in the presence of more than two thousand of the inhabitants.

SIR JOHN RENNIE'S CONVERSAZIONE.—On Saturday evening last, Sir John Rennie, as President of the Institution of Civil Engineers, gave the first of two conversazioni, at his house in Whitehall-place. The ground-floor was wholly devoted to the reception of models, and contained a large collection of them.

PROGRESS OF ROMAN CATHOLIC BUILDINGS.—A building fund is being accumulated for the completion of thirteen new Catholic chapels already in the course of erection, and for the building of others.

INDIAN FRESCOES.—The East India Company, according to the *Athenæum*, have received from India copies in oil of part of the remains of the antique fresco paintings in the Bhuddist cave temples of Adjunta, in Kandesh.

HEALTH OF TOWNS BILL.—The Government propose to go into committee on this bill, on Monday, the 14th inst. A number of petitions in favour of it have recently been presented.

## TO CORRESPONDENTS.

"*Constant Reader.*"—The ledges are included in the price, and are not measured separately except when analysing a door to get at a price per foot. The ground work should be cubed.

"*G. J. W.*"—Shall hear from us.

"*E. A.*"—We cannot afford the space.

"*M. W.*"—The reference alluded to was not meant in any way offensively.

"*H. M.*"—The *right* is always the best course.

"*W. D.*"—A correspondent says he has invented a self-acting trap for gulley-drains. We cannot advise him how to dispose of it.

"*Vendibility Fenes.*"—144, Strand.

*Received.*—"B. S." "C. B." "B. P. R." "A Subscriber." "B. B." "W. E." "G. R." "Messrs. W." "A Competitor." "Monumental Brasses and Slabs: an Historical Notice of the incised Monumental Memorials of the Middle Ages," by the Rev. Chas. Boutell, M.A. (G. Bell, Fleet-street. Thos. Parker, Oxford, 1847.) "The Tradesman's Book of Ornamental Designs," by S. Leith. No. 1. (Orr, Paternoster-row.)" Address of the Council of the People's International League." "Reporton the Ventilation of the School-Houses of Boston."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

ROYAL ACADEMY of ARTS, Trafalgar-square.—The Exhibition of the Royal Academy is now open. Admission from Eight o'clock till Seven; One Shilling; Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Sec.
Dep. Sec.

THE NEW PALACE AT WESTMINSTER.—DEDICATED TO HER MOST GRACIOUS MAJESTY.
Shortly will be Published, by Subscription, two highly-finished and effective Views of the Interior of the

NEW HOUSE OF LORDS, to be executed in the very best style of Tinted Lithography, by Messrs. DAY and HAGHE, Lithographers to the Queen, from very beautiful Water-colour Paintings, by Artists of eminence. The Views are taken by the express permission of CHARLES BARRY, Esq. In announcing the publication of the above Views, the Publisher pledges himself to produce the Lithographs in the very highest style of the art, so as to render them worthy of the noble national edifice they are intended to illustrate.
Size of the prints, 22 in. by 30 in. Price of the pair, plain, 3*l.* 3*s.*; coloured, in exact imitation of the drawings, and mounted, 4*l.* 4*s.*
London: Published by WILLIAM DAY, 17, Gate-street, Lincoln's-Inn-fields.

TO ARCHITECTS AND LOVERS OF THE FINE ARTS.
OF the lately deceased Director of the Bavarian Royal Academy of Arts, and Director-General of the Plastic Building Monuments of the kingdom of Bavaria, knight, FERDINAND VON GAERTNER, there are still some original specimens of Monuments in Sicily, lithographed by himself on stone, on hand and for sale. As F. von Gaertner, during his stay in Sicily, has measured and drawn on the spot himself on stone, these rare remains of the old Greek School of Architecture. The original drawings of this great Architect must be considered of great value to all Architects and Lovers of the Art, the more so as there is only twenty more editions of the same on hand, and the plates not being any more in existence.
The ARCHITECTURAL WORKS of the Monuments of Sicily consists in two title pages, ten well-executed drawings in tan print, and six measurements, with German and French text, on vellin royal paper.
The drawings are:—1. Temple of Concordia, at Agrigent; 2. Temple of Juno Lucina, at the same place; 3. Ruins of the Temple of Jupiter; 4. Theron's Tomb, at Agrigent; 5. Temple of Segesta; 6. Remains of the Temple of Jupiter, at Selinus; 7. Old Tomb Street, at Syracuse; 8. Antique Stone Quarry, at Syracuse; 9. Remains of Theatre, in Taormina; 10. The so-called Dionisius-Ear. The six plates of measurements belonging to same are particularly exact, the whole work most elegantly got up, systematically arranged, and must be a treasure and of great interest to any Architect and Lovers of the Old School of Architecture.
The price of a complete, well-preserved edition of this valuable work is 6*l.*, deliverable at Hamburgh. C. F. ZELLERS, in Munich. Orders for this work are attended to by Mr. R. REINHAUER, in Hamburgh.

BRITISH MUTUAL LIFE OFFICE.—The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

MUTUAL LIFE ASSURANCE, ANNUITIES, &c. The INDUSTRIOUS CLASSES may effect Assurances on Life for 20*l.* and upwards. Annuities for themselves in Old Age, or for their Widows, and Endowments for Children. Premiums may be paid Quarterly or Monthly. Assurers will have the security of a Guarantee Fund.
Apply personally, or by letter, to R. W. MORRIS, Actuary to the Medical, Legal, and General Mutual Life Assurance Society, 126, Strand, London. Agents wanted.

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In addition to Assurances on Healthy Lives, this Society continues to grant Policies on the Lives of Persons subject to Gout, Asthma, Rupture, and other Diseases, on the payment of a premium proportioned to the increased risk. The plan of granting Assurances on Invalid Lives originated with this Office in the beginning of 1834.

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| | £. s. d. | £. s. d. | £. s. d. |
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| 35 | 1 7 3 | 1 9 3 | 3 16 6 |
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| 50 | 2 3 0 | 2 13 11 | 4 7 3 |
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Every description of Assurance may be effected with this Society, and Policies are granted on the Lives of Persons in any station, and of every age.
BONUSES.—The two first divisions averaged 23*l.* per cent. on the Premiums paid. The Third, 26*l.* per cent. The FOURTH Bonus, declared January 1847, averaged rather more than 36*l.* per cent.; and, from the large amount of profit already realized, which has been reserved for future appropriation, and other causes, the Bonuses hereafter are expected considerably to exceed that amount.
The Society's income, which is steadily increasing, is now upwards of 116,000*l.* per annum.
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78, Great Russell-street, Bloomsbury, London.

**BOWIE'S Glass Ventilating Pane, for the** Admission of Fresh Air without any unpleasant or dangerous draught, and the escape of respired or vitiated air.—Specimens to be seen and orders taken at 145, Strand, near Somerset House.

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Trade, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square.—Terms, Cash only.

**THOS. MILLINGTON, 87, Bishopsgate-** street Without, has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

**FOREIGN WINDOW GLASS, superior** to English, 16 ounces to the foot, suitable for general purposes, in cases of 300 to 600 feet, for 42s. or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 3d. per foot. No less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS, equal** to the Ancient.

| | s. | d. |
|---|---|---|
| Ruby in Sheets, a splendid colour, per foot | 8 | 3d. |
| Green | 1 | 8 |
| Blue | 1 | 0 |
| Purple | 1 | 0 |

Glass Engraved to any Design. JOHN MILLINGTON, 87, Bishopsgate-street Without.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgium and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Circy Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

**THE UNION PLATE GLASS Company** beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.

N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and thirds, ground or in block.

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TO PLUMBERS, PAINTERS, AND GLAZIERS.

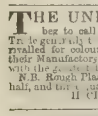
**CROWN GLASS, in Crates of Eighteen** Tables, at the following low prices, for ready money:—

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| Crown Glass cut to size from one foot | Thirds | 4 | 6 | Squares of Small |
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| | C.C.C. | 2 | 0 | 0 foot. |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

**HERRING'S PATENT SAFETY** WINDOW. No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it, and save the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sunblind; all sashes, fixed and open, the same—apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, King-street, London.

**CHAS. WM. WATERLOW,**



MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square. Well-seasoned materials, superior workmanship, lowest prices. Upwards of 400 Doors, and a large variety of Sash Sash and Frames always on sale. Cases, &c. packed securely for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all contractors building



**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly discovered Liquid Composition, when Mr. Wallis first introduced it, fully satisfied the public that he possessed the important qualification of effectually stopping Knots in Wood, however large, and preventing them coming through and spoiling the paint above.

Many ineffectual remedies had in each time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, MILLBANK, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Gas Boilers, Steam Gas, and Water-pipes; Hothouses, Forcing-houses, and Roofing. Its adhesion is so great that a coat of wood that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, is of great body for covering, as one pound of it and one hundred weight is equal to one and a half of lead. It works well under the brush, and runs with oil an unctuous and cohesive manner. It dries with great quickness, and is a softer tint than white lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which the different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain is the object of this process, which surpasses paint in appearance, and at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process so explained, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 3, Southampton-street, Bloomsbury-square, London, in bottles of 6d. and 1s. each, and in larger colour. The oak colour may be obtained in powder at 3s. per packet, which dissolves in water to form the liquid equal to a pound will make one gallon of stain. N.B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

TO BUILDERS AND CARPENTERS.

**A Considerable saving** will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 58, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp Nails, per 1000.

| 3d. | 4d. | 5d. | 6d. | 7d. | 8d. | 9d. |
|---|---|---|---|---|---|---|
| 6d. | 7d. | 8d. | 2s. | 1s. 6d. | 2s. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 8d. | 5s. | 6s. 6d. | 7s. 6d. | 1s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings

| 3 ft., £3 3s. | 3 ft. 6 in., £4 12s. 6d. | 4 ft., £4 |
|---|---|---|

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 8s. | £3 13s. | £3. 16s. | £4 | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 15s. | £3 18s. | £4 2s. | £4 5s. | £5. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do Elliptic do., at 8½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

**ECONOMICAL RADIATING STOVE** GRATE MANUFACTORY, No. 5, Jermyn-street, Regent-street.

PIERCE respectfully invites the attention of the Nobility, Gentry, and Architects, who are building or re-fitting up Mansions, to his novel and unique display of STOVE GRATES, FENDERS, and IRONS, in suites, which are now on view at his Show Rooms. By employing first-rate Artists, he is enabled to guarantee that every work entrusted to him will be finished in the best manner, and the purest style of Architecture required; being manufactured on the premises, guided by his practical experience of more than thirty years devoted to the WARMING and VENTILATION of APARTMENTS, Public Buildings, and Private Mansions, to numbers of which he can refer for the perfect success of his arrangements.

PIERCE has Invented and Registered various improvements for the Ventilation and Fitting up of KITCHENS, BATH ROOMS, LAUNDRIES, with other points of domestic economy, which may be found worthy of notice.

PIERCE'S STOVE GRATE and BATH MANUFACTORY, 5, Jermyn-street, Regent-street.

**HOT WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, drying floors, timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises. BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

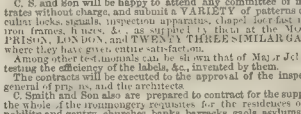
IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouthpieces; Plates, Furnace-bars, Top and Fall Doors, Stoppers, Chimney-bars, Inside, Outside, and Ash pit. Dog-irons, Frames, Binders and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

IRONFOUNDRY.
163, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
(Late HENDRY and GLOVER),

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be enabled to an advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**E. PARK'S, 140, Fleet-street, Wholesale** Ironmonger, Brass Founder, and General Factor, Agent for



Lee's Patent Double Action Bolt, combining cheapness and facility of action with the greatest possible security, particularly adapted for French casements, meeting the various and peculiar difficulties with which they are frequently accompanied, at the same time equally applicable for the strongest folding doors as well as the most elegant cheffonier, wardrobes, &c.

| | | | | | | |
|---|---|---|---|---|---|---|
| Best Patent Cut Clasp | 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. |
| | 3d. | 4d. | 6d. | 8d. | 10d. | 2s6d. |
| Best Patent Sash Line | 4s. 3d. | 5s. | 6s. 6d. | 7s. 8d. | 10s. | 12s. |
| | 1 | 2 | 3 | 4 | 5 | 6 |

Every description of Ironmongery equally low.

**CHARLES SMITH and SON, 25, GREAT** CHARLES-STREET, BIRMINGHAM late STANDLY and SMITH, formerly STANDLY and TANDY and GALE, Bull-street, Locksmiths, Bell hangers, Brass-founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS, and ENGINEERS to their inventions for prisons, lunatic asylums, &c.

C. S. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of locks, signals, inspection apparatus, chapel door-fast nings, iron frames, hinges, &c., as supplied by them at the MODEL PRISON, LONDON, and PENTONVILLE, SHREWSBURY GAOLS, where they have given entire satisfaction.

Among other testimonials can be shown that of Major Jebb, attesting the efficiency of the locks, &c., invented by them.

The contracts will be executed to the approval of the inspector-general of prisons, and the architects.

C. Smith and Son are prepared to contract for the supply of the whole of the ironmongery requisites for the residences of the nobility and gentry, churches, banks, barracks, gaols, asylums, and workhouses, including locks, bells, fenders, kitchen-ranges, staircases, grates, park fencing, fireproof safes, bookcases, doors, metal sashes of all kinds, and every description of ornamental brass and ironwork, light castings, &c.

C. S. and S. beg to refer to the extensive works performed by them at Windsor Castle, Northumberland and Union Houses, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work, in confirmation of which numerous letters from noblemen and gentlemen can be shewn.

N.B. C. SMITH and SON do not appropriate inventions or advertisements, nor label locks "Patent, Warranted, Secure," that are neither the one nor the other.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assort-** ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVES' Timber Yard, Wilton-road, Pimlico, late C. Moore and Son, and Great Smith-street, Westminster.

**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

**T. ADAMS (from Byron and Co.),** late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension. Mahogany, Cedar, Rosewood, Wainscot, Elm Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths, Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.



MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, & Sawn on the most approved principle. Boards, &c., Prepared, Steps, &c. he has constantly on hand, at a very low scale of Prices; and is now selling Excavators' Barrows, of sash frames and elm tops, as low as 18s., by a quantity being taken; and the best make of stout ash frames, stays to legs, inch elm top, largest size, as low as 15s., for cash; Ladders commencing at 4d. per round. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3, and 6, Tottenham-court New-road, St. Pancras, opposite Hampstead road.

**G. ELL respectfully invites the Attention** of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Presents, Steps, &c. he has constantly on hand, at a very low scale of Prices; and is now selling Excavators' Barrows, of sash frames and elm tops, as low as 18s., by a quantity being taken; and the best make of stout ash frames, stays to legs, inch elm top, largest size, as low as 15s., for cash; Ladders commencing at 4d. per round. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3, and 6, Tottenham-court New-road, St. Pancras, opposite Hampstead road.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, sink traps, and various shapes always on hand.

ARCHITECTS AND BUILDERS.

**THE Westminster Marble Company are** enabled, with their patent machinery, to execute every variety of marble work in a superior manner, at a considerable reduction in price. They continue to keep a large assortment of elegant carved statuary chimney pieces and monuments. Country builders will realise a great saving by forwarding orders to this establishment. Liberal commission allowed to the trade for acting as agents.—Direct, Earl Street, Millbank, Westminster.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from the Adelaide Wharf, Lambeth, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne, now receiving at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 38, Southwark-square, Borough, London.

One shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.

**P. FOUCARD and W. TUCKWELL,** • Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf (imported July last), exclusively from their quarries, at Allemagne, which, for present use, is superior to any now imported. Orders received by Mr. TUCKWELL at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 30, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-** tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, may be executed on the most possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London trade supplied, either in the block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Bee Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces, Paving, &c.

Estimates given for building generally.

**MAGNUS'S ENAMELLED SLATE—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Surveyors, &c. &c. The beautiful material has been introduced into Buckingham Palace, the drawing rooms at Osborne, Apsley House, Strathfieldsaye, &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal palaces of Europe, and other public buildings. It can only be distinguished from real marble by its brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold; sienna, jasper, very antique, &c. &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, moiré tables, bottle, trays, stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices. N.B. The trade supplied with whole carcases, cut to any size, planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

SHEET LEAD AND PIPE WAREHOUSE.

**BUILDERS, PLUMBERS, &c., supplied** on wholesale terms with Cast and Milled Lead and Pipe, cut to any dimensions, at MESSRS. BUTLER AND BENTS, Wholesale Plumbers and Lead Merchants, 21, Newcastle-street, Strand; where may be seen A NEW PATENT URINAL BASIN, of a simple and compact description.

TO ARCHITECTS, BUILDERS, AND OTHERS.

**ENCAUSTIC, VENETIAN, BATH,** and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained at MINTON and Co.'s Warehouses, 9, Albion-place, Surrey side of Blackfriars' Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire-places, &c.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N. B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE-MAKERS.

**THE AINSLIE BRICK and TILE** MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's Offices, 193a, Piccadilly, from Ten A.M. to Five P.M. Mr ROBERT SCRIVENER, who has been appointed manager in the room of Mr. JOHN AINSLIE, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 a, Piccadilly.—March 1, 1847

These Machines may also be seen at Mr. Slight's, Leith-walk, Edinburgh; Mr. Lawrence Hill, 135, Buchanan-street, Glasgow; Mr. Robert Charles, Mill-hill, Leeds; Messrs. Finch and Cope, Penkeridge, Staffordshire; and Messrs. Drummond and Son, Dublin

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE** Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the aid of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**MESSRS. HOPKINS** and Co solicit the attention of Architects, Builders, and the Public generally to their REGISTERED SELF-REGULATING BLIND, which, dispensing entirely with the centre line, is peculiarly suited to French casements and high windows. OUTSIDE SUN BLINDS ON IMPROVED BALANCE ACTION.

H and Co. are the sole manufacturers of BARRON'S PATENT METAL GROOVE ACTION, contrived for the easy and noiseless carriage of curtains on Brass or Wood Poles this action has been much used, and with invariable success for octagon, bow, and other shaped windows. Models constantly on show.

HOPKINS and Co., late James Barron, Window Blind Manufacturers and General Brass Founders, 40, Castle-street East, Oxford street, London; and at Birmingham.

JENNINGS'S PATENT WATER CLOSET.
JENNINGS'S PATENT CONNECTION.
JENNINGS'S REGISTERED SHUTTER FASTENER.

**ARCHITECTS,** Builders, and all Persons connected with the Building Trade, are informed by GEORGE JENNINGS, of 29, Great Charlotte Street, Blackfriars Road, that he has obtained HER MAJESTY'S ROYAL LETTERS PATENT for a WATER CLOSET of simple construction, and every way different to any closet now manufactured. The inventor hopes by the end of June to be able to supply the Trade with a closet superior to anything ever yet produced, and at prices not exceeding the present Pan closet.

GEORGE JENNINGS also begs to inform Engineers, Plumbers, Gasfitters, and others, that he has Patented an entirely New Connexion for readily attaching Socks, Lead, Iron, Copper, or any description of Pipes, &c., to Steam Boilers, Wood, Iron, or Slate Cisterns, Casks, &c., superseding all Union Joints, T pieces, and the present tedious mode of Japping and Screwing one Pipe into another.

JENNINGS'S SHUTTER SHOE and FASTENER is now so generally used, that it is only necessary to say it supersedes the Shutter Bar and Iron Hoop Shoes. References may be had to upwards of 800 Fronts, by applying to the inventor, 29, Great Charlotte street, Blackfriars Road

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Pressing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only,
67, WATERLOO-BRIDGE-ROAD.

**ARTISTS,** Architects, Engineers, and others, requiring the finest qualities of Drawing Pencils, are respectfully informed that BROOKMAN and LANGDON are in the habit of making the same to order, and have never failed in any case intimately to give satisfaction, as they spare no pains or expense to suit the taste of each customer.

The various purposes to which Pencils are applied, together with the difference in the surface of the paper or card-board on which they are used, occasion various complaints when Pencils are purchased without a statement of these circumstances. For instance, a free working H B would be highly commended by one artist, whereas, another, who used drawing-paper of a rougher description, and required fine lines, would complain of the very quality which the former considered essential. These objections are obviated by an explanation of the purposes for which the Pencils are intended; and, after a trial of samples, by having them made to order.

Manufactory: 28, Great Russell-street, Bedford-square, where very kind of Cedar Pencils may be obtained; also Ever-Pointed Pencils and Points for the same.

**PAPER-HANGINGS to the TRADE.**—French Papers superseded.—Messrs. HENNELL and CROSBY, Paper Stainers, Queen-street, Southwark-bridge-road, beg to inform the Trade that they can enable them to sell Satin Papers, Elegant Designs, at 2s. 6d. per French piece, Retail.—Cheapest house for Panel Decorations and Clouded Papers.

**FRENCH PAPER HANGINGS.**—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 89, Princes Street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Panties.

TO PLASTERERS.

**LIME FOR PLASTERING,** that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORRESTS' WHARF, East-street, Blackfriars. Sheds for the shading and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

**THE Architectural Carving Company** beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond-street Works, late Sir F. Chantrey's foundry, Eccleston-place, Pimlico.

**CARVING BY MACHINERY.**
JORDAN'S PATENT

TAYLOR, WILLIAMS, and JORDAN beg to draw the attention of those interested in the cheap production of Carved decorations, to the capabilities of their Machinery and the proofs of its efficiency, which are to be found in the fact of its being employed at the Government Workshops for the interior decorations of the New Palace at Westminster, and in the notices of the Public Press elicited by the Exhibition of the Society of Arts.

*The Athenæum* of March 6th, in speaking of the Specimens of Carvings produced from Jordan's Patent, says, "These were really astonishing. A bunch of Hops and brace of Partridges were worthy to hang by the side of Grinling Gibbons's Works. A portion of the Ghiberti Florentine Gates were also very successful. The Machinery employed accomplishes precisely the task assigned to the Sculptors assistant. It clears away all the superfluities and prepares the object for the final touches of the Artist. No matter how high the relief or how low or intricate the undercutting,—no difficulties baffle this Machinery."

The Proprietors find it to be due to themselves and to the Public to state that they have at present only ONE Establishment which is their Machine Carving Works at Belvedere Road, Lambeth, formerly Conde and Sealy's Terra Cotta Works, where specimens may be seen and estimates for large works obtained.

**MOSAIC PAVEMENTS, SINGER'S** PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental pavements, has been lately much improved in execution and reduced in price.—Specimens adapted to every style of architecture may be seen at the Works of the sole patentee, ALFRED SINGER, Vauxhall Pottery, foot of Vauxhall-bridge, Surrey side.

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HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office. By the Court,

STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No 1, Greek street, Soho-square.

**TO BUILDERS and Others interested in** buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by water-courses falling into the river Thames, between the city of London and the parish of Fulham

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that, whenever the ower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers.

All petitions must be delivered at this office at least three clear days before they are presented to the commissioners; and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations made subservient to the purposes of the Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,

LEWIS C. HERTSLET, Clerk.

**PUMPS.**—The attention of Architects, Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to Mr. A. RICHARDS' superior Stock of Pumps for Hand-cranes, Kedgevanes, Brickfields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 14-inch bore for Mines. Estimates given to Drawings if required.—Mr. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

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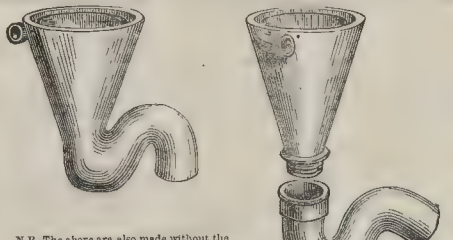
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With Trap in One or Two Pieces.

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Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

J. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being as is well known, the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY. Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of, that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER. This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of, it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required. Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

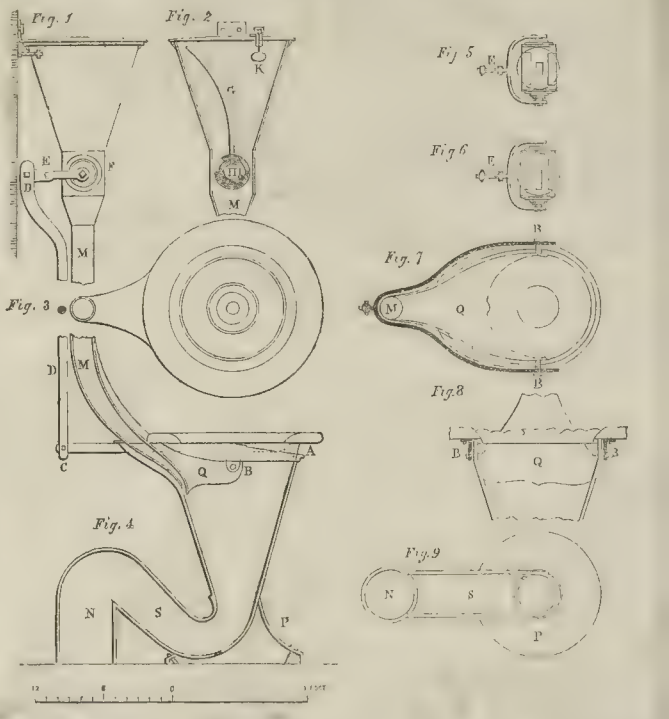
9. ECONOMY.—The cost is small compared with the ordinary complicated and uncertain apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE. The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS unrivalled, for the present closets are a continual trouble, ever are required to be self-acting, but to render less a number of wire and cranks have to be made use of, and consequently continual derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being insufficient to carry through substances as are introduced by the numerous servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig. 1. The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.

Fig. 2.—Section of the measure and cock, shewing its position when open for the water to come in.

Fig. 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.

Fig. 4.—Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action-rod D, to let water in and cut it off.

Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.

Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.

Fig. 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.

Fig. 9.—Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N.

The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are often a source of expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr. Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

MR. JOS. E. DOWSON.

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## GLAZED INSIDE,

## FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

*Scale of Prices.*

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|---|---|---|---|---|---|---|
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| 3 " bore, 3 feet long | 2 | 0 | (two shillings) | each. | | |
| 4 " bore, 3 feet long | 2 | 3 | (two shillings and threepence) | each. | | |
| 6 " bore, 2 feet long | 2 | 0 | (two shillings) | each. | | |
| 9 " bore, 2 feet long | 2 | 6 | (two shillings and sixpence) | each. | | |

THE ABOVE ARE CASH PRICES IN LONDON.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion. And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid, by rotting and largely decomposing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the soil. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the deprecations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains—LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

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MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

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ASSURANCES on the lives of persons in every station of life and every part of the world, granted on a plan which combines the utmost amount of benefit to the families of the assured AT DEATH, with every attainable advantage DURING LIFE, which the system of Life Assurance is capable of affording.

ANNUITIES, ENDOWMENTS, ADVANCES, and LOANS, on liberal terms.

Prospectuses, Forms of Proposal, and every information, may be had on application, either personally or by letter, at the Company's Offices.


## CONTRACTS.

CONTRACT TO ERECT A BATTERY AND BUILDINGS AT COAL HOUSE POINT, BELOW TILBURY FORT.

Royal Engineers Office, Chatham, 7th June, 1847.

**THE** Commanding Royal Engineer at Chatham hereby gives Notice, that TENDERS will be received at the Ordnance Office, Pall Mall, London, on or before Tuesday, the 29th instant, from Persons desirous of contracting with the Honourable Board of Ordnance for erecting a BATTERY AND BUILDINGS at Coal House Point, below Tilbury Fort, agreeably to Plans and Specifications, which may be seen at the Royal Engineer's Office, Gravesend. The person whose tender may be accepted will be required to enter into a Bond, with two eligible Securities, jointly and separately to be bound under a penalty of £200 for the due performance of the contract. The tenders to be addressed to "The Secretary to the Board of Ordnance," and endorsed, "Tender for erecting a Battery and Buildings at Coal House Point."—No tender can be admitted after the said 29th of June, 1847.

TO BUILDERS AND OTHERS.

**THE** Court of Sewers for Westminster and part of Middlesex will be ready at the Court House, No. 1, Greek-street, Soho-square, on FRIDAY, the 18th of June, 1847, to receive TENDERS for building 2,495 feet of sewer along Berwick-street, St. James's, and Wells-street and Great Titchfield-street, St. Marylebone.

A plan, sections, and specifications for the above works may be inspected, and Forms of Tender and other particulars obtained at this office, daily, between the hours of Nine and Four. Parties offering must be in attendance at the above office on Tuesday, the 29th of June, with separate sealed Tenders, marked on the outside "Tender for Works." Each Tender must be strictly in the printed Form prescribed. The Court does not bind itself to accept the lowest Tender. LEWIS C. HERTSLET, Clerk.

Sewers Office, No. 1, Greek-street, Soho-square, 10th June, 1847.

TO PLUMBERS, &c.

**PERSONS** desirous of contracting for the conveyance of water to Kimbolton Castle, Huntingdonshire, the seat of His Grace the Duke of Manchester, may be informed particulars on application to the architect Mr. HARRISON, 59, Lincoln's Inn Fields, St. Neots, Hunts. It is estimated that about 4,000 feet of 1¼ strong lead pipe will be required with stop cocks, joints, &c. The present pipe is to be taken in exchange at per cwt. Sealed tenders are to be delivered to the Architect, on Thursday, June 17th.

TO BUILDERS, IRONMASTERS, AND OTHERS.

**THE** Directors of the Commercial Gas Light Company will meet at the Works, Ben Jonson's Fields, Stepney, on WEDNESDAY the 23rd day of this present month, to receive TENDERS for the erection of Coal Stores, with Iron Roofs, &c. of an area of 12,000 feet, with Lay-bye adjoining. Plans and Specifications can be seen and Particulars obtained on application to Mr. J. MERCER, Engineer, at the Works, between the hours of Ten and Two. Tenders, sealed and endorsed "Tenders for Coal Stores, &c." to be delivered to the Secretary by Twelve o'clock on the above mentioned day. The Directors do not bind themselves to accept the lowest Tender.—By order of the Board.

Stepney, June 2, 1847. G. JAQUES, Secretary.

HACKNEY UNION

**CONTRACT** for New Buildings, &c., at the Hackney Union Workhouse.—The Guardians of the Poor of this Union are ready to receive TENDERS for the Erection of New Buildings at the Hackney Union Workhouse, in Lower Homerton, and taking down and rebuilding part of the present building; the Plans and Specifications of which may be seen at the Offices of the Architect, Mr. A. Ashpitel, No. 5, Crown-court, Old Broad-street, London, from Monday the 7th, till Monday the 28th of June instant, both days inclusive (Sundays excepted), from Ten in the morning to Three in the afternoon of each day. Two Securities will be required in 500l. each for the performance of the Contract, to be named, and their places of abode to be stated in the Tenders, and to be approved by the Guardians. The Guardians do not bind themselves to accept the lowest Tender, nor any of the conditions of the Contract will be that the Contractor shall not underlet his Contract, or any part thereof, or any of the Works comprised therein. Sealed Tenders to be sent to the Clerk on or before Tuesday, the 29th day of June instant, endorsed "Tender for New Buildings, &c., at the Workhouse." The Board will meet at the Board Room, in the Union House, to open the Tenders on Wednesday, the 30th day of June, at Eleven o'clock, when the Contractors are required to attend personally, to answer when called for. The Contract must be approved by the Poor Law Commissioners. Dated the 2nd day of June, 1847

By order of the Board of Guardians,

CHARLES HORTON PULLEY, Clerk.

28, Great Winchester-street, Old Broad street, and Upper Homerton.

MORTGAGE AND ANNUITY OFFICE, No. 124, CHANCERY-LANE.

**PERSONS** requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

TO BUILDERS, PAINTERS, &c.

**CAPITAL LONG STANDARD LADDERS, TO BE SOLD** on reasonable terms, the owner having no further use for them. Six long and proportionably strong ladders, sound, and in good condition, varying from 40 to 53 feet in height.—May be seen by application, at No. 32, Queen-street, Cheapside.

LADDERS, BARROWS, &c.

**G. ELL** respectfully invites the Attention of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Trescels, Steps, &c. he has constantly in hand, at a very low scale of Prices; and is now selling Excavators' Barrows, of ash frames, and elm tops, as low as 12s.; a quantity being taken; and the best make of stout ash frames, stays to legs, inch elm top, largest size, as low as 13s., for cash; Ladders commencing at 4d. per round. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3, and 6, Tottenham court New-road, St. Pancras, opposite Hampstead road.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 5d. | 6d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 3s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 58s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 5 | 6 |
|---|---|---|---|---|
| 4s. 3d. | 5s. 6d. | 7s. 9d. | 10s. | 13s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6id., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 3 ft., £3 3s. | 3 ft. 6 in., £3 12s. 6d. | 4 ft., £4. |
|---|---|---|

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars -

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 6s. | £3 12s. | £3 18s. | £4. | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven -

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturers of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves Kitchen Ranges, &c., &c.

Black Registers from 6d per inch upwards
Bright ditto with Black and Bright Bars, 7d per inch upwards
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:-

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| 3l. 3s. | 3l. 14s. | 4l. 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 8s per pull.

ECONOMICAL RADIATING STOVE GRATE MANUFACTORY, No. 5, Jermyn-street, Regent-street.

PIERCE respectfully invites the attention of the Nobility, Gentry, and Architects, who are building or re-fitting up Mansions to his novel and unique display of STOVE GRATES, FENDERS, and IRONS, in suites, which are now on view at his Show Rooms. By employing first-rate Artists he is enabled to guarantee that every work entrusted to him will be finished in the best manner, and the purest style of Architecture required; being manufactured on the premises, combines improvements of more than thirty years, tested to the WARMING and VENTILATION of APARTMENTS, Public Buildings, and Private Mansions, to numbers of which he can refer for the perfect success of his arrangements.

PIERCE has Invented and Registered various improvements for the Next Session of KITCHENS, BATH ROOMS, LAUNDRIES with their points of domestic economy which may be found worthy of notice

PIERCE'S STOVE GRATE and BATH MANUFACTORY, 5, Germyn-street, Regent-street.

WARMING by means of the circulation of WARM AIR.—BURBIDGE and HEALY beg respectfully to inform the public, that they are prepared to undertake the warming of churches, halls, houses, &c. with a new apparatus of the most simple and durable construction, which, they can warrant to keep in order any length of time and which is capable of effectually warming buildings of any magnitude in a most economical manner BURBIDGE and HEALY, 190 Fleet-street

IRON-WORK FOR BAKERS' OVENS

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks for mouthpieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Hooks, Handle and Ash-pit Doors, and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

IRONFOUNDRY
168, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
Late HENDRY and GLOVER,

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been rearranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c

PUMPS.—The attention of Architects, Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brickfields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth Single and Double Barrel Pumps up to 10-inch kept for Hire. Estimates given by Drawings if required.—M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories Squares Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS & PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ FOWLER, 63, Dorset-street, Fleet-street

FLEXIBLE PIPES AND TUBING FOR PUMPS, ENGINES, GAS, &c.

PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas with all its impurities; and as they do not freeze, retain all the best properties, or require any application when out of use, are particularly well adapted for Fire Engines. Vulcanized India-rubber Washers for steam and hot water Pipes, &c. Manufacturer, JAS. LYNE HANCOCK, Goswell-road, Wood-street, London

PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark Park-road, the Grove, Southwark. At the above Works, the Patentee continues to manufacture roofing upon the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building Ironwork, and that Iron and Smith's Work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

WANTED to Purchase, immediately, a pair of old Iron Entrance Gates and Standards for a width of 12 feet 6 inches, and one gate for a width of 5 feet.—Descriptive particulars, stating terms and where to be addressed to Mr SCOPPE Butler Bridge

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.
Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safe. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

MESSRS. HOPKINS and Co. solicit the attention of Arch tects, Builders, and the Public generally to their REGISTERED SELF REGULATING BLINDS, which dispensing entirely with the centre line, is peculiarly suited to French casements and high windows. OUTSIDE SUN BLINDS ON IMPROVED BALANCE ACTION

H and Co are the sole manufacturers of BARRON'S PATENT METAL GROOVE ACTION, contrived for the easy and noiseless carriage of curtains on Brass or Wood Poles. This with is has been much used, and with invariable success for octagon, bow, and other shaped windows. Prices moderate. Estimates given

HOPKINS and Co., late James Barr & Window Blind Manufacturers and General Brass Founders, 36, Castle-street East, Oxford-street, London; and at Birmingham.

JENNINGS'S PATENT WATER CLOSET.
JENNINGS'S PATENT CONNECTION
JENNINGS'S REGISTERED SHUTTER FASTENER.

ARCHITECTS, Builders, and all Persons connected with the Building Trade, are informed by GEORGE JENNINGS, of 29, Great Charlotte Street, Blackfriars Road, that he has obtained HER MAJESTY'S ROYAL LETTERS PATENT for his WATER CLOSET of simple construction, and I very much different to any that have been made for it. The inventor hopes that all those desirable simplicity in the Trade with a closet superior to anything ever yet produced, and at prices far less than the present Patent.

GEORGE JENNINGS begs to inform Engineers, Plumbers Gasfitters, and others, that he has Patented an entirely New Connection for readily attaching Cocks, Lead, Iron, Copper, or any description of Pipes, &c., to Steam Boilers, Wood, Iron, or Slate Cisterns Tanks, &c., superseding all Union Joints Pieces, and the present tedious mode of Tapping and Screwing the Pipe into another

JENNINGS'S SHUTTER SHOE and FASTENER is now so generally used, that it is only necessary to say it supersedes the Shutter Bar and Iron Hasp Nuts. References may be had to upwards of 50 Persons, by applying to the inventor, 29, Great Charlotte Street, Blackfriars Road.

INJUNCTION

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. Classroom with double sash casing and lowering revolving iron shutters as secured by this Patent is the only safe and simple mode of effecting that object. In large shutters it is indispensable

Several hundreds of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and their many years' practical experience during which they have adopted every real improvement, enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with the convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which expired in 1839, upon which all other makers, but greatly superior, being fitted with their patent raising gear and not requiring boxes, without which no shutter can be safe or clean.

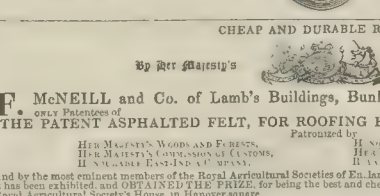
BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, APPLICATION FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, Inspected, Repaired, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade

Office at No. 58, Lombard-street, London; Works, at Deptford, Kent.

Steam engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.



N B The above are also made with all the discharge hole being turned downwards.

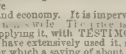
CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY. HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in super GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their CLEANLINESS AND CHEAPNESS.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and obtained the PRIZE for being the best and cheapest article for roofing; also used for underplates at the Royal Agricultural Society's House, in Hanover square

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and cold. It is fixed for 1½d. per superficial foot. The price is now 2½d. PER SQUARE FOOT, complete, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in the quickest manner. The only Establishment in London where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.

Roof covered with the felt to be seen at the Factory, also the new Lord Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

ROYAL ACADEMY of ARTS, Trafalgar-square.—The Exhibition of the Royal Academy is now open. Admission from Eight o'clock till Seven, and Sunday from One till Five. One Shilling.

JOHN PRESCOTT KNIGHT, R.A., Sec.

THE NEW SOCIETY OF PAINTERS IN WATER COLOURS

THE Thirteenth Annual Exhibition is now open at their Gallery, 53, Pall Mall, near St. James's Palace, from Nine o'clock till dusk.—Admission is 1 Catalogue 6d.

JAMES FAHEY, Sec.

ROYAL POLYTECHNIC INSTITUTION

THE ELECTRIC TELEGRAPH COMPANY has just deposited a complete series of APPARATUS, illustrating the Principles of the ELECTRIC TELEGRAPH as now used on the Railway Lines of England. Also superb Specimens of their ELECTRIC CLOCKS, ALARUM, &c. Among the various Works of interest explained, is a WORKING MODEL of CLASSEN'S PATENT IMPROVED RAILWAY De Bachelorier's LECTURES on NATURAL PHILOSOPHY CHEMICAL LECTURES by J. H. Pepper, &c., with Dissolving Views of Madras, Wolverhampton, and England. The Electric Light Effects during Experiments, &c. &c. Admission to the Schools, Half-price.

A HOUSE in a Day, a Breakwater in a Week, the Piers for any Bridge or Railway Viaduct, Quay, Dock, Wharf, Jetty, in a very short space of time. The practical mode of executing such works and forming secure foundations by atmospheric action, for pleasure, fishing, and bathing houses, mills, manufactories, &c., with other interesting and valuable information will be explained by Lectures and Diagrams each day. Fifty Guines each, which will admit the bearer to the Lectures and a Model-house, to be erected, by the Stone Sand, Goodwin, or other situation agreed on, and to be had at 295, Strand

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Yellow Deal, however bad, and preventing them exuding through and disfiguring the paint after.

Many substances have been used and much time spent in endeavouring to find a cure for a bad knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application no skill is not required; it is put on to the work with a brush like oil or paint, can be used in all climates, and stands as well as any part of the work.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, For the Decks and Ships it is the best, as it does not absorb moisture, and the decks need not be scraped, as mould cannot grow upon it. It prevents vegetation, and covered ballings, &c., is not affected by spray or sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead its property of covering is as 75 to 100; that one hundred weight is equal to one and a half of lead. It works well under the brush, and dries hard. Any shade can be given to the mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

TO BUILDERS, PAINTERS, AND OTHERS

MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only,
62, WATERLOO-BRIDGE ROAD

LITHOGRAPHY IMPORTANT TO CONTRACTORS AND BUILDERS

M. COON having discovered a new method of Lithographing Designs and Plans, feels it his duty to call the attention of Architects, Surveyors, Builders, Contractors, and others to the many advantages derived by this method from the ordinary processes used for the multiplication of copies of Plans, &c. All orders, whether in town or country, promptly attended to.—Lithographic Printing Office, 15, Cheapside.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, POLICE-YARD, BRITANNIA PAVEMENT, No. 6 & 13, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best material for covering bridges and arches.

The Builder.
No. CCXXVII.
SATURDAY, JUNE 12, 1847.

EVERY one has heard of St. Stephen's, Walbrook. Foreigners and provincialists know it as one of the best of Wren's many works, and Londoners, who never find time to look at any thing close to them, as the site of long continued parochial strife and disputes. It is of one of the results of these distressing and discreditable squabbles, that we would speak to-day.

St. Stephen's, Walbrook, is one of the architural boasts of London. Hear what Ralph says: "It is famous all over Europe, and justly reputed the master-piece of Sir Christopher Wren. Perhaps Italy itself can produce no modern building that can vie with this in taste or proportion: there is not a beauty which the plan would admit of, that is not to be found here in its greatest perfection; and foreigners very justly call our judgment in question for understanding its graces no better, and allowing it no higher a degree of fame." A modern writer, whose opinion is worth more than Ralph's, clinches this by saying,—"Compared with any other of nearly the same magnitude, Italy cannot exhibit its equal; elsewhere its rival is not to be found. Of those worthy notice, the Zitelle, at Venice (by Palladio), is the nearest approximation in regard to size, but it ranks far below our church in point of composition, and still lower in point of effect." And then again,—"Had its materials and volume been as durable and extensive as those of St. Paul's Cathedral, Sir Christopher Wren had consummated a much more efficient monument to his well-earned fame, than that fabric affords."*

Without going to the full extent of these encomiums, we claim for it the admiration of all who can appreciate harmonious proportions, ingenious arrangement, and great constructive skill; and would have it most religiously preserved and worthily adorned.

This being the case, the sorrow with which we heard of the melancholy state of dilapidation into which the church had been allowed to fall, may be supposed,—the regret with which we heard a statement on the subject made by the rector, the Rev. Dr. Croly, to the open vestry of this unfortunate parish.

"As to the melancholy state of the parish church," said the reverend gentleman, "you require no knowledge from me. Like the often-quoted inscription on the grave of Wren, 'If you desire to see his monument, look round you:' if you desire to see the result of the parish difficulties, you have only to look at the stained roof and broken-up floor, at the shaking casements and beggared furniture of a church which was once the pride of our city, and built expressly to remain as a memorial of the genius of one of the noblest architectural names of England. It is now four years since I said in your vestry, that this church was 'not fit for divine service.' I now say that it is less fit, if possible, than before. It is true, that it has not yet fallen upon the congregation; it is true, that the question is not yet decided, whether the floor is to burst up or the roof to come down. Fortunately, the fabric was the work of better times; for if it had been one of our modern performances, the problem would have been solved long since by its ruins. I repeat that, though the church may stand, it is still not the fitter for its sacred purpose. In the city our church is called the 'Walbrook ice-house.' It has been proposed, when the congregation shall all have been frozen away, to make it a colossal barometer, from its indicating every vicissitude of the elements with the most immediate sensibility. By others, the idea of a rain gauge, on the largest possible scale, has been suggested, from its letting down every shower through its cupola. I have seen people thus involuntarily irrigated within a few feet of the pulpit. It was but two Sundays ago, when fires were forbidden us, that the *planking*, which is the novel substitute for glass in one of our east windows, was taken down, I know not by whom, and the frosty air rushed in in a gale. Gentlemen, I say that this is a scandalous state for any sacred edifice to be left in, and that it is a scandal to the city and to the establishment—nay, to the country."

Since this we have sought for an opportunity to visit the structure and judge for ourselves, and last Sunday succeeded in doing so. We travelled to the Mansion House, where, as a rhymer on "Modern Castles" says,—

> "Behind proud Dance's palace, in disgrace,
> Retiring Walbrook hides her blushing face,"

and after listening to an eloquent and instructive discourse from the rector, looked round the church.

We found the statement already quoted was in no respect over-coloured; and we echo the assertion that the state of this church is a scandal to the city, and to the establishment,—nay, to the country. The glass is broken, the walls are filthily dirty, and the cupola and ceilings stained and injured, by the entry of water for several years past through the lead which covers them, leading to the belief that much of the timber-work will be found rotten when properly examined.

The prevention of further evil through this cause, and the restitution of the parts already injured, are the first steps that should be taken, and ought not to be delayed a week longer than can be avoided. The rest of the fabric should then be generally repaired, and decorated in a style worthy of the building. If the parish cannot do it, London ought, and if London will not, it is the duty of all England to assist. St. Stephen's, Walbrook, belongs to the nation.

We have been asked by several persons to say in what manner this building should be decorated, but think it would be scarcely right to do so now. If it belonged to our neighbours, the French, the columns would be polished, the walls would be covered with paintings in fresco or encaustic, the cupola and ceilings would glow with colours and gilding, varied marbles would form the pavement, and the windows be filled with stained glass. It would be one of the glories of the capital, and an added inducement to strangers of all nations to resort there.

In moderation, the same course should be adopted here, and the corporation of London, and the legislature, might be fairly called upon to aid by a grant so good an object.

It has been suggested by some who frequent the church, that the ugly oval lights (of which there are a dozen) in the walls of the church, should be closed, the light being at times so great as to distract the eye, and that the recesses should be made to receive busts of the apostles. The introduction of painted glass would, perhaps, be preferable, as it would remedy the evil complained of without endangering the effect of the structure. The pewing should also be re-arranged; but, as we said before, we will not now enter into details: our present object is to draw attention to the miserable state of the building, and to claim for it immediate reparation, and ultimately, worthy adornment.*

* Gwilt in Britton's "Public Buildings of London."

## THE BUILDINGS ACT AMENDMENT BILL.

BUILDERS, district surveyors, and the public, have alike felt it necessary to object to portions of the Bill now before the House, and of which we recently gave an abstract.† Committees appointed by the District Surveyors Association, the Builders' Society, and the Society of Master Carpenters, have reported on it and transmitted their views to the Commissioners of Woods. A deputation of the two latter bodies, consisting of Mr. William Cubitt, Mr. Grimsdell, and Mr. Thomas Piper (of the Builders' Society), and Mr. H. Biers, and Mr. J. Stephens (of the Carpenters'), had an interview with Lord Morpeth on the subject last week. The deputation was introduced by Colonel Wood, who seems to be the only metropolitan member that has taken much interest in the matter. Mr. Hawes, the present under secretary for the colonies, was of course precluded by his official position from any interference, but on the former occasion, when the first bill was introduced, he gave the matter most patient consideration, and watched the measure through the House with much though unsuccessful vigilance. The deputation were received with the greatest attention, and their various suggestions were discussed and considered at length. Mr. Philips, at Lord Morpeth's desire, was present, and the interview lasted one hour-and-a-half. The points chiefly insisted upon were:—1st. The new authority proposed by clause VII., to be vested in district surveyors, and which in ordinary buildings it was felt would be in the highest degree objectionable,‡ and, 2ndly, that the awards of the official referees should be subject to appeal.§

Mr. H. Biers called the attention of his lordship to an award by the official referees, which, if insisted upon, would be a great hardship upon almost every dwelling of every rate, but most especially to the smaller description of buildings. He read from THE BUILDER a report of this award, in which the official referees stated, that all additional buildings attached to the back front of any dwelling, if *above* the basement story, must not have any internal communication, although in the same occupation; in point of fact, that to make use of an office building on or above the GROUND FLOOR, you must first go into the back-yard of your own premises, otherwise, if there is to be an internal communication from the staircase or back parlour, that then this addition must be measured as to area, and included in the area of the main building. This would so diminish the area of the respective rates, that the new bill would very considerably curtail the superficial area limiting the rates: so that instead of having had an increase in superficial quantity in the present bill, as compared with the old Buildings Act, it would much diminish even the limited area under its provisions, and defeat the object of the legislature and of every one who had at all promoted a larger space in the respective rates. The award would also deprive the public of the boon they considered they had obtained, in the walls of the additional buildings being of a thickness *pro rata* with the attached building ITSELF, and unconnected as regards thickness of walls with the main building.

His lordship gave the deputation to understand, that this was not to be considered a

† See p. 237.

‡ "This clause as it stands," say the Builders' Society, "has a twofold aspect; one to remove special supervision, and one to give to district surveyors greatly increased powers, and much larger responsibility; because, with respect to the buildings subject to special supervision, as well as those subject to ordinary supervision, the district surveyor is to have regard not only to the provisions of this Act, but generally to the 'stability and efficiency of the structure,' a new and most objectionable power. Any such authority should be limited to special supervision only."

§ "Clauses XII. and XIII.—Give to the award of the official referees powers that will carry everything before it; making it put aside all the existing authorities of the land, and supersede the courts of law—and this without appeal; giving power to destroy and remove deficient buildings, sell the materials, and if the proceeds of that sale do not meet the expenses, giving a charge on the land itself for all the arrears.

This clause gives more power than ought to be in any tribunal, and there certainly should be some appeal. The certificate or award will of course find its legal value in due time in the various courts of law and equity, and it seems unreasonable that this great power should be given to it by Act of Parliament."

A beautiful engraving of the interior of the church will be found in "Godwin's Churches of London."

final measure; but that the whole subject was to undergo discussion and revision, and the present bills superseded, as soon as could be, by one comprehensive and more simple measure.

With this understanding, and with the several alterations suggested incorporated, the deputation stated their desire that the amendments should pass into law.

The report of the Builders' Society summed up as follows :—

"The *general objects* of this additional bill appear to be to increase the authority of the official referees, permitting them, according to their discretion, to set aside the Act altogether, extending their powers, giving them summary and final jurisdiction, and conferring legal and unimpeachable value on their awards; removing from them the trouble and responsibility of special supervision, and bringing under the authority of the Acts such portions of great public works (railroads, docks, &c.), previously exempted, as abut upon public ways, and empowering the recovery of all fees, &c. by the most summary process.

An attempt is made by clause 7 to give to the district surveyors an authority which would be in the highest degree objectionable, by imposing on them the duty of examining into "the general stability and efficiency" of all structures; a power of interference in all respects to be deprecated by the public, while on the district surveyors themselves it would devolve an amount of responsibility by no means enviable.

It is to be regretted that the same disposition to minute legislation still continues, and that this bill is too much in conformity with the former Act, through which there runs so much of the spirit of an individual specification, in place of the broader views and more general directions that should distinguish an act of the legislature.

While to us as builders this minuteness of detail is comparatively unimportant, to our employers the public, it is a source of annoyance, impediment, and expense—at the same time that it is productive of no real public good.

An efficient security against the transmission of fire from building to building, and the protection of the public against accident by insufficient structures adjoining public ways, are all that the public weal requires, for against all other mischief the private interest of the owner is a sufficient guard. The more enlightened views of the present day have opened a fresh field in the sanitary provisions for the first time incorporated in the Act 7th & 8th Vict., cap. 84, and for these purposes it doubtless is well that the legislature should interfere; but a more striking proof of the manner in which legislation has been overdone can hardly be found, than in the fact that the Act 7th & 8th Vict. cap. 84, upon which the then First Commissioner of Woods and Forests, the indefatigable and intelligent Lord Lincoln, expended so much time and saw so many deputations, which itself consisted of no less than one hundred and twenty clauses, with schedules that almost exhausted the alphabet, and twenty different forms of notices, having been once amended by an Act containing eight clauses, now requires a further Act, with twenty-eight additional clauses, ten alterations to schedules, one set of new rules, and eight new forms of notices, making an aggregate of 119 folio pages, with which every one interested in buildings must become familiar, on pain of incurring the penalties against which the ordinary authorities of the law of the land will be no safeguard, and afford no appeal.

THOMAS PIPER, Hon. Sec."

To that portion of schedule A in the new bill, which provides that,—"If a building be situate within 16 feet of another building, not in the same occupation, the external wall of which last-mentioned building shall have any openings on the side towards the first-mentioned building, then no opening may be made in the opposite wall of the first-mentioned building,"—and to the other following clauses touching the same matter,—both builders and district surveyors strongly object. If passed as it now stands, it will be a most unjust and unnecessary interference with private rights.

For our own parts we sincerely hope that the bill will not get through Parliament before the session closes; all agree with us in our objection to multiplying the enactments relating to buildings, and the uncertainty and difficulty which must result from such a course. To pass it this session in order to repeal it next, as is proposed, will but uselessly encumber the statute books, and will give much more trouble to all engaged in building within its control, than can be compensated for by the means of ameliorating some present hardships which it affords.

## AN ACCOUNT OF THE PALACE OF CHAMBORD, FRANCE.

CROSSING the Loire, you pass along a sandy road through a district of vineyards, till you enter a forest, in the midst of which, and at about four leagues from Blois, lies the celebrated *Château de Chambord*.

It is difficult to describe the effect it first creates upon the mind—it looks so perfectly unlike any thing one has ever seen before. Below—its massive round towers and perfect simplicity give the idea of the strong fortress of ancient date. Above—the wildest confusion and profusion of the most fantastic, the most beautiful, and the ugliest forms, all mingle together and produce an architectural scene that cannot be imagined.

The building is immense, and has an appearance of extreme grandeur, stateliness, and solidity.

Androuet Ducerceau says, "All this edifice is admirable, by reason of its great massiveness, and presents an effect wondrously superb on account of the immensity of work in it."

It is said to have been begun to be built by Francis I. after his return from Spain, about the year 1526, and that nearly 2,000 workmen were employed on it for many years.

The centre building is in the form of a square, having at the angles four great round towers about 60 feet in diameter. This centre square building is inclosed, as it were, within an exterior court, having at its angles round towers also. Of these, the two in a line with the principal building nearly resemble those of the centre, with which they are connected by a continuation of the front; and the two towers at the other extremities are smaller, and connected with an insignificant range of buildings for stables, offices, &c., and which, though built by Mansard, in the time of Gaston d'Orleans, are a complete eye-sore contrasted with the more ancient building.

I believe it is unknown who was the architect of Chambord. Primaticcio has been mentioned, and it seems to me likely to have been designed by an artist accustomed to flights of the imagination, rather than by an architect who would have studied greater appropriateness in the forms.

Though it is not so stated in any account that I am aware of, I cannot help fancying that the round towers must be the remains of some older building, so completely does the plan resemble the inclosed strong-hold, the old *maison-forte* of the earlier middle ages.

Three ranges of pilasters at almost regular intervals, girt the exterior of the principal building, which is partly relieved with open galleries; above these is an entablature, shewing the same kind of machicolation and shell-work as in the building of Francis, at Blois; and above the cornice is a balustrade, which girts the platform on the roof. Towards the interior of the court, the architecture possesses more variety, and at the two angles is an open staircase of beautiful design, resembling the one at Blois.

But the roof is the glory of Chambord. The whole top of the building is one grand terrace, paved like a marble court.

Immense pointed roofs, more than 50 feet high, rise above the towers like ornamented pyramids studded with magnificent dormers and gabels, intermingled with elegant chimney shafts and towers, decorated with niches and flanked with columns in most beautiful proportion.

Elevated above all the rest is the grand centre staircase of the building (of the interior of which I will speak presently). This, as it rises above the platform, is surrounded by columns supporting a gallery, from which spring eight grand flying buttresses, ornamented with gigantic salamanders and supporting the cupola, which terminates in the remains of the famous *fleur-de-lis*, which gave the name to this crowning glory the "*Tour de la Fleur-de-Lis*."

There are published views to explain, in some degree, the appearance of this wonderful work; but no drawing can convey the full effect of this labyrinth of palaces, seen at different points of view, as you wander about this magnificent platform.

The various towers and chimney-shafts are of most elegant proportion; but the details, though of beautiful design, are rarely executed with the finish of the work at Blois, which they much resemble.

The caps of the pilasters, and the corbels at their base, are of infinite variety.

On the gable and the buttress of centre tower may be remarked dark lozenges and circles, and also a sort of fluting. To these I beg to call your attention; for though looking from below like inlaid marble, they are in fact nothing but pieces of slate nailed on the surface.

The interior arrangement of the château is extremely peculiar. On each floor one vast apartment stretches in the form of a cross, from back to front, and from side to side, of the building; and in the centre of the cross is the celebrated double staircase, rising through every floor, and forming the highest object in the roof above.

In each of the four angles left by the cross is a separate suite of apartments, including also others within the angle towers, and from two of these, again, there is a communication by another suite of rooms with the two outer towers on the same front. The large cross-shaped chambers are called *Salles des Gardes*; but I cannot think that rooms of such magnitude, communicating with every quarter of the château, could ever all of them have been intended as guard chambers. I rather imagine, considering that Chambord was erected by Francis I. as a hunting palace, that it was arranged on this singular plan as a place where state was to be laid aside, and that these halls were places of general rendezvous. Their ceilings are vaulted and divided into panellings, filled with the initial F and the royal salamander in flames alternately. In one of these curious chambers, where scenes of state and ceremony have often occurred, Moliere's play of the "Bourgeois Gentilhomme" was represented for the first time, before Louis XIV.

The grand staircase is wonderful—wonderful for the effect it produces and the beauty of its proportion and its ornaments, rather than for any peculiar difficulty of construction. Its construction may be thus described :—the outer diameter of the staircase is, I suppose, about 30 feet; in the centre of this is an inner wall, in diameter about 10 feet; between these two circles the stairs wind up in a double spiral, commencing at opposite points, so that parties entering at each, in ascending, see each other repeatedly through openings, but do not meet till they arrive at the various floors. The exterior of the staircase is decorated, and the interior wall is also highly ornamented with a variety of beautiful niches. The salamander in flames and the initial F are also introduced, the latter surrounded with a frame of cords—emblem of the Cordilieres to which the king's mother belonged. Of the termination of this staircase above the roof I have already spoken.

Of the four hundred and forty chambers which this mighty château is said to contain, there is not one that has escaped the distressing evil of whitewash, and few of them retain any ornament indicating their former use or recalling their former grandeur. I sketched a ceiling of a small vaulted room, said to be a private chapel, where the panels resembled those in the *Salles des Gardes*; and I remarked a chamber where there were indications that a painted frieze, three feet deep, had been; but everywhere the walls are bare—not a vestige remains of any kind of hanging or decoration. Destruction, the most ruthless that can be conceived, has swept over the whole interior: all the furniture, the paintings, the wainscoting of the walls, the very doors, the windows, were burnt, broken, or stolen at the time of the Revolution.

Yet, what must the chambers have been at the time of the royal Francis, who so loved to surround himself with objects of art!—what thousands of works produced under his fostering care still remain to us! Who can doubt that the rooms, so wretched now, were one blaze of splendour then? that, besides

the paintings of Primaticcio, and the frescoes of Jean Coussin, who were engaged there for years, there were assembled there the choicest works of the greatest masters—groups in marble by the rarest Italian hands; bronzes by Cellini, and, equally precious, his tasteful ornaments and vases in gold and silver; delicate carvings in ivory; enamels, by Leonard de Limoges; glasses from Venice. Fancy that the walls were hung with the richest tapestry, or leather, or brocade—that the ceilings were blazoned with colour and glittered with gold—that tasteful furniture, which Il Rosso and Primaticcio disdained not to design, filled the various apartments; picture the king, in the midst of his brilliant court, dazzling the eye with the richness of the costume and the beauty of the ladies—and the mind will indeed conceive a scene at Chambord, in vivid contrast to what now meets the view.

J. G. Grace.

## FALL OF THE CHESTER RAILWAY BRIDGE.

Continuing our notice of the evidence brought forward at the inquest—Mr. Stephenson flatly contradicted nearly all Sir Charles Pasley's statements, and said he had built several bridges during the last twenty years after the same manner, and never knew any breakdown but this. He said that Sir Charles Pasley's statements were wide of the truth.

Mr. Locke, engineer of the Grand Junction line, corroborated Mr. Stephenson's testimony; he said the bridge did not fall from any pressure downwards, but from a side-blow; this the examination of the fragments proved to him; he considered all manner of iron bridges objectionable, when brick and stone bridges could be had, as was the case, cheaper and better. Mr. Locke then said, "I believe that much blame lies at the doors of the Commissioners of the Admiralty, the Board of Trade, and the Commissioners of Railways, who require bridges built with too large a span, to answer their views as to shipping and other matters, without at all consulting the interest or safety of the public. I wish this to go forth to the world. I wrote a letter to Government on the subject, and am sorry to say that it was not attended to."

Sir E. Walker said he would not travel on the line, and he wished Mr. Stephenson might be able to make himself right with the public.

Mr. Stephenson said, he hoped he should again obtain the public confidence.

Mr. Walker and Capt. Simmons would not give an opinion until, from a further inspection of the works, they could ascertain if there was any trace of the engine and tender going off the line.

On Tuesday night Mr. Locke's statement was brought forward in the House of Commons, by Mr. Gisborne, who said that Mr. Locke's words were these:—"That the Admiralty and Board of Trade were disposed in many cases, to attend more to the requirements of waterway and navigation than to the safety of the public, and very unnecessarily to place upon engineers the necessity of covering a width of span which could not be made entirely safe. That Mr. Stephenson, Mr. Brunel, and himself addressed a joint letter to Lord Dalhousie, embodying these opinions, to which letter they never received any reply." Mr. Locke had authorized him (Mr. Gisborne) to state, that to this opinion he was prepared to adhere before any select committee, or before any court of law. Under these circumstances it was right that the question should be asked, had this letter been received?

Mr. Strutt said, it was a gross misrepresentation, but admitted that a letter had been addressed to the board by Mr. Locke and other engineers. But it referred, not to the conduct of the railway department of the Board of Trade, but solely and only to a clause in an Act of Parliament, the Railway Clauses Consolidation Act. The letter suggested an alteration in that Act, but contained no complaint whatever; it had no relation to any bridge across any river, or to bridges generally, but merely to bridges across roads; and these, from the limited span required, could not give rise to any question affecting the public safety.

Sir G. Clerk said, with regard to the complaint against the Admiralty, it was the duty of that board, and a matter of paramount consideration, to see that the free navigation of navigable rivers should not be obstructed by any railway works. If a railway company desired to run their line across a river, it was the business of the engineer to see, if he obtained powers, that the bridge constructed was of suitable dimensions and of sufficient strength; and, if any casualty occurred, on him must rest the entire responsibility.

Returning to the failure in question, the public are, as yet, far from satisfied. We shall have some remarks on the subject to offer next week.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Suez Maritime Canal.*—[Revue de l'Architecture et des travaûx Publics.—Crelle's Journal für die Baukunst.]—The interest which English and French engineers have chiefly taken in the above subject, has been thus divided, that the former laid more stress on a railway from Suez to Cairo and Alexandria, while the French shewed more predilection for a canal. From these and his own studies, M. Linant has projected a plan, which had been laid before a technical commission in November last, who considered it practicable, but advised that some further details ought to be first ascertained on the spot, before any decision should be arrived at. Consequently a *société d'étude* had been formed, which raised 150,000 francs for that purpose amongst the three groups of shareholders. The English were represented by Mr. Stephenson, who has to make the survey on the Red Sea; the French, by M. Talabot, who had to survey the spot of the intended canal; and to M. Negrelli, the Austrian engineer, the Mediterranean department had been consigned. Those preparatory surveys are to be ready by next autumn, at which time these three gentlemen have to meet and confer with Ali Pacha. Amongst the German shareholders, the Austrian Lloyd, and, in fact, the whole of the Trieste mercantile interest is concerned, as they want thereby to advance the views of the German Indian route.

On the necessity of the *neutrality* of the canal of Suez, if we may say so, our French cotemporary above cited makes the following remarks:—"If you were to plant any national colours on this maritime canal, a general confusion, nay war, might ensue. In fact, no great world-road can be put under the control of a nation, any more than a railroad under that of a corporation. As all nations are equally *interested* in the free use of the Suez canal, how could they ever suffer that it should be made, possessed, and worked by any single government? Every one who has soldiers and cannons is unfit for such proprietorship. For realizing such a plan, eminently peaceful and cosmopolite principles must be called into aid, viz., a company formed by the capital of all nations, and not being under the protection of any especial government, but, by its very constituency, under the collective egide and patronage of all. Thence, it would result, that such an European company would take care that this world-way would be constantly open to all and every vessel, whatever its colour be. It would be equally impossible that such a company would not maintain an equality of rights, as it would be controlled by the sailing and commercial interest of all Europe and America, —always sure, that if ever warped by any national or governmental consideration, its very existence would succumb to political or military complications. With the company of the Suez canal, interest and (moral) *principle* are fully in unison; and the free communication of the two seas will guarantee general peace and general justice. It would, however, not be enough to declare merely the canal *neutral ground;* it will require to include in this stipulation a band of land of about a league in breadth, say from Suez to Pelusium, that the company may freely execute its works and make suitable habitations, little gardens, &c., for their workmen. This neutral territory, in fine, shall *not* become the property of the company; it is to be the property, as it were, of all the shareholding nations of the human kind! The company not to have but the *usufruct*, and a perpetual ease.

"Dreams! we hear some of our readers exclaim. But many such have got *existence* of late—a memento for all those weak spirits who, by shouldering and doubts, hide merely their own impotency of creation, and who would wish to arrest movements, because they see that it is *not* they who are to *head* them. Those times, however, are fortunately past."

*Gaertner's Death*—has affected, and will long continue to affect, the whole population of Bavaria, as well as the monarch, whose especial architectural adviser and confidant he had been. He was not only an excellent artist, a very efficient academical president—but, what is rarely combined, a sterling man of business. *Society* also loses much in him, as his spacious and open brow smiled on every thing, and cheered up every thing. After the completion of his studies, he visited Italy, where, especially in Sicily, he staid a good while—and then in France and England completed his cycle of art-experience and observation. In 1820 he became Prof. of Architecture at the Munich R. A.—and since 1829, when the king appointed him architect of St. Ludwig's Church, an uninterrupted series of states and monumental structures were produced by his great activity—some of which were alluded to in a recent number.

*Brewhouses for the People.*—For the sake of affording the poor, suffering from the present high prices, a means of keeping up their strength, as well as weaning them from the deleterious dram taking, an enormous brewhouse has been built at Teschen (Silesia), at the expense of H. I. H. (the late) Archduke Charles, costing upwards of 120,000fl. A Bavarian brewer has been employed in brewing and selling very weak, but unadulterated beer at cost price.

*Mr. Warner's Long Range—in* 1792.—It was in that year that a plan was submitted to the National Convention, to carry on war in the *air* by way of *balloons*. One was eventually made, and used, we think, at the siege of some fortress; but the Warners of those times were soon warned off their attempts, by the enemy *firing* at this long range balloon.

## CHURCH ARCHITECTURE AND THE RITUAL.

Sir,—In a recent publication of Dr. Hook, of Leeds, called the "Three Reformations," there are some important observations upon the mediæval style of church architecture, and after lamenting the tendency of an over study of that style to assist in infusing a taste for Romanism, he adds an earnest recommendation to the architects of the present day to invent or adapt from models of the primitive ages a distinct style of building for use in the church of England. The subject is one necessarily of much interest to very many of your readers, and I therefore trust you will give admission in your columns to the following extract from the publication above referred to:—"For magnificent and sumptuous churches, you have primitive precedent as well as scriptural authority. But these were not Gothic churches. In various particulars and details they differed from the churches of the middle ages, and why? The rituals of the primitive and medieval churches differed; and the primitive Christians considered that a church was to be built for the ritual, and not the ritual adapted to the church. Their churches were erected to meet the exigencies of the Greek ritual and the customs of the people. And surely this is the principle upon which new churches ought to be erected in England. Is it not manifestly incongruous to erect a church for the ritual of the 19th century? In the 14th century, the Litany was sung or said in procession, and there were frequent processions in churches; in the 19th century the Litany is sung or said kneeling, and processions are of rare occurrence. In the 14th century the sermon seldom formed part of divine service, and was often delivered in another part of the church; whereas now the sermon forms part of the communion service. Not to instance other particulars, it is quite clear, that for rituals differing so widely, another arrangement of the church is necessary. We all admit, that our forefathers were in error when they sought to assimilate the church to the conventicle, in order that dissenters might not perceive what an honest man wishes to have perceptible, the difference between the principles professed in a church

and in a meeting-house; they were led to this by their ultra-Protestantism.

"Let us take warning from their example, and, instead of rushing into the opposite extreme, take care that our admiration of Gothic churches does not lead to mediæval taste, which will end in Romanism. Why are our architects to be mere servile imitators of their predecessors? Why are they to have no scope for genius? Surely we ought, acting on primitive principles, to encourage their inventive powers; we ought to say to them, 'As Gothic architecture was at its excellence in the 14th century, you ought to master the principles of your art from the ancient models; and then, having studied your Prayer Book, you ought to apply those principles to the production of an edifice, in which the services of the existing Church of England may be performed in the beauty of holiness.' Even with respect to galleries, they are unsightly objects, but they are sometimes necessary. In the 14th century, when the ritual was in a dead language, the people assisted, but took no part in the service. The ritual has now been translated into the vulgar tongue, that all the congregation may hear, and bear their part in the services. While, in mediæval churches, ample space was required for processions, we, on the contrary, require to have many people accommodated in the smallest possible space. Where this can be done without galleries, every one will desire to dispense with them; but practical men will be unwilling to remove them entirely, until our architects have seriously considered whether they cannot be made ornamental as well as useful."

I have met with a passage to the same effect in the good but quaint old Fuller, under the title of "The True Church Antiquary," in chapter 6 of the Holy State, and I hope you will allow it to be a pendant to the extract from Dr. Hook.

"THE TRUE CHURCH ANTIQUARY."

"He is a traveller into former times, whence he hath learnt their language and fashions. If he meets with an old manuscript, which hath the mark worn out of its mouth, and hath lost the date, yet he can tell the age thereof either by the phrase or character.

*He baits at middle antiquity, but lodges not until he comes at that which is ancient indeed.* Some scour off the rust of old inscriptions into their own souls, cankering themselves with superstition, having read so often *orata pro animâ*, that at last they fall a-praying for the departed, and they more lament the ruine of monasteries than the decay and ruine of monks' lives, degenerating from their ancient piety, and painfulness. Indeed, a little skill in antiquity inclines a man to Popery, but depth in that study brings him about again to our religion. A nobleman who had heard of the extreme age of one dwelling not farre off, made a journey to visit him, and finding an aged person sitting in the chimney corner, addressed himself unto him with admiration of his age, till his mistake was rectified: for '*Oh Sir*' (said the young old man), '*I am not he whom you seek for, but his sonne; my father is further off in the field.*' The same error is daily committed by the Romish Church, adoring the reverend brow and grey hairs of some ancient ceremonyes, perchance but of some seven or eight hundred years' standing in the church, and mistake these for their fathers, of farre greater age, in the primitive times."

I am, Sir, &c., A LAYMAN.

Liverpool, 31st May, 1847.

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JOHN FLAXMAN.—In 1843, Mr. Watson commenced a full-sized portrait-statue of this great sculptor. The clay model was so highly approved by a number of noblemen and gentlemen, that they opened a subscription, and formed themselves into a committee for the purpose of making the model a permanent marble statue. The clay has been transformed to plaster, and considerable progress has been made in the marble. The likeness of Flaxman is said to be good, and the sitting attitude easy and graceful: we have not yet seen it.

A NON-CONDUCTOR.—A thickness of half an inch of clay and sand has been found to intercept the heat of a mass of eleven tons of white-hot melted cast-iron for twenty minutes, without the heat on the outside of the vessel being sufficient to pain the hand.

## THE GAS MOVEMENT.

### RETROSPECTS AND PROSPECTS.

ONE astonishing peculiarity in the manufacture of gas is the fact, now more and more clearly evolving and forcing itself into notice, that, for every separate outlay, there is not only a separate compensation, but an additional profit;—that every step in the process of manufacture, not only pays itself, but more than pays itself; or, at least, that by means of patented or other improvements, of which every Gas Company has it in its power to take advantage, there not only need be no positive loss on a single article or process used, but there may or can be a positive gain on one and all.

Thus, for instance, the coal whence the gas is evolved, in being consumed into coke, especially on Mr. Cox's patented process, not only comes out without diminution, but with a positive increase, of its previous value, coal shovelled into the retort at 8s. 6d. a ton, as in Liverpool, coming out to be sold at no less a sum than 23s. 6d. a ton! (*a*)

Thus, too, for instance, in the purification of the article, especially on Mr. Johnston's patented process, not only is there no positive loss, the gas tar, ammoniacal liquor, gas salts, &c., being all valuable and saleable; but, on the latter process, so immensely increased in value, that the patentee offers not only to grant a free license to all companies using that patent, but actually to supply them with all the purifying materials, and that on the mere condition of ridding them of the residue, after the gas has been purified and prepared by passing through it! (*b*)

Then, too, as remarked by a correspondent, even the very "clinkered fire-brick-work of the benches and the burnt out retorts might find a market." (*c*)

But more than that, where coal may not be so easily or cheaply had, or where coke may not be so profitable,—though where *that* may be, in these times of general railway and steam power ramification, and consequent locomotive and other steam engine consumption, it is not so easy to notify as the reverse would be,—by means of Radley's patent, gas may be made even from bones or animal matter, hitherto unproductive for such purposes, and that, too, of a quality "superior to any ever made in the metropolis," at a cost of less than 4d. per 1,000 cubic feet! And here, also, the residual products are extremely valuable. (*d*)

In short, it requires very little foresight to perceive, as we have ere now predicted, that "there are financial wonders here to be opened up to us nearly akin to, and no less astonishing than, those statistical and economical subversions of all common notions that are thought to be on the eve of realization, by chemical and other companies, for the profitable disposal of the old and venerable nuisance of sewage and manure." (*e*)

And although some of the patent or other economical processes, here partially pointed out, are new or recent, the old gas companies are certainly quite inexcusable in not having yet given the public the benefit of such processes, some of which, without a doubt, they have fully appropriated to themselves since the antiquated era when gas was 30s. per 1,000 cubic feet. Is it not manifest, indeed, and that, too, even on the most moderate view of the matter, that while the coke consumer pays for the raw material, and the agricultural or other chemist for the preparation or purification of the gas produced from that material, the gas company have actually nothing in the shape of outlay or expenditure with which they can justly charge the gas consumer at all, except with the interest on capital sunk, once for all, at the outset, in the construction of their gas-works, and the ramification of their pipes, and with the wages paid to their officers and workmen for labour expended in carrying on their work! The public expectation, they may depend upon it, will not brook much more delay in any quarter. A significant index to the growing public opinion may be plainly deduced from the fact, that while not long before we opened the present campaign against the monopoly of gas, "*only* 7s. per 1,000 cubic feet" was a very ordinary turn of expression; now we happen to cast our eye on an intimation circulating in the usual course through the newspaper press, that the "*enormous charge* of 7s. per 1,000 cubic feet" is made by one gas company, namely, the Wigan, though we needed scarcely to have specified which, since it is not the Wigan company alone that make both enormous charges and enormous profits on what has thus been clearly proved to cost them, for material, literally NOTHING.

One future result to which we looked forward in the universal extension of the use of cheap and good gas, as "the nearest possible approximation to the purity and clearness and the cheapness and diffusion of the light of day," was the substitution of it in place of coal, wood, or peat fires, with all their disagreeable adjuncts of dust, smoke, sulphur, &c.; and it is already a satisfaction to us to find the public mind preparing itself, as it were, for such "financial wonders," as in a recent observation by the *Liverpool Albion*, of the fact, that the recent publication of the evidence on the subject of the supply of gas "would shew that we are merely in the first stage of the use of it,—that we are children in our knowledge of its benefits for purposes entirely apart from lighting,—and that the question of gas has ceased to be exclusively a question for those who burn it for illumination. It has become a question affecting us in various departments of household economy and convenience, and will become a primary question on the score of public health. We have it on the testimony of Mr. Herapath (the Bristol chemist), that with gas at 3s. 8d. (and on the *present* consumption of Liverpool it ought to be 3s.), it would be as extravagant as it is annoying to employ coal-fires in dwellings for cooking and warming, and that its general use will render the atmosphere of towns nearly as pure as that of the country. The popular demonstration of these facts (and there could be none more popular than by the publication of Mr. Herapath's evidence) would be productive of invaluable benefit; and the gas companies themselves could not more effectually serve their own interests than by the general 'diffusion' of such 'useful knowledge.'"

The following statistical information, extracted from the *Pharmaceutical Times*, may be considered with reference to what we have occasionally said about the metropolitan gas:—"At the present time there are in London alone fifteen gas companies, having mains laid in the various streets to the extent of several hundreds of miles, supplying above three thousand millions (3,000,000,000) of cubic feet of gas, requiring for its production more than three hundred and thirty thousand (330,000) tons of coals. It appears, from evidence given before a commission on a parliamentary inquiry respecting the 'Dublin Consumers Gas Company Bill,' in February last (1847), that there are in that city two gas companies, having consumed during the year 1846 twenty-seven thousand and thirty-five (27,035) tons of coal, producing about two hundred and forty millions (240,000,000) of cubic feet of gas. 'In the present day,' adds the writer, 'it is almost unnecessary to point out the advantages of lighting with coal gas. It is more economical, more safe, and more convenient than either lamps or candles; *and, as a system of police, its advantages cannot be over-rated; unlike the old oil-lamps of our streets, the burning gas really diffuses light, very much to the prevention of crime.*'"

We are pleased to observe, that the idea of binding down new companies to a maximum price in their Acts of Parliament has been adopted, as at Ashton, although it is notorious that "a coach-and-six may be driven right through many Acts of Parliament." Were assured and efficient means adopted, however, to limit companies to a certain moderate per centage of profit, they would soon be compelled to give the public the benefit of every available process, both old and new, for the reduction of the expense of its manufacture to the minimum. In fact, they ought to be limited, as we have just shewn, *at least* to such prices as would afford them a fair rate of interest on sunk capital, and repay them with interest the wages on labour expended.

Some conclusive experiments with Mr. Leslie's new burner, made by the parochial authorities of St. James's, to which we will refer next week, should make vestries pause before entering into fresh contracts.

We expect, ere long, to have some startling facts to disclose.

(*a*) See THE BUILDER, p. 85, *ante*. (*b*) See p. 108, *ante*.
(*c*) See p. 241, *ante*. (*d*) See p. 172, *ante*. (*e*) See p. 85, *ante*.

## NOTES IN THE PROVINCES.

The Albert Pier at Portsea, now completed, is expected to confer many advantages on the town. Even in a sanatory point of view, the healthy promenade which it opens up is dwelt on by the district papers as of itself a blessing. Other improvements in connection with it, such as the erection of a suitable hotel, &c., have been suggested.——A dispute has arisen at Southampton between the sewers and highways committee and the surveyor for paving, lighting, and sewerage to the board, respecting the expenses of the inspection and repair of sewers, which the committee allege might have been avoided by proper vigilance in preventing the introduction of improper materials and negligent workmanship. The surveyor, Mr. Doswell, replies as he conceives satisfactorily to the implied charge against him, but after a service of thirty-six years under the pavement board, tendered his resignation of the sewers surveyorship, which was finally accepted by a majority of 7 to 3, 2 neutral.——The foundation-stone of the new Roman Catholic chapel at the Cistercian Convent, Stapehill, near Wimborne, Dorset, was laid on the 25th ult. The design of this small edifice will be early Gothic, similar in character to that of several other churches planned by the same architect, Mr. C. Hansom, and in course of erection in different parts of the country.——The Dean and Chapter of Bristol Cathedral have given orders to Mr. Bell, an artist in stained glass, to restore the east window, which was injured by Cromwell's soldiers, and patched up at the 'restoration.' It is to be hoped that due care will be taken.——The foundation-stone of the nave arcade of Rotherfield Greys new district church was laid on Whit-Tuesday with all due parade, but the work was undone with very little ceremony through the ensuing night, and the coins abstracted,—by some new order of antiquaries, no doubt, interested in such deposits, and curious to ascertain the exact nature and value of the contents of the bottle containing them. Whether the high sheriff and the magistrates who headed the first procession intend to repeat the ceremony is not stated, but doubtless they will endeavour to do all due justice to the diligent antiquarian who has brought it to so lame and impotent a conclusion, if they catch him, as it is to be hoped they will. The architect is Mr. B. Ferrey.——At the Bedfordshire sessions a discussion lately arose as to the desirableness of having a new bridge in preference to repairing the old one, known as Harrold-bridge. The surveyor was eventually instructed, under certain contingencies, to cause a new bridge to be proceeded with; otherwise to repair the old one in the meantime. An estimate of 2,980*l.* for the erection of an iron bridge, by Messrs. Barwell, —the only one received,—was conditionally accepted. —— Public baths are about to be erected at Colchester from a design by Mr. Penrice, the necessary funds having been raised by subscription. —— Extensive repairs and restorations are in progress in the chapel of Magdalen College, Cambridge, and the plan of the original structure of the edifice has been revealed, though many of the original enrichments have been destroyed. The original character of the building is to be restored to a great extent, and modern decorations removed.——Advertisements of the proposal for erecting a church in the district of St. Paul's, Derby, have been issued.——The Improvement Commissioners at Wolverhampton have at length resolved to authorize the New Cattle Market Committee to complete the purchase of the site (25,773 square yards for 6,760*l.*), and to proceed as soon as possible with the erection of the market. The meeting was afterwards horrified with a medical report on the "filthy state of those very questionable settlements known as Caribbee Islands and Cole's Croft," and it was determined that the state of the drains and night-soil deposits should be forthwith looked to.——On Saturday week the architect and builder of the South Staffordshire General Hospital at Wolverhampton feasted 80 and upwards of the workmen, who have covered in one wing of the building.——The nailers at Stourbridge lately met to resolve on a strike, but a majority determined otherwise.——Another boiler-bursting case has just occurred, whereby thirteen workmen, at the Pontnewynngdd Iron Works, have been seriously injured. The boiler was an old worn-out one, which a proper inspector, such as we have so often advocated the necessity of appointing, would not have allowed for one moment to endanger life and property; in some places it is said to have been thinner than the sixteenth of an inch! As for the damage of property, estimated at 1,000*l.*, besides loss of profit by stoppage of the works for a month, there is probably little to regret where so much appears to have been risked in the attempt to take so great and far too long continued a profit out of a used up article, which ought to have long before given place to a new one, however considerable the expense; but the personal injury to so many poor workmen, and the serious loss of employment to so many more are deeply to be deplored. Such evils, however, will probably go on, how much longer it would be hard to tell, unless, indeed, some stray bishop or another should happen to be 'devoted' to the boiling or scalding process in some decided case of boiler explosion, while another is being roasted by railway combustion, for behoof of all and sundry suffering lieges.——The new landing stage at Liverpool, was launched on Tuesday week, and successfully transplanted into its destined place. The tonnage of this handy piece of workmanship is 16,000, and the area of the deck which is 508 feet long, and 82 feet wide, is 4,467 square yards, cost 50,000*l.* expense of working 1,500*l.* per annum exclusive of repairs, There is a light-house, at each end with powerful reflectors. The stage is to be connected with the pier by two iron bridges 150 feet long and 17 feet wide, one for ascent the other for descent. Mr. Cubitt is preparing these.——The foundation-stone of the entrance lodge of the new cemetery at Hull was laid on Wednesday week.——The Hartlepool West Harbour and Docks were opened on that day. These important works were begun in January, 1845. The size of the harbour (which is inclosed by two bold stone piers) is about fourteen acres; the dock [eight acres, with quay walls on every side, and capable of accommodating between eighty and ninety large vessels afloat. The entrance gate is 42 feet in breadth. The dock is lighted with gas, and there are water-pipes on all sides constantly affording an unlimited supply. The staiths were constructed by Messrs. George Brown and Brothers, of Stockton. The engineers of the dock and harbour were Messrs. Simpson and Lynde, Great George-street, Westminster; resident engineer, Mr. David Bremner. A graving dock is in course of being constructed, and a second floating dock is to be executed.——The foundation-stone of the Gateshead Mechanics' Institute was laid on Monday week. It is to be built by Mr. Edward Bruce, of Gateshead, under the inspection of Messrs. Wardle and Walker, of Newcastle, the architects, who designed the building: cost of plans and superintendence, 42*l.*; cost of building, 840*l.*; site, 124*l.*; in all 1,000*l.* odds, of which 800*l.* have been realized.

*** Our shrewd Taunton 'Mechanic' led us a little astray, it seems, as to the architect of the Unitarian schools there: instead of 'Mr. Ingle,' [in fact, in the MS.,—pretty well written too,—we find it more like 'Mr. Jingle'] it should be Messrs. Fuller and Gingell of Bath.

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Ancient Frescoes Discovered and Destroyed.—Some very early and fine specimens (?) of fresco paintings were recently discovered on removing a thick coat of whitewash from the inner walls of Shawell Church, Isle of Wight. These paintings probably covered the whole of the interior walls, as detached portions can be traced in different parts of the church. Some of them were extremely curious and interesting, but notwithstanding the efforts of members of the British Archæological Association resident in the vicinity, they were ruthlessly destroyed even before tracings of several of them could be preserved, and the only record of so interesting a discovery is a fac-simile of others made by Mr. Dennet, and now in the possession of the Archæological Association, with a minute description read to the members. Why have not the names of the *guilty* parties been exposed to public comment?

Competition.—An extension of time to 25th inst., has been announced for sending in plans, &c., for the new church at Brompton, in Kent, already advertised in The Builder.

## DECORATIVE ART SOCIETY.

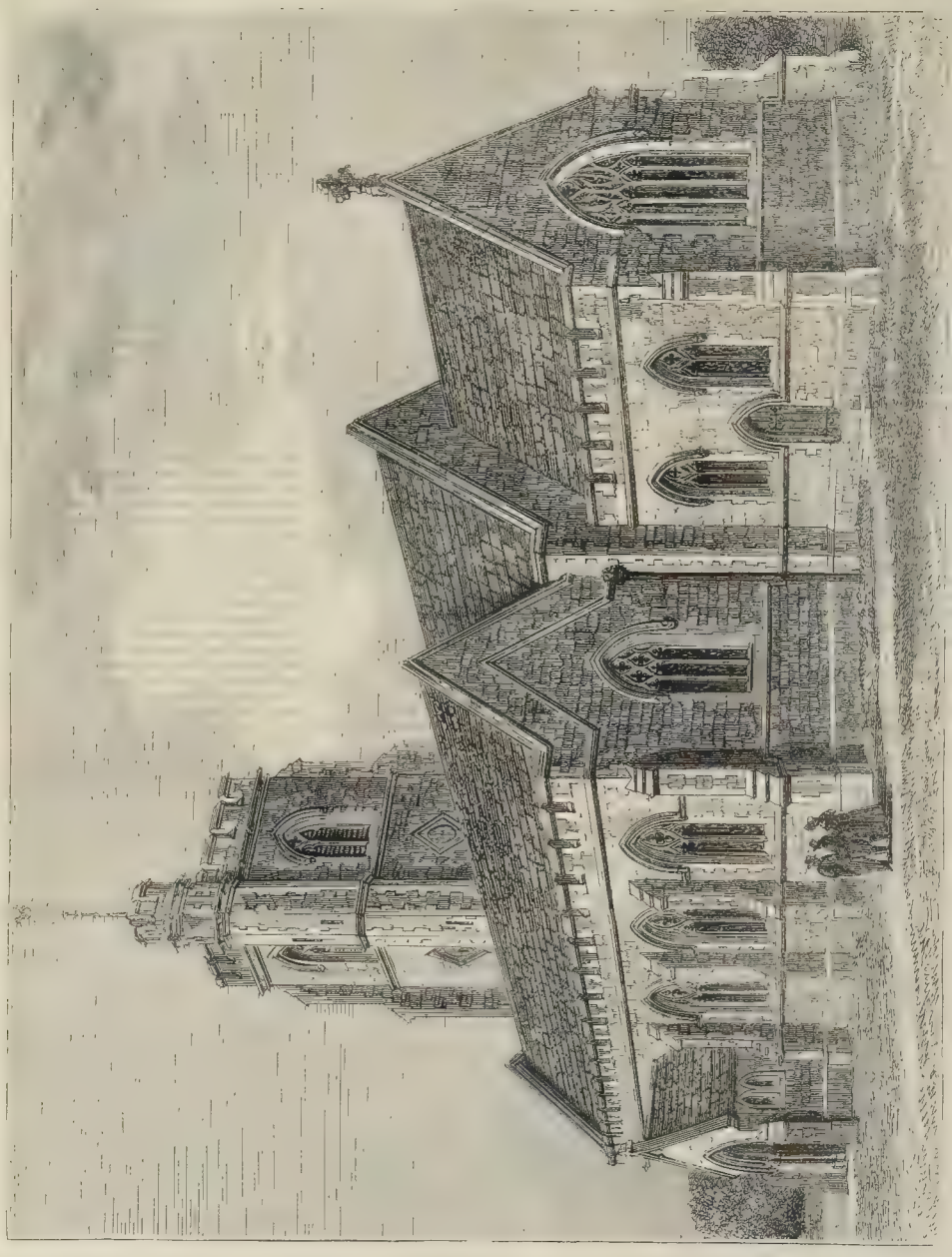
May 26.—Mr. Boulnois in the chair.—A paper on the decorations of Covent Garden Theatre, 1847, considered in their relation to art, was read by Mr. Laugher. The subject was introduced with observations upon the unsettled state of information which at present renders it difficult to arrive at definite conclusions respecting what, at first glance, may be deemed inconsistencies, deviations from certain hypothetical principles prevailing with reference to proper application of embellishment. It was said, that the laws affecting ornamental forms had been so generally disregarded and uncared for during the last half century, as to have become nearly obsolete; and that, amid rapidly-increasing emanations of decorative art, of a profuse variety in growth and endurance, of colour, form, and value, many of the lofty and now permanent structures illustrate the advantages resulting from a careful study, together with a systematic culture and training, while as yet but little regard has been devoted to an artistic cultivation of the entangled under-wood shrubs, arcanthus, &c., which are promiscuously collected for the purpose of contributing to another class of interior decorations. On these considerations Mr. Laugher submitted, that his remarks should be received rather in the light of suggestions requiring critical investigations, than as a series of conclusions fairly deducible from established and recognised principle in the application of ornamental art. He then observed that in all cases of judicious management, it would be found that precedent or example had been respected whenever a completeness of form and harmony of parts had been attained; and he further contended that especial regard should be had whenever certain features became imbued with separate individualities and associations, as also when peculiar forms, colours, and expressions are identified and classed with strongly-marked distinctions and events of history. He maintained that while servile imitation is not commendable, it is not really so objectionable nor so offensive to an educated and reflecting man, as the disregard for and disturbance of his acquired impressions of the proprieties in characteristic associations. Architects, he said, had supported this feeling, with probably too much pedantry, but they rarely permitted a mixture of styles and characteristic allusions to occur without censure. How far this deference to precedent and style had been carried out by the architect who designed the decorations for Covent Garden Theatre would be detected in a glance; and having thus briefly alluded to them, he proceeded to show that a miscellaneous assemblage of any conventional, symbolical, or characteristic forms of ornament should always be avoided in design.

He then urged, at some length, what he considered to be questionable in the decoration of the new Theatre, especially the amount of gilding and the dark colour of the draperies, but admitted the many practical difficulties there were to be overcome, and said he was disposed to attribute some of what he considered defects to the necessity of using such available embellishments as the experience of the architect enabled him to collect instanter.

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Singular Discovery in Mississippi.—The *Louisville Journal*, in a recent article, says:—"In the south-western part of Franklin county, Mississippi, there is a platform or floor composed of hewn stone, neatly polished, some three feet under ground. It is about 108 feet long, and 80 feet wide. It extends due north and south, and its surface is perfectly level. The masonry is said to be equal, if not superior, to any work of modern times. The land above it is cultivated; but thirty years ago it was covered with oak and pine trees, measuring from two to three feet in diameter. It is evidently of very remote antiquity, as the Indians who reside in the neighbourhood had no knowledge of its existence previous to its recent discovery. Nor is there any tradition among them from which we may form any idea of the object of the work, or of the people who were its builders. There is also a canal and well connected with it, but they have never been explored. A subterranean passage may be underneath. Farther explorations may throw some light upon its origin."

HOMERTON NEW CHURCH.—Mr. A. Ashpitel, F.S.A., Architect.



## NEW CHURCH AT HOMERTON.

The need of additional churches having been very severely felt in the parish of Hackney, the rector, the Rev. Archdeacon Watson, convened a meeting of some of the principal inhabitants in 1839. It was then resolved that two, and if possible three, additional churches be erected. Subscriptions were made, and aid from the Commissioners for Building Churches and from the Church Building Society were procured. The result was, that St. Philip's, at Dalston (Mr. Duesbury, architect), and St. James's, at Clapton (Mr. Hakewill, architect) were built and consecrated in 1842. In these two places the support of the ministers might in part be derived from the pew rents; but it was felt that in Homerton very little, if indeed any thing, could be derived from that source. But in 1844 Joshua Watson, Esq., the brother of the late rector, sanctioned the announcement "that a warm friend of the church would be responsible for the endowment, for the half cost of a parsonage-house, and from public and private sources, for 2,500*l.* towards the building fund." Under such circumstances subscriptions were raised, a plot of ground purchased in Homerton, and Mr. Arthur Ashpitel appointed the architect. The church contains sittings for between 600 and 700 persons, all free and unappropriated, without any gallery whatever. It is built under the Act 6 & 7 Vict., c. 37, and the district will be called the "new parish of St. Barnabas, at Homerton."

The church consists of a nave, 70 by 24, a south aisle, 65 by 17, a chancel, 24 by 19 in the clear. The tower is at the west end, and is 20 feet square, with a turret stair, and is nearly 80 feet in height from the ground line. The

style is that which prevailed from 1310 to 1350. The proportions of the whole building have been carefully corrected by existing examples, particularly from the south and south-west of England. The tower is said to be the largest finished tower near London, and contains ample room for a peal of eight bells. The tower-arch is open to the chancel, and affords a complete view of the west window. The upper string course is ornamented with the ball-flower of the period. The tracery of the nave and aisle windows is comparatively plain, but that of the east window is extremely elaborate. The aisle and nave are separated by a range of columns alternately octagon and circular. The roof is open, and the principals filled in with tracery of the period, a good example of which (that at Malling Abbey) was given to our readers a short time back, from the pencil of Mr. C. J. Richardson. The roof-timbers are supported by corbels of foliage. These, as well as the caps of the columns, have been executed by Mr. Nixon, jun., the nephew of the sculptor. This gentleman has also in hand the corbels for the chancel, and a reredos representing the two disciples at Emmaus. These, together with the greater part of the ornaments, are the munificent gifts of an individual who has contributed most largely to the purchase of the ground and to the building, and in every other way, but has most strictly forbidden any allusion to his name. The seats are plain and open, the bench-ends are moulded, and adorned with a simple poppyhead. The pulpit, &c., table and altar-rail, &c., are of oak, carved by Messrs. Pinkerton, of Eccleston-street. The font is of Box Shellatt-stone, and from the chisel of Mr. White, of Millbank. The altar-window of five lights is filled with stained glass, containing scriptural subjects interspersed with emblems, and is the work of Mr. Wailes, of Newcastle. The great west window of three lights, containing a figure of St. Barnabas, to whom the church is dedicated, and one at the west end of the aisle, also of three lights, containing a figure of St. Paul, are the works of Messrs. Ward and Nixon. The chancel windows, and several others in the aisle, are the work of Messrs. Powell, of Whitefriars. The whole of these designs (except for the stained glass) are from the pencil of Mr. Ashpitel. The floors of the aisles are paved with red and black Burslem tiles in various ancient figures. The roof and seats are not varnished, but merely rubbed over to shew the grain of the wood.

As it was imperative that the church should be lighted by gas, the architect found himself placed in considerable difficulty on this head, but he has designed some large Corona lucis, from an idea that he saw at Rouen, and which are now being executed by Messrs. De Bauser, of Creed lane, and it is hoped will form an ecclesiastical method of availing the church of this modern but brilliant light.

The whole fabric is of stone; the general walling of Maidstone rag-stone, and the dressings of Caen stone. The churchyard will be inclosed with a low rag-stone wall, with a Caen-stone coping.

The nature of the site has entailed great expense: the ground fell considerably, and a large bed of sand was found where the church was to be placed. The consequence was, that between 400*l.* and 500*l.* have been expended to make a good foundation, and to bring the church to a proper level, more than ought to be reckoned in ordinary sites. The works have been completed by Mr. Holland, of Duke-street, in an excellent way, and the total cost will not exceed 4,000*l.*

## THE ARMY AND NAVY CLUB COMPETITION.

In accordance with the determination of the committee, already mentioned by us, the six architects, whose plans received the greatest number of votes in the late competition, have been invited to submit fresh designs, and have agreed to do so. We give their names in alphabetical order:—Mr. G. S. Clarke (a pupil of Mr. Barry), Messrs. Fowler and Fisk, Messrs. Parnell and Smith (with whose plan the name of Count D'Orsay has been connected), Mr. H. B. Richardson, Mr. Sydney Smirke, and Mr. Tattersall.

Mr. Smirke was one of the competitors who withdrew his design before the exhibition took place.

## OLD SASHES.

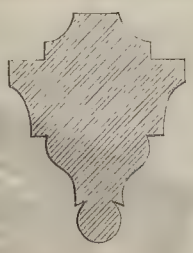


*Fig.* 1.

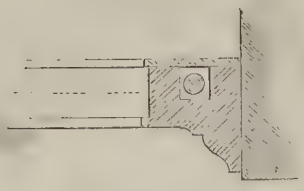


*Fig.* 2.

## OLD SASHES AND FRAMES.

Sir,—I beg to send you two sketches of curious ancient fragments, discovered during some alterations at this place. The first is an old wood mullion of very good design, as early as the time of James I. This was found in the plastered wall surrounding the principal staircase, supposed to have been an open court. There were several windows very perfect; the walls were formed of quartering, filled with wattles and loam. The second sketch is made from one of the old sash frames, of the powder and pig-tail period. It is interesting, as it shews the extent of our improvements in this important part of our buildings. J.

Wickham Court, Kent.

## GEOMETRY OF THE SQUARE.*

*Case 3rd.*—When the triangle is right-angled, as ABC (fig. 5), the sides being AB, AC, and the hypothenuse BC respectively, it is required to convert the right-angled triangle ABC into a square of equal area.

*Construction.*—Through C, the vertex of the triangle, draw the straight line CI parallel to the base AB, and extend it towards I as far as necessary. Bisect the base AB in L, and through L draw LD parallel to AC and meeting CI in D; then is ACDL a rectangular parallelogram equal to the triangle ABC.

Bisect CI in H, and on H as a centre, with the diameter CI, describe the semicircle CGI meeting LD, the side of the rectangle produced, in G; then is DG the side of a square which is equal in area to the rectangle ACDL. On DG describe the square DGEF, and it will be equal to the given triangle ABC, so that the conversion required by the problem has been effected.

Problem.—*To construct a square that shall be equal in area to a given quadrilateral figure; that is, to covert a given quadrilateral figure or trapezium into a square of equal area.*

*Example.*—Let ABCD (fig. 7) be the given trapezium or quadrilateral figure, of which the containing sides are AB, BC, CD, and DA, it is required to convert the trapezium ABCD into a square of equal area.

*Construction.*—Draw the diagonal BD dividing the given figure into the two triangles BAD and BCD, and through the angle A, draw the straight line AK parallel to the diagonal BD, and meeting CD produced in K; draw BK intersecting AD, the side of the trapezium, in *r*, and the triangle KBC, thus

* See page, 289, *ante*.

## GEOMETRY OF THE SQUARE.

*Fig.* 5.

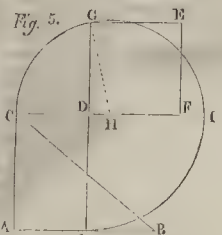



*Fig.* 7.

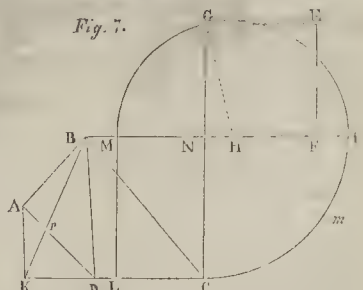
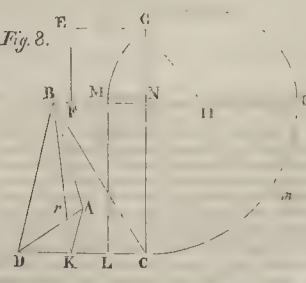



*Fig.* 8.



formed, will be equal to the given trapezium or quadrilateral figure ABCD.

Through B, the vertex of the triangle KBC, draw the straight line BI parallel to the base KC, and produce it towards I to any required extent. Bisect the base CK in L, and at the points C and L in the base line CK, erect the perpendiculars CN and LM, meeting the straight line BI in N and M, and making the rectangular parallelogram CLMN equal to the triangle KBC. Upon N as a centre, with NC as a radius, describe the quadrantal arc C*m*I, meeting BI in I and making NI equal to NC, so that MI is equal to the sum of the sides of the rectangle MN and NC carried out in the same straight line. Bisect MI in H, and on H as a centre, with HI or HM as a radius, describe the semi-circle MGI meeting CN produced in G; then is NG the side of the square that contains the same area as the given trapezium ABCD. Upon the side NG, as thus determined, construct the square NGEF, and that which is required by the problem is done; for the trapezium ABCD, the triangle KBC, the rectangle CNML, and the square NGEF are all equal to one another, so that the figure proposed has been converted into a square of equal area.

*Demonstration.*—Since, by construction, the triangles ABK and ADK stand upon the same base AK, and lie between the same parallels, AK and BD, they are equal between themselves; take away the triangle A*r*K, which is common to them both, and the remainder AB*r* is equal to the remainder KD*r*, so that the part AB*r* which is cut off the trapezium by the line BK, is equal to the part KD*r*, which is applied to it by producing the side CD to meet BK in the point K, and, consequently, the triangle KBC and the trapezium ABCD are equal.

But the rectangle CNML is equal to the triangle KBC, because, by construction, it stands on half the base CL and lies between the same parallels BI, KC, which limit the triangle; therefore, the rectangle CNML is also equal to the trapezium ABCD. And moreover, the square GEFN is equal to the same trapezium or four-sided figure ABCD; for since NG, the side of the square, is a mean proportional between NM and NI, the sides of the rectangle CNML, the rectangle and the square are equal; but the rectangle CNML has been shewn to be equal to the trapezium ABCD, consequently, the square GEFN is also equal to it, for things that are equal to the same thing are equal to one another; hence the trapezium has been converted into a square of equal area, according to the conditions of the problem.

*Note.*—This problem, simple as the preceding construction appears to be, and undoubtedly is, may be more readily and elegantly resolved by the following method:—

*Note.*—Should the trapezium, or quadrilateral figure given, assume a different form from the preceding,—that is, should one of the angles be a re-entrant angle, or turned inwards, then the principles of conversion will still be the same; but in order that nothing may be wanting to render the subject plain and intelligible to the learner, we shall resolve a case involving the specified condition.

PROBLEM.—*To construct a square that shall be equal in area to a given quadrilateral, or four-sided figure, having a re-entrant angle, that is, having one of its angles turned inwards; or, to convert a given quadrilateral, or four-sided figure, having a re-entrant angle, into a square of equal area.*

*Example.*—Let ABCD (fig. 8) be the given trapezium, or four-sided figure, of which the containing sides are AB, BC, CD, and DA, and the angle, BAD, a re-entrant angle; it is required to convert the four-sided figure ABCD into a square of equal area.

*Construction.*—Join the opposite angles B and D by the straight line BD, which in this case falls wholly without the figure, and at the re-entrant angle A, draw the straight line AK parallel to BD, and meeting the side CD in K; join the points B, K, by the straight line BK, and the triangle CBK shall be equal in area to the given figure. Through the vertex, B, draw BI parallel to CD, and bisect CK in L. At the points C and L in the base CK, erect the perpendiculars CN and LM meeting BI in N and M; then is the rectangle CNML equal to the triangle CBK. On N, as a centre, with NC as radius, describe the quadrant C*m*I, meeting BI in I, and making NI equal to NC, so that MI is equal to the two sides of the rectangle CN and MN, extended in one line. Bisect MI in H, and on H as a centre, with HI or HM as a radius, describe the semicircle MGI meeting CN produced in G; then is GN the side of the required square; on GN construct the square NGEF, and the thing required is done.

*Demonstration.*—Since the triangles, BAD and BKD, are constituted upon the same base, BD, and lie between the same parallels, BD and AK, they are equal to one another; take away the triangle A*r*K, which is common to them both, and the remainder AB*r* is equal to D*r*K, so that the part AB*r*, which is added to the figure by the straight line BK, is equal to the part D*r*K, which is cut off by the same line.

*Note.*—The remaining part of the demonstration being precisely the same as in the foregoing cases, it has been thought unnecessary to repeat it.

## RAILWAY JOTTINGS.

VARIOUS plans have been noticed in THE BUILDER, for the very desirable and indeed absolutely essential means of communication between guard and engine-driver. An addition to the number, suggested by a correspondent of the *Mining Journal*, consists in the fixation of two perpendicular guide pieces to the funnel of the engine, in which shall slide, facing the driver, a metal plate painted white, with the word "stop," printed on it in black letters, and with a small chain attached, passing over a pulley near the top of the funnel, and carried within reach of the guards. In case the engine is required to be stopped, the plate should be drawn towards the top of the funnel, and kept there till noticed by the driver, which he could scarcely fail to do. The chief defect of this contrivance is, that it does not force itself so instantaneously or effectually on the notice of the driver as might often be requisite. ——A correspondent of *Jerrold's Newspaper*, speaks of a very good and simple means in use in America, for the protection of passengers' luggage, namely the labelling of each article with a copper ticket attached by a thong, while a duplicate copper ticket is handed to the owner which will constitute the only easy means of reclaiming the luggage.——It has been suggested that the sunny sides of railway embankments might be planted with vines instead of lying fallow as they now so universally do. Vineyards, especially in the counties of Kent, Gloucester, and Cambridge, are no novelty in this country, as many of our readers know, extensive vineyards having flourished and prospered here even so early as the 12th century, and without the aid of modern improvements in climate, soil, and management. ——From an account just published by the Greenwich Company, it appears that 108,861 passengers were conveyed by rail during the Sunday and three following days in the fair week, the amount of fare being 2,186*l*.——At a late meeting of the Gravesend and Rochester, it was unanimously resolved to present Messrs. Collier, the secretaries for twenty-three years, with 1,800 guineas, and Mr. Moxon, the chairman of the company for twenty years, with 1,000 guineas.——A locomotive on the South Coast line, thought proper to 'leap' off the rails on Monday week and kill its driver, while the tender fairly severed the stoker's arm from his body. The engine which was one of Stephenson's patent, was one of those curvetting and unsteady ones, which have an incorrigible trick, *as many engines have*, of sliding, or oscillating from side to side, while they also prance and rear, or swing up and down from back to front, so that they are apt and inclined occasionally to 'leap'—literally—off their wheels, or even off the rails, as in the present instance, snapping the connecting irons, which couple it with the tender, by the jerk, and suddenly producing the catastrophe to which such 'high-spirited' practices inevitably lead. Efficient means of training vicious and skittish engines such as these, as the *Times* very naturally calls them, cannot be too soon enforced. ——It appears that not only was the new tunnel at Southampton made to cross and rest upon the old canal tunnel which lately gave way, and that without the knowledge of Captain Coddington, the Government inspector, but it had been also attempted to obtain permission to recross it with sewers, which Mr. Beatty, on the part of the Railway Company, offered to "rebuild if they sank." When the existence of the old tunnel was "thrust upon Captain Coddington's notice," after the occurrence of the catastrophe, he "expressed his surprise at it," and "took a second survey of half-an-hour of the tunnell." The Dorchester company had even been forbidden, through Mr. Beatty, at their own peril, to form those sewers which had been necessarily destroyed, and which it was proposed to reconstruct. It was shewn by Mr. Hill, before the Improvement Board, that there could be no safety for the road above till the old tunnel was filled up; and the only question seems to be, why that was not done before a stone of the new tunnel was laid. "If the engineer who had planned the line of tunnel," said Mr. William Lancaster, at the same board, "could be alone punished, it would not matter how much he suffered; but, unfortunately, contractors, sub-contractors, and other guiltless persons would participate in the loss." Another subsidence has been going on in this ill-conditioned work.——On Wednesday week before last, the bridge over the Durham and Sunderland Railway, belonging to the Marquis of Londonderry's colliery at Broomside, fell down, and temporarily stopped the traffic upon the railway. Our 'great railway works' appear to be all 'going to sticks,' or stones at least, or bricks.——The Cheltenham and Oxford bill has passed the ordeal of the Commons' committee, after nearly 170 witnesses, including all the principal engineers in England, had been examined in evidence. Efficient means are provided in the bill for the *well*-being of the water-interest in this celebrated resort of ablutionists and water-drinkers.——The contract for the erection of the railway station at Chester has been let to Mr. Brassey. It is to be finished within nine months after its commencement. The total cost will be about 90,000*l*.——The bishop of Norwich, at a recent meeting to promote "ragged schools" observed that Mr. Peto, by educating the excavators working on the railways in the county of Norfolk, had beaten the beer-shops out of the field.—— It is still resolved on to open the Newcastle and Berwick line throughout on the 18th inst., although several of the viaducts will not be finished by that time, and are to be substituted by 'sufficient temporary erections.' A 'strong wooden bridge' is also to be thrown across the Tweed at the site of the permanent bridge and partially supported by the piles for it when fixed. The way will thus, in twelve months, be opened up without intermission to railway carriages between Edinburgh, Newcastle, and the south. At the opening, on the 18th inst., however, the time distance between London and Edinburgh will be reduced to thirteen hours!——The travelling carriage of the Russian Prince Gagarin, on its way from St. Petersburgh to Vienna, was destroyed by fire on the 20th ult., on the railway called the Emperor Ferdinand's, some sparks falling upon it from the locomotive. All its contents, which included a part of the wardrobe of the prince and a large quantity of bank-notes, were entirely consumed.

### ELECTRO-TELEGRAPHIC PROGRESS.

Messrs. Brett and Little have obtained an injunction against the Electro-Telegraphic Company and others using, without license, their patent percolating hydraulic battery, for the sustainment of the galvanic and electro-magnetic action, by the removal of the sulphate of zinc, as it is generated in the battery, through perforations at the bottom, into cells beneath. —— Improvements (Mapple's) have been effected in the casing and insulating of the wires, by first covering them with cotton and coating with any suitable melted material, then inclosing them in a leaden tube, filled with heated Stockholm tar and pitch, or other non-conducting material, and there kept hot while the leaden tube is reduced by rollers to a smaller or more compact diameter; after which the leaden tube is protected by winding coir-rope round it, and then passing it through a hot pitch bath, and ultimately through a trough of sand, which is well rubbed into the interstices of the rope. For still further protection in underground deposit, the whole apparatus is inclosed in a cast-iron pipe.——It seems to be on this conservative system that the wires are now being laid through the streets of Man-

chester from the Exchange to the Leeds telegraph of the Victoria station, whence that line is laid to Normanton station, through which the Manchester Exchange will be brought into electro-magnetic *rapport* with that of London, in course of two or three weeks, when the establishment of a like connection with Liverpool will be commenced without delay.—— There are now, it appears, no less than 1,575 miles of telegraph in operation throughout the United States, besides 4,974 miles more, which are already under contract, and in process of construction so as to be completed in 1848,—making, in all, 6,549 miles of telegraphic interweavement to be completed next year.

## THE NATIONAL BUILDERS' GUILD.

Sir,—Permit me to lay before your readers the following suggestions for the establishment of a national society for regulating wages, supplying employment, relieving the sick, &c. during temporary illness, and for affording permanent pecuniary assistance to aged and infirm members, by a system of mutual life insurance.

The society to consist of masters and men in every department of building, whether under the direction of architects or civil engineers, and to include every description of persons engaged in decorating or furnishing buildings.

I would propose, that, in every corporate town in the kingdom, a trade council should be formed, which might consist of as many persons as there are town councillors of the corporate body; the members of this council to be elected by members of the society resident and working in the town, or whose names are registered in the books of the trade council of that town. The trade council in every corporate town would keep a book for registering the names of members, arranged under their respective trades. The town in which a member is first entered should never be changed for that of any other in which he may afterwards reside,—if he removed elsewhere, he should always be known as a member of the trade council of the town in which he was originally entered. All receipts and payments to his account would be made through the council of the town in which he was residing, to the central or metropolitan council in London, where duplicate books of every town council would be kept, and in which an account would be opened with every member of every trade council in connection with the society. The members of the society would be provided with a book by the metropolitan council, so printed and made as to prevent a forgery of it by any one. This book would contain a copy of his original entry into the society, and of his money account with it; it would also be his certificate of membership when presented at the trade council of any town in connection with the society. A member of The National Builders' Guild, in search of employment, would, as a matter of course, apply to the trade council of the town at which he had arrived, and the presenting of his book would prove him to be a member of the guild. Every working member, when seeking employment from a master member, should have the preference over others who are not members of the guild: I do not mean that there should be any thing compulsory, but simply an acknowledgment of kindly feeling on account of membership betwixt master and man. There will, of course, be rules and regulations required, and which must be so drawn up as to make it the interest of both parties to observe them.

I would propose that the metropolitan, or central trade council, should consist of a chairman and nineteen councillors, which is, I believe, the number of parliamentary members in the metropolitan districts. This council would be elected by the councillors of towns, in the same manner as they themselves were elected—that is, by voting papers, to be transmitted by post or otherwise, one-third going out of office under the same regulation as in the elections under the municipal law. In the metropolitan council would be vested the power of regulating wages, which would be binding on all masters and men in connection with the guild,—the data for these regulations would be, an annual report, in this and other matters, from the several trade councils of towns. The management of the funds of the guild would also be under their exclusive control; no sum exceeding a certain amount, or beyond a fixed period, as I have explained elsewhere, could be continued unless sanctioned by an order from the central council.

That portion of the plan of the National Builders' Guild which relates to the mutual insurance of its members, will be best undertaken by those conversant with such matters. A plan, which I believe to be somewhat similar, was established by the commercial travellers a very few years since, and is now in a most prosperous condition, and I see no reason why a similar one could not be carried out by the National Builders' Guild. My view of it is, that annuities might be granted under the following circumstances: namely, for life in case of infirmity produced by accident, or any cause incident to art, trade, &c., over which the individual had no control; infirmity from old age, to be fixed at a period rendered liable by the nature of the employment—the allowance to be in proportion to the time of life fixed upon as an old-age term; and in case of the death of the parties before the expiration of the term of old age, the immediate relative of such party to have an interest in the remainder of the term. Any break or discontinuance of the payment of the individual's subscription should not affect his claim to ultimate relief, but it would lengthen the period, or reduce the amount, in proportion to the time during which he ceased paying.

I am, Sir, &c. Henry Liddell.
Beverley Road, Hull, May, 1847.

## SCENERY AND DECORATION OF THEATRES.

### LIGHTING THE STAGE.

'The production of ugliness—incongruity—inharmoniousness—is little short of a crime against society. The neglect of an opportunity to set before the general eye that which is harmonious fitting—beautiful is only less so in degree.' Builder page 241, *ante*.

Sir,—If I ere now entertained some little hesitation to set before the critical eye of your numerous readers that which not only I myself, but others highly competent, have been led, by experimental knowledge, to regard as both harmonious and fitting, beautiful and brilliant, in the place of what is, by comparison, inharmonious, incongruous, and ugly, in the management of the light in theatres,—the peculiar applicability of the passage just quoted from The Builder to the half-formed intention of addressing you on a subject in which much of what is either beautiful or ugly, either harmonious or discordant, may at least be capable of displaying itself, at once dispels all hesitation, and points me out the imperative line of duty in this particular instance.

Without further preface, then, I may, in the first place, remark, that amongst the many judicious suggestions proposed in the discourses of the 'Decorative Society' on the 'Scenery and Decoration of Theatres,' there is one for the production of general and harmonious as well as brilliant *effect* in scenic composition, the suggestion of which I looked for in vain while perusing the series of papers lately reported in The Builder; and it therefore lately struck me, that as the idea in question has been tested by experiment, carried out at my own suggestion, and under my own eye, though for behoof of a managerial acquaintance in the provinces, it might be well to draw particular attention to the subject now, that it may opportunely meet with a fair consideration, in coincidence with all those minutiæ, every one of which, however trifling *per se*, ought to be pointedly regarded and attended to in the production and enhancement of that entire, harmonious, beautiful, and brilliant illusion, whose effect, occasionally, even the merest trifle of neglect may be sufficient at once and wholly to dispel.

The idea in question, however, is one connected, as I have already hinted, not so much with the production of the scenic illusion itself, as with the infusion of a brilliancy, and yet a pure and chastened serenity, of general effect throughout that scenic illusion, whether it regard the scenery itself, the drapery and decoration, or the countenances and expression of the *dramatis personæ*.

I had often been struck with the classical or picturesque expression thrown over the features of even a very plain and inelegant countenance by the elevation of the artificial light, when alone reflected on it, from a point *exclusively above its level*. Let any one, for instance, place a mirror before his own face, and elevate the candle, as the only light by which it is to be seen, to various levels, higher or lower, before it; and he will at once perceive, that as the shadows come to fall *exclusively downwards*, a classical elegance and even beauty of effect will be shed over even the most rugged countenance. Of course, I do not mean that the light be elevated directly above the head, but immediately in front of it, at an angle, probably, of forty-five degrees, *so that the expression of no feature be lost*.

Then, again, I had also often admired the purity and serenity, as well as brilliancy of effect produced on colours and on scenery under the like circumstances,—an effect which every one must have observed in this peculiar mode of managing light for scenic display,—so far as regards mere colours and shades, or these with forms,—in the windows of jewellers, drapers, &c.; and,—so far as regards perspective or scenery,—in picture galleries, where, I need scarcely add, the light in general is also made to descend exclusively from above.

On the other hand, while in a theatre, and especially from the pit, I have frequently been annoyed and disgusted with the effect of the unnatural glare of light from the foot lights, particularly on the faces of those on the stage. The false and unnatural effect thus produced, every one must have remarked. Why, the very cavernous interior of the nostril of even the most beautiful countenance, which nature discreetly casts into shade, is thus explored with most unmerciful, trying, and by no means beautiful distinctness. But I need not further enlarge on those reasons which led me to endeavour to get rid altogether of foot-lights, and to substitute a more natural and graceful as well as more brilliant and effective illumination of the persons and the scenery on the stage. I consulted, or rather advised with, Mr. Murray, the able manager of the Edinburgh Theatres, on this point: but he was too much wedded to established practices, or did not accurately judge of the general effect of the proposed improvement, although he admitted that it was most natural that the whole flood of light should primarily descend from above. An opportunity occurred, however, as I have hinted in the outset, and I eagerly embraced it, although strongly dissuaded by various sceptical critics from any interference with what they insisted could not be helped or improved, what was very well as it was, what would never be submitted to either by actors or spectators, *et cetera*, and so forth. Nevertheless, I did realize my own idea, and that too successfully; and what was more, to the satisfaction both of actors and spectators; and amongst the latter, by the way, was one with whose name many of the professional readers of The Builder must be acquainted, namely, Mr. Errington, civil engineer, who happened to be attracted to the theatre in question by a course of scientific lectures, which he, amongst others, did me the honour to attend. Mr. Errington, I remember, while conversing on the subject with me, expressed his entire approval of the principle, and even suggested improvements of it, which unfortunately I had it not then in my power to carry out. That principle, as I have already virtually explained, consisted in the entire removal of the foot-lights, and the bold substitution of a central congeries of lights in the very body of the house (a small one certainly) and almost in the place usually occupied by the chandelier, with a reflector sufficiently large and powerful to turn the whole flood of light upon the stage, at about an angle of 45 degrees. A second congeries was found necessary, however, at a like elevation, but within the proscenium, or above and behind the general range of the actors' heads, to aid in the proper and uninterrupted display of the scenery on the like principle, the complete design for which display comprehended the systematic use of scenery so illuminated also from behind as to give the dioramic effect, as far as possible. The experiment was carried out, at all events, to a sufficient extent to prove, not only its practicability, but its great superiority to the usual method of lighting the stage; and I believe that nothing else is requisite to the most brilliant realization of this striking novelty in all its details, but the well-filled treasury of a metropolitan theatre.

J. E. D.

## IMPURITIES OF GAS AND IMPROVEMENT OF METERS.

On Monday evening last, at the Western Literary and Scientific Institution, in Leicester-square, Mr. Defries lectured on gas meters.

He commenced by contrasting wet and dry meters, and proceeded to shew that, in point of value, the dry meter was the best, as it was not affected by evaporation, condensation, or any change of weather. He argued, that it was a quality in gas to take up in its course any vapour or fluid with which it came in contact; and thus, when acted upon by the weather, the wet meter became, in all material points, an inefficient apparatus. It was almost needless to observe, that when gas was disturbed, a flickering or unsteadiness of the light followed. Another cause of injury to meters was the bad gas that was so extensively supplied; and while he admitted that some London companies furnished as good as could be made, he regretted, for the interests of the public, that a great deal was so strongly impregnated with ammonia and sulphuretted hydrogen, that the machinery shortly became so incrusted with the injurious matter, that not only was certainty of action out of the question, but the metres became useless, and ceased altogether to perform their registration. He would here, by way of digression, observe, that it had long been a matter of unqualified surprise to him, that the practice so invariably pursued in Scotland had not been more generally adopted here. It was notorious, that gas was even used in the bedrooms in Scotland, and that not so much as a tallow-chandler's could be found. When, therefore, he reminded the meeting that the gas thus used was of the purest and most inoffensive character, and when he also reminded them of the great resources of British companies, and of the capability of the British public to support them, he was sure that the meeting would share in the surprise he felt, that the practice had not been more generally adopted here. Gas, independently of being the clearest and most condensed light, was unquestionably the cheapest, and, in point of trouble or inconvenience, was of no account to the consumer, when an honest company supplied good gas, and an efficient meter-maker furnished a proper apparatus. In order to establish his position as to the capability of gas taking up any fluid in its course, the lecturer shewed Lowes's napthalized light, and contended that there was plenty of gas as good as that in use in England.

He then proceeded to describe the water meter, but he would not detail the inefficiency of it, as he considered enough had been said on that score not only by the press in general, but in the paper read by Mr. Croll at the Institution of Civil Engineers, which opened the eyes of the public to the means whereby gas could be obtained without paying for it, and the gas companies defrauded.

The lecturer then proceeded to explain the meters which had been patented during the last twenty-four years, excepting those made by Mr. Clegg and Mr. Hutchinson, for which the means had not been afforded him. And he then went on to speak of the dry meter of which he was the inventor and patentee, and urged that it was so contrived that no gas could affect it injuriously.

By an alteration in the valve in making it from a 3 D. slide to a rotary valve, the gas passed through its proper channel without escaping to the upper part of the meter, for when the gas thus escaped amidst the machinery, corrosion inevitably followed. This improved valve, which he called his new protective rotary valve, in conjunction with an alloy of metal of which he constructed certain portions of the gearage, comprised the essential points of improvement.

The lecturer then proceeded to describe his meter as being of a circular form divided into three rhomboidal compartments and one superior chamber. Each of the three rhomboidal compartments is subdivided into two angular compartments, by a perpendicular partition formed of four metallic angular plates, united at their edges and also at the centre by a skin of leather properly prepared. The meter thus contains six chambers in the lower portion of the apparatus not communicating with each other, but all communicating through a rotary valve with the upper portion. Each of these partitions, the chamber being filled with gas, works backwards and forwards, alternately bulging out or receding at its centre with a perpendicular shaft. The three perpendicular shafts pass through as many stuffing boxes into the superior chamber, where each shaft communicating by two rods with the axle of the common tangent of one, and transmitting to it the alternate motion of its own partition, induces by combination a rotary motion in an upright spindle. The interior compartments are the parts employed in the measurement of the gas, while the superior chamber receives the gas so measured. In the superior chamber is placed a rotary valve, the seat of which is divided into six compartments, to supply alternately the three partitions. The valve is arranged over the three pairs of measuring compartments in such a manner that the centre or interior part of the valve is alternately connected with the part on either side of the partition; and the pressure of gas entering one side of the partition discharges the contents of its fellow compartment into the common chamber above, from which the measured gas passes to the burners. Above the spindle of the tangent a perpendicular shaft is connected with a horizontal wheel, which gives the motion to the index train. An arrangement of wheels similar to those used in clock-work, registering on the drum five feet of gas, measures on the first dial 1,000 cubic feet, on the second 10,000, and on the third 100,000; while, in order to shew the nicety of completion, the meter before them indicated the sixtieth part of one-tenth of a foot.

## SOCIETY OF ARTS.

### DISTRIBUTION OF PRIZES.

We rejoice to find that those judicious and efficient rules and requisites pointed out by the Royal and exalted but most practical and active President of the Society of Arts for the "development and application of the principles of taste along with those of science,—for the promotion, in short, of the union of the beautiful with the useful in our arts and manufactures," as expressed in the report of its proceedings, read on Thursday last, in presence of the President himself, and of a still more numerous and brilliant assemblage than heretofore, are already giving birth to their legitimate issue in "a greatly extended sphere of practical usefulness, and a prosperity, public interest, and substantial revenue, greatly increased beyond all previous experience."

His Royal Highness, the President, after a graceful expression of his satisfaction with the result of what was thus, in truth, due to "that new direction given by himself to the labours of the Society" which he fosters, presented the numerous medals and other prizes with the most gracious kindness of demeanour, not only listening with unwearied patience to the dry details which some enthusiasts, in the merits of their own inventions, spun out to rather a tedious length, but discoursing with the various successful inventors, and inquisitively examining every thing with the least pretension to either beauty or utility.

Amongst the prizes were medals to an Italian and a Swedish inventor; and amongst the crowd of spectators, were recognised the Earl of Dartmouth, Baron Goldsmid, Sir Edward Codrington, Sir W. Ross, Sir J. Boilleau, &c.

On the eve of going to press, we have not time at present further to particularize the proceedings of this interesting meeting.

Burning of Hanwell Bridge.—A subscriber writes thus:—Perhaps the following circumstance may give some clue to the cause of this disaster. It is not long since that the grass in the Green Park was separated from the gravel walk, opposite Lord Salisbury's house, by a single wooden rail, the joints of which at each post were covered with a piece of iron hooping. Going down this walk many years back, the rail suddenly burst into a flame and continued so till burnt through, when it fell on the ground. On examining the cause of apparently so strange a fire, I found the wood underneath the iron hoop was decayed, and had become touchwood, which the heat of the sun, operating on the iron, had kindled into a flame. When wood and iron are so combined, as in the bridge in question, may not the same cause have produced the same effect.

## FINAL RESOLVE OF GOVERNMENT ON WELLINGTON STATUE QUESTION.

In reply to questions put by Mr. C. Berkeley, in the Commons, on the 4th inst., Lord Morpeth assured the House, that the Government have advised her Majesty to give authority for the removal of the statue from the arch; and that the Government have signified that decision to the committee. The committee replied that they did not think a sufficient portion of the scaffolding had been removed. But they now state that a sufficient portion has been removed. The Government, however, are still of opinion, that the effect is unfavourable, both for the statue and the arch, and is not such as to do credit to a memorial in honour of the Duke of Wellington. As to what are the views of the committee, and whether they have sufficient funds for the removal, his lordship professed entire ignorance. All he knows is, that they were willing to remove the statue, and that they have now intimated their intention of doing so. The artist has been requested to prepare a pedestal; a site has not been found; but as soon as the pedestal is completed, the Government will see the removal effected. Further, her Majesty has signified her pleasure that, when the House shall be pleased to vote the sum necessary for the completion of the arch, any decorations which may still have to be added, should be illustrative of the achievements of the Duke of Wellington, and should be such as may serve to mark the sense which the country entertains of his exploits and his deserts. In reply to a question by Lord J. Manners, his lordship added that if estimates of a satisfactory plan for the pedestal could be got before the close of the present session, that estimate and plan would be produced before the works were commenced.

Relative to a site for the statue, our correspondent, "A Londoner," says,—"At the junction of the Brompton and Hammersmith roads, near the end of Sloane-street, there is a triangular clump of old houses, which, if pulled down and the cab-stand removed to a more suitable locality, would afford a very good position for 'His Grace,' besides giving the opportunity of widening the roadway, which is necessary there."

## USE OF GLASS.

Sir,—As your publication has frequently contained suggestions for using glass for many purposes to which it is not at present applied, I beg to add a few words on the subject, in the hopes of bringing it more generally into use. I think glass might be very usefully substituted for metal to form the roofs of verandas, thus obviating the darkening of the rooms, which is caused by the metal; the only proviso being that the glass for this and such like purposes must be sufficiently stout to weather another 1st of August. For coal-plates, area-gratings, or the covering of cellars, where much light is required, and the top is to be used as a yard or passage, *thick, rough plate-glass* might be advantageously used; also for the risers, and, in some cases, even the treads of stairs, where light is required in the basement, or to stairs underneath. For any of these purposes, if air as well as light is required, the glass might of course be perforated, as stout, rough plate-glass is very strong, and will bear a very considerable weight.

Glass has often been recommended for the purpose of conveying gas, water, and electric telegraph wires; and I am surprised that it has not come into general use for these purposes, particularly for water, as being so very cleanly, and not subject to corosion *to any extent*. I think the black bottle-glass best adapted for these appliances.

Glass pipes might also be used in houses for laying on water, and gas, and for house-drains and traps, as glass is easily bent by the application of the heat of a spirit-lamp, and the green glass possesses great strength. The bottoms of sewers might also be lined with glass. Cisterns, meat safes, and shelves for larders, might be formed of this useful material with good effect. Glass tables and side-boards, washhand stands, sinks, taps, and even glass doors, where light is requisite, would form useful and elegant objects.

There are an immense number of purposes

connected with our domestic economy in which glass would be very useful: thus, spoons, dishes, basins, and numerous culinary utensils might be formed of this material.

Yours truly, B. A.

P.S. I should mention, that for the above, and indeed every other purpose, brittle glass should be *carefully eschewed*.

## SINGULAR TRANSIT OF LIGHTNING THROUGH A RANGE OF BUILDINGS.

The details whence the following particulars are gleaned appeared in the *Manchester Express*, and seem to merit a more general circulation through the press than they appear to have yet attained.

During the occurrence of a storm at Manchester a few weeks since, a very loud peal of thunder broke over the mill of Messrs. Sidebottom, and almost instantly a vivid flash of lightning from the north-east struck the chimney, which stands on the margin of the Etherow, and is 118 feet in height, of a square form, and very strongly built. To the height of 40 feet it is of stone, and two to three feet thick, while the upper part, which is of brick, diminishes in thickness upwards from 18 inches to 9. There was no conducting rod—nothing to break the shock, and the stalk has been most seriously damaged. The top was struck on two sides with such force as to open a chasm two or three yards in extent, and some of the dislodged bricks were projected to the opposite side of the river, a distance of 20 yards. The electric stream, as it descended, made another large cavity a dozen yards from the top, and then descended, without further injury, to the base, on one side of which the solid stonework has been thrust outwards in a very remarkable manner, but, apparently, without making any fissure. Some of the stonework externally, however, has been fractured as if by a battering ram; and it is evident that nothing but the strength of the shaft saved it from almost total prostration. Connected with the chimney, there are four underground flues, and through every one of these the electric current rushed. One is 40 yards in length, and the current was strong enough to burst open the doors of the fire-place, knock down the casings of the ash-pit, and project the fire and smoke into the smithy. Another has its exit through a wooden funnel, reared against the wall, and the current, in rushing through, begrimed the face of the wall with soot nearly to the top. In its progress to the chimney, the fluid passed the end of one portion of the mill six stories high, and twenty yards long. It entered at a window on the second story, partly open, and also at one on the fourth story, knocking down two females, and igniting the loose cotton "fly," which adhered to the gas pipes, as well as that in the waste can. Through this mill, in which all the hands (900 in all) were at work, it passed without injuring a single person, and dashed against the warehouse in front of the weaving shed, and 200 yards from the point of entrance. How it entered the warehouse is unknown; for not a pane of glass has been broken, nor has any of the stonework been injured. From the warehouse it seems to have made its way through the weaving shed again, and then to have struck a row of cottages connected with the shed. In one of them the fluid passed between two persons and up the chimney without injuring them.

Sir John Rennie's Conversazione.—The president of the Institution of Civil Engineers gave his second *soirée* on the 5th inst., and the number of visitors was very great. We would suggest to Sir John, in the event of a similar meeting hereafter, that some better arrangement should be made for the recovery of hats and coats than was found on this occasion, when we fought in a dense crowd for five and thirty minutes, and were ultimately but too happy to escape without the object of our search, by means of the kitchen-stairs and the area-gate.

Irish Marble.—A discovery of green-veined Irish marble has been unexpectedly made in quarrying for freestone to repair the Diamond of Raphoe. The quarry opened is said to consist of marble of a superior description.

## Correspondence.

DISTRICT SURVEYORS' FEES.

Sir,—With reference to the mode of fixing district surveyors' fees, suggested by L. H. I. in your valuable journal, it must be obvious to all concerned in building operations, that such a regulation would never work well, for this reason, that instead of the poor man reaping the benefit, it would be the builder who could afford to employ a sufficient number of workmen to complete the job within the seven days. Now, supposing a poor builder is employed to build an addition to a fourth-rate house, he not having the means to set on a sufficient number of men, or, perhaps, in consequence of unfavourable weather, or other unforseen circumstances, during the progress of the building, it might be utterly impossible to complete the addition within the twenty-one days; the result would be that the district surveyor would claim, according to your correspondent's scale, the exorbitant and inconsistent fee of two guineas, whereas, by the present arrangement, he could only claim a fee of ten shillings.

Your correspondent states, that he thinks the district surveyor would only find it necessary to make one survey in jobs which would take but seven days in completing, and that the fee of ten shillings would compensate him for his trouble; but I must beg to differ with him on that point. It would be necessary, in the first place, on the receipt of a notice, to inspect the works, and to cause all the rules and directions of the Act to be strictly observed; and, secondly, to attend on the seventh day for the purpose of seeing if the work was complete and to regulate his fee, which would be, after two surveys at least, the paltry sum of ten shillings.—I remain, Sir, &c.

A Constant Reader.

## Miscellanea.

Institution of Civil Engineers.—June 1st. The paper read was "An account of the iron barque *Josephine*," of Liverpool, by Captain Masters, who commanded her in the voyages she has made. The subject of iron vessels is one of great importance, and the use of that material in naval architecture has been steadily progressing since it was introduced for sea going vessels by Mr. Manby, in the steamer named after him in 1829, and which was the only vessel that ever conveyed a cargo direct between London and Paris without trans-shipment. Sanguine hopes had been entertained of introducing iron for vessels of war; but it appears from the partial accounts that have been made public of the results of the experiments at Woolwich, and elsewhere, that the effects of cannon shot on iron vessels is more destructive than upon timber. The paper read was a plain and somewhat dry specification of the construction of the vessel, which will, however, when printed *in extenso* in the minutes of proceedings, be found useful. Iron ships have generally been found to get very foul. The *Josephine* was, however, paid with various compositions as experiments; that which succeeded best was: 1 barrel of varnish, 2¾ cwts. of best tallow, 40 lbs. of black lead, 7 lbs. of brimstone, 70 lbs. of arsenic. This being applied hot, the iron having been previously warmed and paid with boiled linseed oil, appeared to have prevented foulness; as after her voyages there was little weed or grass, and scarcely any barnacles, but very slight oxidation took place, and that only where the composition had been rubbed off. They were as much annoyed by rats as in a timber ship, nor could they be destroyed by any of the means adopted.

All Saints' Church, Lambeth Marsh.—This church, already described in our pages, was consecrated on Monday last by the Bishop of Winchester. The lofty campanile and spire is about 80 feet from the body of the church, in Lambeth Marsh, at the corner of York-street. The church is calculated to seat 1,500 persons. The architect was Mr. W. Rogers; the land on which the church is built cost 2,400*l.*; the building 6,512*l.*; the furnishing (exclusive of the organ, &c. nearly 800*l.*

Look to Your Coin Deposits.—The 'plundering of posterity' by an inverted 'Antiquary' (see 'Notes') is not a solitary case it seems, the like having lately been 'done' near Stranraer: mere 'rubbings' of the 'brass' won't satisfy these new Archæologists.

Projected Works.—Tenders have been called for by advertisement for the erection of a battery and buildings near Tilbury Fort; new buildings at the Hackney Union Workhouse; walls and entrances to, and excavation of, the Wet Dock and half-tide basin at Sunderland; Framlingham's Hospital at King's Lynn; coal-stores, with iron roofs, &c., of an area of 12,000 feet, with lay bye adjoining, at Stepney; additions to, and alterations of, the Farnham and Aldershot Workhouses; a stable, byre, and cattle-sheds at Offerton; repairs to roof of Coddenham Church; also for widening, sloughing, and bottoming the Keyingham level drain, Hedon; making a cylindrical sewer of 154 yards in length, at Cambridge; and 2,495 feet of sewer in St. Marylebone; conveying water to Kimbolton Castle with about 4,000 feet of 1¼ inch strong lead piping, stop cocks, joints, &c., exchanging old pipes; and for the execution of the whole works on 16 miles and 7¾ miles of the Reading, Guildford, and Riegate railway.

The Bill of Health.—The metropolis has sent up no less than forty-six petitions, praying to be included in the operation of the bill. Liverpool has presented six petitions in favour of it; Hull six, Newcastle-on-Tyne five, and sixty-six other cities and towns three, two, and one each, making a total of 147 petitions in favour of the bill. Cork has petitioned for its extension to Ireland. 'The ancient order of Druids' have shewed an enlightened interest in its favour, and 'it is expected that the sanitary condition of the queendom will occupy much of the attention' of a meeting of their delegates at Hull, where, by the way, 'everybody has in some capacity or other petitioned in favour of Lord Morpeth's bill.—The town-council has petitioned—the guardians of the poor have petitioned—the clergy and ministers of the gospel have petitioned, six hundred physicians, magistrates, merchants, and respectable householders have petitioned—and this week a public meeting, held in the Town-hall, agreed unanimously to petition in favour of the amended bill.' Go thou and do likewise may we say to 'everybody' in every town requiring thorough cleansing,—and where is the town that can conscientiously say that it is even now either 'pure and undefiled,' or 'without reproach.'

Increase of Travellers leads to Diminution of Fares.—Already we have 10,000 miles of railway made, making, or sanctioned, superseding more or less than 25,000 miles of turnpike roads which exist in England and Wales. As railways have spread, travellers have increased in number, and fares have been diminished. In 1845, the London and Birmingham conveyed more than treble the number of passengers over twice the number of miles, for less than double the amount received in 1839:—Half year ending June, 1839 — passengers, 267,144; miles, 17,391,035; receipts, 270,241*l.*:—ditto, 1845, passengers, 156,904; miles, 38,758,260; receipts, 447,190*l.*—*Sidney's Speed on Railways.*

Provincial Archæological Associations.—We mentioned last week the meeting of two such societies. We may add, that the Cambrian Archæological Association will meet in Aberystwith in September, under the presidency of Sir S. R. Glynne, Bart. Papers are in preparation on the following subjects:—The Local Antiquities of Aberystwyth: the Roman Remains in Merionethshire and Montgomeryshire; History and Architecture of Strata Florida Abbey; and State of the Druidic Religion in Britain during the residence of the Romans.

Archæological Institute.—At a meeting of the Institute on Friday, the 4th, Mr. Winston read a very interesting paper on the difference of style observable in ancient painted glass, which was amply illustrated by drawings and specimens of glass. Mr. Winston, if we mistake not, is the author of a work on the subject, recently published by Parker, of Oxford. He evidently understands it well.

Mr. Weale, the architectural publisher, has had a gold medal sent him by the King of the Belgians, as a mark of royal approbation of the service he has rendered by bringing out various works on engineering, both civil and military.

Enlarging University College Hospital.—On Saturday the erection of the north wing to this hospital was completed at a cost of 5,000*l.*

## TENDERS

Delivered for erecting baths and laundries, Orange-street, St. Martin-in-the-Fields. Mr. Baly, engineer.

| | |
|---|---|
| Cooper and Davies..... | £8,539 |
| Jay ..... | 7,989 |
| Hicks ..... | 7,700 |
| Haward and Nixon ..... | 7,487 |
| Pollock and Mc Lennard .. | 7,017 |
| Curtis ..... | 6,994 |
| Patrick ..... | 6,930 |
| Rigby.....(accepted).. | 6,890 |

A tender was received from Messrs. Piper after the business was ended, and, therefore, was not opened.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, June 14.—Institute of British Architects, 16, Grosvenor-street. 8 P.M.

TUESDAY, 15. Institution of Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 16.—Architectural Association.

THURSDAY, 17.—Royal Society, Somerset House, 81 P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*One who did not compete.*"—Will find in our present number the cause of his misconception.

"*J. S.*"—Employ a surveyor, who will send in a proper claim.

"*R. R.*" Newcastle.—The notice was in type taken from local paper before the correspondent's slip arrived

"*C. H.*"—We do not know.

"*B. B.*"—The *Mercury* did not reach us. We hope to hear from our correspondent.

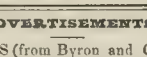
"*Alpha.*"—The open joints may be filled up with slips of deal.

"*A. B.*"—In the common acceptation of the words it is but a "two story house." Under the Buildings Act every story is counted

*Received.*—"H. M." (Uxbridge), "A Subscriber," "General H." "J. W." (Glasgow), "G. P." "Editor of *Ira*." "W. S." "Constant Reader," "A Builder," "A Competitor," "Junius," "J. D." "Practical Builder," "Messrs. W." "J. F." "H. B." "J. S." "T. P." (Thanks).


## ADVERTISEMENTS.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Brekinfit Arms, SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared to any pattern, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths, Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

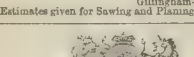
MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Tongued, Grooved, Beaded, and Grooved Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge.

THE GENERAL WOOD CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or grooving and tonguing a board (although curved), the machine follows the edge, remaining in any required position of the wood and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane it smooth. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, postpaid, or apply to W. H. TANQUERAY, secretary, at the temporary offices of the Company, 28, New Broad-street, City

SIR W. BURNETT'S PATENT for preventing the Decay of Timber, Canvas, and of all Vegetable and Animal Substances

This process has long been in extensive use in her Majesty's Dockyards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of timber, at the same time checks decay, and renders it much less inflammable, and entirely so when prepared expressly for the purpose

Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing orders.

Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 83, King William-Street, London-bridge.

PREPARED FLOORING BOARDS.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1½ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith street, Westminster.

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLESLONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch. 1, Ring-street, Portman-square.—Terms, Cash only.

THOS. MILLINGTON, 87, Bishopsgate-street Without, has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 3d. per foot. Every description of Window Glass.

FOREIGN WINDOW GLASS, superior to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 3½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 3d. per foot. No less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

COLOURED WINDOW GLASS, equal to the Ancient.

| | | |
|---|---|---|
| Ruby in Sheets, a splendid colour, per foot | 2s. | 3d. |
| Green | 1 | 3 |
| Blue | 1 | 0 |
| Purple | 1 | 0 |

Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

EMBOSSED GLASS.

EDWARDS and PELL, 15, Southampton-street, Strand, Embossers and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. All the work is done on the premises. EDWARDS and PELL can guarantee its being properly executed.

TO THE PLATE GLASS TRADE, ARCHITECTS, AND BUILDERS.

THE Best House in London, for Plate Glass is the East London Plate and Sheet Glass Company, Leman street, Goodman's-fields; the brilliancy, quality, and colour of our glass remain unrivalled by any other company. All orders to be addressed to Mr. B. MOSS, Leman-street, Goodman's-fields.

N.B. Rough Plate Glass for Skylights and Flooring.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

THE UNION PLATE GLASS Company beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch

N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three-quarter-inch thick.

H. CHRISTIE, Agent, 99, Hatton-garden, Holborn.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

| | | £. | s. | d. | |
|---|---|---|---|---|---|
| Crown Glass cut to size from one foot superficial, at 3d. per foot. | Thirds ..... | 4 | 4 | 0 | Squares of Small Crown Glass, at 1d. 1½d. 2d. and 3½d. per foot. |
| | Fourths .... | 3 | 10 | 0 | |
| | C.C. ..... | 2 | 8 | 0 | |
| | C.C.C. ..... | 2 | 0 | 0 | |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 28, West Smithfield, London.

TO THE BUILDING WORLD.

H. BANKS, Manufacturer of Shop Fronts, Sashes and Frames, and Joiner to the Trade, 78, Bethnal-green-road, London. Parties engaged in building will find the charges at this Establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.

N.B. Glazed goods securely packed for the country.

CHAS. WM. WATERLOW,

MANUFACTURER

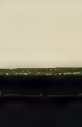


of Sashes and Frames, and Joiner to the Trade, 121, Bunhill row, Finsbury-square. Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 500 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

JOHNSON and PASK, 1, Arundel-street, Strand, near the New River Head,



Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post to any part of the country.



FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Ranges, Hurprets, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

PLASTER of PARIS of the very best quality. Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

LIME AND CEMENT WHARFS.—Grey stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tile, Chimney-pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials, may be obtained, on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Upper Ground-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse, and Kingsland-basin, Kingsland-road.—Ground Lime for Concrete.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very inferior vendible name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this

ATKINSON'S CEMENT.—WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. PRODGON, Factor, 4, Laurence Pountney Hill, Cannon-street, London. Depôts:—Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Pimlico-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich

N.B. Plaster of Paris and Bricks at reasonable prices.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vegetate or burn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute for the use of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Steel street, Liverpool.

GREAVES'S LIAS LIME and CEMENT. RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dockwalls, bridges, railway, and other works, its adhesive qualities being superior to Roman Cement.

As CEMENT, it has more power than any other Cement or Lime as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour similar to Portland stone, does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, in the latter case, very uncomfortable. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 20, PRUDY LANE, Wharf, Liverpool and Manchester, Mr. R. PART, 26, Cannings place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, BANKERS, MERCHANTS, SHIPOWNERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT. The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, flake, nor peel off. It will form a complete Stone casting to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and the mode of application, together with a volume of Testimonials from every part of the kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS, 39, Cornhill, 5, Middle-lane, Queen-street, Cheapside, London, of whom also may be had.

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producesable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

THE BUILDER.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being as is too well known the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages.—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

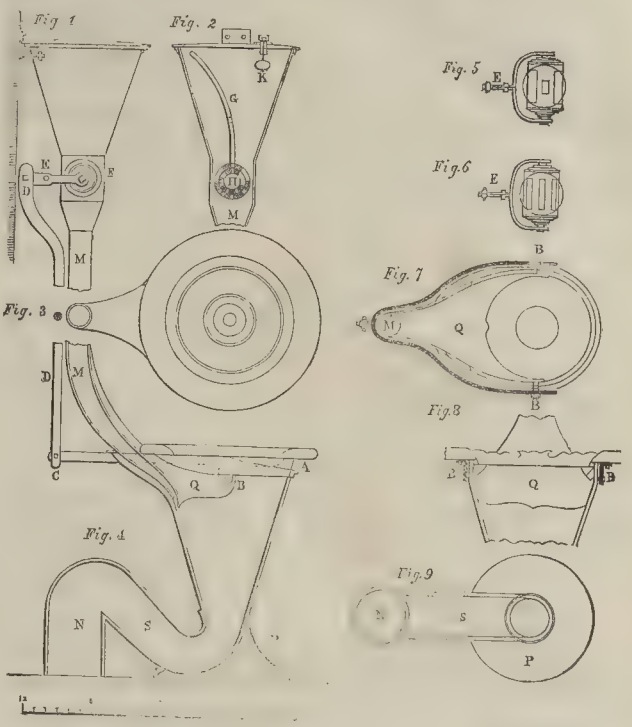
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE.—The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self-acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




## DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.
Fig. 2.—Section of the measure and cock, shewing its position when open for the water to come in.
Fig. 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.
Fig. 4.—Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action-rod D, to let water in and cut it off.
Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.
Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.
Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.
Fig. 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.
Fig. 9.—Plan of foot P, of basin, and syphon.

## MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr Foden, Mr Smith of Deanston, and others. But the apparatus invented by Mr Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

Mr. JOS. E. DOWSON

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

**And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.**

# DOWSON'S EARTHEN PIPES,

## GLAZED INSIDE,

## FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion, and for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the depredations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

BESIDE PECUNIARY LOSS is not the only evil resulting from the use of brick drains. LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They are, if of being constantly flushed, they are free from corrosion, and are impervious to liquid.

Messrs. DOWSON beg also to intimate that they undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE, and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

**OFFICE OF THEIR FOUNDRY, 44, NUTFORD-PLACE, EDGEWARE-ROAD.**

**BRICKS.—One Million new Bricks for** Sale. Best Stocks Thirty-four Shillings. Cash.—Apply to J. MEARS, Garratt Brick-field; or 53, Stone's-end, Borough.

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**A PLOT of GROUND TO LET, for** building Three Fourth-rate Houses, near Kennington Common. Inquire of Mr ARMSTRONG, 94, Blackfriars'-road.

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TO BUILDERS, CONTRACTORS, &c.

**VERY eligible Premises TO LET, in** Blackman-street, Borough. For particulars inquire at the office of R. A. WAINEWRIGHT, Esq., Angel-court, Throgmorton-street, or Messrs. FANSON, 9, Lawrence Pountney-lane, City.

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**SEVERAL PLOTS of Building Ground** TO BE LET, on Wandsworth Common. For particulars apply to Messrs. FANSON, 9, Laurence Pountney-lane, Cannon-street.

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ELIGIBLE BUILDING LAND.

**SEVERAL PLOTS of Building Ground** in the vicinity of Regent's-park, abutting on the new park, enclosed on Primrose-hill, TO BE LET on long Leases. Apply at Mr THOMAS LITTLE'S Offices, 36, Northumberland-street, New road.

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ST. JOHN'S WOOD PARK!!! IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET in this** most desirable and salubrious situation!! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City!—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's villas, Avenue road, Regent's-park.

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DESIRABLE BUILDING LAND for small Cottages or Houses, close to Fulham New Church and a short remove from the high road.

**TO BE LET upon Building Leases, on** very advantageous terms, about Three Acres of Freehold Land, presenting a frontage to the road of about 600 feet, by an average depth of 140 feet, most admirably adapted for the erection of small houses, which are very much required in this locality, every house of this kind being let. Advances may be made to respectable parties. For full particulars apply to Mr. FREDERICK CHINNOCK, Surveyor and Auctioneer, 28, Regent street, Waterloo-place; of Messrs. WEBB, Solicitors, 29, Sackville-street; and of Mr STOCKTON, at the Cottage on the Land.

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BUILDING LAND FOR ABOUT TWENTY-SIX THIRD OR FOURTH-RATE HOUSES

**TO LET, at very moderate rents, a most** eligible plot of ground, near Kilburn Turnpike. A great demand for houses at moderate rents. Apply, to view the plans and particulars to Mr. H. BIERS, 13, Carlton-villas, Edgware-road.

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MANOR PARK ESTATE, STREATHAM, SURREY.

**TO BE LET, on Building Leases, in the** above Park, in this favourite and select district close to the Parish Church, upwards of Sixty Plots for Villas, Fifty for Terraces, and several for Shops and Stabling, the whole forming a belt round the interior of the Manor Park, which from its combination of undulating surface, ornamental water, and well-grown timber, is of singular beauty. Private rides, walks, and drives are intended to be made within the Park. Facing bricks, both White and Red, Stocks and others of an excellent quality, and in any quantities may be had on the Estate, and an allowance will be made in the price where used on the Estate. Gravel and Sharp-sand of a superior description are found in abundance on the ground and water is laid on. Advances will be made, and other accommodation afforded to respectable builders taking an adequate interest in the property which is likely to be immediately remunerative to them from a great and increasing demand for houses existing in [illegible] Plans and Particulars, [illegible] to Messrs. [illegible], FORD, LONGBOURNE, and VICKERMAN, No. 4, South-square, Gray's-Inn; Messrs. GOUGH and ROUMIEU, Architects, No. 10, Lancaster-place, Strand; or Mr WILKINS, at the Manor park Office, Streatham.

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## SALES BY AUCTION.

By Mr. BRAY, Jun., at his Rooms, 259, High Holborn, on THURSDAY, June 17th, at Twelve,

**PAPERHANGINGS of the best manu**facture and the newest patterns, comprising upwards of 3,000 pieces, including elegant crimson flock, mock flock, rich satins, blended parlour, chintz, bed-room, staircase, and library papers.—May be viewed one day prior and morning of sale, and catalogues had at the rooms as above.

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BUILDER'S STOCK, LITTLE BRITAIN. LAST DAY'S SALE, WITHOUT RESERVE.

**MR. H. BIERS will SELL by AUCTION,** at the Workshops and Premises, 49, Little Britain, on THURSDAY, the 17th of June, at Twelve, the valuable, well-selected, and seasoned STOCK in DEALS, Planks, and Battens prepared flooring boards of the best quality, fit for immediate use, dry wainscot, ironmongery, work-benches, and the various appendages to a builder's establishment. Mr. H. BIERS begs to recommend to the trade this last portion of this valuable stock, it having been selected with great care regardless of expense.—May be viewed on Wednesday and morning of sale, and catalogues had on the premises, or of Mr H. BIERS, 13, Broad street, Golden square.

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**TWO large FINGER ORGANS, adapted** for a small Church or Public Building. TO BE SOLD BY AUCTION, by Messrs. BLAKE, as understated. On TUESDAY, June 15th, at Carshalton, Surrey, by order of the Administrators of the late Mrs. Beynon, a fine-toned Keyed Organ, in Mahogany Case, 12 feet high. On FRIDAY, June 18th, at Guy's House, Upper Tooting, Surrey, a superior Key and Barrel Organ, in handsome Mahogany Gothic Case, built by Flight and Robson in 1835.—May be viewed the day prior to each sale, and further particulars had of Messrs. BLAKE, Croydon.

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STOCK OF A TIMBER MERCHANT.—Peremptory Sale, the lease having expired.

**MR. T. TIMS will SELL by AUCTION,** on the premises, 50, High-street, St. Giles's, on MONDAY, June 14, at Eleven o'clock, and following day, the capital dry Stock of Hard Woods, including many thousand feet of fine quality, seasoned Mahogany, Rosewood, Satin, Oak, Maple, King, Box, Sycamore, Lime, Beech, Cedar, Coromandel, Ebony, Walnut, and other woods in Logs, Planks, and Boards of various thicknesses; about 60,000 feet of Veneers; also Pine Boards, Deals, and useful wood and effects. The whole to be cleared from the premises before Midsummer day. May be viewed on Saturday, the 12th, and morning of Sale. Catalogues had on the premises, and at the Auctioneer's Offices, 63, Upper Charlotte street, Fitzroy square.

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IN BANKRUPTCY.—To Builders, Members of Building Societies, and Small Capitalists.

**MESSRS. BROWN and ROBERTS will** SELL by AUCTION, at the Mart, on THURSDAY, June 17th, at Twelve, in Seventeen Lots, by order of the assignees of James Ullathorne, a bankrupt, THIRTY-TWO BRICK-BUILT RESIDENCES, situate on the west side of Loughborough park, known as Berkeley Villas, a portion of which is let, others fit for immediate occupation, and the remainder requiring but a small outlay to complete; they contain ample accommodation for genteel families, and have front courts and gardens. A separate lease will be granted of each pair for about eighty years, at 6l. per annum ground rent. They will readily command tenants at 8l. per annum each. Likewise TWO RESIDENCES, Nos. 7 and 8, Sutherland-terrace, Coalharbour-road, with walled garden, fore court, and side entrance; held for a like term, at 18l. 12s. ground rent. These desirable estates will, when completed, command a rental of upwards of [illegible] per annum, and are well adapted for small capitalists, either for occupation or investment.—May be viewed, and printed particulars had at the Holland Arms, Brixton; of P. JOHNSON, Esq., Official Assignee, Basinghall-street; of Messrs. JENKINSON and Co., Solicitors, 29, Lombard-street; at the Mart; and of Messrs. HENRY BROWN and Y. A. ROBERTS, 22, Throgmorton-street.

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BUILDING LAND, PECKHAM, ADJOINING THE ROSEMARY BRANCH RACE COURSE.

**MR. SINGLE will LET by AUCTION,** at the Mart opposite the Bank, on FRIDAY, June 18th, at One precisely, 43 Plots of very valuable Building Land desirably situate, adjoining the Rosemary Branch Race Course, and presenting frontages on good roads, already made up. Leases will be granted direct from the freeholder, for terms of 80 years.—Particulars may be obtained of THOMAS PRYER, Esq., Solicitor, 11, Artillery Place, Finsbury Square, and at the Office of Mr. SINGLE, Land Agent, 34, Coleman Street.

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TO BUILDERS, MASONS, PAVIORS, ROAD MAKERS, AND OTHERS.

**TO BE SOLD, Cheap, a Large Quantity** of Good, Dry, Screened Brick-core, suitable for Concrete, Road-making, Paving, &c.—Application to be made to JAMES SAUNDERS, Langton Arms, corner of Wenlock-street, and Normans-buildings, St. Lukes, back of the Church.

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ROMAN CEMENT

**TO BE SOLD, by order of the assignees,** under a fiat of Bankruptcy, at Albion Wharf, Holland-street, Blackfriars-bridge, a large quantity of Parker's or Roman Cement, made entirely from Sheppy Stone, which in colour closely resembles that of Atkinson's Cement. Also a quantity of ordinary Roman Cement, made from Harwich Stone. It is fresh manufactured, and of the best quality, and will be sold including the sacks and casks in which it is now packed, at a low price, for cash.

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TO DRAPERS AND OTHERS REQUIRING EXTENSIVE PREMISES.

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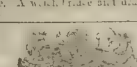
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| | 3 | 8 | 0 | CC. | 3 | 3 | 0 | 1½d., 2d. and 2½d. per foot. |
| | 2 | 15 | 0 | CCC. | 2 | 10 | 0 | |

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Roofs covered with the felt to be seen at the Factory, also the new Vice Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament. A Liberal Discount allowed to the Trade.

The Builder.

No. CCXXVIII.

*SATURDAY, JUNE* 19, 1847.

EVENTS wait for the right moment and the right man. An idea conceived, a proposal made, a reform demanded, may be at first disregarded or abused; even after the lapse of years responded to by few; yet, ultimately, when propounded at a distant period, find universal response and be carried out by common consent. Any of our great reforms would serve as an illustration:—our social progress has so gone on. To honour the heroes of peace was at first a wild notion entertained by individuals only, but it has grown and widened, and is now becoming generally desired, though scarcely to such an extent in our own country, even yet, as in those around it. Still the feeling is increasing, and it may be expected that in a score of years from this time, the result will be a crowd of statues of England's great men, to perpetuate their memory, exalt the character of the country, refine, and elevate the rising generation, and incite to a generous emulation in noble doings.

We would have every available nook in the metropolis filled by a statue; the centre of our squares, the intersection of wide roads, the parapets of our bridges, the halls of our public buildings, should present the lineaments and the mind, in enduring marble, bronze, or stone, of all our "great captains" in the fight between light and darkness, ignorance and wisdom, human happiness and misery. Nor should this be confined to the metropolis;—our provincial towns (many of them larger and more important than some states), should adopt the same course, and in addition to men of all times and all nations, set up especially their own notables, to honour the past and stimulate the coming.

Let our sculptors prepare for it: the day wherein these things will be done is approaching.

Reverting to the remark with which we commenced this paper, Mrs. S. C. Hall, Mr. Charles Knight, and probably other writers before them, have urged the claims of William Caxton, the first English printer, to the honour of a national memorial. "Cologne," said Mr. Knight in 1844, when speaking of the city where the printer learnt his art, "rendered the name of Caxton a bright and venerable name—a name that even his countrymen, who are accustomed chiefly to raise columns and statues to the warlike defenders of their country, will one day honour amongst the heroes who have most successfully cultivated the arts of peace, and by high talent and patient labour, have rendered it impossible that mankind should not steadily advance in the acquisition of knowledge and virtue, and in the consequent amelioration of the lot of every member of the family of mankind at some period, present or remote."

But the moment was not come, and the suggestion was disregarded.

The Rev. Mr. Milman has fallen upon a better time. Availing himself of the proposed improvements in Westminster, he addressed his proposal to the distinguished nobleman at the head of the Board of Works, and no sooner had it appeared, than the whole of the periodical press declared in its favour and advocated its immediate adoption.

A public meeting to promote it, held in the great room of the Society of Arts, on Saturday last, was numerously attended, and all there seemed most anxious to further the suggestion.*

Lord Morpeth, who was in the chair, made an eloquent address,—tasteful, elegant, and convincing. Many of our readers have already seen reports of what was said on that occasion, through the columns of the daily press; it may, nevertheless, be useful to record some few of the observations, and the arrangements that were made. After acknowledging the worth of the reverend gentleman from whom the proposition emanated, the chairman traced the life of Caxton, shewing that it was as a sojourner at the Court of Bruges, and in the train of the English Margaret of Burgundy, that his attention must have been attracted to the progress of that memorable discovery, in the noble cities of Germany, which has been calculated, above all others, to affect the progress of society and the destinies of our race. There his ingenuity must have been exercised in those practical details and mechanical contrivances connected with the art, the difficulties and expense of which we at this day are perhaps hardly able to calculate.

Many of our warriors," said his lordship, "many of our statesmen, many of our sages, and many of our poets, have not wanted the votive marble or the commemorative statue, but I would beg to remind you how much every one of these has been indebted to that art with which William Caxton's name is for ever connected. Of that art, however, it is the main value and the first boast that it does not confine its benefits to the distinguished few, to the favourites of fortune, or to the idols of society, but that it penetrates, and gladdens, and enriches the masses and the many. It is true that Homer and Plato, that Virgil and Cicero, attained their celebrity and their empire over the minds of men, before the existence of printing-presses, but it is the newspaper of every breakfast table, the Shakspeare in every village library, the bible in every poor man's cottage, it is the English primer among the wilds of Australia, the English hymn-book on the broad streams of the Missouri—these are the glorious products and the triumphs of printing. It is possible that in our own day—indeed, I need not talk of it now as a possibility—the electric telegraph may make the operation of printing proceed with the rapidity of the lightning; but by honouring the first introducer of that great invention, we shall be setting the best example to succeeding races of our countrymen to pay the debt which, in its turn, may become due to all the lengthened series of great discoveries. I believe, that ten years only have elapsed since the men of Germany have amply redeemed the obligation which undoubtedly rested upon them, by erecting a statue to Guttenberg in his own town of Mayence, and I believe that the genius of Thorwaldsen was enlisted to mould the enduring marble to that great benefactor of his species. I think it is full time, that England should now show, that she feels how much she owes to the agency of the first English printer. Therefore, it is with no doubtful or hesitating feeling, that I call upon the citizens of this great metropolis, upon the inhabitants of this flourishing kingdom, upon the subjects of our extended empire, to pay the debt which they confess to be due to the merits and the fame of William Caxton. The exact nature and details of the monument which your benevolence may enable us to rear, may be left for more mature, and, possibly, for more select consideration. But it appears to me, that the idea suggested by Mr. Milman, of making the monument of the first English printer indicative of the enlightening and purifying principles of his art, is a very happy one. But at all events, we shall all agree, that the proposed site of the monument is eminently appropriate. There let it stand, close to the haunts of his useful industry and his life-long labours, associated with all the venerable relics of surrounding antiquity, and serving to date also the enterprising efforts of modern improvement. There let it stand, close to that stream which floats on its tide the mighty commerce of the British empire—that commerce to whose infant expansion he contributed—close to those halls of the legislature, which, by their ancient recollections, and by their modern splendour, are worthy of the country, and of their own exalted destination; above all, close to that famous abbey which has raised its requiem over so many immortal names—names which no one has done more than William Caxton to make the heirlooms of our British glory.

The dean of Westminster and Mr. John Murray moved the formal resolution that a national testimonial was desirable.

America next spoke, and spoke well too in the person of Mr. Bancroft, her minister, who moved "That the proper site of any work of art would be at the west front of Westminster Abbey, at the end of the new Victoria-street."

Mr. Bancroft said, to an American in England the name of Westminster Abbey called up all the most pleasing associations. As he crossed the Atlantic to visit the homes of his fathers, nothing so appealed to his heart as the cathedrals and ancient churches of England, and, foremost of all, Westminster Abbey. It appeared to them, pilgrims of the West, as if these ancient sanctuaries gathered around them to enwrap them and speak a welcome, and as if they called them into the presence of all that was greatest and most glorious in the recollection of English history and the English mind. Westminster Abbey was the site most suitable for the erection of a monument to the memory of William Caxton—Westminster Abbey, where lay deposited the remains of kings, warriors, and statesmen—the front of Westminster Abbey, where the sun, descending in the far west, casts his last shadow on the most remarkable building in their island,—that was the spot to be selected as the site for the monument of one well skilled in mechanical art, and who made himself celebrated because he connected himself with the love of persevering and indomitable industry, not for his own aggrandizement, but for the benefit of the European world, and of the human race. A monument to Caxton, the first man who made the songs of the English poets the common property of the world—a monument to Caxton, who first gave to the songs of Chaucer a current and circulation as wide as that of the English tongue, led the way for teaching the sons of industry to understand the noble works of Milton and Shakspeare, and employed the English tongue to

* Mr. C. Knight, previously to the meeting, addressed a letter to the *Times* to the same effect. "I should not presume," he said, "to offer any remark that might be construed into an interference with the plans of those gentlemen with whom the proposed meeting has originated, did I not feel that the work of art, if it may be so called, which has been pointed out as a fit monument to Caxton—the first monument to be raised in a public thoroughfare in London to a man solely connected with the literature of his country—is neither worthy of the object, nor of the sympathy which the object will excite wherever the English language is spoken. The Rev. Mr. Milman, in his letter to Viscount Morpeth, says, 'The character of the monument might be this. A fountain of living water, by day, out of which should arise a tall pillar, obelisk, or cluster of Gothic pinnacles, for light by night, the diffusion of light being the fit and intelligible symbol for the invention of printing.' I venture to think that we require a monument for Caxton more definite than any 'symbol,' however 'fit and intelligible.' A fountain by day—a gas-light by night, are symbols of many other blessings that have been bestowed upon mankind to refresh and to illuminate besides the art of printing. Such symbols might equally honour the memory of the pious and liberal Abbot who encouraged Caxton to set up his press in the 'chapel' at Westminster; they might equally honour any great writer whose 'living waters' and whose 'light' have been rendered universal through the press. No mixed motive of uniting a public work of utility with the memory of a great benefactor should interfere with our performing the duty to which we are called in the most fit and intelligible manner. We raise a monument to an orator—the monument is his statue: we are not satisfied with the best symbol of oratory. We raise a monument to a general: we express not our admiration by trophies of war alone—we show posterity what manner of man he was. The Germans have erected at Mayence a monument to Guttenberg. Ten years ago I saw that monument opened amidst the shouts of thousands, congregated from every district of their fatherland. That monument is a noble bronze statue of the first printer, with bas-reliefs on the pedestal, not symbolical, but descriptive of his art. The genius of Thorwaldsen was employed for this national monument; and now in every town in Germany is the statue multiplied by little bronze copies, which the humblest printer is proud to place in his dwelling in common with the most famous man of letters. I am satisfied that if the memory of Caxton were in the same way associated with a work of such art, and not a mere attempt at ornamental utility, whether a pillar, obelisk, or cluster of Gothic pinnacles, a subscription would be raised throughout the empire that would far exceed what the worthy promoters of this design have ventured to contemplate. One only objection to a statue of Caxton may be urged, that there is no absolutely authentic representation of him. But there is a very ancient wood-cut, full of character, and peculiar in costume, which has some claims to authenticity—which bears his usual mark, and which has become familiar to all as his portrait. I doubt whether Thorwaldsen had a better authority for his Guttenberg. Let us seize, then, upon this opportunity of destroying the reproach that we raise statues only to those commonly called 'the great,' and neglect the chief civilizers of our country and the world. Let us not be afraid to place our first printer upon a level with the most honoured of the worthies of England, in the full conviction that the art which he introduced, and carried on as a zealous disseminator of knowledge, has mainly contributed to make England what she is."

make them companions of the household love of the humblest mechanic, and the friends of their fireside. His American brethren demanded from the people of this country monuments for every thing great and good, for here were their antiquities, their choicest recollections, and the homes of their forefathers. Chaucer, Shakspeare, and Bacon were theirs no less than ours. He was glad that the site chosen for the proposed monument was the west front,—the front nearest America.

Mr. Milman seconded the resolution ably, spoke of the power and importance of the press, and the debt due to Caxton.

With respect to the most suitable form of commemoration, said the rev. gentleman, it was desirable that public monuments should combine that which was ornamental with that which was also to a certain degree useful, and which suggested the object and meaning of the monument. The first thing that suggested itself was, that a statue should be erected to any distinguished individual. If it should appear that there was extant any authentic likeness of Caxton—upon which point some doubt existed—that might be engrafted upon any design commemorative rather of the event of the introduction of printing than of any individual. The monument, in his opinion, should mainly commemorate the great epoch of the introduction of printing into this country. If the liberality of the public should consider this as a great national work, as it must be considered, then he thought it right not merely to instal William Caxton in the honoured roll of the great benefactors of his country, but to commemorate the introduction of printing by some monument illustrative of that event. He had suggested a fountain as one appropriate emblem; but if the suggestion were adopted, he took the liberty with the noble chairman to say, that he hoped it would be very unlike any fountain now in existence in this metropolis. He would remind those who had travelled in Italy of the wonderful combination of fountains with beautiful architecture in that country, and although similar fountains might not be suited to the situation indicated for the present monument, yet there were fountains of the medieval age which dwelt strongly upon his memory, such as those of Nuremberg and Basle. If a fountain were erected in that spirit upon the site proposed by the present resolution, it would be the highest ornament to that part of the metropolis, which was becoming, and might become, what Dr. Johnson said of Charing-cross,—"The great thoroughfare of mankind." The emblem conveyed by a fountain could not be misunderstood by the least educated, but if they added to that a light which should be spread abroad at night, shedding lustre upon all the buildings around it, the type would be complete, and would convey to the mind, without effort or violence, its real and proper signification. If the subscriptions should surpass what was necessary to complete the work on a proper scale of magnificence—for the whole of the influential portion of the public press, not only in the metropolis but in the provinces, were in favour of the contemplated memorial—if this great work were supported by all the educated and intelligent portions of the community, the committee might direct to further purposes, either of charity or education, whatever supplies might be collected.

It was suggested, that to fix the exact site then, before the amount subscribed was known, might trammel the committee, and accordingly the resolution was made to read thus:—

"That the proper site of any work of art, would be in the *neighbourhood* of Westminster Abbey."

A general committee was then appointed, to promote the object, and to decide the character of the memorial. And the following gentlemen were appointed a sub-committee, to determine the composition of any work of art, namely, three artists, Mr. Barry, R.A., Mr. Etty, R.A., and Sir R. Westmacott, R.A., with the proposer Mr. Milman, and the dean, Dr. Buckland.

We trust that the questions of site and the nature of the monument will receive the most careful consideration. We hope to see a fine work of art produced, of far greater importance than was shadowed out by Mr. Milman, in his letter to Lord Morpeth. And we hope, notwithstanding a suggestion to the contrary by Mr. Milman, that none of the money subscribed will be appropriated to any other purpose than the monument, so that it may be worthy of its purpose and of the country.

The constitution of the sub-committee bids us hope, that in the event of a competition, the arrangements will be more satisfactory than is usually the case. It will be our duty, nevertheless, to look on.

## THE IMPROVEMENT OF THE DWELLINGS OF DIFFERENT CLASSES.

### THE NEW MODEL LODGING-HOUSE IN ST. GILES'S.

We have endeavoured on many previous occasions, to contribute to a full estimate of the difficulties and obstacles, which oppress all classes of society, from the want of consideration for the required objects in the arrangement and construction of residences. It has been our aim to shew, that evils parallel with those found to affect the poor, from this erroneous system in the planning of their dwellings, are the occasion of constant trouble and difficulty to all, or at least to those who reside in the metropolis, and the letters of correspondents have borne testimony to the truth of our statements. If the improvement of the Health of Towns be of such immense importance, that no vested interest and no question of party politics should be allowed to delay an instant the active operation of measures of remedy, we are compelled to assign a position even higher to a subject, still more immediately affecting the social and moral condition of the people. We believe we have shewn* that the only system adopted in the arrangement of residences in London, is the very worst that could be devised for the comfort of a vast proportion of its inhabitants; that houses are continually being erected, adapted always only for one tenancy, which will have to accommodate, perhaps, twenty or thirty tenants; and there can be no difficulty, with all the advantages of economy resulting from combination, whether it be merely with a common structure, a common staircase, or a common establishment, in procuring all the comforts of privacy in a home, along with every other advantage, in which all who at present let or take lodgings, are so painfully deficient. We can see no reason why, instead of one system in house-building and provision for residences, fifty different plans should not be devised, both for the arrangement of dwellings, and for the management of such as may have to receive an associated community, and so that every individual could readily provide himself with the description of tenement, adapted to his business and his domestic wants.

But if the subject be important as concerns the middle classes of society, its importance becomes still more evident, as we descend the social scale, till we discover a state of abject destitution, of misery and of crime, of which, did it meet the daylight, society would stand appalled, and for which, if the accounts descend, future ages will mistrust the enlightenment of the 19th century. Were we the expectant contemplator of an Utopia, in which these evils should not exist, we might look for no result from our arguments; but there are many who know well, what we only wish to have known by all, that statements such as have been made, have here received no false colouring, whether as facts, or as regards their influence upon society. The accident of poverty indeed involves in common destruction alike the virtuous and the vicious, and the circumstance cannot to any be so apparent, as to those who are familiar with the arrangement of dwellings. The establishment of baths and washhouses in every quarter of London, so tardily proceeded with, of playgrounds for children, and public places of recreation, of infant-schools, libraries, and gymnasia, are but small instalments of that attention to the comfort of the poor, which they have a right to demand, but which attention will lack its most important field unless it takes cognizance of the *chief* means for giving the comfort of a home, or that temporary shelter which supplies its place. An important duty, therefore, in the progress of social amelioration, is that of the architect.

When, some years back, the "Metropolitan Association for Improving the Dwellings of the Industrious Classes" issued a prospectus and plans, we were amongst those who looked to the speedy effects of its operations with the most pleasurable anticipations. Grievously have, hitherto, those hopes been deferred. The association has but lately commenced active operations in St. Pancras, where we may shortly have an opportunity of seeing what it contemplates. Another society, however, that "for the Improvement of the Condition of the Labouring Classes," has, under some disadvantages, manifested rather more energy; and though we felt it our duty to comment upon the judgment displayed in several particulars, it has our sincere wishes for the success of endeavours in which we are so much inclined to sympathise. The projectors could not have devoted themselves to a more important department of their objects, than to that of dwellings, and to none of those so needing improvement, as the class called "lodging-houses."

Some of our readers may scarcely know what a "lodging-house," *par excellence*—if we do not invert the phrase—is. Such persons we would refer to a penny pamphlet, entitled "The Lodging-houses of London—extracted from the 'London City Mission Magazine' of August, 1845; sold at the office, 20 Red-lion-square:" or would suggest to them merely a walk through the Mint, in Southwark, or through such streets as Charles, King, and Parker-streets, Drury-lane. A celebrated traveller, Mr. Köbl, has described the state of misery and destitution in Ireland as exceeding all he had ever witnessed throughout his extensive travels; but had he been conducted through some of the houses in the localities of which we speak, he would have found, under the gloss of civilization, and within sight of the abodes of the wealthy, or of the legislature, filth, destitution, and vice, below which the most abject spot in any corner of Europe could not descend.—But these are matters with which many are now quite as familiar as ourselves, and all, therefore, that we have to do, is to urge the active removal of such evils, by the erection of suitable places, with purposes similar to that now erecting in George-street, St. Giles's, by the society in question. The object of this building briefly is, to provide a portion of the numerous class who are without any settled abode, for the ordinary rate of 3d. or 4d. a night, with a bed, and other comfortable and decent accommodation, and with the means of cooking and washing; and when we consider that nearly all the places to which the poor now resort, are of the most miserable description, and loathsome to all whose feelings misery or vice has not blunted, we cannot but feel the deepest interest in the success of the society's endeavour, and a wish that every detail of this model establishment should be capable of being imitated.

The building, which we have examined in many stages of its progress, is now nearly completed, and occupies a site adjoining the French Protestant Church in Bloomsbury-street. The front, however, is in George-street, and the building has five stories and a basement. It is of plain brick and cement, with a cornice at the top, and a cornice and trusses to the doorway. The basement contains the washing and kitchen departments, one at each end of the building, in which the staircase occupies the centre. On the ground-floor, the common room occupies the southern half, and north of the entrance are the office, the residence of the steward, or keeper, and below there are also to be baths. The two rooms on each floor above will be used as dormitories, and there will be other conveniences. The ground occupied is thus a parallelogram, of which the staircase and entrance are in the centre, and in which there is an area at the back for light. Some difficulty was found in the arrangement of the plan, from the necessity of having a good staircase; the referees also required an enlargement of the area subsequent to the first prepar-

* Vide Vol. IV.—"Matter for the attention of the legislature," and "Suggestions for the improvement of residences," &c., &c

ation of the plans, and perhaps the entrance has in some measure suffered. On entering the door, the guest turns to the left, along a narrow passage of a few feet in length, and again turns to the right, and passes a window where he deposits the price of his lodging. He again turns to the right, and may either ascend or descend the staircase, or pass on to the common room. We believe some arrangement is contemplated by which guests can be supplied with refreshments at moderate prices, and, we presume, they will be allowed to provide and cook their own victuals, as usual at places of this description. There will be every convenience for washing, for which, and all other purposes, there is an ample supply of water. The floor of the story above the basement is supported by brick arches and iron girders, and the floors to the dormitories are of wood, supported by strong iron girders. We understand the dimensions of the south dormitory are about 34 feet by 23 feet, and of that north of the staircase 26 feet 6 inches by 23 feet. The staircase is of stone. One of the inclosing walls, that next the entrance doorway, is only 4½ inches thick, and that was all that the space at disposal, would allow of, although the steps had to be tailed into it, and the wall carried above to the top of the building. Security and convenience seem, however, to have been carefully considered, and as the steps have a bearing below, all that has been thought requisite has been the building the wall in cement; a 9-inch wall to the stairs above being supported by a T shaped girder, of which the central flange dips like railway rails. Its ends are well supported, partly by an iron column built into the thickness of the 4½-inch wall. The dormitories are fitted up in compartments of about 8 feet 9 inches by 4 feet 3 inches to 4 feet 9 inches, by boarded partitions, 6 feet 6 inches in height, with doors to each, each of which compartments will contain a bed. There is a central passage, 4 feet 9 inches wide, along the room. As the building is lighted on one side only, half of these compartments have no windows opening into them, but will not be very deficient in light, the room being well lighted, and not inconveniently low. The windows are divided into two lights by a wood mullion, and each of these has its lower half hung as a sash, two panes at the top being provided with the means of ventilation. Twelve compartments have been fitted up in one of the rooms at the north end. Those southward would, we suppose, accommodate a larger number. The walls and ceilings are all plastered. The rooms on the top floor are ceiled at the level of the tie-beam. The floors of the passages are of slate, 2 inches thick. Amongst the conveniences not yet described, are the lavatories and water-closets. The former are contrived thus:—oval basins are hollowed out in solid blocks of slate, which are supported at a height of 3 feet from the ground, on the edge of a slab of slate, leaving a space which serves for the admission of warm air to the dormitories. The basins are furnished with a plug, and supply of water is obtained from two slate cisterns on each floor above, and there is a large cistern of the same description in the roof. The plumber's work must have formed a considerable item in the expense of the building. There are six basins to each floor, but we regret to see that there will be only one water-closet, which, to accommodate not less than five-and-twenty persons, must be quite inadequate. There is, however, an evident difficulty in devising further accommodation of this nature, the space corresponding with the entrance passage being the only one that, with this arrangement of the plan, could be made available. A top light to the staircase would also have been desirable, as well for additional light, which may, perhaps, be required when the small area becomes inclosed by buildings, as affording the means of assisting the ventilation, a matter of such extreme difficulty. The latter point seems, however, to have been carefully considered. There are not only the arrangements in the windows before described, to which should be added similar provision in those which open into the area, but at each end of the building there is a shaft, communicating with each floor by openings immediately under the ceiling. Within this shaft burns the light for each room, seen through an opening. Warm air will be admitted from the space below the basins, before described, near the doorway, at the floor of the room. The arrangements for heating are not yet completed. Mr. Hicks, of Lambeth, is the contractor, and the work generally seems to have been very well executed. Mr. H. Roberts is the architect.

We look forward with pleasure to the opening of a building of this nature, and the society cannot do better than continue their useful labours, in connection with every description of want. However we may at times feel it necessary to remark upon particular details, we have sufficient in common with them, to desire anxiously their success. The society has lately put in repair and opened, on improved principles, one of the lodging-houses in Charles-street, Drury-lane; and we trust that, from such improvements, they will not only derive satisfaction, but the means of continuing their labours. The immense profits made by some of the owners of the most wretched lodging-houses, seem not to have induced any persons to build premises upon a better system. Landlords and speculators are certainly not interested in keeping matters as they are at present.

## ROYAL INSTITUTE OF ARCHITECTS.

### GEOMETRIC PROPORTIONS OF ANCIENT GOTHIC CHURCHES.

An ordinary meeting of the Institute was held on Monday, the 14th inst., Mr. Ambrose Poynter, V.P., in the chair. Mr. W. P. Griffith was elected a Fellow. On the well-known engraved section of St. Paul's being presented, Mr. Donaldson remarked that it was much to be regretted that the cathedral had not been decorated in accordance with Wren's intention, and the chairman expressed a hope that a long time would not elapse before it was attempted.

A very interesting communication from Mr. Layard, addressed to Mr. Mair from Nimroud, was read: relating to further excavations recently made. We shall lay it before our readers hereafter. In illustration of it, drawings of some of the bas-reliefs, already sent home by Mr. Layard, and now to be seen in the British Museum, were exhibited, and led to some interesting conversation.

The Dean of Westminster said the material in which these extraordinary sculptures are worked is not marble but *gypsum*, and is so soft, that the nail will scratch it. He thought this an important fact. As this material could be obtained in large quantities, and was extremely easy to work, it was important to know of its power of retaining forms given to it for thousands of years. It is identical with the alabaster of workmen, not oriental alabaster, and may be had in slabs of large size in Italy. Marble exposed to alterations of temperature would not last so long. In Westminster Abbey, many of the marble tombs are destroyed by the precipitation on them of the moisture of the atmosphere, which is absorbed by the clay forming parts of the marble, and leads to decomposition: he would especially mention the tomb of the founder, and the shrine of Edward the Confessor. He hoped to cure it before long by properly warming the abbey. Purbeck marble ought not to be used unless an equable temperature can be obtained. Unless where preserved by grease from the hands or otherwise, the purbeck marble in the Abbey was decomposed. He was very anxious to know how best to clean marble monuments. Workmen sometimes put acid into the water, and this had the effect of destroying the surface. If we knew how to clean marble monuments, especially those exposed to the air, as in cemeteries, it would be very useful. He would not conclude without stating his opinion that Mr. Layard's were the most marvellous discoveries that had been made for many years.

Mr. C. H. Smith said, the alkaline constituent of soap was the best thing that could be used; the fat that soap contained stained the marble. He thought the decomposition spoken of depended more on temperature than moisture.

M. Dusillon, a French architect, visiting London on professional business, was then introduced to the meeting;* and a series of thirty-four sketches by Dr. Bromet, illustrative especially of French castellated architecture, were laid on the table.

* We hear, and we confess, with some surprise, that M. Dusillon has been brought over by Mr. H. T. Hope, to build his new house at the corner of Down-street, in Piccadilly. Mr. Donaldson is to be associated with him in carrying it out.

Mr. R. Dennis Chantrell read a paper "On the geometric system applied by the mediæval architects to the proportions of their ecclesiastical structures," which was profusely illustrated by diagrams, and excited much interest. We shall give it in full next week.

Immediately on the close of Mr. Chantrell's paper, Mr. Godwin said he had been requested to bring before them a copy of a work on the same subject by Mr. Griffith, who had been elected that evening. Mr. Griffith had been engaged many years in the investigation, and having heard of Mr. Chantrell's intention, was of course anxious that his work should appear on the table of the Institute at the moment Mr. Chantrell laid before them the result of his inquiries. It was accompanied by the following letter, which he would read:—

"I beg to forward a proof of the first part of a work, in which I am in hope of finally settling the question, 'As to the principles which guided the architects in constructing the minsters, cathedrals, and churches of England,' and shall feel obliged by your submitting the same to the meeting of the Institute of British Architects, to be held on Monday evening.

In a former work, entitled, 'The Natural System of Architecture,' I maintained, 'In treating of forms keeping symmetry and proportion in view, as in architecture, all figures used must be regular, with equal sides and angles,' and alluded to the triangle, square, and pentagon, as three primary figures. In plates 9 and 10 were given nineteen examples of the application of regular figures in producing certain details in pointed architecture, viz., trefoils, tetrafoils, pentafoils, crosses, foliated crests, rose-windows, arches, &c. Regular figures, with the early architects, were of great importance: in pointed architecture they were the *creative principle* in plan, section, elevation, and details, however small. Figures of this kind were not valued for their symmetrical qualities alone; their power in aiding construction, *by equally distributing all the points of support*, was well understood and appreciated.

I have not given one method for arranging the plans of churches, and another for their sections. If the same primary figure, and of the same size or scale, by which the plan was designed, be transferred to another sheet of paper, it will, in like manner, find the height of the nave, columns, and roof; the aisles, their roofs, buttresses, &c.; and the centres for striking the arches of the nave and aisles, &c.

I beg to direct your attention, and that of the members of the Institute, to plate 3, which is the most perfectly developed plan upon geometrical principles that has ever been issued.

The examples which I have given have not been selected because they suit, in preference to many others; having them at hand from actual measurement has been my principal reason. The system I have laid down applies to all Gothic cathedrals and churches constructed by the early architect.

If the Chairman will detain the members of the Institute but five minutes, and take a pair of compasses in his hand, and proceed according to the following directions, the plan of every cathedral and church will be explained:

Take Britton and Pugin's 'Public Buildings of London,' Vol. II. p. 186, in which is a plan from measurement by Mr. Pugin, of Westminster Abbey; let the centre of the tower be the apex of an equilateral triangle, its base will be upon a line taken through the third axis of buttresses and columns from, or westward of the tower (including the walls); and the apex of the next triangle, on the seventh axis from the tower, and the base of the triangle will be at the west end of the nave. Now, take any plans from measurement, the plans for instance, in Britton's Cathedrals, or Winkle's Cathedrals, drawn by Mr. Garland; and Salisbury, Winchester, Rochester, and Ely, cathedrals, and Yorkminster, Bath Abbey, and Redcliffe Church, will all be found to have been proportioned *exactly* upon the same principles. The transepts, chancels, and lady-chapels, will be found to comply equally as well.

With respect to crypts, take the fifth volume of Britton's "Antiquities of Great Britain," and refer to the plan of crypts. Fig. 2, is that of St. Peter's Church, Oxford; let the east and the west ends (within the walls) each be the base of an equilateral triangle, the apex of each will meet in the centre; do the like upon

fig. 3, in the same plate, only with this difference (being of a different date), let the base of your triangles include the walls.

The habit practised by some architects of taking a base line of a triangle, and dividing it into parts, is very objectionable. I must differ with Professor Cockerell, Mr. Billings, and other gentlemen, on this point. If we are to divide in Vitruvius's style every thing into parts, of what use are regular figures, or geometry at all? It was very well for the Romans, who, not caring for mathematical studies, chose to save themselves the trouble of following the geometrical excellence of the Greeks, and therefore divided the height and width of not merely the building, but all its parts into modules, minutes, seconds, &c., an excellent *method of copying*; but as to any originality arising out of such a process, it is not very probable. On the contrary, with regular figures bounded by the circle, their graceful combinations, their power of distributing and equalizing all the supports and bearings of buildings, are not exhausted: the same figures which created the trefoil, tetrafoil, and pentafoil, will generate a hundred new ornaments, and tastefully arrange many a new specimen of the botanical world. Of the use of geometry in floral decorations, I have before spoken; and it is agreeable to observe, that no sooner is the orderly hand of nature disturbed, or its dictates disobeyed, than confusion is the consequence. In my opinion, architecture has not reached its *summum infinitum*. Gothic architecture, now the rage and the fashion, will, in the course of a very few years, present a different aspect: the far-famed cathedrals and churches of England, now looked up to with wonder, and restored with precision, will be gazed upon as specimens of a not very enlightened age; the ugly gargôyle, the representation of monkish contentions, and other vagaries, will have passed away; and a style, based upon all that is beautiful and good, will rear its head decked with nature's gift, in a more christian-like manner, and with more science and art."

A letter on the same subject from Mr. J. J. Cole was then read, from which we extract the following.

"The fine granite perpendicular tower of Probus, in Cornwall, is in height to the top of the battlements, exactly four squares of one side of the tower on plan; and each square, and each half-square, is particularly marked by complete or interrupted string courses; and to the top of the pinnacles, is also exactly four squares of the average breadth of the elevation, including the buttresses; and the disposition of all the minor points is settled in like manner, but so clearly, that with the pleasure of variety, there is no suspicion of formality; and what enhances the effect is this, that the stories in clear of the buttresses, and of the different panelled bands, are each in height exactly a square and a half, the well known form of beauty.

In another fine perpendicular tower, Boston in Lincolnshire, I find, that in order to obtain its required elevation as a landmark, the *diagonal* of the square, instead of the side, was used, and the result is, that the first square reaches to the first buttress weathering and the springing of the great window—the next to a marked band of panelling—the next to the top of the last battlement, and the next to the top of the tower. Beyond which is exactly another square to the top of the lantern.

Both these towers afford illustration of the best projection for the buttresses—a point most uncertain in designing, and most important in effect. The rule is easy enough—'Given the square of the tower or plan, take the diagonal for the greatest spread of the buttresses'—(I need hardly observe how gracefully this works with the other particulars in the angle view). But good rules will not always make good designs. The real architect will, by prudent or piquant *exceptions* in parts, give character and expression to his work. In the case of Boston, on account of its unusual height, the *average* spread of the buttresses, instead of the greatest, is equal to the diagonal of the tower. But at Probus, where there is neither lantern nor spire, yet, as a tower most superb in its effect, the coincidence of dimensions between the diagonal of the plan, and the width across the buttresses at their base, is remarkable. The diagonal as calculated, is 34 feet 4⅛ inches: by measurement across the point (made years before), is 34 feet 4¼ inches."

Mr. I'Anson said the inquiry was a very interesting one, and seemed to take us back to the old mysteries of our art, but he for one was not quite satisfied as to its soundness, and was anxious to have it further elucidated.

Mr. Donaldson thought it of so much consequence, that he would gladly see an evening set apart for its discussion, when those gentlemen who had studied it might attend, and set forth their views at length.

The chairman announced that the first premium, offered to the students for the best notes and illustrations of papers read, had been awarded to Mr. Boutcher; and a second premium for the same to Mr. S. J. Nicholl; also that the premium for sketches of designs made at the Institute, had been awarded to Mr. Boutcher.

## THE BUILDINGS ACT AMENDMENT BILL.

On Wednesday, the 10th inst., a deputation of the District Surveyors' Association, consisting of Mr. Charles Mayhew, Mr. George Pownall, and Mr. Robert Hesketh, honorary secretary, waited on Lord Morpeth, relative to the Metropolitan Buildings Act Amendment Bill. Mr. Mayhew has favoured us with the following particulars of the interview, which we give in his own words.

We were introduced by W. A. Makinnon, Esq., M.P., for Lymington, who has taken a great interest in the subject, and by his request I had the honour of explaining to his lordship,—That the District Surveyors' Association had given much consideration to the bill, and were decidedly of opinion, that if it were to become law, it would give much dissatisfaction to the public, unnecessarily interfere with private rights, and call upon the district surveyors to exercise an authority as to the internal construction of buildings, which they ought not to possess, and would not only be highly objectionable and vexatious to the public, but place upon them a responsibility which they ought not to bear.

That the Sections 2, 3, and 12, would give unlimited power to the official referees, to alter the law as they might deem fit; section 2, as regards trivial matters; section 3, as regards special cases. The District Surveyors would be "directed" by them, and "in obedience to such directions," they would have to perform their duties. Section 12, would make their awards absolute and without appeal, and Section 13, would oblige the magistrates to enforce them.

That Sections 15 and 16, with regard to party walls, although good in principle, were defective and ambiguous.

That the alterations proposed by the bill to the schedules of the present Act, by making two sets of rules at variance with each other, applicable to buildings generally, would create endless confusion and continual cases of reference.

That the regulation as to internal walls would not be generally understood, and be an unnecessary interference with internal construction.

That doing away with wood plates and bond, in walls one brick thick, was bad in practice.

That the proposed regulation as to windows not being allowed in opposite walls of buildings in different occupations, unless a distance of sixteen feet intervened, would be an unjust interference with private rights; and also, that requiring open areas at the back of houses, to be continued down to the lowest floor, was not only depriving the tradesman of the most valuable portion of his property, namely, the room on the ground story, for his business, but creating a receptacle for neglected filth, which would otherwise be constantly cleared away.

For these, and several other reasons, to which his lordship and Mr. Philips, who was present, most kindly gave the greatest attention, the deputation suggested the propriety of withdrawing the bill, and of preparing a new bill forthwith, based upon the general principle of preventing any nuisance which may affect the public, arising either from noxious or dangerous trades, ruinous buildings next to the public ways, and any encroachment thereon; also for preventing fire from communicating from one building to another, making a perfect regulation as to party-walls, and carefully avoiding any interference with private rights. But should his lordship still consider it his duty to persevere with the bill, the deputation begged to call his lordship's particular attention to the various alterations which the District Surveyors' Association suggested, and then submitted to him. His lordship requested that the papers might be left with him, and the deputation, after thanking his lordship and Mr. Philips for their most polite and kind reception, withdrew.

## RESTORATION OF ST. JOHN'S GATE.

FREEMASONS OF THE CHURCH.

On the 14th inst. the Council of the Freemasons of the Church gave a conversazione, to which admission was obtained by a payment, to be applied towards the restoration of St. John's Gate, Clerkenwell. The rooms were crowded, and Sir Walter James, Bart. took the chair.

Mr. J. Wykeham Archer addressed the meeting at some length, in a discourse relative to the object of the assembly. He likewise explained the general objects and pretensions of the Architectural College of Freemasons of the Church, describing the title adopted by the society as one not intended to express any conformity with the general body of freemasons, but rather as indicative of the professed views of the college, viz., the recovery, maintenance, and furtherance of the free principles and practice of architecture. Such having been in their opinion, the principles of the early fraternities so designated, and who by their labours under the authority of the Pope, and according to the resolutions of a council held for the purpose in the 13th century, introduced a general and uniform change and improvement into the system of ecclesiastical architecture from which resulted the early pointed style, a style perfect and beautiful in a scientific and artistic view, and peculiarly appropriate in its application to the spirit of the Christian faith. It was likewise stated, that in addition to the above views, the Freemasons of the Church made it an object of their exertions to preserve and, if necessary, to effect the restoration of such architectural remains of antiquity as might be threatened with demolition unnecessarily, or should be endangered by decay, or, through neglect or local circumstances, have become inaccessible to the public. Hence their efforts towards the restoration of the gate of the Knights Hospitallers, in Clerkenwell, which was ordered in accordance with the directions of the Street Improvement Act, either to be demolished entirely, or as an alternative to be covered over with compo.

The recovery, progress, and present hopeful aspect of the gate were described, and a strong appeal made to the public and the press, for an extension of the means and of the powerful advocacy which have been of valuable service in forwarding the work thus far. The lecturer then dwelt upon the importance of a national conservation of tradition, in connection with its history, and in reference to its progress, and referred to visible objects as a mnemonic standard of great consequence even in a moral point of view.

Some observations followed, touching the destruction of ancient edifices, in many cases without the plea of necessity, especially in London.

The remains of the church of St. John, together with some other objects of antiquarian interest existing in Clerkenwell, were described. After which, a detail of the events and characters, whose fame imparts by association an increased interest to St. John's Gate, introduced the following summary, viz., Jerusalem,—the high and sacred events of which it has been the theatre; state of Palestine under the caliphs, and the early practice of pilgrimage to the holy sepulchre by the western Christians; permanent establishment of the Italian Christians in Jerusalem, and the foundation of the hospital of St. John, the almoner. The events which succeeded the Council of Clermont, viz., the rabble Crusades, the regular combination of the princes of Europe, and the results of the holy war. The erection of a military order in the fraternity of Hospitallers. Their chivalrous achievements and various fortunes. Following the history of the knights of St. John, the

lecturer instanced some of their different localities, and described the destruction of their house in Clerkenwell by the rebels of Kent and Essex.

A notice of the house re-established by Prior Dowera, and of its final suppression and destruction in the reign of Henry VIII., closed the warlike and religious history of the house of St. John, in Clerkenwell. And, finally, the lecturer submitted in behalf of the gate, a relic of that house, an additional plea, on account of its having been the birth-place of the "Gentleman's Magazine," and the scene of the early literary career of Doctor Samuel Johnson.

According to the committee, the following restorations have already been effected, viz.—"the interior has been renovated, the turrets partly rebuilt, the old stone casing has been tapped and tested, and new stones inserted where wanted, the roof lowered several feet, &c., these have been done by the owners; the public have cased with stone the turrets, restored with solid stone the whole of the embattlements on the north front, and the central portion of the south front, as formerly, and substituted new solid stone window-heads, jambs and sills to the turret windows in the north front, in place of those decayed, &c."

We should mention, that the tables were filled with objects of art, exhibited by Lord Cadogan, Lord Hastings, the Earl of Harrington, and others; and that the evening was equally pleasant and instructive.

## THE GAS MOVEMENT IN THE METROPOLIS.

The public are indebted to the parish of St. James, Westminster, for commencing a movement as to improvements in the mode of lighting the street lamps by gas.

A great improvement having been made by Mr. Leslie, of Conduit-street, Hanover-square, in the sanitary and economical combustion of gas, a deputation of the parochial authorities of St. James's were led, a short time since, to inquire into it; and being satisfied with the experiments they witnessed, they obtained an interview with the directors of the Chartered Gas Company, on the subject of its introduction into the parish lamps, whereby the parish would, as the deputation believed, receive for the same amount of money under the existing contract with the Chartered Gas Company, a great increase of light, or, on the other hand, the same amount of light for a considerable reduction in price. The directors agreed to have a room fitted up for the purpose of testing the experiments, and further, obtained expressly two of the best experimental meters, and a new photometer from Liverpool, that all might be accurate.

On the 27th ultimo, a meeting took place, at which many of the directors and officers of the Company were present, as well as a large number of the Commissioners for Paving and Lighting St. James's parish, and the inventor attended.

The two meters were then adjusted to work accurately together; the photometer arranged by Messrs. Lowe and Upward, officers of the Gas Company, the two manipulators on the occasion, and the standard parliamentary candle was made to burn well. A bats-wing burner was made to consume 5 cubic feet per hour, the same quantity of gas was passed through Mr. Leslie's, and the result, the mean of two experiments, gave within a fraction of one hundred per cent. light in favour of the new arrangement. The engineer of the Gas Company then suggested that it would be better to put out the candle, to re-adjust the photometer, place the bats-wing burner on a *third* meter at the opposite end of the room (which meter was not one of the two ordered for the occasion, and had not been tested in the presence of the company assembled). The result of this new arrangement was, that 4 feet of gas through the new burner gave as much light as 5 feet through the bats-wing.

It appears, that subsequently to this meeting the Chartered Gas Directors have required from St. James's parish ten shillings *additional charge* for each of twenty lights proposed to be put up in the parish as a further experiment, and that the parish shall pay for the new burners. On what ground the additional charge is made after these experiments, conducted by the Gas Company's officers at their own works, through their own arrangements, is not very clear. The results involve, if not controverted, an enormous saving of gas per annum upon the whole lighting of the parish, which certainly should not be pocketted by the Gas Company.

Her Majesty's Commissioners of Woods have ordered the Queen's Walk, in the Green-park, to be forthwith lighted by the Chartered Gas Company with the new burners, so that the public will very shortly be enabled to judge of this invention.

## NOTES IN THE PROVINCES.

The contracts for the Lincoln Corn Exchange have been taken by Messrs. Kirk and Parry, of Seaford.——In St. Mary's Church, Bury, the carved panelling round the communion-table, and the Decalogue, &c., in illuminated characters, have been completed. Rails are also to be put up, and there is some idea of removing the door which opened in the ancient vestry. The little tablet to the memory of the Queen of France (Mary Tudor) has been removed to make way for the panels. "If this sorry memento of her royal ancestor," says our authority, "could be brought under the eye of our gracious Queen, or that of the present representative of Charles Brandon, Duke of Suffolk, to whom the royal blood was allied by this personage, we cannot but think that a more worthy memorial would be placed in one of the windows."——Spratton Church, Northamptonshire, has been re opened. The entire expense of the restoration is about 1,800*l.*, of which 1,350*l.* have been raised by voluntary contributions, and 250*l.* are guaranteed by a rate.——The earthly tenements inhabited by our great poets of old appear to be on the move, one after the other. Milton's house and property, near Horton, Bucks, was 'going, going,' the other day, but no one having offered more than 2,700*l.* for it, it has not yet 'gone.'——The church of St. Stephen, Astley, Leigh, was re-opened on Sunday week; its enlargement, with the addition of an organ, having been effected.——A new school-house for 250 children is about to be erected, in conformity with the provisions of the late Education Act, near the Cwmbach collieries, Aberdare, on land given by Mr. Bruce Pryce. It is said that Mr. Crawshay Bailey also intends building a school at Aberaman; and that the Hon. Robert H. Clive, M.P., has given land for the same desirable object at Heol-y-velin. A new British school, for 400 children of dissenters, is to be opened this month at Pontypool; cost about 600*l.*——On Monday week a testimonial was presented to Mrs. Catharine Wilkinson, the originator of public washhouses, and at present matron of the Corporation Baths and Washhouses, in Upper Frederick-street, Liverpool.——The foundation-stone of the proposed new church at Manthorpe, near Grantham, was laid on the 28th ult.; architect, Mr. G. Place, of Nottingham. It will consist of a nave and chancel, with an intermediate tower, a south porch, and a small sacristy, at the south-eastern extremity of the chancel. The style of architecture adopted is that which prevailed in the earlier part of the second period of church architecture. The cost is to be defrayed by the Hon. and Rev. Richard Cust, rector of Belton, and rural dean. The site is given by the Earl of Brownlow, who has also, with his accustomed munificence, undertaken to build a parsonage after a plan by the same architect, and to supply an endowment. The workmen were entertained in the evening at Belton.——It is proposed to build a new church in the parish of Radipole, Weymouth, to contain one thousand persons on the ground floor. The designs of Messrs. Lee and Bury have been chosen, and builders are now estimating the works. The plan intended to be adopted is cruciform, with a tower and spire (together 150 feet high), at the north-west angle; the style is the decorated.——On Tuesday week, the western portion of the new pier at the ferry-boat dock, at Hull, was formally opened by the mayor and aldermen. The cost of this pier, when completed, is estimated at about 10,000*l.*, but we understand, says the *Hull Packet*, that additional improvements have lately been suggested, which, if carried into effect, will make the expense somewhat more.——The number of persons employed on the Irish relief works during the week ending 22nd ult. was 175,570, and the cost 63,949*l.* In the week ending 29th ult. the number was 145,690, and the cost 45,811*l.* In the week ending 5th instant the number was 118,637, and the cost 49,370*l.*——A circular has been issued to the engineers in charge of the several districts in which public works have been hitherto carried on, announcing that the Lords of the Treasury have given instructions that all the works, whether they consist of roads, bridges, thorough drainage, &c., shall be finally discontinued on or before the 15th of August. Wherever it may be found impossible to complete the works before the specified time, plans and estimates are to be prepared for the county surveyors, so as to obtain presentments in the ordinary way for the execution of such unfinished works from the grand juries of the counties in which they may be situate.——A correspondent of the *Morning Post* states that Limerick County is in a horrid state of murderous turbulence.

## PROJECTED PUBLIC HALL AND EXCHANGE IN SHEFFIELD.

Some time ago we mentioned that a public building of considerable extent, to include a Great Hall, Exchange, and Museum, was projected for Sheffield, and that a design for it had been made by Messrs. Flockton, Lee, and Flockton. In order to make our readers acquainted with the sort of building with which it was proposed to adorn a very important town, and to aid in bringing the project to maturity, we caused a perspective view of the design to be engraved, but have been prevented until now, by want of space, from making use of it.

The site is a plot of ground bounded on the north by Bank-street, on the south by the Hartshead, on the east by Meeting-house-lane, and on the west by Figtree-lane. Its area comprises nearly 3,000 square yards, in an oblong square, measuring nearly 80 yards by 40. It possesses these advantages—1st. It is central, and easy of approach in every direction; 2nd. It is suitable in form, so that no ground would be sacrificed but what is necessary to leave the street of proper width all round it; 3rd. *It is on a steep hill side.* The descent is about 30 feet from the Hartshead to Bank-street, thus affording the advantage of a story on the Bank-street level, and another on the level of the Hartshead, making in effect two ground floors; 4th. A lofty building upon this site will be a conspicuous and imposing object from the north side of the town, for, as none of the buildings in front will be so high as the basement story, the whole of the upper part will be visible. There are to be two frontages—one to Bank-street, and the other to the Hartshead.

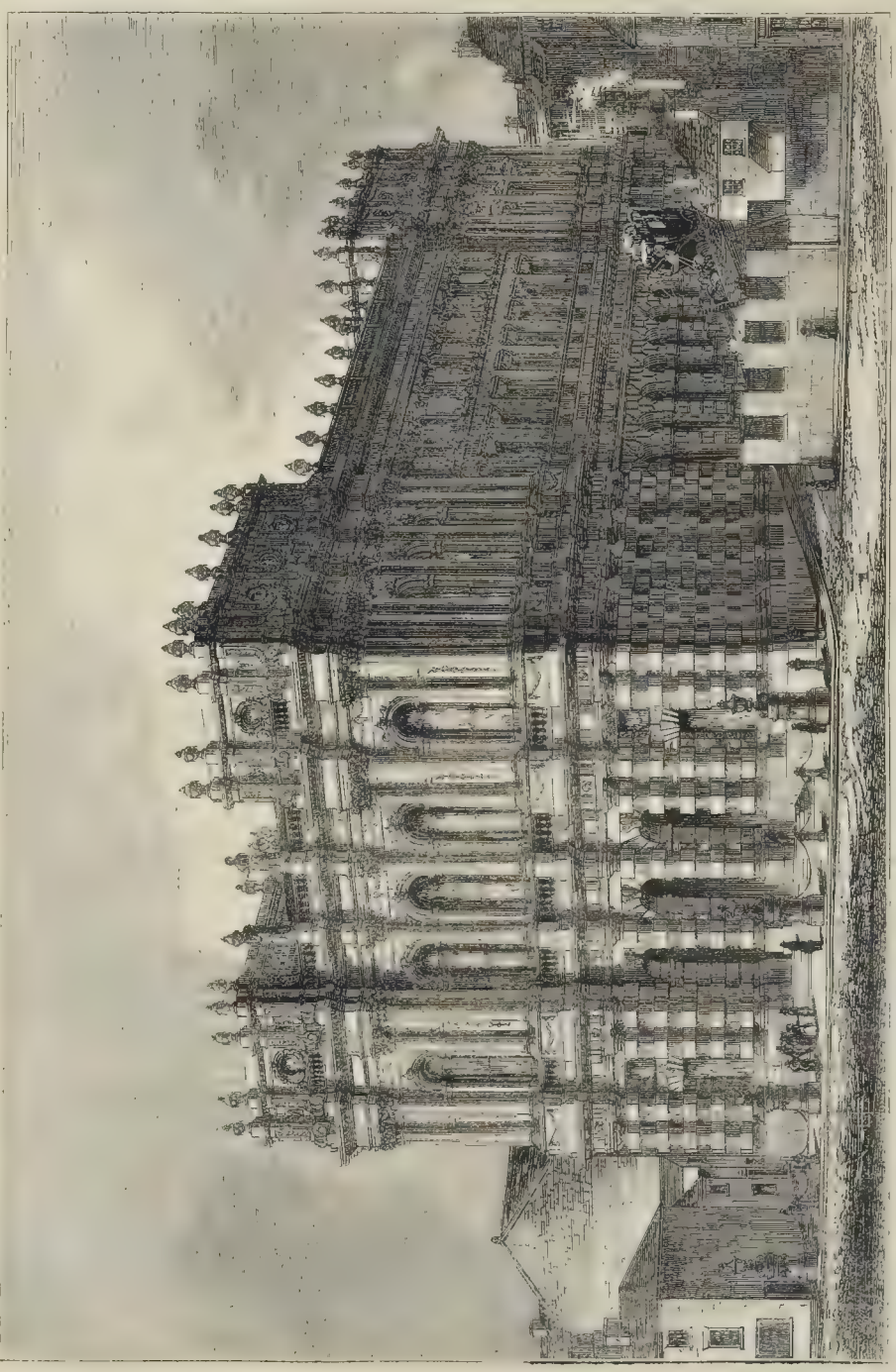
It is proposed to make the Bank-street entrance into a large hall for public meetings. This hall is to be 35 feet high, and measure about 157 feet by 86, giving an area of 1,500 superficial yards; thus affording standing room for 9,000, or sitting room for 3,000 persons. This hall to occupy the whole base of the building, excepting a space at the southern end, for cellars, warming apparatus, &c. Over these cellars will be rooms for the occupation of the persons in charge of the building and other purposes, with an entrance to the gallery or orchestra of the large hall.

The next floor will be only a few steps above the Hartshead level, though 40 feet above the Bank-street level. The doors at this end are to open into an entrance-hall 32 feet by 36, and 28 feet high, with a bankruptcy court on one side 30 feet by 44, and a council room on the other side of the same size, both of the same height as the entrance hall. To each of these rooms private apartments for the mayor and the bankruptcy commissioner are annexed. The entrance hall to open into an Exchange, covered by a glass dome; its dimensions 86 feet by 36, and its height 50 feet. The floor of the Exchange to be partially of ground glass, so as to give light in the great hall below. On each side of the Exchange, a range of ten rooms, applicable for offices or committee-rooms, averaging about 20 feet by 24, and 17 feet high. Across the north end of the building is placed the banquetting room, 94 feet by 43, and 38 feet high. The next story furnishes two side rooms 100 feet by 24, but its height at the south end is occupied by the entrance hall, bankruptcy court, and council hall, and at the north end by the dining hall.

In reply to those who were startled by the

## PROPOSED PUBLIC HALL IN SHEFFIELD.

MESSRS. FLOCKTON, LEE, AND FLOCKTON, ARCHITECTS.



largeness of the plan, and inquired if the town were prepared for such an undertaking, the *Sheffield Independent* answered :—

"Perhaps not, just now; but there are several considerations that may tend to prepare it. In the first place, if the town is to build, as build it must ere many years have elapsed, it must look beyond the present. A public building is not to be made like a coat, to fit exactly when made, and be soon worn out. It should be built for two centuries, or more. The same far-seeing spirit which ages ago led our forefathers to build their parish churches on a noble scale, should influence us in public buildings now. If we were to turn the question into a rule-of-three sum, and say—As the population of Sheffield in 1110 was to the parish church then built, so is the population of the town in 1847 to the public building required,—the result would shew that the plan proposed is a very moderate one, and that our ancestors *did* greater things than we dare even *imagine*."

## A WHISPER ABOUT TOMBSTONES.

Sir,—The desecration of graveyards is one amongst the many evidences of the laxity into which church discipline had fallen in the 18th century. There are not a few surviving, amidst a cloud of witnesses, who can bear testimony to the fact, that the glebe and the churchyard were treated alike, as affording pasturage, not only to the vicar's sheep, but also to his horse; and not unfrequently was the grass which grows over rural graves, let to the village butcher for the same uses. It seemed to be entirely forgotten that the ground had been hallowed by prayer and blessing, and the form of consecration could never have been in the thoughts or memories, perhaps not in the knowledge, of those to whom the guardianship of these sacred precincts was entrusted. It requires not our pen to enumerate the "indignities" to which in former days our metropolitan, in an especial manner, and partially our rural churchyards, were exposed. Much it must be admitted, has been effected in the way of improvement, yet still more remains to be done ere "the reverence due to such places" can be said to be restored. The subject itself must be left to the serious consideration of the clergy; one good example would be speedily followed by a whole district, and the wonder would soon be, how such reformations had been so long neglected.

The object of this brief paper is to call the attention of the clergy in particular and the public in general to a question, which though it cannot be numbered amongst acts of desecration, is yet a great violation of propriety and good taste. It is to present, if possible, a check to the hideous fashion of our country tombstones that this communication has been written. There is, at present, nothing in these memorials of a Christian character; they are as unmeaning as they are deformed, and no wonder, since they have been left to the tasteless minds and hands of common stone-cutters, whilst men of taste have been inactive spectators of the erection of sepulchral testimonials, which witness to any thing rather than the religious feelings of those who erect them, and who had neither help to guide nor model to which they could refer. In some of these rude attempts, the parish stocks seems to have furnished a pattern, a very frequent eyesore in Buckinghamshire and some parts of Middlesex. In others, the milestone and the tombstone appear to have sprung from the same design; and the coal-skuttle, the celaret, and the monument are all of the same formula. I fearlessly proclaim, then, that the cross is the most fitting, the most appropriate, the most graceful emblem on the tombstone of a Christian. If the truth must be told, we as a Protestant people, are (unconsciously, perhaps) ashamed of the cross, and we endeavour to hide our shame or conceal our ignorance under the plea that it is popish. Away with such prejudice. The cross was adopted in the Christian church centuries before the corruptions of popery was heard of; and it will be cherished as a holy sign long after the earth is swept clear of them. The Vatican itself bears witness to the fact, that in the very infancy of Christianity the monumental inscriptions and emblems, amongst others the cross, in its various forms, were all indications of that pure form of religion which we now cherish under the name of Protestantism.

And what on our tombstones have we substituted for the emblem of our faith? Cherubs' heads, and, worse than all, the insignia of paganism,—scythes and urns, and inverted torches,—any thing and every thing rather than the victorious sign; and shame upon our Christianity, shame upon our taste, shame upon our Protestantism, we suffer our cathedrals to become pantheons, and the gods of the heathen to be our illustrations of Christian art.

It would lead me into too wide a field of discussion were I to speak of cemeteries. It is now too late to repair the mischief as regards our more populous cities; we have missed the model of primitive usage, we have suffered the management to fall into the hands of public companies, jobbing for profit, and looking to dividends. Yet even these places may be reformed as regards both the tombstone and its inscriptions, and more especially those that have undergone the rite of consecration. It has been suggested, that henceforth cemeteries should be severed from those who regard them only as places of profit; they should be connected with the church, and consecrated as are churches.

But leaving cemeteries out of the question, and confining our remarks to village churchyards, I have ventured to submit a few designs in passing, simple and of easy execution either in wood or stone, to the notice of those who feel an interest in the subject, and who I cannot but think, would soon take pleasure in the improvement of their churchyards. The first step, I am persuaded, must be taken by the clergy; the public mind must be gradually enlightened, and old prejudices removed. The people require to be taught the reverence due to the dust of man; they must be convinced that churchyards are sacred places, that they were, and still are, called in the old Saxon phrase "*God's Acres*," where the seeds of the resurrection are sown, and the human harvests shall be gathered. Let such impressions be conveyed, and a religious feeling, both as regards their consecration and the humblest efforts of art in monumental testimonials, would follow. These designs are but first attempts at improvements on the prevailing style. They may serve better than words to express my meaning, and they may be easily changed and improved.

We long to see also an improvement in our churchyard epitaphs; but this is not within the scope or design of the present communication. Here again is a subject which the clergy should take into their own hands, and exercise judiciously an authority with which a wise law has invested them, and which their own neglect alone has suffered to fall into disuse.* The planting of churchyards is also an opportunity for the display of taste and feeling. The yew, the cedar, and the cypress suggest solemn and scriptural thoughts. The avenue of limes affords an appropriate walk for the contemplative student. In this, as in every thing relating to churches and churchyards, let there be a due regard to the *genius loci*—the spirit of the place—and we should see few great violations of propriety.†

To compress all we have to say on the subject of churchyards in a single sentence—let all be done decently and in order. The church has committed the bodies of her faithful children to the dust with prayer, let all that follows be carried out in a kindred spirit; safety from indignities, Christian emblems above the dead, and Christian epitaphs, either to express immortal hopes or to perpetuate their remembrance. All should be, as it were, voices in the wilderness, testifying to the world of the past, and exhorting to preparation for the judgment to come.

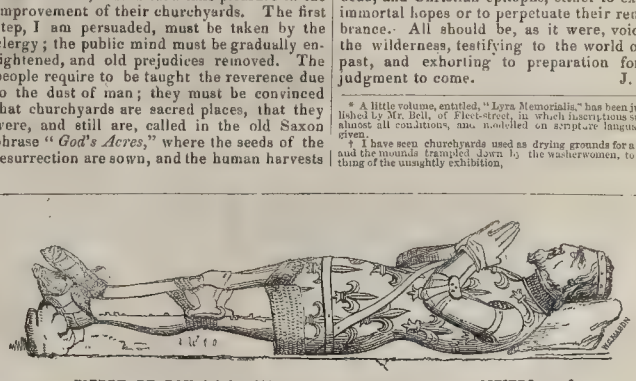
J. S.

* A little volume, entitled, "Lyra Memorialis," has been just published by Mr. Bell, of Fleet-street, in which inscriptions suited to almost all conditions, and, moreover, selected on scripture language, are given.

† I have seen churchyards used as drying grounds for a parish, and the mounds trampled down by the washerwomen, to say nothing of the unsightly exhibition,

## A WHISPER ABOUT TOMBSTONES.





PIERRE DE BOURBON: KILLED AT THE BATTLE OF POITIERS, 1356.
*From the tomb in the Dominican's Church at Paris.*

## STATE OF ST. STEPHEN'S, WALBROOK.

Sir,—As a subscriber to The Builder, though professionally unconnected with that art to the interests of which the pages of The Builder are more particularly devoted, I beg to tender you not only my own, but I am sure the warmest thanks of every admirer of ecclesiastical architecture, for the manner in which you have called attention to the deplorable state of the church of St. Stephen's, Walbrook, the *chef d'œuvre* of the great Wren.

As an inhabitant for many years in the immediate locality of the church, I have frequently heard foreigners and strangers, who have visited this desecrated temple, declare that its condition is at once a reproach to our nation, and an insult to the memory of that great man. Should the time ever arrive when party feeling in this parish shall be absorbed in the more becoming influences of decency and decorum, and that the sacred edifice shall be restored, and its beauties developed, which now lie hid under the accumulating filth of years, let us hope that the external approaches will be improved; at present, the tower on the north side is disfigured by a tenement erected against it; this should be removed, and an appropriate entrance made from that side of the tower, if possible. A stranger approaching from Charlotte-row passes unobserved the only entrance "retiring Walbrook" presents. The sacred edifice is thus hidden from view by the abortion erected against it, a monument of man's cupidity, and by no means uncommon in our great Babylon, but which good taste is gradually removing, much to the credit of those who have set the example. It is gratifying to observe, that in those parishes wherein are found the works of this great architect, all are not alike insensible to their merit. St. Dunstan's in the East has had full justice done to its varied beauties, and its restoration and decoration reflect the greatest credit upon the parish in which it is situate; that the parishioners of St. Stephen's, Walbrook, may follow the example, and that public attention, forcibly directed by means of the press, to the present condition of this church, may achieve this desired result, is the earnest wish, Sir, of your very obedient servant,

An Inhabitant of Walbrook,
though not a parishioner of St. Stephen's.
June 14th, 1847.

Sir,—Should your able appeal on the subject of the restoration of St. Stephen's, Walbrook, rouse the people of England, and of London in particular, from their lethargy, and induce them (as I hope it will) to come nobly forward to assist in the work, I beg leave to express a hope that the *exterior* appearance, as well as the interior, will be cared for, and that the ugly excrescence adjoining the church at the corner of the street (at present a bookseller's shop) will be removed, as has been done in a neighbouring parish in Lombard-street, to the infinite improvement of the appearance of the church. But to do the thing thoroughly, I consider that St. Stephen's, and indeed all our churches, should be completely detached from the surrounding houses, and this not only on the score of appearance, but also on the score of utility, as a preservative against their destruction by fire, to which they are at all times liable, if not isolated.

And this applies with peculiar force to this gem of our city churches, for who is there that would not regret its destruction? and none more so than,

Yours truly, A Londoner.

March of the Schoolmaster amongst the 'Navvies.'—The following 'business-like' tender was lately made, not 100 miles from Harrogate we suppose, for a quantity of digging, prior to laying a length of piping:—"May 31st, 1847, sir, I James Wallis and Co. does Mutialy agree to take the Digging of you at 6½d. per cube yard if you concent to agree to our agreement the Said Digging belonging to the said gas Works of K——— We Do undecign James Wallis and Co."

The Thousand Pounds Prize Picture.—Our readers may have seen by advertisement that the prize has been awarded where we said it was due, namely to Mr. John Wood. The artist, we are glad to be able to state, has received the money.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Cologne.*—What would seem incredible—the rebuilding of the cathedral is lagging behind; the subscriptions and contributions begin to flow sparingly. A great fault has been committed it seems in the building of the provisional roof, because, as here a certain would-be or forced *completion* of the structure has been indicated, the very sting of the affair (so much with us frail mortals) has been taken away.

*Gaertner's Successors.*—The building of the Hall of Liberty, *be-widowed* by the premature death of the great artist, has been intrusted by the king to Von Klenze, who has already made a survey of its progress. The pediment is now completed, and in the course of the year also, the eighteen columns which have to adorn the interior of the great hall, will be placed. These huge granite monolithes, 4 feet thick and 24 high, have been obtained from the quarries of Hausenberg, near Passau, and weigh 7 to 800 cwt. Their transport to the banks of the Danube required the construction of especial waggons of iron, of which the wheels weigh 18 to 20 cwt.—the whole 180 cwt.

*Munich Art-news.*—Kaulbach has completed his great cartoon, "The Fall of Nimrod," and made a small sketch of it in colours. It is at Berlin, where, in the course of this summer, he will execute this great work. On the other hand, Schnorr is expected at Munich for working at his frescoes of the Nübelungen Lied, in the royal palace.—The Pinakotheka has been, of late, adorned, through the liberality of the king, with a picture of Lesueur's "Christ and Martha." It belonged to the Fesch collection, and has been placed in the Saloon of Italian and French schools, and it is one of the finest specimens of the old French style of painting.

## ARCHITECTS AND BUILDERS.

Sir,—It is a pity that builders and architects cannot come to some better understanding as to their true relative position towards each other and themselves, because their interests are in many points identical. The architect of any practice knows what embarrassments and difficulties he has (beyond the onerous duties which legitimately attend his profession), to contend with by business undertaken at too low an estimate, and that it not unfrequently accounts for the disproportion between the additional works and the original contract that may attend any building; the contractor taking advantage of their occurrence, to set right a false calculation. I have lately had a dispute on the following point:—Notice was given to some six or seven builders, to inform them that tenders would be received for erecting a certain building of a public nature, when the following clause was *objected to* by two most respectable and responsible firms, who refused, in consequence, to tender at all.

"That the competitor whose tender shall be accepted, will be required, as a condition of it, to submit the details of his estimate, which is to form a schedule of the prices for any addition or deduction that may arise in the progress of the proposed building, but no such alterations are in any way to vitiate the contract."

Now the object of this clause was to enable alterations (if required) to be made in the structure on the *same scale of charges* as the contract itself, whether more or less, but it was objected to on the following ground, viz., that it would afford the architect or employer the opportunity of exchanging the work which might be highest in price, for other which might be lowest in price, and thus deprive the contractor who made the lowest tender of the only opportunity of righting himself. I see and admit that there is some force in the argument, but on the other hand, if the case be looked at thoroughly, it will be seen that the clause is calculated to protect the most respectable class of builders, by making every competitor rely upon a fair valuation of each item, such as will at least cover his expenses and yield some reasonable profit for his time and capital, thus insuring (as far as it can be done) a *bonâ fide* competitor against a haphazard candidate for the work, who might rely upon the doctrine of chances for getting through a job by unfair means.

I ought to add, that the objecting parties offered to give a schedule of prices for alterations, but then the difficulty attending a competition of schedules will be obvious; the party whose gross estimate was lowest might have the highest schedule, or if it was to be limited to the party whose tender was the lowest, it would amount to a mere dictation of his own terms for alterations, which the architect could not agree to in justice to his employer.

An Architect.

## RAILWAY JOTTINGS.

The London, Brighton, and South Coast Company are about to erect a large hotel at Newhaven; also a custom-house, and two 'splendid' stations, bonding warehouse, engine-house, coke-oven, &c. They have already constructed a wharf 1,100 feet long; and it is intended to have a covered corridor from the hotel to the wharf.——At a dinner at Ringwood, on Tuesday, commemorative of the opening of the Dorchester line of railway, says the *Hampshire Advertiser*, "Captain Moorsom, the engineer of the line, communicated the astounding intelligence to his hearers that 'the sinking of the railway tunnel was owing to the desire of Mr. Peto to accommodate the authorities of Southampton! By filling up a portion of the old canal tunnel, an irregularity of pressure had been caused, producing a disarrangement in the brickwork to an extent of about 70 feet.' If the tunnel had not been filled up, then, the accident would not have occurred! Captain Moorsom should have said that if it had been filled up with concrete at first, as advised by the Southampton surveyors, it would have been safe, but it was at first neglected as of no consequence. Then, when the ground began to sink, loose earth was thrown in, which would not add one tittle to its strength, and the whole portion of the work where the tunnels cross each other has been a series of blunders, with which the authorities of Southampton have had no more to do than the gentleman in the moon."——On Saturday week, an arch 12 feet in span, 60 feet in length, and consisting of three rings, in which upwards of 12,000 bricks were used, was thrown across the Gipping, on the Eastern Union line, by four men, who turned the arch by 4 o'clock p.m. By a slight inversion, or it may be subversion, of sense, we may say with the poet "If 'twere done quickly, 'twere well done, were it done well."——The Lincoln station of the London and York line, it is said, will be begun very shortly. It is to be in the Elizabethan style, with platforms 500 feet long and 18 wide. The Norwich public have now the benefit of a three mile penny trip into the country twice a day, three times a week, besides Sundays, and we doubt not the spirited directors will also have the benefit of so good an example.——The works of the Rugby and Stamford line, near Harborough, are in rapid progress by night as well as day.——Mr. J. E. Hall, of Nottingham, has contracted for building the new passenger station at Nottingham; and Mr. Haywood, of Derby, for the iron work; the two contracts amount to nearly 15,000*l.* The digging of the foundation was commenced on the 2nd inst. Mr. G. Hall, of Derby, is the company's architect.——The Crimple Viaduct on the Harrogate and Church Fenton line, near Harrogate, is far advanced towards completion. It consists of 31 arches, each of 52 feet span, the loftiest 130 feet in height. The piers on which they rest, 32 in number, are about 20 feet each in thickness at the base, and are composed of immense blocks of hard granite. The line at the south end is carried through a long deep tunnel; while at the opposite extremity it proceeds along a deep rocky cutting. The whole length of the masonry is about 1,856 feet.——The masons employed in the construction of the high-level bridge at Newcastle, struck work on Saturday week. They had 28*s.* per week, and demanded 30*s.* "Many of them," says the *Gateshead Observer*, "did not wait for an answer: they packed up their tools, and started for other parts, where high wages are being paid. At Hull, for instance, the masons are earning (so we are informed) 35*s.* a week."——A complete army of workmen is engaged at the summit of the Caledonian line, near Beatock bridge. The contractors, Messrs. J. Stephenson and Co., have 500 men

engaged in blasting rocks on one mile of these large works.——The Hawick and Edinburgh is also fast progressing in the vicinity of Galashiels, where the station is nearly finished, and the bridge across the Tweed begun; the foundation-stone of the latter having been laid upon the solid rock, on Wednesday week, in presence of the contractor, Mr. Dodds, and others.——The works and plans of the Great North of Scotland are nearly ready, and operations are to be commenced in October.

## BUILDERS' TENDERS.

### HILLINGDON CHURCH.

The following tenders for the alteration and reparation of Hillingdon Church, Middlesex, were opened on the 29th ultimo, and the lowest was accepted.

| | |
|---|---|
| Morten, Uxbridge ..... | £3,579 0 |
| Oades and Son, Egham .... | 3,218 12 |
| Blowman and Co., Oxford .. | 2,991 0 |
| Fassnidge, Uxbridge ..... | 2,392 0 |

A correspondent complains, that the accepted competitor having discovered "an error in his estimate amounting to 385*l.*, the committee agreed to accept his amended tender for 2,700*l.*, being an addition to the former tender of 308*l.*" And he asks for our view of the fairness of a contractor being allowed to amend his tender after the tenders from other parties have been made public.

However desirable it may be that a builder should not suffer through an accidental error, permission to make such an alteration is certainly objectionable on principle. The next step would be, when one who was not the lowest shewed that *he* had accidentally put down too *much*, and was in truth less than the lowest, to give him the work. Still we see no reason to find faults with the committee in this case, especially as they comprised the largest subscribers, and were doubtless fully satisfied as to the truth of the contractor's statement.

With reference to the great difference found in builders' estimates, concerning which we continue to receive a large number of letters, one correspondent suggests, that if the *middle* tender were always accepted, it would induce greater care in the preparation of estimates. Bad or good, the suggestion is not likely to be adopted.

## INSTITUTION OF CIVIL ENGINEERS.

June 8. Sir John Rennie, president, in the chair. The paper read was "On the expansive action of steam," by Mr. J. M. Heppel. The object of the paper was to deduce a more exact formula than those now in use, for the dynamical effect developed by steam in expanding from one pressure to another. The usual method of computing this effect neglects the influence of the variation of temperature, which always accompanies change of density, and which has been shewn to modify considerably the corresponding pressure. M. de Pambour, however, has, by combining Gay Lussac's formula for the relation between temperature and density, under uniform pressure, with that of Boyle, for the relation between density and pressure under uniform temperature, deduced a formula containing the density, pressure, and temperature, from which any two being given the third may be deduced.

What was further done in Mr. Heppel's paper was to combine this formula with one by Mr. Scott Russell, expressing the relation between the pressure and temperature, and by this means to eliminate the latter, and obtain a formula containing only the pressure and density.

From this formula another was easily obtained, shewing the total dynamical action developed during expansion from one pressure to another, and the results were given in a tabular form, exhibiting 1. The pressure in lbs. per square inch. 2. The relative volume, or ratio of the volume of steam, to that of the water which produced it. 3. The dynamical effect before expansion, or the number of lbs. raised one inch by the evaporation of each cubic inch of water. 4. The dynamical effect during expansion, or the number of lbs. raised one inch by the steam produced from one cubic inch of water, in expanding from a pressure of 100 lbs. per square inch to the particular corresponding pressure. The dynamical effect, in expanding from any one pressure to any other, must be clearly expressed by the difference of the corresponding numbers in this column.

It was followed by a short paper also, "On the expansive action of steam," by Mr. Tate, mathematical master of the Training College, Battersea. Its object was to demonstrate and apply a formula some time since discovered by the author, expressing the law of the expansion of steam; and at the same time to establish certain general equations relative to the work of steam, applicable to all formulæ professing to give the law of volumes and pressure. It also examined and corrected Pole's formula, which, although a decided improvement upon Pambour's, was stated to be not sufficiently accurate for pressures above 70 lbs. or below 16 lbs.

Monsieur Piarget exhibited in the library, after the meeting, specimens of his improvements in producing ornamental metal surfaces, formed by the deposition of metals during the electrotype process, which is conducted in a peculiar manner, with mixtures adapted to the effect desired to be attained. The form also of the bath is peculiar, and when the plate is taken out of it and off the model, it exhibits a burnished polish, or a dead appearance, according to the preparation used. The metal thus produced is stated to be of a much better description than metals which have not undergone such process, as it is more flexible, and is capable of withstanding the action of heat without destroying the form of the copper; and the surface will not tarnish when exposed to the air. Portions of any pattern can also be silvered by a similar process, and the general expense is about one-third of that of engraving or chasing, while the boldest or most minute patterns can be equally well produced.

## WESTMINSTER COURT OF SEWERS.

A general court was held on the 4th inst.; Captain Bague, R.N., in the chair.

The report of the committee on view of the King's Scholar's Pond Sewer was received. It pointed out the defective state of that portion of it passing through the Green-park; and that in one or two instances surreptitious drainage into it had taken place from some houses in Pimlico. The new works adjacent to Buckingham Palace had been done to their entire satisfaction.

The report having been received, the parties illegally draining were ordered to be summoned to appear before the next court.

*The New Bill for the Enlargement of the Powers of the Commission.*—The solicitor laid before the court certain clauses proposed by the corporation of the city of London, to be inserted in the bill for extending the powers of this court, having for their object to prevent this commission from carrying on any improvements to the river Thames, without having previously obtained the consent of the corporation.

Mr. Willoughby looked upon the right of this commission of free access to the river Thames as a most important question. He denied strongly that the corporation were even lords of the manor, or were the possessors of the freehold of the river, but were simply its conservators. He claimed free access to it, aye or no, without making a bow or paying a toll to any one whatever. This court possessed an indefeasible right to the use of the river, and it was not for them to place themselves at the mercy of these parties, or that they should be permitted to put their construction on the possession of their rights come from what quarter it might. It was unjust on the part of the corporation of London, having themselves got free from all control, to damage the neighbouring districts; and he, for one, was not disposed to submit to either their smiles or their frowns.

This subject was terminated by the solicitor being requested to return such a clause as would fully maintain the privileges of this commission.

The next application was from the London Gas Light Company, for the insertion of two clauses, declaring that it should not be lawful for this commission to break up the ground without giving forty-eight hours' notice. That the works should be done under the superintendence of an officer of that company, and that the works of that company should be fully protected, under heavy penalties from the commissioners.

The court agreed to the two first provisions, but rejected altogether the question of penalties.

Sir J. Hansler said that the city commissioners, in making a sewer in great Carter-lane, had compelled him to be at great expense in protecting his houses, although he received no benefit whatever from the sewer, nor any of his tenants, who were perfectly satisfied with their present mode of drainage.

*The Proposed Sewer in the Fulham-road.*—The next question was "to consider as to the course to be pursued in consequence of James Hobbs not proceeding with the works in the Fulham-road, and to take such steps as shall be necessary." Mr. Hobbs, the contractor, was not in attendance, or any person on his behalf. It was resolved "That the next lowest tender be accepted." The next lowest tender was that of Messrs. Humphreys and Thirst, viz., 687*l.*; Hobbs being 613*l.* 10s.

Mr. Wm. L. Donaldson then moved,—"That, in cases of emergency, any six commissioners residing within one mile of the place where the case occurs, do take such steps as may be necessary; and that the clerk do summon at least ten such commissioners."

Several commissioners took part in this question, but the majority appeared to be of opinion that crude notions might be formed of cases of emergency, and that works might be done for which there was no real necessity.

The motion was eventually withdrawn.

Receipts and expenditure of the commissioners for the year 1846:—

*Receipts.*

| | |
|---|---|
| Eastern division ..... | £9,982 11 10 |
| Western division ..... | 188 4 0 |
| Ranelagh district ..... | 365 14 0 |
| Counters Creek district .. | 694 19 6 |
| General disbursements .. | 139 19 3 |
| Balance in hand .... | 15,388 6 10 |
| | £26,759 15 5 |

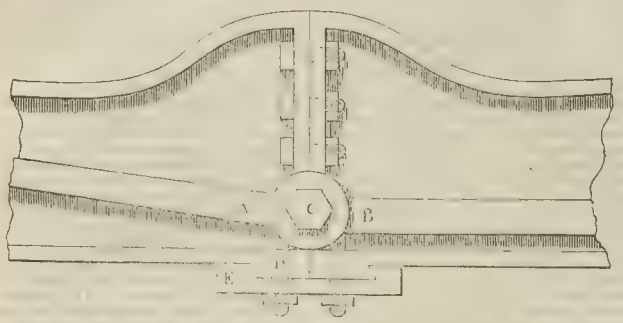
*Expenditure.*

| | |
|---|---|
| Eastern division ..... | £2,580 4 11 |
| Western division..... | 2,943 5 3 |
| Ranelagh district ..... | 4,593 10 10 |
| Counters Creek district .. | 1,303 11 8 |
| Bayswater sewer..... | 245 0 0 |
| General disbursements .. | 4,767 14 8 |
| | £16,433 7 4 |
| Balance in hands of treasurer ..... | 10,301 0 0 |
| | £26,734 7 4 |
| Ditto in hands of clerk on account of petty cash.... | 25 8 1 |
| | £26,759 15 5 |

[We asked some time ago in what way the enormous balance in hand is employed; but have not yet been answered.]

The Torrent Water Closet.—We have already alluded to this very simple and apparently efficient self-acting closet; and now that it is duly manufactured for sale by Messrs. Dowson, feel it incumbent on us to direct attention to their advertisement of it on another page, wherein it is fully described and illustrated. The shape of the trap is ingenious; that portion of it which is in sight (at the bottom of the pan) has a smaller sectional area than the continuation of it, so that whatever will pass there is certain of getting away freely. Relative to traps, by the way, we have heard of a new drain-flap, recently invented. The flap consists of a series of plates, covered with vulcanized indian-rubber; the indian-rubber forming so many hinges between the plates. When there is no water in the drain, the flap shuts closely against a broad rebate, also covered with indian-rubber. If a small quantity of water is running down the drain, it opens only the lower part of the flap; if more water, two plates may be opened; a still greater quantity, three plates may be opened, and so on until the drain is quite full, when the whole would be opened.

JUNCTION OF BEAM-CASTINGS IN BRIDGE AT YORK.




## THE BRIDGE FAILURE AT CHESTER.

The above figure is from a pencil jotting of the manner of uniting together the three castings, forming each beam of the railway bridge over the river Ouse at York, referred to by General Pasley in his evidence (p. 262); being one of the bridges constructed with trussed beams, of the description now called in question on account of the unequal contraction and dilatation of cast and wrought iron, that evil being aggravated by the disparity of substance in the parts composed of these kinds of iron respectively. At the meeting of the tension rods, A and B, an axle, $4\frac{1}{2}$ inches square, is passed through the beam, and rounded at the parts which receive the eyes of the rods; into the ends of this, the bolts, C, are screwed. There are tension-rods on both sides of the beam; also staples, D, which are nutted underneath the clip, E. The clips, in the case of the Chester girders, according to the particulars quoted from the *Manchester Guardian* (p. 253), were of wrought-iron.

The linear expansion of cast-iron, with an increase of one degree Fahrenheit, is, according to Roy, ·0000061700, while that of bar-iron, with the same increase, is, according to Hasslar, ·0000069844. These data enable us to ascertain what length in the one material will be necessary to produce an extent of expansion equal to that of a given length of the other, with a corresponding increment of heat. Thus (the lengths relatively being inversely proportional to the rates of expansion), supposing a given length of wrought-iron to be 100 feet, a length of cast-iron, to have an equal amount of linear expansion, would have to be,—

61700 : 100 : : 69844 : 113 $\frac{1}{17}\frac{3}{7}$ feet.—*Ans.*

Seeing that the difference in the rate of expansion is so much, and considering the great disparity of substance that is usually presented in combinations of the kind referred to, supposing the parts to be adjusted to each other at a season of medium temperature, and that the tensile strength of the rods enables them not only to sustain the superior contraction to which they are subject during the cold season, but, by virtue of it, to increase the strength of the truss for the time, it is evident that they must, during the hot season, be at least in a condition to justify the opinion of General Pasley, that they are "not of great use;" if, indeed, the downward thrust of the oblique portions, from the bearings of either end, have not power enough to act to a dangerous degree to a disadvantage of the beam they were meant to assist. James Wylson.

*** The inquiry is still going on.

Improvements of Greenwich Hospital. Workmen have been employed, by order of the Commissioners of Greenwich Hospital, in the demolition of the Ship Tavern, the Lord Ligonier's Head, and other buildings in Fisher-lane, Greenwich, to form improvements in the line of, and in addition to, the river frontage of Greenwich Hospital.—*Morning Post.*

## Correspondence.

ARMY AND NAVY CLUB COMPETITION.

Sir,—It has been pointed out to me that my name has been associated with MM. Parnell and Smith's design for the Army and Navy Club; will you at once disabuse your readers of such an idea? All that I know of the plans, was seeing them after they were finished, and, in common with many others, expressing my concurrence with the taste which selected one of the most beautiful palaces in Europe for the model, and which for the embellishment of the metropolis, I must confess I should like to see executed.

I am Sir, &c. C. D'Orsay.

Gore House, June 15, 1847.

Birmingham School of Design.—The annual meeting of the subscribers and donors of the Government School of Design at Birmingham was held on Wednesday week, when the report of the honorary secretary, Mr. J. W. Unett, was read, and resolutions were passed, the accounts, shewing a balance of 417*l.* odds due to the treasurer, examined, and the prizes distributed; the first to Mr. Aaron Jennens, being one offered by the firm of Jennens and Betteridge, for the best outline from the antique (subject, the Laocoon). Mr. Thomas Lane, the high bailiff, who presided in the absence of the late president, Lord Leigh (who has now given place to the Hon. F. Gough), remarked that, when he considered how much a knowledge of art was required in the various processes of the different trades of the town—in die-sinking, engraving, brass-founding, plating, chandelier making, and japanning—all of which were mainly dependent on the fine arts, he felt surprised that the school was not more extensively supported. The town only required to be roused to a sense of the importance of the institution. The Rev. J. P. Lee observed, that no Englishman could visit the galleries of the wealthy without being proud that English art stands so high as it does: no person, he thought, could behold even the germ of art which Birmingham possesses, without being aware that English art has a high mission, which it is destined to fulfil. But he would ask them to look at the houses of the lower classes, and say how much their mental and moral cultivation must be improved by giving them a knowledge of, and a love for, art. He did not speak so much of those instructions which were given, not as an end, but as a means, but of that love for nature—that love of something higher and worthier—that power of tracing in the works of nature the beauty which is in accordance with the highest sentiments of which man's moral and intellectual constitution are capable. Let him ask the meeting whether the homes of those artisans, whose art-work was displayed around these walls, and who were mainly inmates of the manufactories, resorting to the school as a relaxation, were not more likely to be kept neatly, orderly, and comfortably, by the action of the principles which they were taught in that school?

## Miscellanea.

Improved Method of Tempering Tools.—We learn from the *Mining Journal*, that Mr. Newton, of the Patent Office, Chancery-lane, has taken out a patent for an apparatus for hardening and tempering edge tools. For heating axes or other similar articles a heating furnace is constructed in the form of a vertical cylinder, the exterior made of sheet-iron lined with fire-brick 4 feet 8 inches in diameter, or of such outside diameter, as to give it an inside one of 4 feet and 3 feet high. In the interior of this cylinder several fire-chambers are formed, usually four; the inner wall of each fire-chamber is 18 inches long, 4 inches from front to back, and about 4 inches in depth, forming, in the whole, a circle of 3 feet 4 inches diameter; under each there are grate bars, and air is supplied through a pipe, connected with a blowing apparatus. A circular table of cast-iron, 3 feet 4 inches diameter, is made to revolve slowly on a level with the upper part of the said chambers; this table is sustained on a central shaft, which passes down through the furnace, and has its bearing in a step below it; a pulley keyed on to it serves to communicate rotary motion to the table. When the axes or other articles are to be heated, they are placed upon the table with their bits or steeled parts projecting so far over its edge as to bring them directly over the centre of the fire, and the table is kept slowly revolving during the whole time of heating: when duly heated they are ready for the process of hardening. The hardening bath consists of a circular vat of salt and water; within the tub or vat, a little above the surface of the liquid, is a wheel mounted horizontally, with a number of hooks around the periphery, upon which the axes or other articles are suspended; the height of the hooks from the surface of the liquid is such as to allow the steeled part only to be immersed; as soon as the hardening is effected, the articles are removed from the hooks, and cocled by dipping in cold water. With the best cast-steel a temperature of 510° Fahr. has been found to produce a good result in hardening in about forty-five minutes.

Drainage of Haarlem Lake.—We learn from a source on which we can rely, that the drainage of Haarlem Lake, in Holland, progresses satisfactorily, and that other engines, with improvements, are now constructing in Cornwall to hasten the completion of that great work. When finished, it is understood, the sewage of all the cities and great towns bordering on the lake will, by the same engines, be conveyed to and over the surface of the bed of the lake to irrigate it; so that in all human probability fifty-six thousand acres, now covered with water, and the waste land adjoining, will, within the next seven years, be furnishing corn and cattle to the Dutch and London markets—the result of science combined with practice. We learn, also, that the same parties who are engaged in this magnificent undertaking are in communication with the Egyptian government on the subject of employing similar engines to irrigate districts above the ordinary rise of the Nile, for the purpose of growing cotton, flax, &c. If Ireland was in Holland, and parts of England in Egypt, there might be some chance that both would be improved. Strange to say, there is employment for English talent and English capital abroad, whilst at home we are content to make paupers and find them with food—to know that disease and wretchedness from the want of drainage beset the poor on every side, and yet do nothing to better their condition—to know that the sewage of our cities and towns is suffered to contaminate the waters of our streams and rivers, which might be used to fertilize our lands, and thereby increase the quantity of human food. Yet with all these evils, and all this knowledge before us, we have the vanity to consider ourselves the greatest, wisest, and best nation upon the face of the earth!—*Mark Lane Express.*

Zinc.—M. Devarenne, a founder at Berlin, has received an order from Helsingford, the capital of the Grand Duchy of Finland, to cast in zinc, for the cathedral of that city, colossal statues of the twelve apostles, after those sculptured in marble by Thorwaldsen, for the church of our Lady at Copenhagen. Six of these have been cast, and are the largest works in zinc ever executed.

THE CASTLE OF BLOIS.—As a postscript to the account of this structure, which appeared in our pages a fortnight ago, we give the following from a foreign correspondent of the *Athenæum*:—"The restoration of the castle at Blois is proceeding rapidly and well. At present, it is confined to the north side of the quadrangle—that built by Francis I. The deplorable thing is, that a considerable piece at the end furthest from the great entrance is gone—pulled down by Gaston of Orleans, and replaced by a bit in the cold, heavy, tasteless, styleless style of his age, in which the south side is built. It looks as if he actually contemplated destroying the whole magnificent work of Francis. The end pulled down contained part of the rooms of Henry II., adjoining those of Catherine of Medicis. A link in the historic chain of the several scenes of the great tragedy acted in these apartments is thus wanting; viz., the back staircase by which the royal assassin went to the upper room, where he distributed the daggers to his hired accomplices, and awaited the issue of his perfidy. The magnificent staircase is now completely restored; and the salamanders, which Mr. Murray says 'have been all effaced,' again decorate it in profusion, together with the ermine of Claude and various other devices and ciphers of these and the succeeding sovereigns. Beautiful as this staircase is, the less showy one in the right-hand corner on entering the quadrangle is, I think, still more so. This belongs to the east side, built of brick, and said to be of the time of Louis XII. Nothing can be conceived more perfect than the proportions, more graceful than the curve, of this staircase. The roof is like a half unfolded fan; and round the top of the central pillar supporting it winds, or climbs, the sole ornament—a beautiful border, the effect of which is singularly elegant and harmonious. Far less ornate than the staircase of Francis I., this exceeds it in unity, grace, and symmetry. It leads to the *Salle des Etats* (which is still used as the *Salle d'escrime et de gymnastique* for the soldiers), and to other rooms dedicated to barrack uses. The only portion as yet rescued from this desecration is the north side. A vandalism at least equal to that of Gaston of Orleans has been committed in our day. The half of the chapel, a beautiful little building, has been pulled down,—it is difficult to see for what end. The other half serves as a workshop for the men employed on the building. The restored rooms, splendid in colour and gilding, are small and low; like those of almost all residences, even royal ones, of that date. The middle ages, like antiquity, reserved vast proportions for their public buildings; and the taste for gigantic habitations is of recent date. It was carried to its height by Louis XIV., and is very characteristic of that boundless inflation of vanity, pride, and selfishness which no man perhaps ever felt to such a degree, or acted upon with such consistency."

GYMNASIA OF THE GREEKS.—The gymnasia were large buildings encircled by gardens and groves. On entering, the first thing was a large square court, surrounded by porticoes and great halls, in which the philosophers, rhetoricians, and sophists taught their disciples. One side of the quadrangle, however, was occupied by rooms for bathing, and other purposes. To guard against the southern winds driving the winter rains into the court, the portico facing the south was made double. You next entered a square inclosure, in the centre of which were fine plane trees. Colonnades extended round three sides. Those towards the north were double, to afford a shelter from the scorching rays of the summer sun. The opposite piazza was called Xystos, in the middle of which and through its whole length, they contrived a sort of pathway, about twelve feet wide, and about two deep, where, sheltered from the weather, and separated from the spectators ranged along the sides, the young scholars amused themselves in wrestling. —*J. A. St. John.*

BREACH OF AGREEMENT.—At the Town Hall, Stratford-on-Avon, last week, a man named Thomas Thompson, a labourer, was charged by Mr. Shesby, bricklayer, with neglecting his work, and failing to fulfil his engagement of working till next Michaelmas, at 10s. per week. The defendant had gone to Wolverton, where he obtained more profitable employment. He acknowledged his fault, and was liberated on paying the expenses.

ASSURANCE A DUTY.—It may be felt by many, that, admitting this duty in full, their income is nevertheless insufficient to enable them to spare even the small sum necessary as an annual premium for life assurance. The necessities of the present are in their case so great, that they do not see how they can afford it. We believe there can be no obstacle which is apt to appear more real than this, where an income is at all limited; and yet it is easy to shew that no obstacle could be more ideal. It will readily be acknowledged by everybody who has an income at all, that there must be some who have smaller incomes. Say, for instance, that any man has 400*l.* per annum; he cannot doubt that there are some who have only 350*l.* Now, if these persons live on 350*l.*, why may not he do so too, sparing the odd 50*l.* as a deposit for life assurance? In like manner, he who has 200*l.* may live as men do who have only 175*l.*, and devote the remaining 25*l.* to have a sum assured upon his life. And so on. It may require an effort to accomplish this; but is not the object worthy of an effort? And can any man be held as honest, or any way good, who will not make such an effort, rather than be always liable to the risk of leaving in beggary the beings whom he most cherished on earth, and for whose support he alone is responsible?—*Chambers's Information for the People.*

NEW THEATRE AT CARLSRUHE.—The *Art-Union* says that the necessity caused by the late conflagration of the public theatre, of constructing a new one, for which the situation is not yet assigned, produces much discussion as to the style of architecture of a building intended to become a model specimen of art in Germany. "For this reason it ought to be in the German or Gothic style, which expression allows a wide sphere of meaning, when referring to those particular additions or retractions which form a specific difference from the universal Gothic character in all countries where Gothic buildings are to be met with, from the Gothic-German style. The Grand Duke of Baden is desirous to have a variety of competing plans laid before him. He is reported to have specially invited M. Heideloff, of Nuremberg, who has devoted almost his whole life to the Gothic style, to furnish a plan for the above-mentioned edifice, combining all the advantages of a free egress from all the respective localities for the players and audience. If the theatre should be built in the common style—which, though gorgeous, can never be grand—the Munich theatre, as far as the accommodations of access and egress are considered, justly deserves to become the model for buildings of this description."

MANCHESTER.—One of the profoundest writers on social politics of the present age has justly remarked that few of us are aware of the value of Manchester in the present constitution of things; perhaps still fewer amongst us have an adequate conception of the importance, to the future, of those gigantic forces which as yet lie undeveloped in the system of which it is the representative. Manchester is the type of one grand idea—*machinery*—an idea that is new in the world; at least in that large sense in which its vital significance consists. The ancients had no conception of such an idea; and hence, the past can teach us nothing either of warning or of wisdom respecting it. The records of an eternal element of human society, which has begun to influence the affairs of nations, and aspires and promises soon to become the world-ruling power, does not occupy a single page in the history of civilization. It is a new idea—a new power; and thus, ever and anon, as the human race advances in intelligence, are new powers evoked by the human intellect that give a fresh impetus to the ever-progressive movement. Thus it has ever been. As men have been educated to receive new truths—moral powers, or new inventions—physical powers, they have been given.—*People's Journal.*

CONTRIVANCE.—In front of the entrance-gate to Bevois Mount, the residence of Mr. W. Betts, there is a spring plate let into the ground, which, on being pressed by the wheel of a carriage, sets the bell of the porter's lodge in motion. The only inconvenience attending it is that a mischievous person by a jerking step can move the plate, and the gate-keeper has been more than once imposed on in that way.

PROJECTED WORKS.—Tenders have been called for by advertisement, for erecting two chapels and an entrance lodge at Pennycomequick; various works required in the restoration, &c., of St. Mary's church, Scarborough; also for the various works required in the repair of buildings on the estates of the Trinity House, Hull, for six to twelve months; for erecting sick-wards and washhouses, at the Blything Union Workhouse; erecting enclosure wall and iron railings of St. Mary's churchyard, Southampton; erecting and completely finishing the several works of the new battery at Point, Portsmouth; erecting a temporary bridge at St. Olave's, Yarmouth; making certain alterations at the Hurtismere Union Workhouse; quarrying and polling stones, hauling, repolling, &c., and relaying rag-pitching, for three years for the carriage-way of the Bristol Paving Commissioners (separate tenders); also for a supply of 700 tons of Guernsey granite lumps for breaking; and for making two cylindrical sewers, one of 154 yards, the other of 210 yards, at Cambridge.

ORDER IN COUNCIL AS TO ENGINEERS.—By the rules and regulations of the order in council of 27th February last, to which reference was some time since made in THE BUILDER, engineers in her Majesty's naval service are to be classed as either inspectors of machinery afloat, chief engineers, or assistant engineers; the two first to be appointed by commission, and rank with, but after, masters of the fleet; and the last to be appointed by order, and rank with, but after, second masters. The two last are to be subdivided, each into three classes. Inspectors must be "men of experience and acknowledged ability, in whose judgment, integrity, and talent, implicit reliance can be placed." Chief engineers, besides a practical knowledge of every particular of the construction and working of marine engines and boilers, the principles of expansion and its gearage, &c., must "be able and willing to exert himself practically as a workman when occasion requires," to keep accounts, make notes in the log, and sketches of machinery, &c. The assistant engineer must produce certificates of servitude in a factory, or other proof of his acquaintance with engine-work, &c. Inspectors are to have 25*l.* per month of sea pay, or 13*l.* 5s. for harbour service; chief engineers, 12*l.* to 20*l.* per month of sea pay, or 6*l.* 12s. to 11*l.* for harbour service; and assistants, 8*l.* to 12*l.* of sea pay, or 4*l.* 4s. to 6*l.* 12s. for harbour service.

GUIDE FOR SCREW-CUTTING, invented by Mr. J. Bolton of 22, Ivy-lane, Newgate-street. In order to apply this screw-cutting instrument to the lathe it is necessary to have a brass chuck screwed on to the mandril, and which must have a screw cut on it similar to the nose of the mandril to receive the wood chucks in which the work is to be turned. In the centre of the brass chuck a square hole is to be made, which will receive the square end of the steel screw of the instrument. The wood chucks must be pierced through to admit freely the plain part of the steel screw, so as to reach the square hole of the brass chuck. The work having been turned to receive the screw, the steel screw is passed into the square hole of the brass chuck, and the front centre of the lathe is then placed in the centre of the steel screw of the instrument, when it is ready for work. The screw tool is set parallel with the work to be cut, by means of a plate and screw, the latter passing through an oblong slot and bighting on either edge. The screw-cutting tool, and the screw-cutting instrument, must be of the same rake. For ordinary purposes, six steel screws of different rakes will answer. The instrument will cut on large or small diameter screws, with 2, 3, 4, 5, or more threads, by regulating the cutting tool.

IRON.—English bar-iron has been in little demand during the month, and prices have fallen 5s. per ton. Within the last few days a better demand has taken place, and makers now refuse to sell under 8*l.* 10s. at the works in Wales. The rail market has been exceedingly dull, principally owing to the difficulty the various companies experience in getting in their calls. Nail rods, hoops, and sheets are from 5s. to 7s. 6d. per ton less in Liverpool. Scotch pig-iron declined to 63s. 6d., mixed numbers, and 64s. to 65s. No. 1; but within the last few days rather higher prices have been asked. Swedish iron and steel are dull of sale.—*Birmingham Journal.*

THE WESTERN LITERARY INSTITUTION.—The public dinner of the friends and members of this Institution, to which we alluded some time since, will take place on Monday, at the Freemason's Tavern. As one of the oldest of the popular institutions, and one which has done much good in its time, it deserves warm support, and will, we hope, receive it, even from those who have outgrown the want of it, if it be but for the sake of the rising generation. Lord Kinnaird will take the chair, and Lord John Russell, J. B. Macaulay, Esq., R. Monckton Milnes, Esq., W. Ewart, Esq., Mr. Serjeant Talfourd, and other distinguished men, are amongst the stewards.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, June 21.—Statistical, 13, St. James's-square, 8 P.M.

TUESDAY, 22.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

FRIDAY, 25.—Archæological Association, 8½ P.M.

## TO CORRESPONDENTS.

"*J. H., Jun.*" next week.

"*A Churchman,*" ditto.

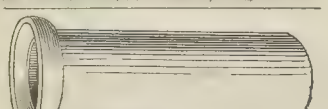
*Received.*—" F. B." " W. S." " Tim. Fairplay." " T. L." " C. J. G." " J. J." "Batterseä," "Suberiber," "Bathe," "H. D. G." "Juvenis," " J. L. H." " A Looker-On," " G. P." "G. J. W." " J. W." " An Inquiry into the difference of Style observable in Ancient Glass Painting, with Hints on Glass Painting. Oxford, Parker. 1847. 2 Vols. "The Decorator's Assistant." Part I.—View of Battersea New Church, Messrs. Lee and Bury, Architects. View of St. John's Church, Radipole. On the Cottages of Agricultural Labourers, with working Plans and Estimates." By Messrs. C. W. Johnson, F.R.S., and Edward Cresy, Architect. (Ridgway.)


## ADVERTISEMENTS.

THE SEWER NUISANCE WHOLLY REMOVABLE.

ABATE'S Registered Apparatus, for which the Inventor got the prize in competition from the Society of Arts and Manufactures of England, conferred in the annual distribution, on the 10th inst., is exceedingly simple and cheap, and never requires repairation: it may be made in various very common materials, and is equally applicable either to the large sewers of streets, or to the small for domestic purposes. Application for licences for the manufacture of the article, either exclusively or not, for single towns of the United Kingdom, may be made to F. ABATE, 38, Old-Bond-street, Piccadilly, from whom may be had the Silver Medal of the Apparatus, and a model of it may be seen at the said society's room, John-street, Adelphi.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various sizes, from 3 to 9 inches bore, manufactured by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, sink traps, and various shapes always on hand.



TUBULAR DRAINS IN STONE WARE,
Manufactured by
HENRY DOULTON AND Co.
POTTERS,
HIGH-STREET, LAMBETH.

THE only Efficient Mode of Drainage is by Tubular Drains, as from their form they give every facility for a perfectly free passage.

The material of which they are composed is impenetrable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They are laid down with as little expense, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

WALLIS'S PATENT LIQUID WOOD KNOTTING. This article discovered Liquid composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them coming through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railway Bottles, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It preserves wood and iron on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of covering is as 75 to 56, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and dries with oil as moderate and effective as raw. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is in all preferable, to be put in oil.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is rendered more beautiful by this process, but the most splendid imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural state. The most ornamental cocoa or lime wood without distinction, is rendered, by the application of this process, with little cost, perfectly imperishable under the same circumstances as to exposure, that the wholesomest of deal is rendered by paint, which soon destroys the wood it is laid upon, and must in a few years be renewed at much greater cost by the process above named, and is more pleasing to look upon. The dyes or stains are prepared and sold by HENRY STEPHENS, 68, Fetter-lane, Fleet-street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and at 1s. per gallon. The colour may be obtained in powder at 1s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. B. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 9d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 8d. | 1s. | 1s 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3 3s. 3 ft. 6 in., £3 13s. 6d. 4 ft., £4.
Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 12s. | £3. 19s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 9½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE, Kitchen range, and Stove grate Manufactory, 18, Cross-street, Walworth.

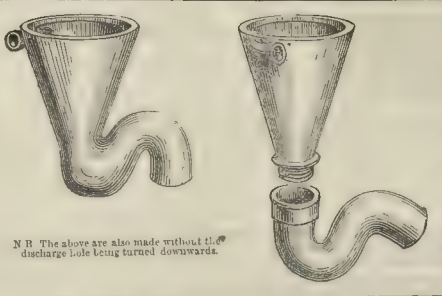
JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from 6½d. per in. and upwards
Bright ditto with Black and Bright Bars, 3d. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright.

| 3 ft. | 3ft. 6 in. | 4 ft. |
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| 3l. 3s. | 3l. 14s. | 4l. 6s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouthpieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their
CLEANLINESS AND CHEAPNESS

By Her Majesty's Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of London.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London

W. GREENWOOD, SASH MAKER and JOINER to the TRADE, 6, Wickam-street, Pool-street, New North-road, begs most respectfully to submit the following list of reduced prices for Sashes, Frames, Doors, &c., with best workmanship and materials, for ready money:—

| In. SASHES, at per Foot Super. | s. | d. |
|---|---|---|
| 1¼ Ovolo | 0 | 4 |
| 1¼ Shop Fronts | 0 | 8 |
| 1½ Ovolo Sashes and Frames | 0 | 8 |
| 1¼ Ditto, double hung | 0 | 9 |
| 2 Ovolo Sashes and Frame | 1 | 0½ |
| 2 Ditto, prepared to hang double | 1 | 0 |

| In. DOORS, at per Foot Superficial. | s. | d. |
|---|---|---|
| 1¼ 4-panel square | 0 | 7½ |
| 1¼ Ditto, moulded one side | 0 | 6½ |
| 1¼ Ditto ditto, both sides | 0 | 10½ |
| 1½ Ditto, bead, butt, and square back | 0 | 9 |
| 1½ Ditto, bead, butt, and square back | 0 | 11 |
| 1½ 6 panel square | 1 | 8½ |

FANCY SASHES, SHUTTERS, AND DOORS, TO ANY DESIGN.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Rhone.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

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| Foot Pavements. | Dog-kennels. | Covering of Railroad and other Arches. |
| Kitchen Floors, particularly where it is essential to keep damps from rising). | Barn Floors. | The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. |
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| Carriage Drives. | Dairy-room Floors. | |
| Coach house and Stabling. | Malt-House Floors. | |
| | Pigeons, &c. &c. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the "SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to the Company, and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one

T. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

ECONOMICAL RADIATING STOVE GRATE MANUFACTORY, No. 3, Jermyn-street, Regent-street.

PIERCE respectfully invites the attention of the Nobility, Gentry, and Architects, who are building or rebuilding Mansions, to his novel and unique display of STOVE GRATES, FENDERS, and IRONS, in suites, which are now ready for inspection. By employing first-rate Artists, he is enabled to guarantee that every work entrusted to him will be finished in the best manner, and the purest style of Architecture required; being manufactured on the premises, guided by his practical experience of more than thirty years, devoted to the WARMING and VENTILATION of APARTMENTS, Public Buildings, and Private Mansions, to numbers of which he can refer for the perfect success of his arrangements.

PIERCE has Invented and Registered various improvements for the Ventilation and Purification of KITCHENS, BATH ROOMS, LAUNDRIES, with other points of domestic economy, which may be found worthy of notice.

PIERCE'S STOVE GRATE and BATH MANUFACTORY, 3, Germyn-street, Regent-street.

HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Public buildings and private residences on the same principle of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing the greatest satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises. BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

IRONFOUNDRY.
163, Drury lane, and Charles-street, London.

JOSEPH GLOVER,
Late HENDRY and GLOVER,

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that he will be found at every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

TO ARCHITECTS, BUILDERS, &c.

R. WHAITE, Cabinet Maker (from Messrs. Crace and Sons), Wigmore-street, begs leave respectfully to acquaint the Trade, that he continues to manufacture every description of Furniture, guaranteed, of the most superior material and workmanship, in the Grecian, Italian, Renaissance, Louis Quatorze, Gothic, Tudor, or Elizabethan styles, at the very lowest remunerating prices.
MANUFACTORY, 10, Coppenhall-place, Chelsea-bell.

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ARMORIAL SHIELDS, Heraldic Devices, and Antique Writing of every description, for Ceilings, Cornices, Family Monuments, or Furniture, correctly executed by W. PARTRIDGE, Heraldic Artist, 123, Great Portland street, Cavendish-square.
W. PARTRIDGE has had twenty-nine years' experience, and can refer to various Churches and Mansions where he has executed the above works.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being, as is too well known, the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that it could not become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

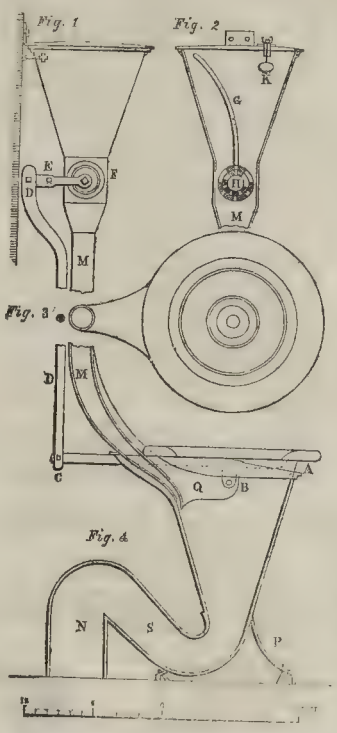
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE. The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of the parts, and it will present an ornamental appearance, with a ready means of being kept perfectly clean, and all accretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.

Fig. 2.—Section of the measure and cock, shewing its position when open for the water to come in.

Fig. 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.

Fig. 4.—Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action-rod D, to let water in and out it off.

Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig 6. Bottom of cock, shewing openings to let out water, and bridle lever.

Fig 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action rod.

Fig. 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.

Fig. 8.—Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

MR. JOS. E. DOWSON.

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

**And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.**

## DOWSON'S EARTHEN PIPES,

GLAZED INSIDE,

FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the deprédations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains—LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

MESSRS. DOWSON beg also to intimate that they undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE, and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

**OFFICE OF THEIR FOUNDRY, 44, NUTFORD-PLACE, EDGEWARE-ROAD.**

# THE BUILDER.


BUILDER'S PREMISES, WORTHY OF NOTICE.

**THE Lease of Convenient Premises TO** BE SOLD, consisting of Dwelling House, Counting House, Carpenters' Shop, Stabling, Sheds, &c. The utensils, if required, may be taken at a valuation. Address A B, Mr Wilcox, House Agent, Greenwich road.

TO ARCHITECTURAL SOCIETIES, ARCHITECTS, ENGINEERS, AND OTHERS

**TO BE SOLD, a very beautiful Plaster of** Paris MODEL of the PARTHENON, 7 feet long, 3 feet 6 inches wide, and 2 feet high, late the property of John Nash, Esq. It is in three pieces, which can be put together in two minutes. Lowest price 20 guineas. Also a large Model of the Temple of Minerva Polias, one of the Temples in the Acropolis at Athens, in two lengths. Apply to Messrs. WILLIAMS and Co., Architectural Library, 116, Strand, London.

**EXTENSIVE Water-side Premises to be** DISPOSED OF, covering an acre of Ground Dwelling-house, Wharf, Stabling, &c. Apply at Mr GRITTEN'S Office, 6, Bull Head-court, Newgate-street.

ELIGIBLE BUILDING LAND

**SEVERAL PLOTS of Building Ground** in the vicinity of Regent's-park, abutting on the new park, enclosed on Primrose-hill. TO BE LET on long Leases. Apply at Mr THOMAS LITTLE'S Offices, 36, Northumberland-street, Newgroad.

BUILDING LAND FOR ABOUT TWENTY-SIX THIRD OR FOURTH-RATE HOUSES

**TO LET, at very moderate rents, a most** eligible plot of ground, near Kilburn Turnpike. A great demand for houses at moderate rents. Apply to view the plans and particulars to Mr H BIERS, 14, Carlton-villas, Edgware-road.

HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country.—For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford-row.

TO SURVEYORS AND OTHERS requiring Large, Handsome, and Detached Offices in a Central Situation.

**TO BE LET, the Offices recently occupied** by Messrs. Page and Son, Surveyors, with the fittings, a large "strong room," with water and every convenience complete. 14, Kings'-road, Gray's Inn.

TO BUILDERS AND OTHERS.

**TO BE LET, on Building Leases, a Valu**able Plot of Ground fronting the East-India Road, in the immediate vicinity of the East and West-India Docks, and the several other large dock and manufacturing establishments at Poplar, Middlesex.—For particulars and an inspection of the plans and elevations, apply to Mr. JOHN MORRIS, No. 4, Trinity-terrace, East-India Dock Road, Poplar, and No. 68, Fenchurch-street, London.

CASSLAND ESTATE

**FREEHOLD LAND to be LET, on Build**ing Leases, for a term of 80 years, divided into speculations of varying magnitude. The estate adjoins Victoria-park, and arrangements are made for a direct communication from the drive. This property possesses the peculiar advantage of a large extent of land on the south and east, being inalienable for building or manufacturing purposes. The soil is gravelly, and the locality is noted as one of the most healthy suburbs of the metropolis; distant about two miles and a half from the Royal Exchange. For particulars apply to Mr. WALES, at the office, Cassland-road, Hackney.

BUILDING GROUND, GLOUCESTER GATE, REGENT'S-PARK. A PLOT OF FREEHOLD

**BUILDING GROUND TO BE LET for** 80 years, for seven or eight third-rate houses, with excellent back premises and stabling. The new road in front of the ground is now being laid out, and the sewer is built in front of the premises. Possession may be had immediately, which is finished in the best manner. The neighbourhood is rapidly rising, and the value of houses is in great request. Apply to Mr. BIRL at the Southampton Office, Southampton street, Fitzroy-square, or to Mr. RATHBONE, 26, Berner's-street, Oxford-street.

ST. JOHN'S WOOD PARK.—IMMEDIATE CONNECTION

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation, commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Metropolis, with the easy approaches of new and improved roads near the most rapid and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City.—For particulars and plans, apply to W H TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

MANOR PARK ESTATE, STREATHAM, SURREY.

**TO BE LET, on Building Leases, in the** most eligible situation, and adjoining to the Parish Church, upwards of Sixty Plots for Villas, Fifty for Terraces, and several for Shops and Stabling; the whole forming a belt round the interior of the Manor Park, which fronts the combination of undulating surface, ornamental water, and well-grown timber, is of singular beauty. Private rides, walks, and drives are integral to the road within the Park. Taylor's Bricks, both White and Red, Stocks and others of an excellent quality, and in any quantities, may be had on the Estate, and no allowance will be made in the price where used in the Estate. Gravel and sharp sand of a superior description are found in abundance on the ground and water is laid on. Advances will be made and other accommodation afforded to builders taking out leases of the immediate interest in the property, which is likely to be immediately remunerative to them, from a great and increasing demand for houses existing in this neighbourhood. Plots disposed of. Particulars apply to Messrs. RANKEN, FORD, LONGBOURNE, and VICKERMAN, No. 4, South-square, Gray's-Inn; Messrs. GOUGH and ROUMIEU, Architects, No. 14, Lancaster-place, Strand; or Mr WILKINS, at the Manor Park Office, Streatham.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-**RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand both great and rapid variations of temperature, and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes. Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

**PORTER'S CORRUGATED AND PA**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works the Public are respectfully informed the superior trade, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Plain descriptions of Building, Railway, and other Iron and Smith's work. Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

PATENT BELLS.

**MESSRS. MEARS respectfully beg to** announce to the Public and the Trade, that they have succeeded in producing a NEW BELL of a new alloy, called the Union Metal, which bell will be found of a very superior quality of tone, and cheaper than the ordinary bell. Arrangements are now being made for the supply of House, Clock, Cattle, and other Bells. A scale of prices and sizes will be shortly transmitted to the trade generally. The alloy is patented, and Messrs. MEARS by arrangement are the sole licensees for Bells. Messrs. MEARS have also several new alloys, which they will be happy to shew to consumers. For Engine Castings, their compositions are considered superior to any metal in common use.—Bellfoundry, Whitechapel. These are also Patented.

**BRITISH MUTUAL LIFE OFFICE.**—The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

**MUTUAL LIFE ASSURANCE, AN**NUITIES, &c. The INDUSTRIOUS CLASSES may effect Assurances on Life for 20*l.* and upwards. Annuities for themselves in Old Age, or for their Widows, and Endowments for Children. Premiums may be paid Quarterly or Monthly. Assurers will have the security of a Guarantee Fund.

Apply personally, or by letter, to R W MORRIS, Actuary to the Medical, Legal, and General Mutual Life Assurance Society, 126, Strand, London. Agents wanted.

TO BUILDERS, PAINTERS, AND OTHERS

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only.

62, WATERLOO-BRIDGE-ROAD

**SPURWAY and M'PHERSON, Grainers,** 19, Tabernacle-walk, Finsbury-square, London.

Graining of superior quality executed in any part of the Kingdom, with every required dispatch, and at lowest possible prices.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**MESSRS. HOPKINS and Co. solicit the** attention of Architects, Builders, and the Public generally to their REGISTERED SELF-REGULATING BLINDS, which, dispensing entirely with the centre line, is peculiarly suited to French casements and high windows. OUTSIDE SUN BLINDS ON IMPROVED BALANCE ACTION.

H and Co. are the sole manufacturers of BARRON'S PATENT METAL GROOVE ACTION, contrived for the easy and noiseless carriage of curtains on Brass or Wood Poles. This action has been much used, and with invariable success for octagon, bow, and other shaped windows. Models constantly in show.

HOPKINS and Co., late James Barron, Window Blind Manufacturers and General Brass Founders, 46, Castle-street East, Oxford-street, London; and at Birmingham.

JENNINGS'S PATENT WATER CLOSET.
JENNINGS'S PATENT CONNECTION.
JENNINGS'S REGISTERED SHUTTER FASTENER.

**ARCHITECTS, Builders, and all Persons** connected with the Building Trade, are informed by GEORGE JENNINGS, of 36, Great Charlotte-street, Blackfriars-Road, that he has obtained HER MAJESTY'S ROYAL LETTERS PATENT for a WATER CLOSET of simple construction, and every way different to any closet now manufactured. The inventor hopes by the end of June to be able to supply the Trade with a closet superior to anything ever yet produced, and at prices not exceeding the present Valve Closet.

GEORGE JENNINGS also begs to inform Engineers, Plumbers, Gasfitters, and others, that he has Patented an entirely New Connection for readily attaching Cocks, Lead, Iron, Copper, or any description of Pipes, &c., to Steam Boilers, Wood, Iron, or Slate Cisterns, Casks, &c., superseding all Union Joints, T pieces, and the present tedious mode of Tapping and Screwing one Pipe into another.

JENNINGS'S SHUTTER SHOE and FASTENER is now so generally used, that it is only necessary to say it supersedes the Shutter Bar and Iron Hoop Shoes. References may be had to upwards of 800 Fronts, by applying to the inventor, 36, Great Charlotte-street, Blackfriars Road.

INJUNCTION.

**BUNNETT and CORPE'S Patent RE-**VOLVING IRON SHUTTERS. Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering the Volume (now known as copied from this Patent in the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Smith and Co.'s Patent Invett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement enable the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with flat convex laths.

B and C also manufacture REVOLVING WOOD SHUTTERS of the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Wainscoted Plates, best Patent Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard street, London. Works, at Deptford, Kent.

Steam engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.—Parties desirous of** delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**FIRE BRICKS.—WARD & HART,** Hondurus Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malt Kiln Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

TO BUILDERS, CONTRACTORS, LIME MERCHANTS, &c.

**GREY STONE LIME of the best quality,** will be delivered after the 1st July, on board barges at the Halling Lime Kilns lately occupied by Messrs. Poynder and Co.) at 6*s.* per yard, or alongside any Wharf in London, at 7*s.* Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**LIME AND CEMENT WHARFS.** — Grey-stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney-pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials, may be purchased on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland-road. Ground Lime for Concrete.

**ARCHITECTS, BUILDERS, and the** Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, bed moulds, &c. &c., on the most reasonable terms, by JNO HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 3*s.* per cent. cheaper than papier mache.

**PLASTER of PARIS of the very best** quality, Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT. — WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**BATHSIDE CEMENT WORKS,** established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts:—Three Cranes Wharf, 69, Upper Thames-street; 84, George's Wharf, Upper Belgrave place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

**PORTLAND CEMENT** is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland cement or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it checks the progress of Dry-rot, the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS Millbank-street, Westminster, and Seel-street, Liverpool.

**GREAVES'S LIAS LIME and CEMENT.**

BUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to four of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

**DEANE'S FIRE-PROOF AND ORNAMENTAL CEMENT.**

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. It and it alone, pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not liable to change colour, or in any way be unsightly when with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following points, which are only a few of its many excellences:

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface, which may be made equal to that of the finest marble, NEVER PERSPIRES with moisture or SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly applicable as an internal stucco for walls, skirtings, architraves, mouldings, cornices, and indeed for all kinds of work, purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an indescribable advantage over stone, being, at the same time, much more cool. The main substances, referred to in the Specification, for the Inventor's Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLANTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT. The following are the positive advantages possessed by Hunt's Invention of covering Cement in Patent Stucco:—

It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will resist the severest Climate. Going to any Building covered with it. It so closely resembles stone that it is impossible to detect it. It never requires either to be painted or coloured. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cements. It matures by age, and becomes harder when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, as it completely excludes the Damp. Roofs laid or pointed with this Cement will remain unshaken by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

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# The Builder,

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### ADVERTISEMENTS.


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I, Canning Place, Kensington, June 24th, 1847.

NEW WORKHOUSE, KENSINGTON, CLERK OF THE WORKS.

NOTICE IS HEREBY GIVEN, that the Board of Guardians of the parish of Kensington, will meet at the Board-room, Kensington Workhouse, on WEDNESDAY, the 30th instant, at twelve o'clock at noon, to APPOINT A CLERK OF THE WORKS to superintend the building of the said intended new workhouse. The whole of his time will be required, and he will be paid at the rate of three pounds per week for his services.—Candidates for the office must attend the meeting at the time and place above mentioned; and testimonials as to character and competency for the office, must be presented at the same time.

S. CORNELL, Clerk to the Guardians.


TO CAPITALISTS, ENGINEERS, AND OTHERS.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

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THE AINSLIE BRICK and TILE MACHINE COMPANY (JAMES SMITH, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's Office, 103a, Piccadilly, from Ten A.M. to Five P.M. Mr. ROBERT SCRIVENER, who has been appointed manager in the room of Mr. JOHN AINSLIE, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 103a, Piccadilly.—March 1, 1847.

These Machines may also be seen at Mr. Stighs's, Leith-walk, Edinburgh; Mr. Lawrence Hill, 135, Buchanan-street, Glasgow; Mr. Robert Charles, Mill-hill, Leeds; Messrs. Finch and Cope, Penkeridge, Staffordshire; and Messrs. Drummond and Son, Dublin.

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PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.


### CONTRACTS.

Office of Ordnance, 18th June, 1847. E 1077

NOTICE IS HEREBY GIVEN, that TENDERS for a specific sum for erecting and completely finishing the several works of the NEW BATTERY at POINT, PORTSMOUTH, will be received at the Ordnance Office, Pall Mall, London, on or before the 22nd July, 1847.

Specifications and detailed Plans of the proposed buildings and works may be seen, and Forms of Tender obtained, after the 18th instant daily, at the Commanding Royal Engineer's Office, Portsmouth, between the hours of Ten and Four o'clock, until the 21st July next. By order of the Board,

R. BYHAM, Secretary.

PARISH OF CHRIST CHURCH, MIDDLESEX.

THE Commissioners for Paving, &c., give NOTICE, that they will meet at the Vestry-room of the said Parish on WEDNESDAY, the 30th day of June instant, at Six o'clock in the evening precisely, to receive Proposals and Contract for Cleansing the said Parish for One Year, from the 30th day of June instant. The Contractor to give security for the performance of his Contract. Tenders to be left on or before Monday, the 28th instant, with Mr. BRUSHFIELD, the Treasurer, at 38, Union-street, Spitalfields. Further particulars may be known by application at the Office of the Clerk to the Commissioners, 31, New Broad-street, City.

H. PARNELL,
Clerk to the Commissioners.

TO BRICKLAYERS, IRONFOUNDERS, AND OTHERS.

THE Commissioners of Sewers for the Limits of Holborn and Finsbury Divisions, the Parish of St. Leonard, Shoreditch, and the Liberty of Norton Falgate, in the County of Middlesex, do HEREBY GIVE NOTICE, that they will meet at their Office on FRIDAY, the 9th day of July next, to receive TENDERS from such persons as may be willing to contract for the performance of such Bricklayers', Carpenters', Masons', Paviors', and Plumbers' Works, as may be ordered by them in the construction of New Sewers, and in rebuilding, cleansing, or repairing of the public Sewers, or other works connected therewith, within the Limits of their District, for the space of Three Years ending the 2nd day of June, 1850. Separate Tenders are to be made for the works to be done in Holborn Division, and for those to be done in Finsbury Division (which includes the Parish of St. Leonard Shoreditch, and the Liberty of Norton Falgate); the whole of the works in either division must be contracted for by one person, but no Tender will be received from the same person for both divisions. Particulars of the materials to be provided, and the works to be executed, with the Forms of Tender, may be obtained by application at the Commissioners' Office, daily (Sunday excepted), between the hours of Eleven and Three.

Tenders will also be received at the same time for such iron work, consisting of flushing apparatus, sewer grates, and other articles, as may be required for the like period.

The contractors will be required to find security for the due performance of their respective contracts.

Models of the flushing apparatus, and patterns of the grates, &c., to be seen at the office.

No Tender will be received after Two o'clock precisely on the day before mentioned, nor will any be noticed which shall not be made in the form prescribed, with the prices inserted in words at length, and indorsed with the name of the division for which it is intended; nor unless the party tendering personally attends to answer when called upon.

The Commissioners will not consider themselves bound to accept the lowest tenders.—By the Court,

STABLE and LUSH, Clerks.

Office of Sewers, Hatton Garden, 11th June, 1847.

TO BUILDERS, ST. MARTIN-IN-THE-FIELDS, WESTMINSTER.

THE Guardians of the Poor of this Parish HEREBY GIVE NOTICE, that they are prepared to receive TENDERS for the erection, in the Workhouse Yard, a Building to contain Two Wards for the reception of Infirmates. The Plans and Specifications may be inspected at the offices of H. E. KENDALL, Esq., Architect to the Board, 17, Suffolk-street, Pall Mall East, on any week day between the hours of 11 A.M. and 4 P.M. The Tenders are to be delivered in at the Register Office of the above parish, 44, Castle-street, Leicester-square, by the 12 o'clock in the afternoon of Monday, the 5th July next, when and where the parties tendering are requested to be in attendance.

The Guardians do not pledge themselves to accept the lowest or any Tender.—22nd June, 1847.

CONGREGATIONAL CHURCH, KENTISH TOWN.

THE Committee for erecting the above Church are desirous of receiving TENDERS. The drawings, specification, and form of contract may be inspected at the Offices of the Architect, Mr. H. HODGE, 5, Lyon's-inn, Strand, from the 28th inst. to the 10th of July next, on which day all Tenders are to be delivered at the above Offices, addressed to Mr. HALTON, Hon. Sec. Two approved Securities will be required.

The Committee do not bind themselves to accept the lowest Tender, nor any unless satisfactory.

TO BUILDERS.

PARTIES desirous of Contracting with the Committee for all, or any, of the works, viz., Mason's, Carpenter's, Slater's, Plasterer's, Plumber's, and Glazier's, required, in the Restoration, and in part Rebuilding of the Church of St. Mary-le-Wigmore, may see the Plans and Specifications by Monday next, at the Offices of Mr. W. B. COLLISON, Solicitor, Nicholas-street, Scarborough, on and after Tuesday, the 22nd of June inst. Tenders, according to a prepared form, are to be sent to the Architect, Mr. Ewan Christian, 5, Bloomsbury-square, London, on or before Monday, the 12th of July next. The Committee do not bind themselves to accept the lowest tender.

TO BUILDERS.

PERSONS desirous of Contracting for the erection of a Parsonage House at Sundon, near Luton, in the County of Bedford, may see the Plans and Specifications at the Office of Mr. E. F. LAW, Architect, Northampton, from Saturday, the 26th June, to Saturday, the 3rd July; and after that time, they may be seen at the Vicarage, Sundon. Sealed Tenders to be delivered addressed to Rev. J. LITTLE, Vicarage, Sundon, near Luton, Beds., on or before Saturday, the 17th July.

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E. Sale, Northampton.


TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

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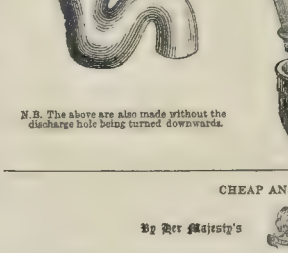
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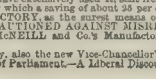
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The Builder.
No. CCXXIX.
SATURDAY, JUNE 26, 1847.

ALL parties seem now to agree with us in the opinion, that the accident to the Dee Bridge occurred, not through the failure of the masonry, or any accidental blow, but from the ribs being too weak to carry their own weight, the weight of the roadway, and the traffic.

The nonsense that has been talked during the inquiry, either for the purpose of shifting the blame, and throwing dust into the eyes of the public, or want of knowledge, must have been read with astonishment by those who are quietly looking on without interested feelings. The result, it is to be hoped, will at least have the effect of inducing some gentlemen, who have been raised by a series of lucky accidents into a position of great authority, to distrust their own infallibility (into a belief of which they have been persuaded by foolish adulators), and to give such consideration to works entrusted to them as their importance, involving the safety of the public, demands.

Railway engineers have become too speculative, too self-sufficient, and too careless: and railway directors are often too *exigent*. The endeavour to keep within the estimate, and to keep within the time, has produced much bad work; and want of care and over-weening sufficiency have led to more. Premiums have been offered both to engineers and contractors to slight the works; and it is scarcely to be wondered at, that in many cases the bribe has been taken without objection. There is, however, another party who ought to be (but is not) considered in these arrangements,—poor, credulous Mr. Bull, who pins his faith to any name that is often mentioned, and will take any thing for granted 'till he is once led to mistrust. This is a party who *must* be cared for, and it behoves the government to see that it is done.

Great excitement was caused by the failure in question, and this has been increased by the reported failure of a girder bridge recently constructed over the Tame, near Tamworth, for the Trent Valley Railway. According to the *Worcester Journal*, apprehensions had been entertained for its safety for some little time past, and a man was appointed to watch the progress of any defect which might be observable in the structure, either from subsidence or other causes. This bridge consists of three divisions of about 70 feet span, supported by two piers in the bed of the stream, the line being formed by iron girders, and the whole being constructed on a principle precisely similar to that of the bridge over the Dee, on the Chester Railway, where the late melancholy accident occurred. "It appeared that the doubts entertained as to the stability of the structure did not originate without sufficient cause, as on Monday the man appointed to watch the bridge perceived that one of the immense iron girders was giving way. The circumstance was immediately reported to the officers of the company, and measures will no doubt be taken not only to repair the fracture, but to ascertain the perfect stability of the work, before the opening of the line for traffic. On the whole, it is a matter of congratulation that the state of the bridge was discovered thus early, as, had it given way during the passing of the trains, the consequence would have been frightful to contemplate."*

The fall of the arch in Bermondsey has further increased the excitement, and has produced us, in addition to many which had reached us before from all parts of the country, a pile of letters on the subject. Some of the former complain bitterly that similar girder-bridges, in progress in their various localities, are not suspended. The form is undoubtedly a bad one; the mode of trussing, from the upper corner of each end, *above the line of compression*, down towards the lower edge of the girder, is worse than useless.

We would suggest, that government, to appease the public mind, should obtain a report from competent persons, on every similar bridge now being constructed.

To make our record perfect, and afford as much information as possible, we return to the inquiry at Chester, which has now closed.

Mr. Broad, in reply to an inquiry, whether the girders "were tested by pairs, or promiscuously," said "they were tried in pairs. It was quite possible that two girders of the same strength might be made from the same mould. They were all cast from two patterns, and he should think their relative strength was about the same. The girders now standing were about the same strength as that which had failed."

The foreman of the jury wished to ask Mr. Stephenson, how it was, that in all the short bridges of 30 feet span, the girders were assisted by timbers, so that if the former gave way, the latter would still stand, yet that here, where the span was much greater, there was no such support.

Mr. Stephenson said, in a bridge of 100 feet span, the timbers would have been an absurdity; they were applied to bridges of a smaller span, as mere matters of convenience, without at all contributing to their safety.

Thomas Jones proved, that he was looking at the bridge when the train passed, and observed *a crack open at the bottom of the girder in the centre*. When pressed as to this important fact, he said he was quite certain, that the girder opened from the bottom, and not from the top.

Mr. Kennedy, an iron master, considered the bridge strong enough for its purpose, and thought it was broken by a blow, or by the extra weight of ballast trains upon it on the same day. The iron girder was capable of carrying 70 tons in the centre without the tension rods; if the rods were not properly adjusted, he thought the bridge would not be safe for ordinary traffic.

Evidence was given contradictory of the opinion, that the carriages were off the line, and had struck the girder.

Thomas Taylor saw the carriages fall. Before they fell, saw the *girder "belly" in the middle*.

Mr. Robertson, the engineer to the Shrewsbury and Chester Railway, put in the following report, which deserves attention. It was accompanied by a model.

"You will perceive that there are two principal fractures in the beam, one near the centre, 5½ feet from the joint in the middle portion of the girder; the other in the portion of the girder next to the abutment, and 20 feet from its bearing; the latter fracture appears to me, from its form, and especially from the position in which the fragments lay, as shewn in the ground plan taken the morning after the accident, to have been caused by the fall; any disturbing cause previously to the fall is quite inconsistent with the close proximity of the fragments.

The fracture at the centre, from the position of the fallen portions, and of the middle tension rods wrapped over the girder, and especially from the form of the fracture, appears to me to have first taken place. This fracture I consider to have resulted from the weakness of the top flange of the girder, which was compressed and broken by the strain arising from the rolling weight of the engine and train, and the vibratory weight of the structure itself, increased to a large extent by the deposit of 25 tons of ballast on the roadway immediately before the accident. This compression is remarkably evident, by the bulging out of the metal at the point of fracture, at the top of the web or vertical portion of the girder.

In estimating the strength of the girder, I am of opinion, that the tension rods, from the form of the section of the girder, tended to weaken it, and to throw an undue strain, by compression on the top flange; but, assuming that they did not weaken it, and applying the formula as given by Eaton Hodgkinson, F.R.S., to the girders—by one formula the breaking weight is equal to 61½ tons; and by the other, the breaking weight is equal to 76 tons. Now, it has been an established rule in practice, that ½d or ½th of the breaking weight is the safe working weight to which a girder should be subjected; and the larger the size, the smaller ought to be the proportion taken,—therefore, ½ of 76 (the breaking weight); it follows, that the safe weight to which one of the girders ought to be subjected is 18½ tons, and the two girders 37 tons.

The weight of the timber platform, beams, rails, chains, &c., exclusive of the girder, according to an approximate calculation I have made, is 19 tons 6 cwt.; and adopting the rule, that a uniform weight, diffused over a beam, is equivalent to one-half that weight suspended at the centre, this becomes equal to a weight suspended at the centre of 9 tons 13 cwt.

The equivalent weight of an engine and tender of 33 tons 10 cwt. 2 qrs. suspended at the centre of the beam, I estimate at 32 tons, making a strain of 41 tons 13 cwt., against 37 tons, the safe working strain to which the bridge ought to be subjected.

However, on the afternoon of the accident, immediately previous to the passing of the train, the bridge was subjected to an additional strain by the laying on of 5 inches of broken red sandstone ballast, amounting to a weight over the bridge of 25 tons, which is equivalent to a weight suspended at the centre of 12 tons 10 cwt.

This makes a total of 57 tons against the safe strain of 37 tons formerly stated; and this last addition appears to me to be the immediate cause of the accident.

In these calculations, however, it is assumed that every thing is at rest, and that the forces applied are those resulting from direct pressure; while the evidence shews that there is a vibratory movement of the whole structure to a large extent; and there is besides the percussive movement of the engine and tender, which, with a heavy long boiler engine with outside cylinder, is considerable. The weight of the structure and of the train in motion will be about 164 tons in all; and the strain from this cause must be added to that formerly stated.

This strain, although it cannot be ascertained by accuracy of calculation founded on experiment, experience shews to be great; and I am of opinion, that it formed a large element in the strain which broke the bridge down.

There is also the whole gross strain arising from the pressure, and the percussion of the structure and its load, the apportionment of that strain between the girders; for I am of opinion that from the loose and independent connection of the girders, and the giving of the structure, the strain may have been equally divided between the girders. These investigations, independently of the evidence of the eye witnesses, lead me to the conclusion that the girder broke in the middle from its weakness to resist the strain increased by the laying on of the ballast.

The opinions of Mr. Stephenson and Mr. Locke, founded on the alleged facts as to the paint on the tender, the broken carriage wheel, and the snips in the chairs, appear to fall to

* A viaduct, which carried the new line of railway over the river Neurthe, between Avignon and Marseilles, and was just ready to be opened, is reported to have fallen in, with an immense sacrifice of money.

the ground, as they must have been misinformed on those particulars, which can all be disproved.

HENRY ROBERTSON, Engineer."

In examination, the witness objected to the principle of the bridge, but thought strength might be made to obviate that principle. Had tested the bridge by taking three engines over it before the opening of the line, but was not aware if the supports had been removed from under the bridge at that time!

Captain Simmons, inspector of railways, having stated that he had been appointed by the Government, in conjunction with Mr. Walker, C.E., to inspect the bridge at Chester, and to inquire into the cause of the accident, proceeded to read their joint report. According to the *Chester Courant*, it was an elaborate and able document, but was so cautiously guarded by reasonings upon probabilities and conflicting engineering opinions, that the decision of the Government inspectors was not very positively pronounced. "Their concluding inferences, however, were, that the first fracture was made in the *centre of the girder*, that the girder of itself was too weak to support the weights usually passing over it, and that *the principle of the construction of the bridge was objectionable*."

Below we give some portions of the report, which have since reached us.*

The coroner then summed up, and the jury returned a verdict, of which the following is the close:—

"We are further unanimously of opinion, that the aforesaid girder did not break from any lateral blow of the engine, tender, carriage, or van, or from any fault or defect in the masonry of the piers or abutments; but from its being made of a strength insufficient to bear the pressure of quick trains passing over it.

We feel, that the eleven remaining girders having been cast from the same pattern, and of the same strength, are equally weak, and consequently equally dangerous for quick or passenger trains, as was the broken one.

We consider we should not be doing our duty towards the public, if we separated without expressing our unanimous opinion, that no girder bridge of so brittle and treacherous a metal as cast iron alone, even though trussed with *wrought* iron rods, is safe for quick or passenger trains. And we have it in evidence before us, that there are upwards of one hundred bridges similar, in principle and form, to the late one over the river Dee, either in use, or in course of being constructed, on various lines of railway. We consider all these unsafe, more or less so, in proportion to the span; still all unsafe.

We, therefore, call upon her Majesty's Government, as guardians of the public safety, to institute such an inquiry into the merits or demerits of these bridges, as shall either condemn the principle, or establish their safety to such a degree, that passengers may rest fully satisfied there is no danger; although they deflect from 1½ to 5 inches."

On the effect of this deflection an architect of standing, who signs himself "J. W." has forwarded to us the following remark:—

"I am dissatisfied with the opinions of the eminent men who have expressed their sentiments relative to the disaster which has occurred, because none of them have attributed the failure of the iron to the disintegration arising from the repeated deflexures of the girder, which was at length fractured. It appears from the evidence, that this iron beam bent frequently when trains passed over it; now, as cast-iron is granular not fibrous, or very little so, every time it is deflected it loses a portion of its adhesive constitution, wherefore a repetition of flexures ultimately destroys its cohesion: the reverse takes place with wrought-iron of good fabric, if it is suffered to recover its first position. When wrought-iron or timber beams fail, they do so from imposition of too great dead weight."

We will close our article with a communication from our correspondent on the spot, which will be read with interest:—

At the middle fracture of the rib the section of the body is 2 in., the upper flange 7 in. by 1⅛, the lower flange 24 in. by 2½, and the depth 3 ft. 9 in. the width of the space being 98 ft. The breaking weight of this rib, according to Hodgkinson's formula, is calculated to be 62 tons on the centre, which is equivalent to 124 tons distributed over the rib, and to 248 tons equally distributed over the bay or platform. The weight of the roadway appears to be as follows:—

| | Tons |
|---|---|
| Weight of girder and rods, 31 tons by 2.... | 62 |
| 4 lines of rail (70lbs. to the yard) ..... | 12½ |
| 60 chairs (¼cwt. each) ..... | 1½ |
| Ballast 22 cube yards (6 in. deep), 25 cwt. to the yard ..... | 27½ |
| 13 tie rods, 13 lbs. to the foot (162 lbs. each) | 1 |
| Timber, oak, 180 cube ft. (73 lbs. to the ft.) | 6 |
| ——— pine, 400 cube ft. (41 lbs. to the ft.) | 7½ |
| | 118 |
| To which is to be added, the 2 coats of arms 10 cwt. each, on the rib that failed ..... | 1 |
| | Tons 119 |

So if 119 tons is deducted from 248, it leaves the net breaking weight 129 tons: this divided by 3, the system usually adopted by engineers, gives 43 tons, the weight it may be safely loaded with. Mr. Fairbairn, in a recent communication to the Institute of Civil Engineers, recommends ¼, which would reduce it to 32¼ tons, and this is a very safe calculation, as the deflection of cast iron commences at one-fourth its breaking weight.

It has been stated in evidence by Mr. Lee, Civil Engineer, that 100 tons had been placed upon the bridge; and Mr. Stephenson states, that the greatest weight it may be loaded with is 86 tons: so that in one instance nearly the breaking weight has been upon the bridge, and it is at all times liable to be loaded with a weight double what it ought to be, and which would permanently injure the structure.

The line is 5 inches nearer the south side of the bay than the south side, so this circumstance would throw an additional weight upon the side where the rib is broken, in addition to the 2 coats of arms previously mentioned.

We also find upon trial, that the ribs are not vertical, one or two inclining as much as 1½ in. in the depth of the girder; this would have a tendency to weaken them, because cast iron will not bear that pressure inclined, as it will in a vertical position, so that the further you incline the ribs, the weaker will they become, until by turning them over on their sides, they will break with their own weight.

Mr. Stephenson stated, he could camber the ribs by means of bolts passed through a plate at the angular points of suspension, and attached to the tension bars: an allowance has been made in the joint of the rib for that purpose, but it seems to have failed in practice, as the ribs are now level.

The tension-bars, as arranged on this bridge, seem of little service, because the object of trussing is to strengthen the weakest point, which, undoubtedly, is the centre, so that a beam should have but one angular point of suspension. The principle has failed in Manchester, at Mr. Gray's cotton mill, and the reason stated by Mr. Fairbairn was, that it allowed the breaking weight to be arrived at before the tension-bar came into action.*

Besides, the tension-bars are attached to the girder, and, in consequence of not being confined to any fixed point on the piers or abutment independent of the girder, they have deflected as the girder deflected with the weight passing over, varying from 2⅛ in. to 5½ in., as proved by respectable witnesses.

In calculating the strength of the tension-bars, if in action, which is not the case in this bridge, the following results are arrived at:—An inch bar of iron will suspend from 27 tons to 30 tons before it breaks; it will bear from 15 tons to 16 tons before it begins to stretch, or extend in length; and the calculation of Mr. Telford, in his experiments for suspension-bridges, was to allow 4 tons for every square inch of iron, instead of eight, as assumed by Mr. Stephenson; so that, multiplying 3 in. by 6 in., the size of the suspending bars, and that by 4, gives 72 tons for one chain, or 144 tons for one rib, or 288 tons for the bay.

But a deduction must be made from this calculation on account of the difficulty in fitting together so many pieces of ironwork with that nicety and accuracy, so that every part should discharge its due share of duty.

An iron wall plate would have proved beneficial for bridges of this character, as it would distribute the weight equally over the breadth of the piers and abutments, instead of having the entire weight of the pier at four small fixed points a considerable distance asunder; besides, it would have prevented the stonework from falling when the rib fell.

The bridge was not well braced together; it is tied together transversely by thirteen ties, 4 in. by 1 in.: these are let into dove-tailed cast iron sockets, 3 in. long on the edge of the flange of the girder. The timber braces, supporting the roadway, are 4 ft. in extent, and 10 in. by 9 in. with a similar bearing upon the flange of the middle section of the rib, so that this will account for the buckling in of the top flanges of the ribs, and the spreading out of the lower flanges when weights pass over it. Besides, there is no diagonal bracing. This seems very important to check oscillation and vibration (which are very perceptible in this bridge), the most destructive agent of cast-iron.

Cast-iron is a material of such a doubtful character for bridges (particularly of large span), that we desire to see wrought-iron substituted for it; there would be no difficulty in rolling beams of the size and dimensions required.

The system of testing iron girders in foundries is to be objected to, as adopted at the bridge, because castings are liable to accident and injury in carriage, fitting, and erection. The French system of having them tested by government officers when in their place is to be preferred.

But even supposing this accident arose from a side blow, as assumed by some eminent engineers, without a tittle of evidence to support that hypothesis, it still amounts to this, that the bridge is not strong enough. A bridge that fails either from vertical pressure or a side blow, occasioned by the regular traffic, to which it is at all times liable, must be to all intents and purposes too weak; and neither the reasoning of Plato nor the eloquence of Demosthenes will convince the public to the contrary; and the sooner the bridge is taken down or strengthened, or protected from these

* The following is from their report:—

"That the bridge was of sufficient strength if the cast and wrought iron in it supported to act together, each taking its equal proportion of the strain.

That there is great difficulty in insuring the joint action, and that if this is a part of the principle of the bridge, we do not approve of it.

That neither the wrought nor the cast iron, taken separately, was sufficient for perfect stability, and that to have insured this, the cast-iron girders alone should have been of sufficient strength to carry the whole weight, with ample allowance for the various circumstances, some of them peculiar to this bridge, which we have explained.

That, with the exception of the bends or warps in the top flanges, the castings are of good quality. That the wrought iron is also of good quality.

That the stonework of the piers and abutments is good, and in no way contributed to the failure.

We now come to the question, what was the immediate cause of the accident? As the bridge has carried so great a weight, as stated below, the suggestion that there was something peculiar in this case, as the end of a rail having projected from the straight line, and been struck by the engine, or the tender having got off the line and struck the girder laterally, is not improbable. The engineers who were called by the railway company considered that the breaking of one leaf of the wrought-iron that was next the tender, the piece that was struck out of the girder, and the damage to the abutment wall, are all proof of the fact that the accident was caused by the tender having got off the line, and broken the girder by a heavy lateral blow. We refer to the evidence of Mr Robert Stephenson, Mr Locke, Mr Vignoles, and Mr Cubitt, in support of their opinion that the strength of the girder was sufficient. As to this point, we have already stated the principles upon which alone the conclusion could have been arrived at, and our own opinion. As to the tender, the [illegible] fixed [illegible] behind it, having got off the railway and lamed the abutment walls, there is no doubt; and if the tender struck the side of the girder, when the latter was under consideration, the fracture was the probable consequence. This is only the case with one of the tender's wheels getting off the line from some other cause than the tender striking the girder.

Our own decided opinion, formed from the statement we have made as to the strength of the girder, and from the position in which the broken pieces were found, the two halves being each in a straight line, or nearly so, but at an angle with one another, is that the first fracture took place in the centre of the girder, and not at the end, which rested on the abutments.

Having reference to other cases, it is proper to state that Mr. Robert Stephenson stated in his evidence that he had erected a number of bridges on the same principle as this, and that this was the first failure. We have not examined these bridges: they are stated to be all of a less span than the Chester bridge, but that the dimensions of the parts are proportionally less, and it has to be argued, from the above numerous examples, and the opinions of the eminent engineers, opposed by this one failure, that we are mistaken in considering the weakness of the girder to be the cause of the failure in the present case, and unnecessarily cautious in the objection we entertained, and have expressed, as to the principle of this bridge and its security, but, as we entertain those opinions very decidedly, it is our duty, by no means an agreeable one, to express them."

* There was a model exhibited of the girder at the inquest, demonstrating most forcibly the fallacy of the system of trussing cast-iron bridges. When the model was placed in the position of the girder, it deflected considerably, some 2 or 3 inches, with 28 lbs. suspended from the centre; but when turned upside down, it bore the weight with scarcely any deflection, and with the accidental weight of a chain upon it.

*side blows*, the better it will be for the interest of the shareholders of these railways, and the safety of the public.*

## MR. LAYARD'S RESEARCHES AT NIMROOD.

Since the British Museum has undertaken the excavations, I have been pushing on my researches in various directions as well as the means allowed will permit; and, with far less than one-quarter of the sum expended by the French at Khorsabad, I trust we shall have twice as much as they obtained, with respect to objects of art and to important historical information. I think I have already given you some account of the nature of the building which I am exploring in the mound of Nimrood. As there are buildings of several distinct epochs amongst the ruins, and as I have examined many other edifices in this part of Assyria, I can now form some opinion upon the architecture and mode of building of the Assyrians. Their palaces, temples, or whatever these buildings may be, were all constructed on one plan—a nest of chambers and halls leading one into another, the entrances formed either by gigantic human-headed winged lions, or bulls with similar attributes, or by large slabs on which are sculptured winged figures, perhaps the guardian deities of the place. The rooms are constructed of large slabs, 8 or 9 feet square, and from 8 to 12 inches thick, each having sculptures and inscriptions. There is not a stone in these buildings which has not one or the other, and in Nimrood generally both. Above these slabs were walls of sun-dried or kiln-burned bricks, richly painted, sometimes with figures, at others with ornaments, shewing considerable taste in the design and disposition of the colours. The interval between the slabs, forming a wall between two chambers, was filled up by mud bricks—mud mixed with a little straw, and simply dried in the sun—which have maintained their consistency to this day, and appear to have the most extraordinary power of resistance. The roof was probably constructed of beams, with wood, straw, and mud to form a compact mass, as houses are covered in to this day throughout this part of the East. The most, indeed the only perplexing part of the matter is, the external architecture, and the means adopted for lighting. Upon these two points I have been utterly unable to form any conjecture. It is most probable that the Assyrians were unacquainted with the use of the column. The Persians, who borrowed their sculpture and ornamental architecture from the Assyrians, probably introduced columns.

The sculptures of Persepolis are almost facsimiles of those of Nineveh, the exterior architecture being of Persian addition. It is scarcely probable that the halls and chambers were sunk in the earth for the sake of coolness, as I have heard it suggested, or why should a mound have been constructed for the reception of the building? There is no other communication between the rooms except the doors, and no windows are to be seen. Light could only have been received from above. However, in the sculptures, windows are frequently represented in the towers and walls of castles; but of course in a nest of rooms only the outer could have received light by such means. The sculptures were painted either in whole or in part. At Nimrood I have only found on the marbles, blacks, reds, blues, and whites, and these appear to be the principal, if not the only colours used in painting figures. At Khorsabad, I believe *greens* and other colours were found. The ornamented bricks have yellows, and various shades and tints of the above colours. With regard to the antiquity of the ruins of Nimrood, it is probable they will be found to exceed considerably what had been originally conjectured. As there are buildings of different epochs in the mound, I have been able to obtain from the inscriptions which they contain, the names of many kings of the Assyrian dynasties, and to fix the relative periods of most of the other ruins known in Assyria. From them I can prove beyond a doubt, that Khorsabad was founded at a much more recent epoch,—perhaps 500 years later than the earliest edifice at Nimrood, and that the ruins opposite Mosul, usually called Nineveh, are of the same epoch as Khorsabad. The earliest building at Nimrood, which is also the best preserved, was founded by Ninus (if Major Rawlinson's reading of the name be correct, and there are many facts corroborative of his opinion). The second edifice was erected by his son; but between this and the last there was a lapse of many generations, as can be easily proved by the names of kings which occur in various parts of the ruins. The founder of the last building was of the family of the builder of Khorsabad. You will understand by these facts how important, in an historical and archæological point of view, the inscriptions furnished by these ruins will prove to be. I have, however, not been satisfied with exploring Nimrood, and have been examining many other remains in the country. Two days ago I was fortunate enough to discover the entrance into a new building in the mound opposite Mosul. The sculptures hitherto removed are in a most dilapidated state; but as I advance into the mound hope to find them in better condition; at least, I hope to obtain a good collection of inscriptions. From Nimrood I have secured a good collection of sculptures; above sixty have already been sent to Bagdad. Amongst them is an obelisk, in black marble, about 7 feet high, and evidently of the highest antiquity. It appears to have been made to celebrate the Indian conquest of some monarch, probably Ninus himself, or Simeramis; it is in the finest preservation. I have succeeded in moving to the bank of the river one of the large winged bulls, about 10 feet square, and hope, during the week, to give him a companion in the shape of one of the lions. Without any mechanical means at my disposal, and many difficulties to contend with, you may conceive I have had hard work to effect the safe removal of such large blocks. I hope to be enabled to send them to England. The pair would make a splendid entrance to an Assyrian Museum or "Hall of Nineveh."†

A. H. Layard.

## THE EXHIBITION AT WESTMINSTER HALL.

The exhibition of oil pictures at Westminster Hall being arranged, the cleaning and varnishing of the pictures was, on Monday and Tuesday, an anxious and busy occupation for the artists, and afforded them an opportunity of mutual advice and last-finishing touches, which, at the Royal Academy, is enjoyed by the members of that society only. The doors of the hall were opened to them at five o'clock each morning, and from that early hour until eight or nine in the evening, the busy toil, intermingled with friendly hints or discussion of the various subjects and claims, occupied them in a state of unusual excitement. All that we have seen were unanimous in reckoning it the finest and most interesting exhibition ever seen in this country. Though different opinions are expressed as to a few of the paintings, still the leading features and merits of four-fifths of them are pretty well determined among artists.

Mr. Poole has a large composition of King Edward's generosity to the famished inhabitants of Calais, which for colour and likeness of nature is represented as of surpassing excellence. Mr. Horsley's dying Henry 4th, Prince Henry placing the crown on his head, is also, notwithstanding objections to the short figure of the prince, esteemed a master piece for sentiment, picturesque effect, and beautiful execution. Lauder's "Christ blessing little children" is, perhaps, superior to any former production by that artist, combining character and expression with good execution and colouring. Armitage's "Overthrow of the Sikhs by General Sir Charles Napier," is by some described as eminently skilful, by many as French mannerism without interest in the episodes. Townsend's "Prince Charles in the Oak" is said to be cleverly painted, but confused, whilst Mr. Watts, who obtained so much fame by his "Caractacus" in the exhibition of Cartoons, does not appear to have improved by three years' residence in Italy: his "Alfred teaching his subjects the importance of a navy" is said so be like an Italian distemper sketch for fresco.

Sir William Allan's "Battle of Waterloo" is an extensive view of that memorable day; and Sydney Cooper, another of the Academy competitors, has the "Final Charge of the Guards breaking the Cuirassiers," very clever in its details of horses and men, but less impressive or correct as a description of the event than Jones's ample representation. Nelson's victories are also depicted, and with considerable success; but the figure compositions, contrary to what has been usual among us, from their number, importance, and merit, claim precedence and general attention. Noel Paton's picture gives less satisfaction than was anticipated, as its skill and elaborate finish are combined with mannerism. Thomas's allegorical composition, though somewhat flat, is described as shewing great ability. Severn's "Allegory of Queen Victoria," as Victory with black wings perched on the limb of an oak, like Ophelia over the deep waters, is thought too mystical for an English public, who will much more relish the "Death of King Richard," by Crosse, that of Harold, by Pickersgill, Lucy's "Religious Emigrants," "The Charter of Henry I. exhibited to the Barons by Cardinal Langton," by the Foggos, Claxton's "Funeral of Sir John Moore," and various other interesting subjects from "Cromwell's Refusal of the Crown," and "Spenser reading his poem to King Edward and Queen Philippa," Lord Compton's solemn picture of strife and death, the awful nightfall after the Briton's Defeat, by Dighton, "The Loss of the White Ship," by Woolnoth, "The History of a Merchant Vessel," by Brownrigg, and the "Acts of Mercy," by W. Riviere.

Most of these, and several more, are improvements on works which have already gained reputation to the artists. Salter's education of Alfred (winning the beautiful book) is a pleasing and clever performance. Bendixen, Morris, Blaikeley, Howard, Rippingille, Aglio, J. P. Davis, R. Evans, and a score of very young artists, have also contributed to this very successful collection of British national works of art. Even Haydon is here again, and advantageously, in his "Banishment of Aristides."

Next week we shall see them for ourselves.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Paris Library.*—The late charges brought against some or other department of Public Works in France, seem also to extend to the above structure and establishment. The head librarian, Mr. Naudet, has published a pamphlet in his justification, to which some other officers have succeeded. The Paris Library consists of four departments, most strangely bungled together—printed books, MSS., coins and antiques, and charts and maps. The conservators form a council, of which the head librarian is the president. The late improvements and rebuilding of the library seem to be suspended on account of these squabbles, and it is the *Palais Mazarin* which forms the object of contention between the architect and the common council of the city of Paris. According to the statements of the former, the palace is in a state of ruin—the latter complain of the long and gloomy façade, which encroaches on a valuable space in the most thriving part of the French metropolis. It was believed that the intention of rebuilding the present library was fixed; but now it seems that the French *Conceil de Municipalité* objects, and proposes four other localities for the present one. But if it should ever remain where it is, the council propose that the old buildings be demolished, to widen the street.

*Rome.—Picture destined for the English market.*—A large historical picture by *Schrader*, has made a great impression in the Roman capital. It represents the surrender of Calais at the moment when Edward III. had given orders to execute the six burgesses, who had surrendered as hostages for the welfare of their native city. This impressive event has been seized by the artist with much clearness of

* "Whatever the proximate cause of the accident at the Dee Bridge," says the *Spectator*, "it is evident that the structure was not strong enough for all contingencies. Roman structures did not thus crumble to pieces in the life of the builder. But the ancients did not know our contract system. They had not reduced great public works to a simple question of pounds, shillings, and pence. They took a pride in throwing in a good deal for solidity, for duration, for art's sake, for dignity: they did not calculate cost to a penny, or space to an inch, or materials to an ounce. They had to satisfy more than a contract—conscience. We 'superintend,' hide d; but what vigilance can suffice where the foundations of conscience are sapped? We exact set observances of laws, of sectarian precepts, of commercial customs; but 'good works,' personal probity, the generous sacrifice to conscience, are enforced among us by no rewards and punishments; personal worth obtains slight and precarious social distinction, its breach no retribution. The contractor satisfies the literal terms of his contract; the engineer teaches the economical directors how to shave close in building a bridge; and if there are deaths, who repents?"

† I daily regret being no draughtsman, and that I have been obliged to pick up the little I know here. Were I accustomed to the use of the pencil, I should be spared a vast deal of trouble and time.

conception, and rendered by a well-sustained composition with a dramatic, yet chaste character. The execution is brilliant, as well in the correctness of forms as the hue of colour, and has quite enraptured the young Roman art-world, brought up, it is true, in a too *puristic* style of art. The great sacrifice of time and otherwise, which this picture has entailed on Mr. Schrader, makes us wish—concludes our Roman authority—"that this fine work be exhibited in England, where it will meet a generally felt desire, to see the history of this great people typified by art; the more so, as besides the lively approval of the Roman public, some substantial encouragement might accrue to deserving artists, choosing similar subjects for their art-scape."

*The new Granary and Halls at Munich.*—[*From the Ausland*].—It was to be expected, that the right valuation of architecture and art would sooner or later arise here—and the mere "playing with art," be supplanted by works bearing upon, and useful to the great mass of the nation. A huge public building is thus contemplated, where, besides an (imperatively called forth) granary, the necessary halls for the wholesale of grain, hops, wool, &c., in fact all bulky produce, of agriculture and husbandry, could be placed under the same roof. The undertakers are some of the rich burgesses of Munich, and the plans have been made and approved by some of the first architects. The length of this imposing pile for public utility is to be 1,200 feet. The corn hall, to occupy the centre, and extend to 200 feet by 100 feet. One end of the building to be occupied by the city scales (*Stadtwage*), the other for *dépots* of produce of every kind. Each of the latter localities to be 100 feet long and 60 feet broad. In the intervening halls, open on all sides, the different markets are to be established. For the easy access of waggons, carts, and the public, every care has been taken. As an especial advantage it is to be considered, that the ground for the building, belonging to the corporation, will be given *gratuitously*, and being situate near the Altstadt where the present corn-market (*Schranne*) is kept, the inhabitants of that quarter will not lose by the transfer. The locality is the large place of 1,500 feet in length, behind the Frontfeste and the Anger Church. Thus aside of king Ludwig's art-creations, a work of popular utility will arise such as no other city of Europe can boast of.

*Novel Discovery about Egyptian Hieroglyphs.*—A rather stormy debate has taken place at the Institute of France, on the discovery of Mr. de Löwenstein of a *third* variety or system of cuneiform inscriptions. Mr. Burnouf (M. J.) spoke to great extent on the final deciphering of Assyrian characters and language, which the recent discoveries of Mr. Layard have now made so popular. Mr. de Löwenstein thinks it co-generic with the Semitic and Coptic; and what is most remarkable, not only in form, but in its very system, *analogous* with Champollion's Phonetic Hieroglyphs.

*Leipzig Central Association of Industry and Trades.*—This very important commercial city has followed in the wake of Paris and Berlin in forming the above association—with the purpose of exhibiting engines, tools, and other industrial apparatus, as well as new discoveries of a general useful character, and to facilitate their introduction and sale. The association will carefully and impartially test every object submitted to them, and guarantee the solidity of the engines, &c., purchased of them. The society contemplates having agents in all principal places of Germany, to co-operate in the fostering and generalizing of useful technical objects.

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THE TWOPENNY EXHIBITION OF ST. PAUL'S.—Earl Fitzwilliam having happened lately to be called upon to pay his twopence like any sight-seer (by the way, are the bishops *free*, on the fellow showman principle?) the important twopenny question had the honour of being brought before the lords and bishops in parliament assembled; the right authority was most inopportunely, though doubtless quite accidentally, absent, otherwise we hope the circumstance is significant of the right reverend reluctance to countenance, or shame to acknowledge, such a system of money-changing in the temple.

## THE LATE MR. J. B. PAPWORTH.

THE death of Mr. John Buonarotti Papworth, late vice-president of the Royal Institute of British Architects, occurred on Wednesday 16th inst., at his residence, Park End, St. Neot's, whither he had retired after more than fifty years of professional practice. Early in life his excellent judgment and kind heart acquired for him the intimacy of the leading artists, and also the confidence of many wealthy amateurs, as to the direction of their patronage, as well as to the decoration of their mansions. In this course he aided materially in introducing a tasteful style of modern furniture, which caused his selection by Government for the trust of forming and directing the Somerset House School of Design. His works on garden and rural architecture, very favourably received by the public, were the results of his experience in landscape gardening, which he joined as a profession with his other art.

Amongst the clients to whom he owed an extremely varied practice, he numbered several of the late branches of the royal family, especially the Princess Charlotte, and also the present king of Wurtemberg, from whom he, having designed the palace and English park at Kaunstadt, received the appointment of architect to his majesty. His sons will have the satisfaction of remembering how highly Mr. Papworth was respected, not only by his friends and by his clients, but also by those severer judges, the members of his own profession, to whose gratifying token of their esteem we gave publicity at the commencement of the year.

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## ON THE GEOMETRIC SYSTEM,

APPLIED BY THE MEDIÆVAL ARCHITECTS TO THE PROPORTIONS OF THEIR ECCLESIASTICAL STRUCTURES.

THE revival of the architecture of the middle ages within the last quarter of a century, in this country, may be fairly attributed to the clerical body, who, accustomed to meet in our cathedrals and ancient churches, gave preference to that style, then usually denominated Gothic; and where they had sufficient influence, induced local committees to adopt it for their new churches in all parts of the kingdom. The architects employed on these buildings, though generally well grounded in Greek and Roman architecture, found themselves called upon to construct works utterly at variance with Greek and Roman principles; and having no time to study or collect data, whereon to compose works in this (to them) new style, they were required at once to erect buildings equally at variance with its principles, in which the greatest number of sittings could be crowded into the smallest area, and adapt the fragments of the various mediæval styles to their utilitarian masses; thus, by compulsion, producing works truly Gothic. Galleries were at first required to be invariably 10 feet in clear height from the floor to the underside, whether the building was to contain five hundred or two thousand sittings, for which the pillars must of necessity be disproportionately lengthened, and the walls unduly raised, to admit of a flat ceiling, and allow ample space above the back of the gallery floor, this requiring a considerable elevation above the front to obtain a view of the pulpit and reading-desk, in their defined position on each side of a broad aisle in the centre of the building, the dimensions whereof were specified in printed instructions. All roofs were required to have horizontal tie-beams; and where clerestories and groined ceilings were introduced (the peculiar features of our cathedrals, abbeys, and collegiate churches), great additional expense was incurred. Many of our old parish churches of the fifteenth and sixteenth centuries have fine moulded oak tie-beam roofs; the beams, king-posts, and purlins moulded, and the triangular spaces between the beam-post and rafter filled in with moulded mullions, and arched or semi-arched, and cusped tracery; the purlins formed into panels by broad intermediate rafters, below the spans or lesser rafters; and on their intersections carved bosses improved the general effect. As these roofs were almost invariably concealed by flat plastered ceilings, they would be almost unknown, even to those who had but occasionally to enter them.

One of the best formed modern churches of plain character, having a spacious chancel, nave, and side aisles, vestries on each side of the chancel, and a western tower, open roofs with arched ribs and no tie-beams, was planned by and built at the sole expense of the late Rev. Hammond Roberson (Prebend of York), at Liversedge, in the parish of Birstal, in Yorkshire, in the year 1817; it is so proportioned as to admit of no galleries in the aisles, and the architect under whose superintendence it was erected (the late Thomas Taylor, of Leeds), never equalled this structure in the numerous churches which he subsequently built, having in all to provide sufficient height for side galleries.

It has been justly observed, that those who copied most closely, have produced the best Gothic works of the day. In the year 1818, in restoring the parapet and pinnacles of the parish church of Halifax, I copied the half decayed fragments which remained, and this my first attempt, is more satisfactory than any Gothic work I designed, till within the last five years. Having erected many churches in the North of England, before I rebuilt the parish church of Leeds for Dr. Hook, I worked without system—merely adapting ancient features to masses, to which I could give no just proportion. Subsequent to the erection of the Leeds parish church, I have visited many churches, and have read and examined attentively, Mr. Kerrich's essays in the "Archæologia," and have found his system to answer in the plans of some few churches of simple form. This theory of proportion is the Vesica Piscis, containing two equilateral triangles, but even this he has not carried out to its full extent, as two or three of his plans will explain; it is a minor portion only of the grand system. He justly considers this system to have been known at a very remote period, and applies it first to Ciampini's plan of St. John in the Lateran, a plain oblong square, with a semi-circular apse at one end; here the vesica gives the length and breadth *internally*; but in addition, I find the bases of a larger vesica, of which the length of the first is the radius, equal the diameter of the apse. He produces the plan of the old St. Peter's, at Rome, by a similar vesica; this has a small apse and two lateral projections or transepts: here the diameter of the apse is determined by the base of the two triangles forming the key vesica, and the transepts are produced from bases of the larger vesica, which is founded upon the two points or extreme length of the first: these taken on each side of the centre line, give the radius by which their length and breadth is determined. On this principle (part of the general system only), the relative proportions are obtained, and the several points both in extensions, divisions, and subdivisions, must be based upon the first figure. Mr. Kerrich gives examples of the simple oblong square, on the bases of the triangles, as Bainwell Church, in Cambridgeshire, little St. Mary's, at Cambridge, Chedgrave, in Norfolk, &c., which answers for the internal length and breadth of these and several small churches of the 12th, 13th, and 14th centuries. These parallelograms, in which piers and arches separate the chancel from the nave, are almost invariably subdivided by taking the breadth as radius, and on it, producing the vesica: thus is formed the chancel, sometimes within the walls and western arch, and at others extending to the western face of the arch in the nave; this, in either case, is indicated by the step into the chancel, and the variation was intended to conceal the principles on which the proportions were obtained. The church at Routh, near Beverley, is thus formed, and corresponds with those of Sancton Barnby, and several others, erected in the 13th century. Many of these small churches were built without the separation of the nave and chancel by piers and arches, but at the same proportionate distance from the east end, holes are formed in the walls, wherein wood has been inserted to secure the rood-screen or loft. Mr. Kerrich has given a plan of the chapel in the tower of London, where the vesica includes the apse, and other plans wherein the apse is excluded, as in Little Maplestead Church, in Essex, also Croyland Abbey, in Lincolnshire, and old Lincoln Cathedral, the plans being described in the "Archæologia," by the late Mr. James Essex. This applies to the Church of St. Anne, in Bruges, and many

small oblong continental, apsidal, churches. Of cruciform Churches, Croyland and Buildwas Abbeys, are on the simple base of the vesica; others are shewn partly so, but where that form has to be applied to plans, partly internal and partly external, including walls and buttresses in the breadth, and excluding them in the length, or *vice versâ*, Mr. Kerrich's theory cannot be admitted further than as a small integral part of a more general and comprehensive system; its use is shewn for proportioning doors and windows, and, in some cases, sections of buildings and spires. Where the nave and chancel vary in breadth—as Barfreston, Bricksworth, Stourbridge, &c. (shewn by Kerrich)—the base of the triangles equals the breadth of the chancel, its length being determined by the vesica or double equivalent triangle; and in each of these cases, the breadth of the nave, by forming a similar vesica upon the remaining length. The Anglo-Norman church at Adel, in Yorkshire, has the breadth of the nave determined by the base of the equilateral triangles formed upon the extreme length internally. With the breadth as a radius produce the vesica and extend the arcs to that breadth, and describe a segment upon the intersection of the arcs on the breadth; or by extending each arc to a quadrant, and striking a segment on these points, the length of the nave is determined: upon the same central point strike a circle tangent to the last segment, and the breadth of the chancel is defined; with this breadth as a radius, the simple vesica will be found the true proportion of the chancel. This proves that even the incomplete system may be extended beyond the limit of the diagrams in the "Archæologia," shewn by the late Mr. Kerrich.

The equilateral triangle alone has been tried, and though by dividing into certain parts forms may be composed, no great variety can be produced, as, like the former, it is but a minor portion of the great system in which most others will be found combined.

Another system was shewn to me about the year 1830, by Mr. John Browne, of York (the antiquary), whose valuable history of York Cathedral (now nearly completed) will be of more practical service to the profession than any work I have met with on pointed architecture and its decorations. Mr. Browne's discovery was *on the circle*; it was submitted (in manuscript) to the Society of Antiquaries, who did not approve of its title, "The Trinitarian System of Pointed or Christian Architecture." By placing a square or cross upon the centre of the circle, dividing it into four equal parts, centres are obtained for vesica of a different proportion to those formed by the double triangles, which in many cases of foliated tracery are equally efficient. Upon two points of this square, and upon the circumference of the circle, the second form is produced by the radial segment; strike the same radial segment opposite to the first, and the vesica is produced. (Fig 1.) With one point of the compasses on this second figure or first vesica, and the other upon the apex, where it intersects the circumference of the circle, the third figure or second vesica is given: by striking these radial lines upon each of the four points on the circumference, centres are produced in abundance for quatrefoils, crosses, and other figures, applying more especially to tracery.

In many works the vesica piscis has been explained, and amongst them in one on Stonehenge,* which contains an essay on Druidism. In this the traditional dimensions are given of the first Christian church of this country, founded in the Isle of Avalon, or Glastonbury, and its proportion is the first vesica of Mr. Browne's diagram. This also gives the proportions of the naves, and their aisles, of the cathedrals of Durham, Ely, Peterborough, Canterbury, and Salisbury, but no others, and cannot, therefore, be considered an universal system. Mr. Billings has given some very useful information in his "Geometric System of Tracery;" and in his "History and Illustrations of the Temple Church" has formed some very reasonable conjectures relative to the original design; and Mr. Clarkson's essay on its "Symbolic Evidences," with the plan relative thereto in the latter work, merits a careful investigation. Mr. Wallen, in his "History of the Round Church at Maplestead," and his more recent works and lectures on the "Geometric Principles of Tracery," has contributed essentially towards the development of the system.

Others have written on this subject; but for want of time to examine their works I must pass them over, to notice a recent work of great merit—"Mr. Griffith's Natural System of Architecture, applied more particularly to the Temples of Greece"—beginning with the primary forms in geometry, and applying those forms within the circle to both plans and elevations, giving the true and just proportions, whether upon the triangle, the square, or the pentagon, prove that the author has succeeded in developing a true and perfect principle.

The system upon which every divisible geometrical figure is founded, is the *Circle*. The semi-diameter, or radius, divides the circumference into six equal parts; by drawing straight lines upon the alternate points two equilateral triangles are formed, intersecting each other. (Fig. 2.) Upon the intersections of the triangles continue the lines to the circumference of the circle, and six centres are given; upon which, with the first radius, striking a second series of segments will produce a third set of twelve centres; upon the second centres two intersecting triangles, with their bases, perpendicularly to the first, complete the first part of the diagram. Upon the twenty-four points of the intersecting inner arcs a circle inscribed will determine the lesser, or inner triangles, upon the centres of the first, and the diagram is thus perfected. This will suffice for the simple forms, but for the more complicated, an additional number of centre lines may be drawn upon the remaining intersections: thus we have twenty-four divisions of 15 degrees each, dividing the circle into 360 degrees. The first division of the circle, by its diameter, or 180 degrees; the trigon, or triangle, of 120 degrees; the tretragon, square, or rectangle, 90 degrees; upon this figure another division is produced, which, I have imagined, would explain the theory of the Egyptian Pyramids. On referring to Mr. Agnew's letter on the Pyramids of Egypt, he states, that "on the diagonal, the vertical line from the base to the point would be the radius." If so, this confirms my theory of their construction. Take the square, with its centre in the centre of the circle; its diagonals are the four divisions of the circle; upon the face of this square (the elevation based upon the diameter of the circle) two lines, meeting upon the circumference, will be found to be the vertical centres of four inclined equilateral triangles. Hence four equilateral triangles, meeting at the apex, produce the radius of the circle on their diagonal, and the rectangle and the half square. Vitruvius tells us, that Plato discovered this method of doubling the square. But may this not have been known to the Egyptian *magi* long before? A line drawn from the base to the opposite face of the Pyramid, where intersected by the great trigon, indicates the pentagonal division of the circumference of the circle; the Pyramid thus, is the mystic symbol, which combines every principle of geometry, and contains all the regular figures or polygons founded upon the first, or primary divisions—the hexagon of 60 degrees is the figure which is preeminently distinguished: it is produced by the radius of the circle. In all ages it has been symbolized, and may be appropriately termed a "natural system." That insect emblem of industry, the bee, constructs its cell in this form, economising space in a manner unattainable by any other figure. This was doubtless held by those of ancient times (who, in their monastic cells, had leisure for contemplation) to be a lesson to man through so simple an insect. Space, emblematic of time, pointing out the value of industry and the exercise of the intellect, wherewith he is blessed during the short period of his sojourn upon the surface of this planet. Were I to treat of symbolism, I should shew that this diagram indicates the six lesser revolving round the greater central planet, the six days for labour, and numerous other emblems; half a side of the trigon divides the circumference into seven, but it is indivisible by numbers.

The heptagon has been set apart from the even, or divisible numbers, and always held as symbolic or mystic. The octagon of 45 degrees is the division of the square, the nonagon of 40 degrees, the third of the trigon; and the decagon of 36 degrees, dividing the pentagon, ends the numbers used for the primary purposes of constructive proportion. This, according to Vitruvius, was Plato's perfect number, but the Anti-platonists, with their six, or the radial division of the circle, could, by the working of their centres (without the necessity of dividing with the compasses), produce the ten, shewing that they were the more perfect as their system combined all others. Mr. Browne, of York, says, "the circle symbolically represents the Divine Power, the Universe, Eternity, without beginning, without end, infinite and perfect;" but it should be observed, the equilateral triangle was used in a similar manner, and for the same purpose.

I will proceed to the use of the system practically, in the formation of our mediæval churches, and its universal application to the adjustment of the proportions.

Observing the intersecting triangles in many buildings, I conceived that this would prove to be the system, or diagram, whereupon geometric proportion was founded (sometimes exhibited entire, and at others in part only), and this explains why I came to such conclusion. In 1842, on taking down the old Church of Leven, in Holderness, upon a fragment of one of the nave pillars, I found a cross of the 13th century; on measuring it, I found every centre upon the diagram, and that every line was struck. This applies to an infinity of crosses fleury, the method of striking them being concealed by the artistical disposition of their foliated embellishments. In the tracing of many windows and decorations of churches, the system is clearly exhibited, which a few examples will suffice to indicate. The Anglo-Norman interlaced arches, those particularly in three stages in Wenlock Priory; the trefoil and complex triangular windows of York, Beverley, Salisbury, and Lincoln Cathedrals; the circular window in the south transept of York; the peculiar window in the west front of Canterbury; and the circular window of the south transept of Lincoln Cathedrals; the circular window of Winchester Palace, in Southwark. This peculiar window shews the system slightly varied, and almost undisguised, and it appears in a simple form, but more veiled, in the east window of Hawkhurst Church, in Kent, or on the borders of Sussex. In both large and small churches it is introduced, not only in windows, but in various ornaments, both external and internal, particularly in piscina, sedilia, &c. In the continental churches it is equally conspicuous, and may be detected in every ancient structure that has escaped the beautifying ordeal of modern over-zealous church-wardens.

In its application to plans, Walkington Church, near Beverley, affords a simple illustration, using the entire diagram, which compound forms require; the nave is upon the intersection of the triangles produced by the radial divisions, the chancel upon the vesica formed by one of those divisions, and the transept upon the central intersection of the triangles; the lengths and breadths are thus determined by the radial divisions and their centres. All the plain oblong churches answering to Mr. Kerrich's system are proportioned by the second radial figure, produced by the divisions of the circle; but instead of working them out upon this portion of the diagram, they should be placed upon its centre, one end being upon the base of the great triangle, which will facilitate the operation of giving proportion to a plan. I have taken these two plans to explain the difference of working compound figures, as in our cathedrals, and simple ones, as Bainwell, Adel, Barfreston, &c.; the churches of Maplestead and the Temple are worked in a different manner to the others, as the system is shewn entire in the hall or chapter-house; this western portion, having, I imagine, been erected for the assemblage of the templars. Upon Mr. Billing's plan of the Temple Church—the circular nave to the west, is the scale upon which the diagram is formed; a circle struck upon the intersections of the triangles passes through the centre of the outer range of columns, and on the inner circle, tangent to the triangles, is the centre of the inner range; the breadth of the choir to the east, is the diameter of the great circle; the trisection of the inner circle gives the centre of the clustered columns, of the choir, north and south of the centre line, the centres of the outer range of columns, and

* By Malachi Mouldy, F.S.A.

## GEOMETRIC PROPORTIONS OF ANCIENT CHURCHES.

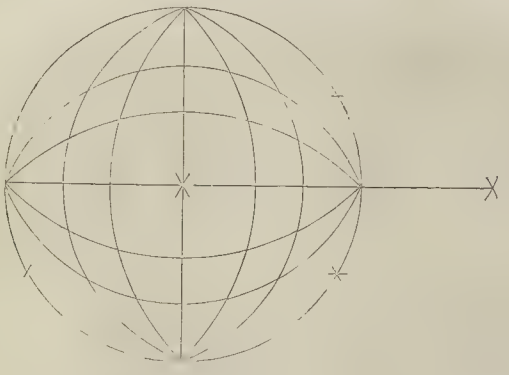


*Fig.* 1.

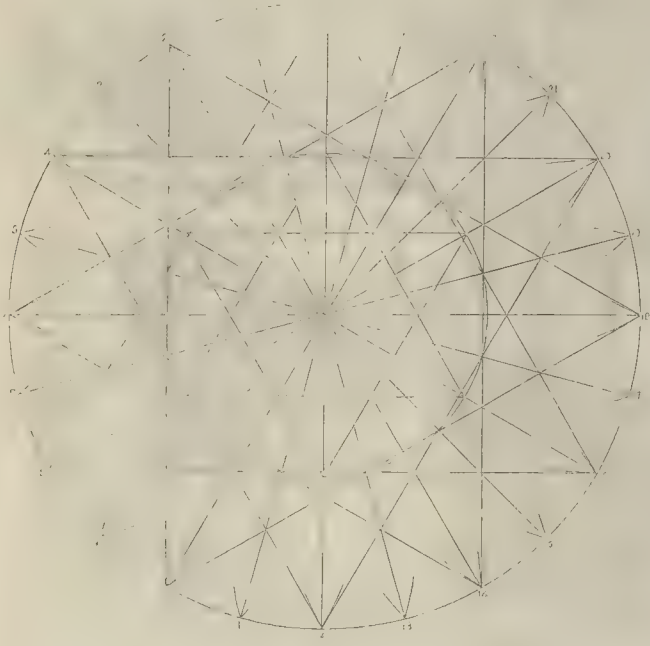


*Fig.* 2.

the centres of those of the choir from east to west: the trisection of the first great circle is the semi-diagonal of the choir; the vesica piscis, or double spherical triangle, gives the length of the choir from the base of the western triangles in the great circle; the probationers' rooms, or, as Mr. Clarkson terms them, "the novices' rooms" on the south were similarly proportioned by central intersections in the circular hall. The plan of Little Mapleton is worked nearly the same as this, but the choir is the radial division of the outer circle in breadth, and its length to the centre of the apse is the double triangle extended from the circumference.

In the composition of the cathedrals of Ely, Lincoln, Canterbury, Norwich, Salisbury, Worcester, Durham, Peterborough, Winchester, and Worcester, the general proportion is determined by the first of the twenty-four divisions on each side of the centre, intersecting the great triangle; others vary considerably, but even where extensive alterations have taken place subsequent to the original design, regard has been had to the general first principle; the abbeys are all produced on the intersections of the triangles and their centres, and the subdivisions for the pillars are found in the central portion of the diagram, but may also be produced by the radial divisions on the breadth of the building, or that portion of the system used by Mr. Kerrich. Hence, whether the nave or choir be long or short, this vesica will determine the proportion of the subdivisions, the only variation being, that though the centres of the piers are taken for the longitudinal divisions, transversely they may be either on the centres or the inner or outer faces; this difference of proportion being purposely given to conceal the principle whereon they were based; this applies to the smaller parochial and other churches, with three, four, five, or more arches in their length, and will account for the extraordinary varieties of form in their plans; no two buildings were ever made alike, and for this reason, that it required less time to compose than to copy. From a determination to excel and surpass the works of their predecessors, and that the science was progressive, with the innumerable forms that could be produced by the intersections of the diagram, the architects could vary their compositions (retaining certain prescribed rules for their choirs) so long as they confined themselves to their extensions and alterations, to the limits of the system.

Having the plan disposed, the elevation was next considered, and proceeding with the double spherical triangle upon the centres longitudinally, and the variations before noticed, transversely, the various heights were obtained for the pillars; and sub-divisions, by the spherical triangles upon them, gave arches, capitals, bases, triforia, clerestories, tracery, mouldings of every description, and due proportion to each feature, which, on a future opportunity, I shall be glad to elucidate, particularly shewing the facility with which those features are obtained upon the diagram.

Upon this system, with great advantage and satisfaction, I have had erected the churches of Leven and Rise, in Holderness, Middleton, near Leeds, King Cross, in Halifax; and those of St. Paul, at Armitage-bridge, near to Huddersfield, and St. Philips, in Leeds, are rapidly advancing towards completion.

To be enabled fully to comprehend the system, much time must be devoted to the testing of existing models, though simple in its application: when once mastered, it will well repay the labour, however it may require the most indefatigable application. It is not like a machine, to be used without labour or trouble. Those who produced the beautiful works, not only of this, but most of the countries of Europe, at the same periods, though generally belonging to the monastic fraternities, were not wholly occupied with sacerdotal offices, nor was their time ever passed in indolence; they were the architects, the artists, the philosophers, and the *literati* of their day, and noble monuments have they bequeathed to posterity. This style of architecture is not incompatible with that of Greece or Rome,—all can be produced by this general system. Vitruvius has prescribed rules, and numerous authors have followed him; and I have every reason to believe, that this system will apply to the works of all ages that can be tested by sound geometric principles; and I shall not rest until I have endeavoured to prove this satisfactorily to its fullest extent.

R. Dennis Chantrell, Architect.

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St. Peter's-on-the-Wall, near Bradwell-juxta-mare, Essex.—At a meeting of the British Archæological Association, on the 11th instant, Mr. C. R. Smith exhibited drawings of the curious old building so called, and gave some particulars of his personal examination of it, and of the Roman remains in its immediate vicinity. This edifice, now a barn, had, it appeared, escaped the observation of antiquaries, although it exhibits some remarkable features. Morant briefly refers to it, and states, that in 1442 a jury found it had a chancel, nave, and small tower, with two bells (no traces of which now remain); that it was burnt, and the chancel and nave repaired: when it was founded, and by whom, he adds, they know not. The building at the present day exhibits, notwithstanding the dilapidations to which it has repeatedly been subjected, some interesting traces of its original character: among these the most remarkable is a circular window, neatly turned with Roman tiles; and indications of two others similarly worked, on the side fronting the sea. The entire materials of the building appear to have been taken from the Roman structures, which, by foundations yet remaining, covered the site. It stands on the western side of a Roman entrenchment, which is considerably elevated above the surrounding level, and slopes towards the sea.

## THE VICTORIA LOBBY—NEW HOUSES OF PARLIAMENT.

MR. C. BARRY, R.A., ARCHITECT.



### THE NEW HOUSES OF PARLIAMENT.*

THE VICTORIA LOBBY.

Our readers will remember that at the south end of the House of Lords is the Queen's hall or lobby, communicating, still further southward, with the Victoria gallery and the robing room. The above engraving is a representation of this apartment, which is one of the three finished. The decorations are very rich; carving, gilding, and colours uniting, as in the house of lords and the peers' lobby, to produce a brilliant effect. The ceiling is panelled by the intersection of moulded beams; the ground is rich blue, on which are painted quatrefoils, containing the quarters of the royal arms surrounded by gilt crowns; the mouldings of the ceiling are painted subdued gold colour, partly gilt, and the foliage bosses are illuminated in colour. The upper part of the walls are covered temporarily with a maroon stuff powdered with roses and crowns, in panels, but is intended for painting.

The wall, to two-thirds of its height, is panelled with wainscot, finishing with an enriched cornice and battlement; in the frieze are blazoned the shields of the succession of sovereigns from William the Conqueror to the Queen; the upper range of the panelling is intended for paintings of figures on gold ground, and is now hung with a paper in imitation of leather hangings.

The archway on the left opens into the Victoria gallery; that on the right is immediately behind the throne.

* See pp. 153, 177, 183, 193, 194, 230, 254.

## THE REBUILDING OF THE CARLSRUHE THEATRE.

The Grand Duke of Baden has proposed a prize for the best plan for this building*—to which the injunction that it be executed in the spirit of German architecture (*im Geiste*) has been added. On this account a German art-critic has put forth the following observations.

"We may, in the first instance, well change the expression of German into *Gothic* architecture. In the whole of civilized Europe, the style of mediæval architecture was the same—and the cathedrals of Cologne, Strasburg, and York are monuments of a youthful inspiration (*Jugend Begeisterung*), which we fear will never more return. Let us keep close to that great historical axiom: "That in every epoch of history—all nations connected with it, have always used the same architectural style, only varying as to the degree of skill and mind of any individual nation." The monuments on the Indus and Ganges, Euphrates and Tigris, Nile, and at Persepolis, are so closely allied to each other, that we may call this style—whose constructions *exclude* the arch and the use of wood, the *heroic* one. The architecture of the subsequent epoch was the same as the former, a *general* one, and reached as far as the peaceful exploits of the Greeks and Romans. This style implies the use of both arch and timber, in every case, whenever a certain aim was more easily accomplished, than by the covering of horizontal slabs, &c. The characteristics of this style are a high consequentiality in the laying out of spaces, the use of the most adapted materials, and the highest taste in ornaments; thence it has obtained, most deservedly, the name of *the Classic*. And, when, in fine, this style of art had vanished in the great nation-migration (*Völkerwanderung*), of the middle ages, or sunk to the *Byzantine-Roman* style, mankind became imbued with a new sort of inspiration at the Holy Sepulchre in the far East — and imagination gained once more ascendancy over the rules of mere positive reason. Then it came, that the crystalline structure of the stone was violated as it were, being forced to bend to the widest, and at times, to the acutest arch—and rise up beyond all human proportion and necessity; it was formed, in fine, into hugest and slenderest finials, foliage, flowers. Still, even then, all mankind (either herded around the cross or crescent), had but *one* style of architecture—viz., that of the *pointed arch*, which may be called (in its bifurcation) the Gothic and the Mauro-Saracenic, if conjoined, the *romantic* style. When the minds of men began again to *sober* down to positive reason, they seemed to revert to classic architecture, endeavouring, however, to surpass their prototypes in elegance. The acme of this style has received, accordingly, appropriate names—*del cinque cento* in Italy; *de la renaissance* in France; in Spain, *Architectura platteresca* (silversmith's architecture).

After a long period of art-confusion and the subsiding of all genuine taste, we find the nations of Europe undecided on the choice of a new style of architecture. The most potent art-patron of modern Europe, Louis of Bavaria, however, embellishes his metropolis with structures of every kind, making it thereby the high art-school for the pupils congregating there from all Europe. This seems to us more judicious, than to make the mediæval style the chief patron of art-buildings, as is done in London and Paris. Because, even where it is art and not filligree work—its sterlingness cannot be compared with the classic. Compare even the solidity which a Parthenon presents, over the thousand faces and angles of Gothic buildings.

Still, this is not said to prevent us from taking care and restoring our old cathedrals with their numberless points and crags, columns and statues, mouldings and filligree work — it is known, that Professor Amati replaced one thousand and eight hundred statuettes at the dome of Milan alone! Let us rejoice that German princes restore their old castles and build Mauresque palaces and baths; let us approve that a whole city like that of Nüremberg has remained intact of classic intrusion. These stupendous works of *romantic* style, deserve eternal duration — but they should (like any other art-work) never come in close contact with one of a *different style*, which surely must disrupt the feelings of every sensible beholder.

The question of flat and acute gables has also been mooted, of late, and some preference shewn to the latter. Still, it is well known, that after Winckelmann's return from Italy he said, that their sight was insupportable to him. On this account we have to combat the opinion of those who consider gables as extraneous and arbitrary accessories and ornaments; and whenever they are placed without any scope or aim, they are faulty—and it is from such *arbitrarism* that the decay of architecture has always taken its origin. Such faults have been committed at Carlsruhe in three of its hugest modern buildings—the Hall of Art, and the Terminus in that capital, and the Drinking Saloon at Baden. And if art-consequentiality and chastity be thus badly observed by masters, may we, then, wonder at the sins of pupils, and see in the same building all sorts of doors and windows bungled together, wide spans topped by strait, narrow by arcuated lines; columns used as a mere ornament to walls, pillars wanting in the corners of Peripteri, and finding them close by, where they are not wanting. Still, the student of constructive art ought to *study* all art-styles in their greatest detail, and then to *opine* for one most adapted to his judgment and imagination. Unfortunately, art, philosophy, religion, politics, are stagnating in the present period of transition. If all these be once regenerated, we shall not be wanting in a novel—an adapted style of architecture!"

* Only open to German architects.

## PROGRESS OF THE BILL OF HEALTH.

The progress of this bill many thought had been arrested for the present session; but a determination has been shewn to carry it out at least as far as possible, before the rising of parliament; the commons, as the *Times* remarks, appearing to appreciate the grace and wisdom of such a closing act, before it surrenders back its trust to the people. The progress within the last fortnight has been accordingly considerable.

At the Statistical Society's rooms, on the 10th inst., a conference was held between the committee of the Health of Towns Association and members of both Houses of Parliament, to consider the means of rendering the most effectual support to the Government in their efforts to pass the bill during the present session, and thus to insure a commencement of sanitary improvements.

The Marquis of Normanby presided; and among those present were Lord Kinnaird, the Earl of Dartmouth, Earl Fortescue, Lord Ashley, Lord Dunally, and Sir C. Lemon, and various other M.P.'s, Dr. Southwood Smith, &c. Letters, expressive of sympathy with the object in view, were sent in by the Duke of Cambridge, the Earls of Auckland, Clarendon, and Shelburn, Lords Jocelyn and Sandon, Sir H. Douglas, Sir J. D. Acland, and others. The Marquis of Normanby, after presenting in detail a glaring example (elsewhere noticed), of the deadly nuisances still permitted not only to exist, but to increase, within the sanitary sphere of our great manufacturing towns, said, did it not reveal a state of things which called aloud for legislative interference, and scientific superintendence? He was anxious to cheer on the Government to give effect to all the portions of the bill which they could carry through. He was convinced that delay was sinful, and he believed that Government shared his feelings on the subject.

Mr. Mackinnon stated some objections to the bill, amongst which he pointed to the want of arrangements for the prohibition of intramural interments. England, moreover, was averse to the principle of centralization; and he was of opinion that the measure would never become law unless they left the power of administration in the local boards. [Lord Ashley intimated that the clause objected to had been given up.] If they succeeded, however, in getting the end of the wedge in this year, they might be able to drive it home next. By the improvements effected of late years, they had annihilated time, space, and pain, —time by the telegraph, space by railways and pain by the application of sulphuric ether. Why, then, should they not now seek to annihilate disease, the only way to do which was to set their shoulders to the wheel, and enable the Government meantime to carry the least objectionable portions of the bill? Lord Ashley moved "That, in the opinion of this meeting, it is of the utmost importance that some measure of sanitary reform should be passed in the present session of parliament, and that this meeting pledges itself to use every possible exertion to support the Government in their efforts to carry through whatever portion of the Health of Towns Bill, in the present advanced stage of public business, they may decide on retaining, as a step towards the final attainment of the great object they have in view." Mr. Ewart having seconded the motion, it was unanimously agreed to.

The friendly forces having thus been mustered, active progress at once displayed itself in the commons, in spite of Colonel Sibthorp, —worthy coadjutor of the obstructives in so grave and serious a cause,—who on the motion being put, that the house do now resolve itself into committee on the bill, proposed an amendment, seconded by Mr. Newdigate, that they do so that day six months. An animated discussion ensued, during which Mr. Roebuck, with every desire to support the noble lord, the author of the bill, and to admire the boldness of his attempt, and assist him in the benevolence of his intention, could not help expressing his regret, that although the noble lord had gone to Bath, and there found pestilence: had crossed to Manchester, and pestilence was there: had rushed to Birmingham, where all the abominations—no matter of what description—could not resist his interference; had then swept round to London, and there, frightened by a phantom, struck his flag, and cut—his stick—yes, cut his stick! The vernacular was the fittest language for describing the somewhat ignoble flight of the noble lord (Lord Morpeth) who had spread his net so wide; but why was it cut, and this great fish let out?

We cannot pretend, however, here to pursue the course of debate, even on a subject which, though intimately related to all that is stale, is in itself for ever fresh and worthy of re-argument. We can only, in the meantime, spare enough of space to state, that after not a few members had delivered their sentiments, the question was put, the amendment negatived by a majority of 191 to 50, and the committee fixed for an evening next week.

## NOXIOUS VAPOURS FROM SEWERS.

The Society of Arts have awarded premiums to several plans to prevent the emission of noxious vapours from sewers. The following is a description of two of them.

*Mr. J. Walker's Sewer-trap.*

It is proposed that a tank or pocket in cement should be built, to receive the water through the gratings from the streets, whereby the grosser particles will be collected instead of passing into the river. A cast-iron elbow is to be fixed on the side of the tank leading into the sewer. The elbow is to dip 3 inches into the water, so as to form a water joint to trap the vapours from the sewers, and to prevent the bursting of the drains. At every such trap an air-pipe is to be inserted, which may be continued under the paving, and terminated up the nearest lamp-post, building, or rain-water pipe.

*Mr. Chadley's Plan for Preventing the Emission of Noxious Vapours from Sewers.*

This plan consists of a cast-iron bason suspended under the body of the trap by means of chains, for the purpose of holding water to prevent the passage of the gas from the interior of the sewers. A partition is formed across the bason and parting any ice or other body in it by lowering the bason, which can be done by passing an iron rod through the grating and unhooking one of the chains: any dirt that it contains may thus be discharged.

British Association for the Advancement of Science.—The 17th meeting has commenced at Oxford, and promises to be satisfactory. Accommodation has been afforded to many visitors in the different colleges, at present untenanted by the undergraduates. Prince Albert is expected on Monday. Amongst the papers announced which more especially interest us is one, by Professor Hodgkinson, on the Dee Bridge failure.

## RAILWAY JOTTINGS.

More accidents! and at least 100 lives lost! only it fortunately happens, that although the third class 'carriages' on some lines are little better than 'cattle pens,' those 'smashed to pieces' in the most extensively fatal of the accidents alluded to, were not exactly third class ones of the stamp just indicated, but a grade lower, namely, cattle pens in reality; containing sheep and calves, between 90 and 100 of which had the butcher's work done for them by the railway wholesale system, the effectual principle of which approved system consists in the pinioning and execution of the convictims between two locomotive engines, one in front and one in rear. A good deal of curiosity and speculation, it seems, has for some time prevailed amongst the knowing ones, as to how this not altogether new invention would 'work,' when the expected result should take place. That curiosity has at length been gratified. When the proper obstacle occurs in the van, by the sudden arrival of the advance engine at a full stop, or, as in the present instance, by one of the loose connecting chains of a timber truck being hitched by catching hold of a crossing—the rear engine of dread destruction pushes on, and propels one truck, or carriage, into another, till the whole be reduced to squash. That is how the work was done on the Great Western on Saturday last, and although, for an amateur experiment, it would have been too expensive a process to the company to have sacrificed 90 or 100 'humans,' we may look for the thing coming off some fine day soon in earnest, and 'quite regardless of all expense.'——There is an interesting variety, however, as well as a 'startling novelty,' in the experiments on human life, with which the public have of late been entertained; of which the romantic plunge at Chester may be cited as a convincing proof. So much so, indeed, that after such exhibitions as these, there is a stale no less than an unprofitable excitement in the mere fact of 'making no bones of,' but breaking a few of those already made for, 3 or 4 labourers, with a miscellaneous, or chance 'female,' or woman, and 'male' of the same species, by the very reasonable determination of a railway arch to stand no longer after its 'only means of support,' namely, the trusses and centre pieces, on which it had been nursed into a precocious maturity, had been cruelly taken away. We may, however, *pro forma*, state, that this little incident occurred on Friday last, and that quite at hand, in Great Russell-street, Borough, already alluded to, over which the arch of the North Kent viaduct had been 'thrown.' Our only wonder is, whether the arch was begun in the morning, and 'turned by four o'clock.'——*Apropos* of viaducts, an 'alarming sinking' of the viaduct over the Avon, near Salisbury, occurred on Sunday morning. The 'stupendous walls,' had found their own obesity too much to support, and were in the act of giving way, when labourers were set to work to save them the trouble of at least supporting the stone coping and brick work, while carpenters were ordered to prop up 'the four lines of rail at the top,' so that the general traffic may not be interrupted, even in the midst of falling arches. 'Many complaints,' says our authority, 'are made against the works on this branch line of the South Western, from Bishopstoke to Salisbury (22 miles in length). At the present time, the large building intended for the reception of goods in this city (Salisbury), 240 feet long, 40 feet wide, with a further span of 10 feet each way, covered with at least 60 tons of slate, has been carried up in so shameful a manner as, even before its being finished, to require at least 50 pieces of timber to prevent this ponderous mass from falling! A few days since, this ill-built place was examined by Mr. Locke, the company's engineer, and other gentlemen connected with the company, when the works were condemned, and all the men ordered off, Mr. Fisher, the builder, of Salisbury, having been appointed to either rebuild, or so far to strengthen, the works as to make them safe. Many are of opinion that all must come down,' Can this be one of those lines which there was so great an anxiety to have hurried through, that the contractors were bribed by tempting offers of bonus, even to 'surpass themselves,' in speed of progress?——At a conference of the Midland Company and Sheffield Corporation and other authorities, the subject of the erection of a central station at Sheffield was lately discussed, after which the parties examined the site of the intended Sheffield, Barnsley, and Wakefield station, and also the station of the Sheffield, Ashton-under-Line, and Manchester, with a view to ascertain the eligibility of either of these localities for a central station.——The South Wales railway-works are in rapid progress near Usk. Here, says a correspondent of the *Monmouth Merlin*, "not only does a massive bridge of stone now span the Usk, and defy the rush of water and the strength of storms, but also, just above the beautiful structure of stone, a towering and magnificent bridge, on giant wooden pillars, and apparently as durable as the heart of oak will ever be." May he never be undeceived!——In the same quarter the Newport and Pontypool line is also fast progressing, as well as the Monmouth and Hereford, in the vicinity of Caerleon. These works create a great demand for labour.——The Leeds company lately preferred paying a passenger the expense of a post-chaise from Preston to Lytham, rather than risk a county court decision on the point at issue, which arose from the determination of the passenger to lose no time in reaching Lytham, to which place he had tickets through from Manchester, while the company had no train ready at Preston, when he arrived, to carry him on to his destination.——Engineers, it seems, have reported favourably on the project of converting the Carlisle and Port Carlisle canal into a railway, for the Newcastle Company. The probable cost is estimated at 20,000*l.* per mile, including purchase of land. The depth of water at the coast entrance, is said to be 18 feet 6 inches, or 1 foot 6 inches above that of Liverpool.——The extensive mining district of Alston Moor is about to be opened up to railway transit, by the commencement of a branch to Haltwhistle, on the Carlisle and Newcastle line. The cutting in some places will be very heavy. The contractors are, for the earth work, Messrs. Cowan, Marshall, and Ridley; for the Haltwhistle bridge, Mr. Edward Reed. The Lamley bridge is not yet allotted.——A locomotive was recently struck by lightning, between Atalanta and Augusta, in Russia, but the iron horse stood the brunt of the enemy's deadly shaft, without flinching, and passed on as if nothing had occurred. The carriages are, however, to be in future protected by horizontal conductors.——The Emperor of Russia, the Grand Duke Constantine, and other great Russian guns lately visited Messrs. Eastwick and Harrison's American engineering establishment, at Alexandroffsky, where the materials of six engines and tenders and five luggage vans and an eight-wheeled carriage, are prepared every day. The emperor, after examining every thing, made colonels of Messrs. Kraft and Melkinoff, and gave the order of St. Ann to Major Whistler, the American engineer, and diamond rings of great value, to Messrs. Harrison, Eastwick, Ninian, and others. 'This establishment,' says the *Mining Journal*, 'employs 1,920 workmen, of whom 1,643 are Russians, 121 Germans, 164 Swedes, 17 English, and 5 Americans. The engineers contracted for 162 locomotives, of 25 tons each, with their tenders, 5,300 iron trucks, 2,500 eight wheel luggage vans, 70 passengers' carriages, and 2 peculiarly elegant carriages, 24 metres in length, with 16 wheels each. Of these, 108 locomotives, and numerous trucks and carriages, are complete. This establishment is one of the most important in Europe, and highly patronised by the emperor and nobility.'

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Athenæum and Mechanics' Institution, Sheffield.—The sub-committee of this body, appointed for the purpose of receiving and inspecting plans for the proposed new building, met, in conjunction with the general committee, on Monday evening in last week, when they recommended as the most eligible, the plan supplied by Mr. G. Alexander, of London. About 15 designs were submitted.

Ovens in Dwelling-houses.—A correspondent draws attention to the impositions practised by many bakers, and suggests that every six houses, built in future, should have a bread oven for the use of the inhabitants alternately, one day in the week. A copper for brewing might be added.

## NEW CHURCHES AND THE RITUAL.

Sir,—My attention was attracted by an interesting and important article in your journal for this week, and though not in the habit of raising discussions, still the recommendations of your correspondent, "A Layman," are, as he himself observes, necessarily of much interest to very many of your readers, and I would hope, to all churchmen. How and in what style are the churches of England henceforth to be erected? This is indeed a momentous question.

Undoubtedly, "A Layman," is right, when he recommends to architects a study of their prayer-book before they presume to erect the sacred edifice; but then such a study will, I believe, shew, that as far as the *plan* of the building is concerned, the reformed ritual of the English church will differ but little from that of the unreformed church of Rome. The early Christians converted the halls of justice of Pagan Rome into temples henceforth dedicated to the worship of the Almighty; these primitive buildings have formed the models for all successive ages, and are still, and properly, adopted in the present day. Walter Scott, and a few other elegant, but on this subject unlearned writers, have unfortunately done much towards propagating erroneous ideas on ecclesiastical matters. The "long aisles" that are associated in so many people's minds with popery, unquestionably constituted a portion of the church long before popery was talked of. Will the plan of the ancient Saxon church be found in any respect different from that of the Norman and succeeding periods? Have not the two really essential parts of the church, the chancel and the nave, *always* existed in our English edifices? and is it not expressly ordered that *the chancels shall remain as they have done in times past?* Why, then, in our just endeavour to avoid the errors of Romanism, seek "to invent, or adopt, from models of the primitive ages, a distinct style of building for use in the church of England?" For, as we have seen, the plan of the primitive churches has formed our prototype; and it is therefore in the details of the Gothic style that the dangerous tendency to Romanism exists. Are we then called upon to abandon the intricate net-work of a traceried window, the clustered and lofty pillars with foliage wonderfully carved, the

> ——"branching roof
> Self-poised, and scooped into ten thousand cells,
> Where light and shade repose?"

Must they all be swept away because they were invented by men who were gradually led away from the purity of the primitive faith? As well might we condemn the noble art of printing; and casting from us the invention of popish times, seek some other method of enlightening the minds of our fellow-men. Good old Fuller is indeed right; a little skill in antiquity *may* incline a man to popery, "*but depth in that study brings him about again to our religion.*" "A little learning is a dangerous thing." Rather, then, than invent, let us study, aye, and deeply, and let the church, catholic and universal, continue to erect her temples in that style which has become peculiarly hers by the sanction of ages.*

Now, with regard to galleries, is it solely because they are unsightly objects that they are to be banished from our churches? Certainly not. Here is an instance where the architect is called upon to study his prayer-book and the canons of the church; for in the eighty-second it is enjoined, that the ten commandments be set up on the *east end* of every church and chapel, where the people may best see and read them. Occupiers of north and south galleries clearly were not then thought of; for such an arrangement obviously presupposes that the congregation are facing the east. But besides this, galleries tend very much to disturb the devotion and unity of the congregation. It is frequently difficult at times to keep the mind from wandering, but how much more so, when, perched up aloft, we have a sea of heads under our feet. Why, a person must almost necessarily close his eyes from the commencement to the close of the service, if he would keep his thoughts firmly fixed on the one object which

* At the same time, I am far from advocating a servile imitation of what has already been done. The builders of the 14th century had the Early English gothic to follow, and they did so eminently; extracting the spirit of the style, and clothing it with the offsprings of their own mature taste, they at last produced the exquisite architecture of the Edwardian period: let us follow their example.

brings him to church. After all, "A Layman" seems to leave the question in the hands of architects; it is for them to say whether or not they shall be tolerated in our churches, or whether they shall not rather be turned out as intrusions and innovations. For he says, "Practical men will be unwilling to remove them entirely, until our architects have seriously considered whether they cannot be made ornamental as well as useful." It remains to be seen what the architectural verdict will be. That they can be introduced in a design not only as tolerable but actually as beautiful features, nobody would care to deny; but if we are to follow catholic antiquity and the spirit of her architecture and church arrangement, then indeed galleries, like pews, are inadmissible. I cannot but suspect, that in more than one case a gallery is built where, if Christian liberality had been more abundant, an aisle would have been thrown out or a new church erected.

A Churchman.

## NOTES IN THE PROVINCES.

The Cowes commissioners have decided on commencing an efficient system of sewerage throughout the town, to be appropriately carried out, together with the introduction of the water-pipes along the streets. Engineers were to be called on last Monday to furnish plans. ——A grant of 25,000*l.* has been obtained, to defray the expense of the proposed barracks for 300 convicts, at Portland [where they are to labour on the government works, we presume].——The erection of public baths at Colchester has been begun. The building will be 112 feet in front, and the elevation of the Ionic order. They will be finished, it is thought, in about four months. Mr. Penrice, of Colchester, is the company's architect, and the building contract has been taken by tradesmen of the town.——A convenient county court house is to be provided, it is said, at Brentwood.——In scraping the walls of Great Waltham Church, the remains of various old paintings have been laid bare.——Measures have been taken, it seems, to repair and restore the chancel end of Rotherham Church. The churchyard though 'chocking with graves,' is still in use. The archdeacon of the diocese regrets the want of power, in either church or state (or law at least), to stop this disgusting 'outrage on decency, as well as on the sanitary condition of the people.' The yard, he thinks, ought to be flagged over, and further burials there precluded altogether.——The new baths at Rotherham, erected on the plan of Mr. Flockton, architect, will be opened forthwith. The *Sheffield Times* presents an engraving of this spirited undertaking, which ought to serve as an example to certain of our stingy metropolitan parishes. The edifice is upwards of 70 feet by 60 feet in extent, besides the out works, consisting of engine house, chimney, &c.; and contains all sorts of baths for both sexes—hot, cold, and tepid, vapour, slipper, plunge, &c.——We regret to have to announce, the death of the well-known Forest of Dean improver of iron and steel, Mr. David Mushett, of Monmouth, on the 5th instant, in the 77th year of his age. ——A stained-glass window has been put up in St. Martin's Church, Liverpool, at the cost of about 350*l.* It is said to contain between 3,000 and 4,000 pieces of glass, and have 120 figures in it.——A subscription, now amounting to 600*l.* has been opened, for repewing Mansfield Woodhouse Church.——The tenders of Messrs. Liller and Son, for altering Retford Town Hall, and making a better market, has been accepted—amount 495*l.*——The interior and exterior of Bradford parish church has undergone a thorough repairing and cleansing: a thorough restoration is said to be desireable.——The restoration of the battlement extending across the south aisle of the Lady's Chapel in York Minster, has been commenced.——A large public building, which will ultimately contain within its walls the subscription library, mechanics' institution, Bible depository, savings' bank, a large public hall, lecture-room, &c., has been opened at Darlington.——The renovation and improvement of the venerable cathedral of Glasgow progresses. The soil has now been removed from before the great western door, and that fine entrance is seen in all its beautiful proportions. Workmen are busily engaged in pointing Blackadder's aisle outside, and the windows, at present built up with stone, are all to be glazed;—the roof is also to be covered with asphalte, to keep out the weather. The buttresses at the east end of the building are likewise under repair. New steps have been put down at the south entrance to the main crypt, and the porch will be repaired with mastic. ——The new Wesleyan church in Donegal-square, Belfast, which cost 5,000*l.* in the erection, was to be opened on 20th instant.

## ARCHITECTS AND BUILDERS.

### TAKING OUT QUANTITIES.

Sir,—In your next publication, will you, for the information of builders in general, be pleased to answer the following question?—A is an architect appointed to superintend the erection of a public building, the quantities for which he himself takes out, and charges 1 per cent. to B, the builder, for the same. At the close of the job, B discovers there is great deficiencies in the quantities supplied him by A, who, on being spoken to, and asked to meet any competent surveyor that B may appoint to measure the same, refuses to do so, and even says, that he will not allow any person to measure a building over which he is the architect. What remedy has B in the matter, he having paid a large sum for the quantities?

*** Unless freed from the responsibility by a special clause in the contract (which is usually inserted in such cases), the architect, we are disposed to think, would be liable for the omissions. An architect, by taking out the quantities for contractors, places himself in a wrong position as respects his employer and the builder. The practice should be discountenanced: we do not believe, however, that it is carried on to any extent.

### SCHEDULE PRICES.

Sir,—In reference to the remarks of "An Architect," in your last number, touching the relative position towards each other of architect and builder, I, as a builder, wish that the system of schedule prices were fairly carried out, but unfortunately this is not the case. I will give you a practical illustration. I undertook a contract and furnished a detailed estimate, on which prices all the alterations were to be calculated and charged. As soon as the contract was entered into, the engineer (not architect) set about making sundry alterations in the plans and arrangements, so as to make quite a different thing of it. In calculating my brickwork, I put down an average price for the whole of the work, face-work and all other extra items being included in the price, which I considered a fair average as the drawings were originally made. The alterations made in the plans were such as to cause nearly double the quantity of face-work (and this was all done with the best dressed bricks and tuck pointed), and a corresponding deduction made in the common brickwork, so that the alteration made no more in amount though the prime cost of the whole was from fifteen to twenty per cent. more than it would have been under the original contract drawings.

Again, there was in the schedule of prices an item of a few shillings only of "casements and frames." This, by an oversight in pricing out the quantities, was put down at a very low rate, evidently a mistake; well, our saving engineer, in making the alterations in the plans, took out a great portion of the sashes and frames, and put in casements and frames, being so great a saving. Several other similar alterations were made, but *invariably* to the evidently *studied* disadvantage of the contractor.

Whilst architects or engineers will thus act, they cannot expect contractors to place that implicit confidence in them which both ought to feel in each other.—I am, Sir, &c.

A Builder.

College of Chemistry.—At the evening meeting on Wednesday last, Mr. Pusey, M.P. in the chair, Mr. Noad lectured to the satisfaction of a considerable audience, on the manufacture, properties, and uses of sulphuric acid. A pretty daguerreotype from a rubbing of a "brass" was shewn

## THE INTENDED MUSIC HALL, IN LONG ACRE.

Mr. Hullah has commenced a new Music Hall, from designs by Mr. W. Westmacott, Architect. The plot of ground on which it is to be erected, consists of a parallelogram 149 feet in length, and 61 in width, the north side abutting on Wilson-street (leading from Endell-street to Drury-lane), and the east side on Charles-street; this plot being connected (at the south-west corner), with Long-acre, by another 44 feet in length and 22 feet in width.

There will be three entrances, from three different sides of the building; one, the principal, from Long-acre, another from Charles-street, and another from Wilson-street.

The building will have three principal stories, viz., basement, ground-floor, and first-floor; and between these latter (over the corridor), an intervening story, or mezzanine floor.

The ground-floor will consist of a lecture-room, 51 feet long, 40 feet wide, and 26 feet high, calculated to afford accommodation to 500 persons; and of three class-rooms, one 40 feet by 36 feet, another 31 feet by 19 feet, and a third, 26 feet by 19.

The first-floor will contain the concert-hall, which will be 120 feet long, 55 feet wide, and 40 feet high; the length being rather more than double the width, and the height a third of the length. On the north and south sides, and at the west end of the hall, will be erected galleries, the former 7 feet, the latter 11 feet in depth. The ceiling, or inner roof, will be flat in the centre, and sloped at the sides; and divided into compartments or panels, framed in wood. This hall will afford accommodation for 3,000 persons.

Between the inner and outer roofs of the hall will be formed a room 120 feet long, 17 feet wide, and 9 feet high, lighted by dormers. A portion of this room will be occupied by a ventilating apparatus, and the remainder will be fitted up as a library of music and musical literature.

The elevation towards Long-acre (nearly opposite the end of Bow-street), will be of Elizabethan architecture, and chiefly worked in brick. A lithograph of the design has been circulated, but it is so rudely executed, that it might seem unjust to the architect to form an opinion from it.

## Correspondence.

### PUBLIC BATHS.

Sir,—In an age when companies and societies are formed for carrying out almost every imaginable object, and when the sanitary question is the leading topic of the day, and when public writers are continually comparing our great metropolis with the metropolis of the ancient world, and mourning over its deficiency in this respect, is it not surprising that London is so ill-supplied with those great desiderata, public baths? and more particularly with swimming baths?

The few establishments of this kind at present in existence, I consider nothing better than mere apologies for what are required, and I am fully persuaded that it would amply pay a joint-stock company to form baths in the heart of the metropolis, on a *large and grand scale*, and fully commensurate with the wants of the million. With this view I write to you, in the hopes of inducing some enterprising capitalists to supply this great want.

I am, Sir, &c.,

A Denizen of the Metropolis.

June 10th, 1847.

### STRAIGHTENING CROOKED RAILS.

Sir,—Can you afford a subscriber some information relative to a machine for straightening crooked rails? Contractors find it very expensive in preparing rails for permanent use after they have been bent in the construction of the works. If not, it may be in the power of some of your contributors to point out a "*cheap and effective*" machine for this purpose. —I am, Sir, &c. J. S.

Competition.—Gas engineers and contractors are called upon for plans and specifications, with tenders, for the erection of gas-works at Littlehampton.

## Miscellanea.

Projected Works.—Tenders have been called for, by advertisement, for erecting a congregational church in Kentish Town; two wards at the workhouse in St. Martin's-in-the-Fields; various works (including plumbers', carpenters', &c.) necessary in the building, rebuilding, repairing, &c., of sewers and other works connected therewith in Holborn and Finsbury, for 3 years (separate tenders); erecting and completing the several works of the new battery at Point, Portsmouth; executing certain works in repairing St. Dunstan's church, Stepney; excavating the wet dock and half-tide basin of 22½ acres, at Sunderland, and building the walls surrounding same with entrances thereto; making and completing a tramway of 1,260 yards lineal at Southampton harbour, with rails, &c.; erecting wards and washhouses at the Blything Union Workhouse, Bulchamp; paving, repairing, and keeping in order for 3 years the stone carriage-way and foot-pavements of St. Mary-le-Strand parish; also for constructing 3½ miles and 5 miles of the Vale of Neath railway; and building a large viaduct through the city of Gloucester, and bridges over the Severn, on the Dean Forest and South Wales railway.

The New Marbles in the British Museum.—We mentioned last week, that the marbles which had been sent from Nimrood, by Mr. Layard (from whom we publish a communication in our present number), had reached the British Museum, and were exposed to view. In our last volume, we gave Mr. Layard's own account of the discovery, and description of the bas-reliefs.* They consist of slabs ranging from 6 ft. 4 in. long, by 2 ft. wide, to 7 ft. 6 in. long, by 3 ft. wide, and exhibit representations of battles, and a lion hunt; comprising also, the head of a king attended by his eunuch, the size of life, and a winged divinity with the head of an eagle. It will be observed, on examination, that inscriptions, in the arrow-headed characters, are cut upon them in straight lines, passing indifferently over the ground of the sculpture and the raised parts. In one, representing a siege, is a semicircular-headed doorway, with a zig-zag ornament around it.

Metal Gilding.—The relative merits and peculiarities of the three modes, namely, by amalgam, by galvanic action, by mere immersion, have been rather curiously brought to light by the simple test of nitric acid applied by M. Barral. The article, when attacked by dilute acid, yields a pellicle or scale of gold pure on the inner surface if electro-gilt, or by immersion; but if by amalgamation, of a reddish brown colour, shewing that the coating has been united with the substance of the article by a double amalgamation, so that the old process is a more solid one than the new; but then the pellicle of the old process is full of minute but distinct holes, through which the mercury had been driven off, while the pellicle of the new is quite opaque and solid, so that the latter is much better adapted to vessels in domestic use liable to the action of acids, while the former will probably stand mechanical tear and wear with much more hardiness and endurance.

Prevention of Railway Robberies.—Sir: It has occurred to me that, by the adoption of the following simple plan, railway robberies may be effectually prevented. Most companies now place a label on the luggage. Suppose, in addition thereto, the party affixing the label asked the passenger his name, or initial, and marked it with *sympathetic ink* on the label, already affixed. At the journey's end passengers may, as now, select their own luggage; but if, on passing out with it (or at some other convenient point) an officer were authorized to ask the name, or initials, a stroke with a brush would in an instant reveal the name, before concealed, and the almost certain identity of the claimant, or the thief, would stand detected. If this plan were adopted only occasionally, *at uncertain intervals*, it would prove a considerable check. F. B.

Perpetual Motion.—This vain delusion, if not still in force, is at least as standing a fallacy still as ever. Joseph Hutt, a framework-knitter, in the enlightened town of Hinckley, professes to have discovered it, and only wants 20*l.*, as usual, to set it agoing.

* See Vol. IV. p. 520.

The Serpentine River for Bathers.—Sir: A correspondent of the 6th of March last, called your attention to this subject, proposing, that as from the removal of the gravel from the bottom at various times, there are many holes which render it dangerous to bathers, it should be filled up to a uniform depth. Now, I would go farther than this, I should propose, that a portion of it, say about 400 or 500 yards of its length at the east end, be inclosed, and separated from the rest, by a wall, and that this portion be 2 feet deep on each side, and increase gradually in depth, from these two points towards the middle, where let it be 5 feet 6 inches in depth or thereabout. The water might be renewed by means of gratings in the dividing wall, so as to let the water in, and the water of the bath might pass gradually out through the small stream which passes out at the end of the river; in this manner, the water would be constantly renewed, as the outer part will be supplied by the springs which abound there. This inclosure might, with a little money and a little intellect, be made to present a considerable deal of that architectural appearance so much neglected in many places.

St. Stephen's, Walbrook.—Our remarks on the disgraceful state of this building have awakened attention to the subject; it is to be hoped they may have the effect intended. One correspondent, "T. I. M.," has forwarded us a plan for a proposed new street from the front of the church to Southwark bridge, printed in the parliamentary report on Metropolis Improvements in 1838, and again recommended in 1843 by the London Bridge Committee. This would expose the church to view, and he suggests certain architectural additions to the outside of it. Our present object, however, is the preservation, repair, and adornment of the *inside*. Another correspondent inquires if it be true that a part of the church is in private occupation, thereby increasing the risk of fire, and urges that the churchwardens should themselves immediately move in obtaining the reparation of the structure.

Shakspeare's House.—It has been suggested to us that the 2,000*l.* required to prevent the destruction or removal of Shakspeare's house, might be raised by a guinea subscription, conferring on each subscriber a proprietorship in it to the extent of a two thousandth part, and the right of voting for the election of some person in reduced circumstances connected with the legitimate drama, who should reside there and receive all fees paid, with the exception of a sufficient sum each year to maintain the building in repair.

Patent Rock-drilling Machine.—Experiments have been tried with a new machine on the rock of Kendal Fell. The new machine, worked by a horse, and adapted to railways from an instrument used upon canals in America, "will render rock cuttings a mere bagatelle," says a contemporary. A hole was bored, and a mass of rock 363 tons in weight displaced in six hours, a feat which would require the energies of sixty men. At Beattock Summit, on the Caledonian railway, this machine it is said will immediately be brought into active use.

Bridge over the River Meuse.—The bridge over the Meuse, at Val St. Lambert, now being erected for the Namur and Liege railway, from the design of Mr. George Rennie, the engineer, has five arches of 82 feet span each. The rise from the springing of each arch to the soffit of the key-stone is 10 feet. The bridge is of stone, rusticated, with a cornice and parapet, and has a large sculptured wreath over each pier in the spandrels.

Tintern Abbey.—Since last Christmas, an important addition has been made to the ruins, by the discovery of the remains of a large oblong building, supported by a row of pillars, the lower parts of which appear in a perfect state. The situation of this adjunct (nearly adjoining the refectory), is thought to mark it as the hospitium, or smaller convent, in which the monks were wont to entertain strangers.

Fishmongers' and Poulterers' Institution.—On Wednesday last Lord Morpeth laid the foundation-stone of an asylum for aged and infirm fishmongers and poulterers, at Wood-green, near Hornsey,

## TO CORRESPONDENTS.

"*J. L. H.*"—An objection to the apparatus in question has already appeared in our pages.

"*B. B.*"—Many thanks.

"*P. C.*"—Apply to a surveyor.

"*J. W.*"—Nicholson's.

*Received.*—"J. S. B." "W. B." "R. S." "C. H. C." "J. S." "H. L." (Beverley), "J. S." (Stafford-street), "T. B. L." "G. B." "J. M." "J. H. D." "J. G. S."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses

Errata in last number, page 288, 2nd column, 1st line, *for* "point," *read* "front."


## ADVERTISEMENTS.

SURVEYING AND LEVELLING.

MR. HENRY CASTLE, Lecturer at King's College, London, and Author of "Engineering Field Notes," and of the "Elementary Text Book," for Surveyors and Levellers (both of which are now ready at Messrs Simpkins, Marshall, and Co., Stationers'-hall-court), will commence his Private Vacation Class for actual Field Work on the 6th July next. Fee for the Class, Five Guineas.

SURVEYING, &c.

ENGINEERS' COLLEGE, LONDON.—Conducted by Messrs SMITH and LEWIS.

Course 1.—Surveying, Levelling, and Mapping, will commence on Tuesday, the 29th inst.

Course 2.—Civil and Military Engineering, will commence on Wednesday, the 30th inst.

Course 3.—Architecture, Building, and Draughting, will commence on Thursday, July 1st.

Course 4.—Measuring and Valuing of Land, Timber, Buildings, Townships, &c., will commence on Friday, July 2nd.

Proficiency guaranteed. Terms, till perfect, very moderate.

Pupils, on completing the Course, may be introduced to employment. For Prospectuses, &c., apply at the offices, 4, Harpur-street, Red Lion-square.

PAVING, 2s. 9d. PER SQUARE YARD.

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, PULONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

ANSTON QUARRIES.

MESSRS. Wm. WRIGHT and Company beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened Quarries in the land adjoining those of Messrs. Grissell and Peto, and are ready to supply any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected, in preference to all other in England, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. Facilities are at hand for forwarding the stone to any part of the kingdom. Applications to be made to Messrs. W. WRIGHT and Co., Anston, near Worksop, Nottinghamshire.

ARCHITECTS AND BUILDERS.

THE Westminster Marble Company are enabled, with their patent machinery, to execute every variety of marble work in a superior manner, at a considerable reduction in price. The show rooms contain a large assortment of elegant carved statuary chimney pieces and monuments. Country builders will realise a great saving by forwarding orders to this establishment. A liberal commission allowed to the trade for acting as agents. Direct, Earl street, Millbank, Westminster.

CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.

P. FOUCARD and W. TUCKWELL, Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry [illegible] Caen Stone on their Wharf (imported July last), exclusively from their quarries, at Allemanne, which, for present uses, is superior to any [illegible]. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. JAMES A WITHALL, Surveyor, 89, Cheapside, where any information and samples may be [illegible].

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the Sole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemanne. Orders received at the wharf, and further particulars may be obtained of Mr GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

MAGNUS'S ENAMELLED SLATE.—Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has been introduced into Buckingham Palace, the drawing rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now making the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, bazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices.—N.B. The trade supplied with whole cargoes, self-faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

STEPHENS' CONCENTRATED and SOLUBLE INK POWDERS, which contain the chief elementary parts, in a dry state, of his various well known INKS or WRITING FLUIDS, yet so readily soluble in water, that by putting the contents of a paper packet into a bottle, and adding the quantity of water indicated by the directions, it is ready for immediate use. The economy of this article in carriage, from its reduced bulk, may be estimated when it is considered that one part of the powders will make nearly twenty times its weight and bulk of liquid ink. The Black Ink Powder is sold in packages at 1d., 6d., and 1s. 6d. each, or six of the smallest in one packet, 6d. The Blue Black and Unchangeable Blue, in packets at 1½d., 9d., and 2s. each, or six of the smallest in one packet, at 9d. Samples of the smaller packets can be sent by post to those who may wish to make a trial of them. Prepared and sold by HENRY STEPHENS, inventor and proprietor of the Writing Fluids and Colours for Staining Woods to imitate oak, mahogany, &c., 64, Stamford-street, Blackfriars-road, London, and by booksellers and stationers throughout the kingdom.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Plain, enamel and painted work on the most moderate terms.—CHARLES LONG, No 1, King-street, Bayer-street, Portman-square Cash only

**THOS. MILLINGTON, 87, Bishopsgate-**street Without, has a large Stock of Crown Glass on hand of the following sizes—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass

**FOREIGN WINDOW GLASS, superior** to English, 16 ounces to the foot, suitable for general purposes, in cases of 300 feet, for 42s. or about 3d. per foot; in large dimensions; smaller do., in 100 feet cases, at 3d. per foot. No less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS, equal** to the Ancient.

| | s. | d. |
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| Ruby in Sheets, a splendid colour, per foot | 2 | 3d. |
| Green | 1 | 3 |
| Blue | 1 | 0 |
| Pale Purple | 1 | 0 |

Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**PLATE GLASS.**—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the UNION PLATE GLASS COMPANY.

N.B. Rough Plate supplied one-fourth, three-eighth, one-half, and three-quarter inch thick. — Warehouse, 99, Hatton-garden, Holborn.

H CHRISTIE, Agent

**HETLEY and Co. beg to inform Archi-**tects, Builders, Plumbers, and Glaziers, and the trade generally, that their new price list of PATENT PLATE, CROWN, and BRITISH SHEET GLASS, will be forwarded to address post free.

16 oz. and 21 oz. Sheet Glass for Horticultural purposes at a lower price and of a better quality than the foreign. Glass Tiles and Slates to pattern, any thickness.—5, Soho-square, London

EMBOSSED GLASS.

**EDWARDS and PELL, 15, Southampton-**street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms; Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Regular 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies. The Attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

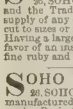
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| Thirds | 4 4 0 | |
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| C.C. | 2 8 0 | |
| C.C.C. | 2 0 0 | |

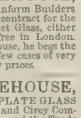
SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turpentine, Colours, Varnishes, &c. WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

**CHAS. WM. WATERLOW,**

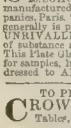
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of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square. Well-seasoned materials, superior workmanship, lowest prices. — Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

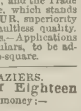


**JOHNSON and PASK,**

1, Amwell street, Clerkenwell, near the New Road Head.

Beg to inform the Trade, and the Public, that they have taken Premises, fitted up with every convenience for carrying on Shop Fronts, Doors, and all other kinds of Joiners' work, on the most reasonable terms.

All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



**J. BARKER'S DOOR, SASH, and SHOP-** FRONT MANUFACTORY, 93, Theobald's-road, Bloomsbury. Prices for Cash:—



14 inch outside cased sashes and frame, with lines and weights, 1s. 3d. per foot; 3-inch ditto, ditto, 1s. 3d. per foot; 3-inch ditto bar, glazed sashes and frame, with lines and weights, 1s. 4d. per foot; 2½-inch casement sashes and frame 1s. 4d. per foot; ditto, glazed 1s. 3d. per foot; 1½-inch four pound squares 1s. 3d. per foot. Inch ditto into 1½ or 2 inch, moulded both sides, 1s. 0½d. per foot.

All kinds of joiners' work per foot or otherwise preferred. Alterations at workmanship warranted.

**ARCHITECTS, BUILDERS, and the** Trade in general, are informed they can be supplied with Composition and Plaster Ornaments of first-rate quality, the study of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, bed mouldings, &c. &c., on the most reasonable terms by Mrs. HERBERT and SON, Modellers, &c., 33, Fetter-street, Strand, late Modelling assistant for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 3d per cwt. cheaper than paper maché.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assort-**ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from 4 inch to 14 inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well seasoned Stock of every kind of Prepared Flooring Matched Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING PIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. All Deals and Battens of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Red Laths, Wainscot Boards, &c. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

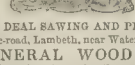



SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

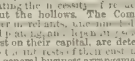
Address to HENRY SOUTHAM, Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial that the system in the preparation of boards which finishes skirtings, &c., by which accuracy, dispatch, and economy of material is secured, is the best ever introduced. The process of planing a board although curved, the machine following the edge, reducing it to the same thickness all along by the use of a peculiar cutter of deep curve, that comes in with every part of surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders or timber merchants, are enabled with any fair but remunerative patronage, to afford every advantage in the power of a moderate interest on their capital, are determined, by an assiduous attention to the wants of their customers, to combine good workmanship and general business arrangements, to merit a continuance of their support.



WOOD THOROUGHLY PLANED UP IN DAYS INSTEAD OF WEEKS BY DAVISON AND SAMUDSON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning and fitting wood, on simple principles of science, is now in full operation at Surrey Mills, Camberwell, where the above and all kinds of Joinery Deals for the home and export trade are prepared and seasoned by one of the most simple and inexpensive processes ever introduced to the public. The process is conducted in a manner how warm the temperature or hot the climate, strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 36, New Broad-street, City.

N.B. It has been found necessary to state, that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is a defect in them to possess.

**SIR W. BURNETT'S PATENT for pre-**venting the Decay of Timber, Canvas, and of all Vegetable and Animal Substance.

This process has long been in extensive use in her Majesty's Dockyards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood, and renders it perfectly durable, and for all purposes unobjectionable, as it neither alters the colour or smell of the wood prepared expressly for the purpose.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.

What the quality of timber to be prepared for special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 53, King William-Street, London-bridge.

FOR NEW AND OLD BUILDINGS

TERRO-METALLIC WINDGUARD

**CHIMNEY-POTS,**

For stopping Down Draught, and preventing Return Smoke and Soot.

On View and on Sale at THOMAS PEAKE'S WHARF, CITY ROAD BASIN, LONDON

TO ARCHITECTS, BUILDERS, PLASTERERS, AND OTHERS.

**W. HUGHES and Co., Ornamental Plas-**terers, Modellers, &c., are enabled to supply at reasonable prices, all kinds of Cement and Plaster Ornaments for Architectural purposes, they having a large quantity of moulds and patterns, consisting of Trusses, Consoles, Capitals, Centres, Friezes for Columns and Pilasters, Queen's Coat of Arms, Pediment Scrolls, Ornamental Chimney Shafts, of large dimensions, Ballustrading, &c.; a great variety of Animal and other Figures, Vases, &c., for Gardens, Pleasure Grounds, Terraces, &c.; a variety of Centre Flowers, Soffits, Bed Mouldings, &c., for internal decorations.

Modelling executed with great despatch. Brewers, Workshops at No. 1, Brewer-street, Northumberland-street, Waterloo-bridge, St. John-street Road. Residence removed from Upper-street, Islington, to 118, Gower-street, opposite the Duchess of Oldenburgh, Clerkenwell.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

TO BUILDERS, CONTRACTORS, LIME MERCHANTS, &c.

**GREY STONE LIME of the best quality,** will be delivered after the 1st July, on board barges at the Halling Lime Kilns (lately occupied by Messrs. Poynder and Co.) at 8s. per yard, or alongside any Wharf in London at 7s. Apply to CHARLES FORNBY, Esq., Halling, near Rochester

**LIME AND CEMENT WHARFS.** — Grey-stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials, may be obtained on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland-road.—Ground Lime for Concrete

**PLASTER of PARIS of the very best** quality, Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

**CHEAP ROMAN CEMENT is sold in** Casks that will not contain Five Bushels, even by some manufacturers of a very inferior article. Consumers should see that the standard size cask is 39 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT.** — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, S.E. Constance of Atkinson's Cement.

**BATHSIDE CEMENT WORKS,** established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 3, Laurence Pountney Hill, Cannon-street, London. Depôts—Three Cranes Wharf, 69, Upper Thames-street; Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

**PORTLAND CEMENT is the only Cement** for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster

**KEENE'S PATENT MARBLE CEMENT**

Is now an exceedingly hard and indestructible Stucco, which may either be prepared for paint or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and effective substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it combines the great advantages of Permanency and Freedom from the attacks of Vermin

Patentee and sole Manufacturer, J. B. WHITE and SONS Millbank-street, Westminster and Seel-street, Liverpool

**GREAVES'S LIAS LIME and CEMENT.**

RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as a cement, is especially adapted for sewers, dockwalls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it becomes more than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—is not affected by frost—and is light.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting

Metallic Sand on hand.

MARTINS' FIRE PROOF AND ORNAMENTAL CEMENT.

**CAUTION.**—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against using this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, does not in the slightest degree injure any substance with which it may be combined, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without the necessity of previous dry work.

It is peculiarly adapted for an internal coat for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For external purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniformity give an immense advantage over stone, being, at the same time, much more economical. The most [illegible] for the Patentees, Messrs. STEVENS and SON, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE, [illegible] Liverpool and Manchester. Mr R. PART, 28, Cunningham-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPOWNERS, AND OTHERS.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by the Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building over which it is used, so as to render it impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It can be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs [illegible] with this Cement will remain unbleached by the several Seasons. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above and many other valuable advantages, it [illegible] of any kind.

Architects and Builders who have used this Cement have declared it [illegible] and have ordered it to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from many eminent Architects, may be had on application at the Sole Depôt for the United Kingdom, of MANN and CO., 39, CORNHILL, Patentees, Mapleleaf-lane, Queen street, Cheapside, London; of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses, &c. &c., in lieu of Roman Cement and Stucco, and which have become dirty and discoloured. It is in every way better suited for that purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being (as is too well known) the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

The PATENT TORRENT WATER CLOSET has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and the construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

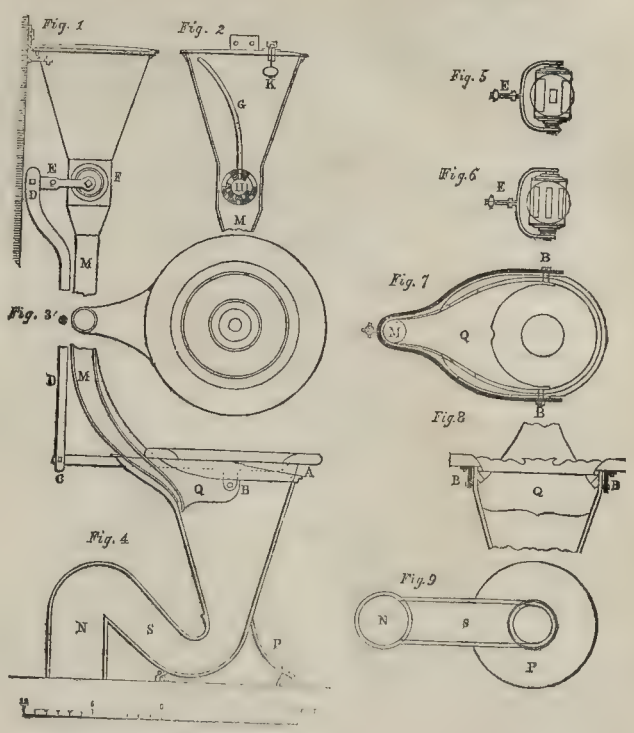
9. ECONOMY. The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE. The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock &c., at bottom.
Fig. 2.—Section of the measure and cock, shewing its position when open for the water to come in.
Fig. 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.
Fig. 4.—Section from back to front of seat, basin, bottom of torrent-pipe M, apparatus Q, and shewing lever C under seat, and lower end of action-rod D, to let water in and cut it off.
Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.
Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.
Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action rod.
Fig. 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.
Fig. 9. Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F:—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

MR. JOS. E. DOWSON

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

## DOWSON'S EARTHEN PIPES,

GLAZED INSIDE,

FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the depredations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of MESSRS. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains—LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

MESSRS. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE, and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

OFFICE OF THEIR FOUNDRY, 44, NUTFORD-PLACE, EDGEWARE-ROAD.

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MAY be had, if fetched away immediately, a large quantity of GOOD DRY SCREENED BRICK CORE, suitable for concrete, road making, paving, &c. Apply to J. SAUNDERS, Langton Arms, corner of Wenlock-street and Norman's-buildings, St. Luke's, back of the [illegible]

TO MEMBERS OF BUILDING SOCIETIES AND OTHERS.

TO BE SOLD, a long Lease of a Seven-roomed House, in good repair and in an improving situation adjoining [illegible] Apply to Mr GEORGE LOW, Architect, [illegible]

BUILDING LAND FOR ABOUT TW[illegible] THIRD OR FOURTH RATE HOUSES.

TO LET, at very moderate rents, a most eligible plot of ground, near Kilburn Turnpike. A great demand for houses at moderate rents. Apply, to view the plans and particulars to Mr. H BIERS, 13, Carlton villas, Edgware-road

TO ENGINEERS AND OTHERS.

TO BE LET, together or separate, large Light Lofts, and an extensive Smith's Shop, fitted up with three double forges, vice lofts, drills, &c. Inquire at the Counting-house of No. 101, Long Acre.

HORNSEY ROAD

TO BE LET, on Building Leases, several Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country. For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford row.

FREEHOLD BUILDING GROUND

TO BE LET UPON LEASES, for a term of Ninety nine Years, in Plots, averaging from three-quarters of an acre to an acre, each adjoining the Ewell station on the London and Epsom Railroad, and having frontage to good roads. The places may be inspected and full particulars obtained at Messrs. CLUTTON'S Offices, No. 8, Whitehall-place, London.

TO BE LET, for a Term of 84 years, Several Frontages of Desirable Building Ground, situate at Chelsea, and forming a part of New Pier-street, in a direct line from King's-road to the Chain Pier, also in continuation of Upper Cheyne row, &c. Apply to Mr RICHARD TRESS, Architect, 23, Little St. Thomas the Apostle, City.

MANOR PARK ESTATE, STREATHAM, SURREY.

TO BE LET, on Building Leases, in the above Park, in this favourite and select district close to the Parish Church, upwards of Sixty Plots for Villas, Fifty for Terraces, and several for Shops and Stabling; the whole forming a belt round the interior of the Manor Park, which from its combination of undulating surface, ornamental water, and well-grown timber, is of singular beauty. Private rides, walks, and drives are intended to be made within the Park. Facing-bricks, both White and Red, Stocks and others of an excellent quality, and in any quantities, may be had on the Estate, and an allowance will be made in the price where used on the Estate. Gravel and Sharp-sand of a superior description are found in abundance on the ground and water is laid on. Advances will be made and other accommodation afforded to respectable builders taking an adequate interest in the property, which is likely to be immediately remunerative to them, from a great and increasing demand for houses existing in this neighbourhood.—For Lithographed Plans and Particulars, apply to Messrs. RANKEN, FORD, LONGBOURNE, and VICKERMAN, No. 4, South square, Gray's-Inn; Messrs. GOUGH and ROUMIEU, Architects, No. 10, Lancaster place, Strand, or Mr WILKINS, at the Manor-park Office, Streatham.

## SALES BY AUCTION.

SECOND PORTION.—Third, Fourth, and Fifth Days' Sale of the extensive stock of General and Furnishing Ironmongery, of the very best manufacture, removed [illegible] to suit private buyers and the trade.

MR. DRAY, Jun., will SELL, at his Rooms, 259, High Holborn, on TUESDAY, June 29 and two following days, a valuable ASSORTMENT of IRONMONGERY comprising modern register stoves, kitchen ranges, Dr. Arnott's and other shop stoves, bronzed fenders and fire irons, an assortment of best Sheffield cutlery, Britannia metal and tin dish covers, bronze tea urns and kettles, Palmer's and other lamps, 26 sets of papier mache tea trays, 50 sets of best japanned ditto, shower, hip, and sponging baths, japanned and tin ware in great variety, enamelled and tinned iron goods, locks, latches, bolts, hinges, nails, and finger plates, door furniture, and cabinet ironmongery. May be viewed the day before and morning of sale, and catalogues had as above

QUEEN'S-ROAD, KENSINGTON PALACE GARDENS. BUILDER'S STOCK

MESSRS. FOSTER and SON are directed by the Assignees of Mr. J. M. BLASHFIELD to SELL by AUCTION, on the Premises, Queen's-road, Kensington Palace Gardens, on MONDAY, June 28, and following day, all the new Materials of the best kind, consisting of 2200 dry [illegible] parquet, 1,000 flooring and other boards, planks [illegible] deals, Spanish mahogany in boards and veneers, five tons of nails, various, 200 gross of patent and other screws, hinges, latches, locks, files, corbels, bar iron, lead and iron pipes, coloured and white paving tiles, [illegible] carpenters' benches, ladders, a portable house on wheels, and a great variety of useful effects. May be viewed on Saturday prior, and Catalogues had of H CANNAN, Esq., Official Assignee, Birchin lane; on the Premises, and of Messrs. FOSTER, 14, Greek-street, and 54, Pall Mall.

MILL-WALL. TO CONTRACTORS, MANUFACTURERS, AND OTHERS

MESSRS. FOSTER and SON are directed by the Assignees of Mr. Blashfield to SELL by AUCTION, at the Mart, on TUESDAY, June 13, at Twelve, the Lease of an extensive Wharf and Premises at Mill Wall, [illegible] having a river frontage of 200 feet by a depth of 500 feet, together with the Cement Works, a small Brewery, and other excellent buildings thereon; the whole held by lease for a term of 88 years, of which 50 years are now unexpired, at a ground-rent. Further particulars will shortly be advertised.

ALBION WHARF, BLACKFRIARS.

MESSRS. FOSTER and SON are directed by the Assignees of Mr. Blashfield to SELL by AUCTION, at the Mart, on TUESDAY, July 13, at Twelve, the Lease of Albion Wharf, Blackfriars' bridge, occupying a plot of ground of 300 feet, by a river frontage of 90 feet, together with all the substantial Warehouses and Workshops, having great facility of egress and ingress from gateways in Holland-street and Blackfriars'-road; also the capital mansion in Albion [illegible] the northern house overlooking the Thames. Portions of the estate are let to Messrs. Rosher and Messrs. Minton and Co., tenants of the first class [illegible] an extensive [illegible] Particulars [illegible] and may be had fourteen days before the sale, of H CANNAN, Esq., Official Assignee, Birchin lane; of Messrs. VANDERCOM, COMYN, and Co., Solicitors, Bush-lane, at the Mart, and of Messrs. FOSTER, 14, Greek-street, and 54, Pall Mall.

TO SLATE MERCHANTS. Genuine Stock in Trade, unexpired Term of Lease of valuable Wharf and Business Premises, Stratford.—By

MR. OLIVER, on the Premises adjoining Bow-bridge, Middlesex, on MONDAY, June 28, at Eleven, by direction of the Assignees of Messrs. Thos. and Wm. Starling, Slateworkers, Bankrupts. The Stock comprises [illegible] slate slabs, from half inch to two inches and a half, 16,000 duchess and countess slates, cisterns, filters [illegible] table tops, views, inkstands, [illegible] May be viewed on the Saturday preceding the Sale. Catalogues then had on the premises, and of Messrs. LINKLATER, Solicitors to the Assignees, Leadenhall street; of G. GREEN, Esq., Official Assignee, Aldermanbury; and at the Offices of Messrs. OLIVER and SON, 7, Lawrence-lane, Cheapside.

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SEVERAL PLOTS of Building Ground in the vicinity of Regent's park, abutting on the new park, enclosed on Primrose-hill, TO BE LET on long Leases. Apply at Mr THOMAS LITTLE'S Offices, 36, Northumberland street, New road

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BUILDING GROUND TO BE LET for 99 years, for seven or eight third-rate houses, with excellent back gardens and forecourts, the sewer is built in front of the ground, and paving laid to the adjoining property, which is finished. It is within 100 yards of the Park, where a third rate class of houses is in great request. Apply to Mr. BIRT, at the Southampton Office, Southampton-street, Fitzroy-square, or to Mr. RATHBONE, 33, Berners-street, Oxford-street.

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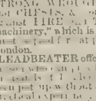
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Including fixing.

Flats Covered and Cisterns Lined from 4½d. to 6d. per foot superficial: Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, New-road, [illegible] opposite to the Fishmongers' Alms Houses.

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# The Builder.

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

Vol. V.—No. 230. JULY 3, 1847. Price ..... 3d. Stamped ..... 4d.


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### ADVERTISEMENTS.


TO STONE MASONS.

WANTED, a Steady Active Young Man, who can give reference as to ability and sobriety.—Address Mr. C. ERSWELL, Saffron Walden.

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WANTED, by an Experienced Person, a Situation as Clerk of Works or Foreman, in town or country. The highest testimonials for ability and sobriety can be given.—Address, pre-paid, to A. B., 3, Mount-street, Lambeth.

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WANTED, at an Upholsterers and Decorators, a respectable Gentleman in the above capacity. One need apply who have not already filled a similar situation. Apply, by letter pre-paid, to M. C., No. 14, Wigmore-street, Cavendish-square.

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TO BUILDERS AND MASTERS CARPENTERS.

A YOUNG MAN wishes to Apprentice himself for Three Years to the Carpenter and Joiners' business. A small Premium given.—Address, post-paid, stating particulars, to W. E. B., at J. Bayliss's, North Audley-street, Grosvenor square.

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A GENTLEMAN, educated in one of the first offices in town, and who has since been several years in practice, would be happy to undertake, for a moderate remuneration, the management of an Architect's, or the Architectural Department of an Engineer's Office, provided the facility were afforded him of conducting his own practice, averaging about 300l. per annum, at the same time.—Address to L. M. N., at the office of "The Builder," 2, York-street, Covent-garden.

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MR. HENRY CASTLE, Lecturer at King's College, London, and Author of "Engineering Field Notes," and of the "Elementary Text Book," for Surveyors and Levellers, both of which are now ready at Messrs. Simpkins, Marshall, and Co., Stationers'-hall-court), will commence his Private Vacation Class for actual Field Work on the 6th July next. Fee for the Class, Five Guineas.


METROPOLITAN BUILDINGS ACT. NOTICE TO CANDIDATES FOR DISTRICT SURVEYORSHIPS.
Office of Metropolitan Buildings, 6, Adelphi-terrace, 1st July, 1847.

NOTICE IS HEREBY GIVEN, that the Examiners appointed by and in pursuance of the Metropolitan Buildings Act will hold their next Examination of Persons desirous to obtain a certificate of qualification for the office of District Surveyor on WEDNESDAY, the 21st day of July instant.

Persons desirous to be examined must apply on or before the 17th instant; and their applications must be accompanied by a preliminary statement, according to the course of examination prescribed in the rules for that purpose, copies of which, and any other information on the subject, may be had at this Office, or at Mr. WEALE'S, Architectural Bookseller, 59, High Holborn.

Subsequent Examinations will be held in the months of October, January, or April, or at such other periods as shall be appointed, of which due notice will be given.

ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.

### PUBLICATIONS.


GOTHICK ARCHITECTURE.
Just Published, price 2s. 6d., No. 20

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*** On the 1st of August, will be published the concluding number, comprising Descriptive Letter-press, illustrated with nearly One Hundred and Fifty Wood cuts, and several Additional Plates.

*** Subscribers are requested to complete their Sets, as separate Numbers of the Work will not be obtainable after the 1st of October next.

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London: J. GILBERT, 49, Paternoster-row; and of all Booksellers and Newsvenders. Price 1s.


HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square

TO BUILDERS and Others interested in buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by water-courses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry of drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers

All petitions must be delivered at this office at least three clear days before they are presented to the commissioners; and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations made subservient to the purposes of the Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,
LEWIS C. HERTSLET, Clerk.


FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.


### CONTRACTS.

E
1077.

Office of Ordnance, 18th June, 1847.

NOTICE IS HEREBY GIVEN, that TENDERS for a specific sum for erecting and completely finishing the several works of the NEW BATTERY at POINT, PORTSMOUTH, will be received at the Ordnance Office, Pall Mall, London, on or before the 23rd July, 1847.

Specifications and detailed Plans of the proposed buildings and works may be seen, and Forms of Tender obtained, after the 18th instant daily, at the Commanding Royal Engineer's Office, Portsmouth, between the hours of Ten and Four o'clock, until the 21st July next.—By order of the Board,

R. BYHAM, Secretary

AIR OR WATER WARMING.

PARTIES disposed to Contract for Warming Two Store-rooms, about 7,000 and 4,000 square feet, may open a correspondence with R., box 107, Post-office, Birmingham, with reference to premises they have supplied.

TO BUILDERS

PARTIES desirous of Tendering for the Works required in the Additions to Chigual Smealey Church, near Chelmsford, may see the Plans at the Churchwardens. Tenders to be sent to Mr. CLARKE, the Diocesan Architect, No. 1, Lincoln's-Inn fields, London, on or before July 8th. No tender will be accepted unless approved by the architect; and security, if required, to be given.

TO BUILDERS.

PERSONS desirous of Tendering for the Erection of a Dwelling House and Offices at Cuckfield, Sussex, may inspect the Plans, Specifications, and terms of Contract on application to Mr. F. W. HOLLOWAY, Cuckfield, on and after Saturday, 17th July. Sealed tenders to be addressed to the Rev. T. A. MABERLY, the Vicarage, Cuckfield, on or before Friday, 23rd of July next.—The acceptance of the lowest tender will be optional.

CONGREGATIONAL CHURCH, KENTISH TOWN.

THE Committee for erecting the above church are desirous of receiving TENDERS. The drawings, specification, form of contract, and bills of quantities, lie at the office of the Architect, Mr. H. HODGE, 8, Lyon's-Inn, Strand, until the 10th of July next, on which day all tenders are to be delivered at the above office addressed to Mr. HALTON, Hon. Sec. Two approved securities will be required. The Committee do not bind themselves to accept the lowest tender, nor any unless satisfactory

PREMISES TO BE LET, TUDOR STREET

THE Committee appointed for carrying into execution the Act of Parliament, for making a Street from Whitefriars-street to Tudor-street, do hereby give notice, that they will meet at Guildhall, on MONDAY, the 12th day of July next, at One o'clock precisely, to receive TENDERS in writing, sealed up, for Letting on Lease for 42 years, from Michaelmas next, a House and Premises, on the south side of Tudor-street, the east side of Water-street, and the west side of King Edward-street, subject to a portion of the site thereof being laid into the street by the lessee, in conformity with the Plans and Conditions, to be seen at the office of Works, Guildhall.

Guildhall, 25th June 1847. MEREWETHER.

TO ARCHITECTS, BUILDERS, AND OTHERS.


ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained at MINTON and Co.'s Warehouse, 9, Albion place, Surrey side of Blackfriars' Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire places, &c.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193 a, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Enlingstation of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 a, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Pentridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

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FREEHOLD BUILDING LAND, close to a Railway Station, in a beautiful neighbourhood, surrounded by good roads, near a [illegible] twenty minutes' distant from London.

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[illegible] PARK ESTATE, STREATHAM, SURREY.

**TO BE LET, on Building Leases, in the** [illegible] close to the Park [illegible] Plots for Villas, Fifty for Terraces, and several for Shops and Stabling; the whole forming [illegible] tion of undulating surface, ornamental water, and well-grown [illegible] West [illegible] be made and other accommo[illegible] them, from a great and increasing demand for houses existing in the neighbourhood.—For Lithographed Plans and Particulars, [illegible] RANKIN, FORD, LONGBOURNE, and [illegible] Messrs. GOUGH [illegible] Strand, or [illegible] park Office, Streatham.

**BUILDING GROUND, the most eligible** [illegible] at Park [illegible] detached Villas, for a long term of years, at a moderate ground rent, being a safe and profitable investment for builders.—Apply to Mr. [illegible]

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**TO BE SOLD, a Bargain, Eighteen** Spanish Mahogany Windows, with Shutters, &c., complete, of the best description, glazed with British plate glass; size, 9 feet 3 inches, by 3 feet 9 inches; and two 12 feet by 8 feet.—To be seen at Mr. [illegible] road, Avenue road, Regent's park, near the Swiss Tavern.

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**TO BE SOLD, and now ready, One Hun-**[illegible] WHEELBARROWS, made upon the best principle, [illegible] delivered at any [illegible] terms. For price and particulars apply to Mr. CHRISTOPHER RUSSELL [illegible] construction, and [illegible]

TO PLUMBERS, PAINTERS, AND GLAZIERS, &c.

**TO BE DISPOSED OF, an old-established** [illegible] Trade [illegible] Goodwill [illegible] apply to Mr. NORRIS [illegible] Most satisfactory reasons given [illegible]

[illegible] CARPENTERS BUSINESS, WEST END.

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## SALES BY AUCTION.

BUILDER'S STOCK, BY DIRECTION OF MR. CROWE, WHO IS RETIRING FROM BUSINESS.

**MR. H. BIERS will SELL by AUCTION,** at the extensive Workshops and Premises, Old Church Street, Edgware-Road, on THURSDAY [illegible] July, at [illegible] The [illegible] Stock is of the very best quality, and comprises Deals, Planks, and Battens, in every thickness; Dry and well-seasoned Wainscot and Mahogany Prepared Flooring and Match Boarding; nearly new scaffolding, and powerful Crabs, Blocks, and Falls; Standard and other Ladders, Builders' Carts; Ironmongery of the very best description; Sashes, Frames [illegible] May be viewed on Wednesday, the 14th, when Catalogues may be had on the Premises, and at 13, Broad Street, Golden Square.

BUILDING MATERIALS, IRON, &c. GREENWICH.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION at the Store Yard, on MONDAY, July 12th, at Two o'clock, main Gates after the Sale of [illegible] and other Stores, by Order of the Commissioners of the Royal Hospital: Three wrought-iron Boilers, two 16 feet long; a large quantity of loose Iron, Stoves, Pump, Piping, &c.; also Firewood, Framing, Sashes, Doors, Brass, Copper, and [illegible] Water Cart, and numerous other Effects.—May be viewed in the yard, opposite the East Gate of the Hospital, [illegible] had at the Clerk of the Works Office, Royal Hospital, and of the Auctioneers, Coal Exchange, or 1, Little Smith Street, Westminster.

CLOTHING AND STORES, ROYAL HOSPITAL, GREENWICH.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION at the Royal Hospital, Greenwich, on MONDAY, July 12th, at One o'clock precisely, the following goods, viz., Blue Woollens, Cuttings of Blue Cloth, Striped Linen and Rags, Coverlets, Bed-ticks, Linings, Flannels, &c.; Hats, Leather Caps, [illegible] Copper, Brass, Pewter, and Tinware, Coal-sacks, Old Carpeting, and other Effects. [illegible] the Stewards' Department [illegible] where Catalogues may be had, and of the Auctioneers, Coal Exchange, or No. 1, Little Smith-street, Westminster.

Fourth-rate Brick built Carcasses, Old-street, held direct from the Ironmongers' Company, to be SOLD by AUCTION [illegible]

**MR. RICHARDS, at Garraway's Coffee** House, Change Alley, Cornhill, on THURSDAY, July 22nd, 1847, at Twelve o'clock without reserve, Tw[illegible] rate substantial Brick-built Carcasses [illegible] a densely populated and manufacturing district, Brick-lane, near St. Luke's Church, Old street, held for a term of sixty-seven years at low apportioned ground rents.—May be viewed three days prior to sale, by applying to Mr. SANDERS, the Langton Arms, near St. Luke's Church; at Garraway's; and of the Auctioneer, Tottenham.

FREEHOLD BUILDING GROUND IN THE HEART OF THE TOWN OF CROYDON, SURREY.

**MESSRS. BLAKE will SELL by AUC-**TION, at the Ship Inn, Croydon, on SATURDAY, July 17th, at Two for Three, a Valuable Freehold Site of BUILDING GROUND [illegible] Three Acres, land-tax redeemed, which affords the opportunity of forming an uninter[illegible] where the views are open and picturesque, and through which a [illegible] scheme, which cannot fail to answer in a town like Croydon. [illegible] RUSSELL [illegible] 26, Martin street [illegible] Messrs. BLAKE, Croydon.

IMPORTANT SALE OF THE EXCELLENT WELL-SEASONED STOCK OF A BUILDER.

**MR. C. FURBER begs to announce that** he will SELL BY AUCTION, on the premises, in the rear of Gloucester Terrace, Westbourne Terrace, Hyde Park, on THURSDAY, July [illegible] each Day, the extensive Stock of a Builder, comprising a large stock of [illegible] mahogany doors, sashes [illegible] shutters [illegible] scaffold poles, cords, and boards, a large assortment of nails, screws, hinges [illegible] stone work, and numerous effects; together with all the loose materials [illegible] Westbourne [illegible] Gloucester Terrace, belonging to this Estate. May be viewed [illegible] Catalogues had on the Premises, and at the Auction Offices, Warwick-court, Gray's-inn.

BELGRAVE STREET, SOUTH, PIMLICO, AND HEREFORD SQUARE, BROMPTON.—Important sale of the valuable Stock of Marble, Stone, Bricks, Timber, Ironmongery, Doors, Sashes and Frames, glazed and unglazed [illegible] Glass, Plasterers' Brass and Lead work [illegible] with chains and blocks [illegible] powerful Crown Gelding, Builder's Cart, and other effects.

**MESSRS. DAINES and Co. have received** instructions from the Assignees under the bankruptcy of Mr. THOMAS HOLMES, Builder, to SELL by AUCTION, on WEDNESDAY, July 7th, at Eleven o'clock precisely, and following days, the stock of Marble and Stone, Horse and Carts, Counting-house Fittings and Furniture, Utensils in Trade, and other effects, upon the premises, Belgrave-street, South, Pimlico, and Hereford-square, Brompton. May be viewed [illegible] days preceding the sale. Catalogues had on the premises, of BELCHER, Esq., Official Assignee, 9, King's Arms-yard, Coleman-street; Messrs. PHOBBS and LANE, Solicitors, Chancery-lane; JOHN PINK, Esq., 3, Westbourne-park Villas, Paddington; Messrs. JONES and BROWN, 17, High-row, Knightsbridge; and of the Auctioneers, Farming [illegible]

VALUABLE FREEHOLD BUILDING LAND AND DWELLING HOUSES situated at Woodhouse, Sheepscar, and Briggate, Leeds, Yorkshire.

**TO BE SOLD, in several Lots, pursuant to** an order of the High Court of Chancery made in a cause [illegible] WILLIAM FARRER [illegible] of August next, of which due notice will be given, a Freehold Estate adapted to Building purposes, situate near Little Woodhouse, in the Town of Leeds, with several substantial Dwelling houses. A part of another Freehold Estate, called the Atkinson Estate, situate near Little Woodhouse aforesaid. Also a valuable Freehold [illegible] Briggate, in the Town of Leeds, aforesaid, and which said [illegible] Southampton-buildings, Chancery-lane, London; of Messrs. RICHARDSON, SMITH, and GADLER, Solicitors, 28, Golden-square, London; of Messrs. PATTENDREIGH and STEVENSON [illegible] Coleman street, of Messrs. SANDYS and PEARSON, Solicitors, [illegible] Solicitors, John street, Bedford-row; Mr. JOHN MOSS, Solicitor, [illegible] Mr. THOMAS WILLIAM [illegible] Mr. THOMAS NEWSAM [illegible]

RICHARDSON, SMITH, and GADLER, Plaintiff's Solicitors, 28, Golden square, London.

TO SPECULATIVE BUILDERS, RUBBISH CARTERS, MASONS, PAVIORS, ROAD MAKERS, AND OTHERS.

**MAY be had, if fetched away immediately,** a large quantity of GOOD DRY SCREENED BRICK CORE, suitable for concrete, road making, paving, &c. Apply to J. SAUNDERS, Langton Arms, Wenlock-street and Norman's-buildings, St. Luke's, back of the church.

**SOLICITORS' and GENERAL LIFE** ASSURANCE SOCIETY.

Eighty per cent. of the Profits [illegible] Apply to any respectable Solicitor, or at the Office, 57, Chancery lane, London. CHARLES JOHN GILL, Secretary.

**BRITISH MUTUAL LIFE OFFICE.—** The Public are invited to examine for themselves the advantages [illegible] plan on which policies are [illegible] Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS.** and WRITERS to the Trade only. 79, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

**SPURWAY and M'PHERSON, Grainers,** 13, Tabernacle walk, Finsbury [illegible] London. Graining of superior quality executed in any part of the Kingdom, [illegible] prices.

**ROOFING SLATES. Present Cash** Prices.

Best Blue Bangor Duchesses, 24 by 12, per 1,200 [illegible]
Do. Countesses [illegible]
Marchionesses, Viscountesses, Ladies, Doubles, &c.
Bricks, Lime, Tiles, Cement, Chimney-pots, Welsh Goods, Yorkshire Stone, and Coal. JAMES SAYE [illegible] Wharf, Pimlico.

SNOWELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 99, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, [illegible] so simple that the largest establishment can be opened or closed with [illegible] Their [illegible] great [illegible] cannot rust, buckle, be strained, or get out of order, and are safer. [illegible] iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**MESSRS. HOPKINS and Co. solicit the** attention of Architects, Builders, and the Public generally to [illegible] REGISTERED [illegible] VENTILATING BLINDS [illegible] to [illegible] and high windows. OUTSIDE SUN BLINDS ON IMPROVED BALANCE ACTION. [illegible] PATENT METAL GROOVE ACTION, contrived for the easy and noiseless [illegible] HOPKINS and Co., late James Barron, Wood's Blind Manufacturers [illegible] 4, Castle-street East, Oxford-street, London; and at Birmingham.

JENNINGS'S PATENT WATER CLOSET.
JENNINGS'S PATENT CONNECTION.
JENNINGS'S REGISTERED SHUTTER FASTENER.

**ARCHITECTS, Builders, and all Persons** connected with the Building Trade, are informed by [illegible] JENNINGS [illegible] Stairs [illegible] LETTERS PATENT for a WATER CLOSET of simple construction, [illegible] with a closet superior to anything ever yet produced, and at prices [illegible]

GEORGE JENNINGS [illegible] description of Pipes, &c., to Steam Boilers, Wood, Iron, or Slate Cisterns, Casks, &c., superseding all Union Joints, T pieces, and the present tedious mode of Tapping and Screwing one Pipe into [illegible]

JENNINGS'S SHUTTER SHOE and FASTENER [illegible] the Shutter Bar and Iron Hoop Shoes. References may be had to [illegible] Blackfriars Road.

INJUNCTION.

**BUNNETT and CORPE'S Patent RE-**VOLVING IRON SHUTTERS. Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action [illegible] granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising [illegible] the only safe and durable mode of effecting that object. In large [illegible]

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge [illegible] all Shutters put up by them to keep in order, and last twice as long as any with the usual laths.

BUNNETT and CORPE also manufacture REVOLVING WOOD SHUTTERS [illegible] has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear and improved metallic hinges, without which no shutter can be safe [illegible]

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c. IN BRASS, COPPER OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, [illegible] price, [illegible] Country.

Metal Doors [illegible] for the Trade.

Office at No. 26, [illegible] street, London; Works, at Deptford, Kent.

[illegible] Cutting Machines [illegible] Builders' purposes [illegible]

**ROYAL ACADEMY of ARTS, Trafalgar-**square. The Exhibition of the Royal Academy [illegible] open. Admission from Eight o'clock till Seven. Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Sec.

ROYAL POLYTECHNIC INSTITUTION.

**THE ELECTRIC TELEGRAPH COM-**PANY has deposited for a limited period, a complete series of APPARATUS [illegible] ELECTRIC TELEGRAPH [illegible] &c. Among the various Works of interest explained, is a WORKING MODEL [illegible] RAILWAY [illegible] NATURAL PHILOSOPHY, CHEMISTRY [illegible] Bell and Diver, with Experiments, &c. [illegible] Schools, Half-price.

wherewith to wrap up all such far-fetched transatlantic indelicacies out of view.——In a brickfield at Sheffield last week, no less than 20,000 newly-made bricks were destroyed by the weather.——A new church, capable of accommodating three hundred persons, is in course of erection at Great Lever, says the *Birmingham Gazette*. The Earl of Bradford has given the land, 1,000*l.* towards the endowment, and 500*l.* towards the erection.——The *Manchester Guardian* gives its readers of last week a somewhat curious illustration of what it calls the 'power of the auctioneer's hammer.' In 'knocking down' some 'substantial building materials' at Salford, 'Mr. Fullolove' had scarcely announced that the floor on which some thirty bidders stood, along with Mr. Fullolove himself in the midst of them, was 'going—gone,' when, knocking it down' with his official hammer, away it went, with all and sundry, down indeed, to the floor below, but fortunately, *facili descensu*, only Mr. Fullolove had his knee injured and his garments rent, and Mr. Nelson, a builder, also suffered by the fall of a beam on his thigh. The redoubtable auctioneer, however, proceeded to knock down the other floors as if it were but a portion of his legitimate duty to do what was done, but the bidders prudently stood on *terra firma* till the work was finished.——The catacombs of the Hull General Cemetery Company are to be begun forthwith, on the plans of Mr. Brodrick, in keeping with the entrance-lodge now in course of erection, and the proposed chapel. They consist of a series of Gothic arches, forming a colonnade below and a terrace above.——The contractor is making rapid progress with St. Cuthbert's Church and steeple, now being erected at Bensham, Gateshead.——It has been resolved to erect a gas-work at Kettle, N. B., to supply the inhabitants of that village and Kettle Bridge with gas. The money has been all subscribed for, and the works will be erected so soon as the necessary arrangements are completed.——The new quays at Lancefield, Glasgow, are in an advanced state of progress. The facing of cut stone is nearly finished, and upwards of a hundred men are employed in cutting away the embankment. The new dock on the other side of the river is a much more extensive work. Two hundred men, according to the *Reformers' Gazette*, are at present at work in sinking it, but it probably will not be finished before three years. Docks were almost the only thing wanting to make Glasgow rank among the first-rate sea-ports.——The Earl of Stair has intimated his intention of giving 1,000*l.* towards the erection of the proposed new pier at Stranraer.——As it is still determined that before the 15th of August all the public works under the Irish Labour-rate Act are to be finally closed, the numbers employed in the meantime are rapidly diminishing, though, in some places, the effect has been greatly to increase the expenditure for out-door relief. The Government mean, at the same time, to dispense with the services of the commissariat department in Ireland.——Preparations are now being made towards the erection of the new college at Belfast. A considerable number of men are engaged in clearing the grounds and arranging the materials for the edifice.

An Edinburgh Genius.—A house-painter and glazier in Edinburgh, having become convinced that he was at the very top of his profession, and could add no more to his stock of knowledge in "Auld Reekie," took it into his head the other day to pay a visit to Italy, and have a personal inspection of the performances of the great Italian painters. Before leaving, he called upon a friend in the high street, and announced his intention in these words:—"I say, Willie, ye ken I am at the head o' housepainting in Embro', and can learn nae mair here, so I am just on my way to visit the painters o' Italy, to see what can be made o' them." Commending his resolution, his friend replied, "Weel, Sandy, I think ye're right, after a'; but when ye are at it, at ony rate I would strongly recommend a visit in passing, to the *glaziers* o' Switzerland."

Gun Cotton.—Very satisfactory experiments, according to the *Merthyr Guardian*, have been made near Merthyr, with Professor Schönbein's gun cotton, by Messrs. Wheeler and Ringer, for the patentees.

## PROTECTION OF STONE WORK FROM ATMOSPHERIC INFLUENCE.

Sir,—Having in the course of the last twenty-seven years, tried various expedients for the preservation of marble and stone from the all-destroying effects of our atmosphere, and finding from experience that stone or marble exposed in the open air may be preserved by being saturated with wax, I take the freedom of inclosing my mode of applying the wax to the stone.

When I first proposed the use of wax as a repellent of moisture, Mr. Decimus Burton, who was architect for the Athenæum Club House, permitted me to apply it to the front of the exterior of the building, which I executed under his direction; the result has been most satisfactory, as the work, which is done in bath stone, can be made perfectly clean by the simple process of washing it with the same mixture which is generally used for cleaning marble. In the year 1828, Mr. Farraday, the eminent chemist, in conjunction with myself, made some experiments, and, to the best of my recollection, the result of the experiments was, that it was as twenty to one in favour of my process.

Noblemen and gentlemen, who are expending large sums in the erection of buildings, would do well to consider this matter, and architects ought to bear in mind, that their future fame depends much on the preservation of their work.

If this should be thought worthy of a place in your useful Journal, I shall feel happy in having it inserted.—Yours obediently,

John Hennino, Jun.

17, Lower Belgravé-place.

*Mode of application of Wax as a preservative of Stone, Marble, &c.*—Procure a square sheet-iron case, the sides being penetrated with holes to admit of a current of air; the bottom of the case to be formed of iron bands, similar to those used in fire-places; at each corner of the upper part of the case there should be blocks, also of iron, with a chain of iron to pass over an iron ledger, which is placed between two tressels near the work. When this apparatus is suspended, light a fire in the case, using, in the first instance, wood and coals to light it; then feed the fire with coals till it burns brightly; you may then place it at a proper distance from the marble or stone which is to be impregnated with wax, say 3 inches distant from the sculptured work, and in a few minutes it will heat the stone sufficiently to enable you to apply the wax, which should be done with a hog-bristle brush; the wax being previously melted in a pipkin. Care should be taken to keep the works free from dust.

## GERMAN CRITICS AND ENGLISH ARTISTS.

The following remarks by a German art-critic, on the exhibition of the Royal Academy, shew what our neighbours' views of English art are:—"If at Paris Mr. Couture's 'Decline of Rome' has attracted great attention, at London Mr. Huskisson's 'Summer Night's Dream,' deserves the palm. Amongst the sculptures, F. Thrupp's 'Girl caressing a dead bird,' is so fine, that one at first would doubt that it is made by an Englishman. But with such few exceptions, the *five thousand* specimens exhibited in London and Paris were little worthy of much praise. In England every one thinks to have ideas of his own, but when brought on either canvass or paper, they look very seedy and thin: every thing, in fine, is supposed to improve by varnish and ornament, but instead of turning out *spirit-ful* (geistig), it becomes insipid—if not bizarre and unintelligible. What mass of *consumption* and sickly allegories, and—as there is some smack of German romantics afloat, what mass of dissolving ghost—and dream-scenes full of mist, and haze, and all sort of dimness! Since the time of Wilkie's 'Blind Fiddler,' a flow of rural scenes has been *added* thereto, worked out with painful accuracy into the minutest detail; still, some of them approach, after all, near *reality*, and pictures of J. Philip, J. Middleton, W. P. Frith, are full of life and truth. But there is not one historical picture in the hall of Trafalgar-place, not excepting even those three Joan d'Arcs, and A. Johnston's funeral of Charles I. Conspicuous, however, are the landscapes of Stanfield and some others. Where the English are pre-eminent now, is in their miniature and water-colour painting, especially the former, by Ross, Thornburn, Foster, &c. But even here art strides over nature, detail over a grand *ensemble* thrown down with a few master-strokes. If we, therefore, combine the progress of art in France and England (to which Italy may be added), we can say that it is very inconsiderable. Speaking without prejudice, German art-tendency is now the prevailing—more natural and quiet than the French; more intern (*inward*) than the Italian; higher, nobler, in the conception, perfecter in execution than the English. If we were called upon to assign a reason for this inferiority of the English, 'under rather favourable circumstances, as they have arisen *of late*,' we would attribute it to a certain flippancy and want of seriousness, which has taken hold of the nation, and to whom every thing seems to appear in the shape of fun, pun, or *caricature*. If the latter were ever to become objects of art-exhibition, a great *negative* quality would then certainly belong to the English arts of design."

## RAILWAY JOTTINGS.

The first trip with Mr. Crampton's six-wheeled engine, the "London," was lately run from Wolverton to London, at a speed of a mile a minute, the variations ranging between 56 and 63 seconds each mile. The motion, it is said, was perfectly steady, and a further speed may be expected when the machinery gets more smoothly into play.——It has been happily suggested, that 'those who run may read' in railway transit, if the movement be not very bad indeed, by merely sliding a slip of paper or a card along the page perused, from top to bottom, as each line is scanned, the eye being freed from the vibratory disturbance by the margin of white or other tint below.——The broad and narrow gauge forces have been waging war of late with one another, each by turns coming off victorious in the strife. The London and North-Western were defeated in their Cheltenham line; the Great Western won theirs. The broad gauge has been carried from Oxford to Coventry, and so, observes a contemporary, the Gauge Act has been virtually annulled, by a majority, in the Commons, of the Great Western party, against the narrow gauge party, *plus* two ministries, past and present, who were left in the minority!——The repair of the new tunnel of the Southampton and Dorchester line is in progress. The old tunnel is filled up under the public road, and the sinking is said to have ceased. It is suggested, however, that the solidity of the work ought to be tested by goods traffic alone for some months at least.——Great progress has been made at Birmingham with the Oxford line. The arches, on which it is to be carried into the very centre of the town near to the market hall, are in a very forward state. They "are of an enormous height," says the *Railway Times*, "and tower far above the tops of the houses." They are said, however, to be "of the most substantial description." The extension of the London and North Western to the same point, is also in a very forward state; both being to be completed at once.——At the Oxford meeting of the British Association last week, Sir Robert Inglis observed "Electricity was working wonders for the benefit and comfort of mankind. In the United States of America, there was an instantaneous communication of 1,300 miles; and when the *Hibernia* steamer lately carried out the intelligence of the dearth of corn in this country to Boston, it was instantaneously conveyed to New York, the streets of which were the next day filled with carts from neighbouring farmers laden with the produce of the country and for English use. It must be recollected (added Sir Robert) that to the United States we were first indebted for the introduction and exercise of the electric telegraph."

Society of Master Carpenters.—This Society celebrated their anniversary at Richmond on Monday last, Mr. Biers, the president, in the chair.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*M. Agassiz's Lectures at Boston.*—The Lowell Institution of that city is one of the few where foreign *savants* are permitted to lecture. Such was the case with Professor Lyell, and lately the above Swiss geologist. The attendance at the latter was extraordinary; 7,000 persons applied for tickets, of which only 4,500 could be accommodated, although the lecturer repeated every delivery twice. They have been also the inducement for the establishment of a new museum of geology, as the lectures made the poor state of the present *locale* too conspicuous. The estimates and plan were soon made, 30,000 dollars subscribed within a fortnight, and in a few months the new Boston Museum will be ready. "This," says an American periodical, "is *our* way to do things."

*Neapolitan Improvements.*—On the late tour through the provinces, his majesty was accompanied by the director general of roads and bridges, and the king often ordered improvements and new works, when pelted by rain and wind.—A new Roman house has been excavated at Pompeii, under the direction of Cav. Bonucci, and the vestibulum and impluvium are already brought to light. Amongst the statues found, a female playing with two goats is especially fine. It is in perfect preservation, and has been placed in the Muzeo Borbonico.

*Art in Frankfort.*—Although there be some artists at that great commercial and banking city—art cannot be said to flourish appropriately. The *museum*, which once served as a centre for art and literary tendencies, wants remodelling—if not dissolution. Formerly art-works were exhibited here, and served for an *invigoration* of mind. This tendency has been lost sight of—and flippant amusement substituted.

## VIENNA ART-EXHIBITION.

May, 1847.

Historical paintings have been more numerous this year than the preceding, owing, probably to a sort of exhortation on the part of the Art-Union to that effect. "Thence, it is a good sign, that our artists have turned their attention towards history, nay, Austrian history. It is, however, not to be gainsaid, that historical art is still deficient in higher attributes, and that it is more the anecdotical and accidental, than the truly grand, which is mostly represented. A chief cause of this anomaly is, that few historical painters are imbued with that, whence they derive their name—we mean *history*. He, only, who thoroughly understands the mind and essence of a period, can seize and render its events worthily. And it is a strange logic, to form merely the hand, which produces something, while that, *by* which this is produced—the *head*—remains untutored and *uncultured*." After these general remarks, we may first point to Rahl's "Manfred," elevated on the shields of the Saracens at Luceria—an art-work full of ingenious capacities and noble mind. A young artist, of the name of Zichy, has also produced some commendable work.

Sculpture is every where influenced by the possibility of producing extensive works; and this has been hitherto much wanting in Vienna. Now it is said, that government intends to erect several monumental fountains (*Brunnen*), in which native artists are to be employed. Mr. Pleutbner has made formerly some attempts at modelling the heroes of the Nibelungen-song. Ramelmayer has made a model of Sta. Cecilia, destined for a joint monument of Gluck, Haydn, Mozart, and Beethoven. The art of chasing and die-sinking appears yet in its infancy, as, besides Mr. O. Steinbock's medal, no other work appears in this exhibition. In the department of landscapes, the Vienna school may be said to be piercing from the mere *vista* to the real art-work, and Professor Steinfel's "Dawn of Day" is a surprising performance. Mr. Valentini's works are also stamped by a high degree of seriousness (*Ernst*) and repose.

It is to be regretted that, amongst the oil paintings, no great work of architecture is to be met with, while, amongst the water-colour drawings, those of Heinrich (Roman ruins) and Alt are meritorious. A number of architectonic projects and plans, however, adorn the exhibition, mostly by Professor Rösner and his pupils. As far as the reproduction of art works by prints is concerned, some blame may be thrown on our publishers, as even an engraver like Mr. Tastiera has to occupy his time in vignette engraving. The coloured lithographs, however, issued from the Imperial Typographical Establishment, are deserving of notice.

Casting an ultimate glance at this exhibition of about 500 numbers, we cannot say (as some do) that art has retrograded in Vienna; still its advance is here, as in most places, nigh imperceptible. The appearance of novel powers and high talent is a thing over which a higher agency alone disposes: according to Goethe's saying, "*es ist dafür gesorgt, dass Bäume nicht in Himmel wachsen.*"*

## A VISIT TO STOWE.

Mr. Editor,—The increasing value of your labours, lays us all under an obligation to assist you whenever we have it in our power, for in the case of a publication issued at such brief intervals as yours is, it is only by the combined aid of numbers that it can reach its full efficiency.

I send the following which you may perhaps find room for, for the benefit of your younger readers in the south.

At a season of the year when a short absence from the office is usually allowed the architectural student, with a view to a summer ramble, he may be glad to know of one which combines the *dulce et utile* to no inconsiderable extent, and which I took, myself, with a pupil, last week:—it was to Stowe, the seat of the Duke of Buckingham.

Leaving Euston-square Station at 3 p.m., we reached Wolverton at 5 p.m., and walking thence round by Buckingham, we arrived at a comfortable inn close upon the park entrance of Stowe at 10 p.m., a distance of twelve miles. Beginning early the next day, we spent the whole in viewing the beauties of the place, and at 4 p.m., started again on foot for Wolverton, returning thence by a ¾ p. 8 train to London, reaching home by ¾ p. 10, having left it just thirty hours:—our united expenses of every kind reached 2*l.* 13*s.* 6*d.*

Well knowing the character of the architecture of Stowe, I had not raised my expectations at all high, and I was not therefore disappointed, for there was certainly no one object, among the numbers that adorn the place, that, purely as a work of architecture, gave me entire satisfaction, but as lessons for the combination of architecture with foliage, and for the play of light and shade on the several structures in their multiplied varieties, I have seen no where else in England any thing that approaches it. The variety for study of effect in the temples, pavilions, columnar monuments, groups of sculpture, and other features, is most interesting, and for the architect and architectural draftsman, most improving,—a practised hand with proper materials, would bring away in a week a portfolio of reminiscences which he might have, alas, to pay much dearer for in fetching from the continent, but which when obtained might not perhaps be in reality more to his purpose.

The grandeur of the park and the beauty of the timber; the truly palatial character of the mansion and its appendages; the princely magnificence with which the grounds are kept up; the high principles of liberty and morals, which in many cases the very stones are inscribed to inculcate, and above all, the generous liberality with which the whole is open to the public, render the place pre-eminently inviting to the artist, whether for profit or for enjoyment. And if, as Sir Joshua Reynolds observes, the student's seasons of recreation are to have a bearing on his profession, a visit to Stowe offers, indeed, a rich opportunity for such a purpose.†—I am, Mr. Editor, yours very faithfully, Nonnullus.

London, June 27, 1847.

Short Time on Saturdays.—A memorial has been forwarded simultaneously to many of the builders of the metropolis from the joiners in their employ, asking to leave off work at three o'clock on Saturdays, and receive full day's pay. It is to be hoped that the matter may be arranged in a friendly spirit.

* It is provided for, that trees will not grow up to heaven."

† The house can be seen internally by the public on Tuesdays and Fridays only; but this my visit did not accomplish.

## HEALTH IN THE CITY.

In consequence of statements recently made to the Lord Mayor, respecting the state of the cesspools, and the accumulation of filth in the cellars of many houses, the Commissioners of Sewers have commenced proceedings against some of the landlords, under the cholera Act, 9th Vict., chap. 96, which empowers them, upon receiving the certificate of two medical gentlemen, that there is in any house or other place an accumulation of noxious matter of any kind, or any foul privy or cesspool, to make complaint to the magistrate, and cause the owner of the house to be summoned, and an order made that he should abate the nuisance within forty-eight hours. In default of his obeying this direction, the order required the commissioners to enter the premises and abate the nuisance at the charge of the landlord.

Various parties were summoned to Guildhall a few days ago, and in one case where the landlord refused to attend, Mr. Alderman Musgrove made an order for the cleansing of cesspools complained of, within twenty-four hours. The Alderman said on that occasion, that "as the chairman of the Commission of Sewers for the Tower Hamlets and a commissioner of the Holborn and Finsbury division, he had a practical knowledge of the subject, and he would affirm that if the legislature would entrust the Commissioners of Sewers with the authority to compel the owners of houses to make underground drains to the great sewers constructed by the commissioners, the grievance might be entirely removed without the interference of Government or any of the Government commissioners. He could vouch that, particularly within the last three years, the most anxious attention, and vast sums of money had been devoted to making proper sewers in the thoroughfares, but they could not persuade or compel the owners of houses to open a communication with those sewers at their own expense, and particularly the owners of houses in courts. The public local burdens were quite heavy enough without adding charges that clearly belonged to private individuals."

We cannot avoid referring here to the recent death of the strenuous and able advocate of sanitary regulations, Dr. Lynch, by whom the above proceedings were chiefly originated. He died at the early age of thirty-eight.

## WATER ENTRANCE TO THE DOGE'S PALACE, VENICE.

The water entrance to the Ducal Palace is in the back of the building, opposite to the prisons, a narrow canal running between the two structures.

The architecture of this front of the palace is plainer than the other more public portions; the most decorated part of it is the entrance-gates, which are in the style known by the term *cinque cento*, of which beautiful style Venice contains so many elaborate examples.

The shield of the doge who erected the building, the insignia of St. Mark, and ornaments, such as dolphins, syrens, allusions all illustrative of the power, the prosperity, and maritime history of the republic, adorn the front of the building.

The architectural composition of the entrance-gates, notwithstanding the difference in width of the pilasters, and the great width of the opening, is extremely elegant; the decoration, although pervading every part, is not too rich, nor does any superfluity appear.

The sculptured representation of leaves, fruit, and flowers in the architrave, and the festoons and centre enrichment above, are all worked with considerable delicacy and great skill.

The doors are of cedar; the lower part of them is rather injured by the prows of the gondolas and the salt water dashing against them; with this exception, the whole of the composition is in good preservation. As the canal in front of the building is not much frequented, the doorway is little known, and is seldom seen by visitors.

The representation here given, like that of the fire-place in the palace of the dukes of Burgundy, given in No. 226, was made from materials preserved in the library of the School of Design, Somerset House.

C. J. R.

## ROYAL INSTITUTE OF ARCHITECTS.

The closing general meeting of the session was held on Monday last, Mr. C. Fowler, V.P., in the chair. Amongst the donations announced were some portions of a work on Wren's Churches, by Mr. Clayton; *Description de la Chapelle Carlovingienne, et de la Chapelle Romane, restes du Château de Nimègue*, by Alexander Oltmans; and some Italian works on a new street at Milan, and on the sixteen ancient columns near Lorenzo. Portions of a fine work on *Les Monuments de la Lombardie*, by Frederic Osten, were exhibited.

The foreign secretary read a note in Mr. Oltman's work, from which it appears that in Amsterdam there is an institution for the promotion of architecture, which was founded in 1842, and has 700 members. The subscription is 4s. 2d. *per annum!*

Dr. Bromet exhibited a sketch of the Templar's church at Metz; and Mr. C. J. Richardson some drawings executed by two of his pupils at the School of Design.

The chairman, with some appropriate remarks, then presented to Mr. Boutcher, Gwilt's edition of "Chambers," and Hope's "Essay on Architecture;" and to Mr. Nicholl, Milizia's "Lives of the Architects," in accordance with the awards of the council.

Mr. Scoles, honorary secretary, read the following letter addressed to him by Mr. S. Smirke, relating to the architecture on the bas-reliefs from Nimrood, now in the British Museum.

"The object of this brief note is merely to call the attention of the Institute to the very singular architecture of the bas-reliefs just received by us from Nimrood.

They have so recently been subjected to minute inspection, that it would be unreasonable to expect philologists to have yet arrived at any certain conclusion in respect to their age; but the inscriptions are numerous and in excellent preservation, and there are learned men, capable of decyphering these strange chisellings, who are deeply engaged in tearing open the veil of mystery in which they are now enshrouded: we shall, therefore, soon be better acquainted with these marbles than we at present are. Of the conjectures that I have hitherto heard, some send back their date to an extremely remote antiquity, but the least sanguine archæologists incline to about six or seven hundred years B. C.

Here then we have, of almost the Homeric age, a lofty castle, with fortified turrets; a gateway, having a circular head; circular-headed windows on an upper story; crenellated battlements; overhanging parapets with embrasures; a well-defined chevron ornament forming the archivolt of the entrance gateway; masonry of perfect workmanship equal to that of the best period of Greek art.

The time is not far distant when the best informed antiquaries doubted the existence of any arch older than one hundred years B. C.; and if at that time an Eastern traveller had informed us on his return that he had himself witnessed these strange anomalies, his tale would have been certainly held by all to be an oriental fiction, utterly unworthy of credit or regard.

This is an instructive lesson, teaching the best of us to be diffident and cautious.

Since the Elgin marbles were brought to England, no similar arrival has occurred so calculated to excite the interest of artists and archæologists as these Assyrio-Babylonian remains, and it is most gratifying to reflect, that on this occasion we have not allowed our continental rivals to prevent England from enjoying the fruits of English enterprize."

The foreign secretary said, nothing was more difficult than determining with accuracy the age of a monument from the surface only: he was glad to find that able men were investigating the inscriptions on the bas-reliefs, as these would probably aid the inquiry. Even the evidence offered by these inscriptions, however, must be received with caution, as they might not be of the same date as the stones. His opinion was, that the arch was not known earlier than one or two centuries before Christ: he could not believe, that if such a development of science, such an advantageous system of construction, had been known, that the Greeks would have allowed it to remain asleep. There were many buildings of the Roman period in Egypt, and he thought it quite possible that the pyramid wherein it was said that an arch had been found, was of that date.

Mr. Scoles said that the soffit of the arch discovered by Sir Gardner Wilkinson was plastered, and that on the plaster was the name of Sesostris.

Mr. S. Angell, V.P., read a well-penned memoir of George Dance, the architect of Newgate, the Mansion House, &c., which was illustrated by a number of his original drawings from the Soane collection.

The chairman concurred in the opinion that had been expressed of Dance; he thought no one could look at Newgate or St. Luke's without admitting his genius. The latter, although flat and poor in a drawing, was effective in execution. He then reminded the meeting that it was the closing meeting of the session. Usually the chair had been filled by the president, who took the occasion to address to them remarks always instructive. He would not venture to emulate his lordship, but there was one suggestion often made by the president which he thought it was his duty to re-urge. It was that each should, during the recess, put together some facts or observations, to be laid before the members in the ensuing session; it was only thus that interest could be given to the meetings. Although the contributions might be small individually, collectively they would be large and important. He afterwards alluded feelingly to the loss of Mr. Papworth, and adjourned the meeting to November next.

## A NEW DESIGN FOR THE COMPLETION OF THE LOUVRE.

We have already alluded to certain projects for the reconstruction of the Royal Library at Paris, to examine which, a commission of inquiry was lately appointed by the Prefect of the Seine. This commission has given in its report in favour of the scheme for appropriating the ground situate between the Louvre and the Carrousel. The decision, in the words of a French contemporary, is intimately united with the question of the completion of the Louvre, so often broached, so that great interest is given to the publication of a scheme in which that object is included. The author, M. Brunet de Baines, architect, instead of endeavouring to *unite* the Louvre and the Tuileries,—an attempt which, in consequence of the inclination of the axes of the buildings being different, has not yet appeared to present any probable success, has obviated the difficulty, and devised an ingenious combination of the buildings. Preserving a direct communication (Rue des Tuileries) between the Rue de Richelieu and the Pont des Saints-Pères, thus intersecting this arrangement transversely, he proposes, upon the Place du Palais Royal, an extension of the Louvre, which would exceed in area, the space occupied by the present building. This addition would comprise the Royal Library and rooms required for the Museum, and with its principal front in the Rue des Tuileries, would have another opposite the Palais Royal, the direction of the line of the front of the Tuileries, in the Rue de Rivoli, being continued. By this arrangement, a site for the Opera would have to be found elsewhere; and it is argued, that a building of such a nature in the immediate neighbourhood of the Library and Museum, would expose the national treasures to all the chances of destruction by fire. The site near the Rue des Bons Enfans is, therefore, filled with a *château d'eau*, as likely to be of greater service in case of a disaster. Further, the architect proposes to arrange part of the square of the Tuileries in semi-circular form. The centre of the semi-circle being in the Rue des Tuileries, and the arch of the Carrousel forming the summit, buildings of one story are added on each side, to the original edifice, at the springing of the curve. These additions are required for military posts, and the offices of the household.

The advantages expected from the proposal of M. Brunet de Baines are thus summed up:

1. Completion of the Louvre, with special application to the disposition of the royal library, and the gallery of paintings.

2. Disappearance of the defect of parallelism between the two axes of the Louvre and the Tuileries.

3. Establishing a grand road between the two banks of the river, at the most frequented point, and doing away with the wickets, which are so inconvenient for communication.

4. An area of monumental character in front of the Tuileries, and providing those appurtenances which are wanting in the building.

5. Complete isolation of the library, of the gallery of pictures, and of the palace, by means of the squares and quays surrounding those buildings; immediate succour in case of fire, and consequent security for those precious deposits, for the preservation of which, too many precautions cannot be taken.

It is further argued in favour of this scheme, that sufficient space would thus be provided for any probable extension of the collection, and that removing the library to the site proposed, and the opera to the present site of the library, would be a far more convenient disposition, as well as one more likely to ensure the safety of the buildings themselves, and those surrounding each of them.

## THE LATE MR. ALLEN,

DISTRICT SURVEYOR.

We have to record this week the death of another architect, Mr. George Allen, who died on Monday last, the 28th June, at his house in Tooley-street, Southwark, after a short illness of about ten days. His decease in the prime of life, may be partly attributed to that zeal and energy for which he was distinguished in his early career, in the prosecution of any object to which he gave the attention of his mind, and which caused him to devote himself so unwearedly to the arduous duties of an extensive and increasing practice, that a comparatively slight indisposition led to a brain fever, terminating in typhus.

Mr. Allen was a pupil in Mr. James Elmes's office, and in 1820, obtained the silver medal at the Royal Academy, for a drawing of the portico and front of the College of Surgeons in Lincoln's-inn-fields, which had been erected a few years previously by Mr. Dance, of whom a memoir was read by Mr. Angell at the Royal Institute of British Architects, on Monday last, as elsewhere mentioned. A few years afterwards the sudden death of Mr. Varnham, an architect of extensive practice in Southwark, with whom Mr. Allen was about to enter into partnership, was the cause of his succeeding to that gentleman's business, and he was shortly afterwards engaged in conjunction with Mr. Savage and others for Mr. Peto, in making surveys and reports, and in giving evidence on the then recent failure of the foundations of the Custom House. This occasion called forth the exhibition of powers for which he was afterwards distinguished, namely, that of great firmness and self-possession under a cross-examination of counsel, who are not always the most courteous to a witness on the opposing side, and of considerable talent in the composition of reports, memorials, and business correspondence.

In 1827 and 1828 he gave his attention to the contemplated improvements in the approaches consequent on the building of new London Bridge. He memorialized the city authorities, and had models, drawings, and engraved views made, at an expense of above 300*l.*, in illustration of his designs for forming an approach to the new bridge from Tooley-street, particularly with reference to throwing open the east end of the church of St. Saviour's, Southwark; and likewise for forming a direct line from the bridge to the Bank, with a cross street to the Monument, and for converting the site of the northern abutment of the old bridge into an open dock for steam-vessels. Mr. Allen had the satisfaction of seeing these and many other of his suggestions adopted; but in reply to his memorial to the city authorities in 1830, to take his claims into consideration, he was informed that there was no fund available for such a purpose. These proceedings, however, brought him into notice in the borough, and for some years past he had been extensively employed in valuations, building of warehouses, and other works, arising from the improvements and alterations made in that neighbourhood; and after one of the great fires so prevalent in that district, he was employed to restore the church of St. Olave, in Tooley-street.

On the extension of the Metropolitan Buildings Act, Mr. Allen was elected District Surveyor for Rotherhithe and Hatcham; and on the occasion of a recent vacancy, he succeeded to the appointment of surveyor to the Haberdashers' Company.

His professional brethren, his clients, and even those to whom he was opposed, on occasions where conflicting interests were at issue, will bear testimony to the honourable manner in which he conducted himself, and to the zeal which he manifested at all times for the business he was engaged in, and likewise for his anxiety to support the character of the profession to which he belonged. Mr. Allen was admitted a few months since, a Fellow of the Royal Institute of British Architects.

J. J. S.

## CHELSEA.

This interesting locality, which was fast falling into decay, has recently awakened into new life: a fresh spirit has been infused, and is leading to efforts which cannot fail to have a good result. The success of a literary and scientific institution, "The West London," established there a year ago, is one of the satisfactory evidences that may be adduced. At the closing meeting of the first session, a short time since, Mr. Francis Lloyd, a vice-president, who was in the chair, delivered a more than usually interesting address on its progress and prospects, and made an appeal to the wealth and intelligence of the neighbourhood for sympathy and support. We quote a portion of the address relating to the past and future of the place.

"Chelsea," said the speaker, "is in my mind associated with giants of literature. Here, on the banks of our noble river, were the Tullian villas of scholars and philosophers. Here—

> 'Where glides the silver Thames along,
> His silent winding way,'

lived Sir Thomas More. Here Erasmus visited him, and of whose visit to the domestic circle of the great chancellor he has left so charming an account, albeit rather hard upon our pretensions to classical literature, which, he says, 'Vix tenuis odor in Angliam demigráret.' His house was the resort of the most ingenious of that age. There would that brutal and unaccountable monarch, Henry VIII., visit and dine with him; and even used, as Roper informs us, to ascend with him to the house-top, to observe the stars and discourse of astronomy. 'A house,' says Erasmus, 'in which every one studies the liberal sciences; where the principal care is virtue and piety; where idleness never appears; where intemperate language is never heard; where irregularity and disorder are proscribed by the mere force of kindness and courtesy; where every one performs his duty, and yet all are so cheerful, as if mirth were their only employment. Such a house ought rather to be called a practical school of the Christian religion.' Sir Hans Sloane was afterwards the possessor of the same house. He, you know, was a very learned and indefatigable pioneer in science. He succeeded Newton in the chair of the Royal Society, and was president of the College of Physicians, to whom he presented the ground of the garden of the Apothecaries' Company, adjoining the Military Hospital. In the hamlet of Little Chelsea resided Sir Bulstrode Whitelock, Mr. Pym, the celebrated member of the Long Parliament, Bishop Fowler, Sir Robert Walpole, Sir Richard Steele, Dr. Meade, Addison, John Locke, Dr. Smollett; and Dr. Swift resided, as he tells us, in his letter to Stella, for some time in Chelsea. Queen Elizabeth received her education at a palace the site of Cheyne-walk. Our president (the Earl of Cadogan) derives his descent and valuable estates in Chelsea (I believe most of us are his tenants) from Sir Hans Sloane; and I doubt not, with the gallantry and liberality that distinguish his profession (the navy), will lend a helping hand to our institution, which his lordship may, I think, be proud to see rising on his property, and certainly not decreasing its value.

The changes witnessed in the face of the country, within the time of two not very old men, are more than likely to be surpassed during the same future period; and this institution may influence the nature of that progress to a great degree. On this very spot where we now assemble (a handsome street surrounded for miles by houses), not longer since than this period, was the Earl of Peterborough stopped by highwaymen, in what was then a narrow lane; and the robbers, being watched by the soldiers on guard at the gate of the college, were fired at from behind the hedge. One of the highwaymen was a student in the Temple, named Brown, whom Mr. Vernon, the Secretary of State, in a letter to the Duke of Shrewsbury, says, 'a friend of his (Sir John Talbot) knew well; and his father, losing his estate, Mr. Brown lived by play, sharping, and a little on the highway.' You may see this anecdote and others, portraying the manners, modes of thought, and occupations of society, from the Revolution of 1688 to the death of George II., in a very interesting work, now on our shelves, by Mr. Jesse. I think the part we are attempting to play, in carrying onward the great work of social development, cannot be wrong, if it only causes the possibility to be more remote of our parish being again favoured by gentlemen of the Temple for such recreation."

"We are at this time peculiarly fortunate in having a nobleman who has testified an interest in our young institution, chief commissioner of crown lands; his interest, in what all admit will prove conducive to the intellectual advancement of Chelsea, convinces us that the improvements I have alluded to for its ornament, as well as for its health, will be carried out to the fullest extent permitted by the legislature. Let Lord Morpeth carry out the plans he has at heart, and let the legislature support them, and no minister will be remembered with more gratitude to latest posterity. May we live to see this terrace, not taken from useful or profitable occupation, but borrowed from the unwholesome mud shoals of the Thames, planted with rows of fair elms, a broad carriage-way in the midst, and a water-side causeway for pedestrians, similar to the *quais* on each bank of the Seine, in Paris,—a continuation of our own admired Cheyne-walk, in fact, to Westminster-bridge; and mansions, spacious warehouses, and structures of all kinds, worthy of such a river as the Thames, will grow up, as if by enchantment, upon its margin. The huddled sheds and tumble-down tenements, that now shut us from the sight of it, would vanish. Only think what a beautiful sight would be a Cheyne-walk or a Temple-garden, miles in length, opening an avenue of fresh air and a new element of health to the entire population of this vast metropolis, as much a blessing as a beauty! Imagine how much longer we should live, how much more healthy, and, therefore, how much more happy, we should be, if, when wearied with confinement, enfeebled by sickness, or oppressed by toil, we could enjoy in its plentitude the health and pleasure of living by the river side. We have ruthlessly defaced the banks of the king of English rivers:—

> 'Strange that where Nature loves to trace,
> As if for gods, a dwelling-place,
> There man, enamoured of distress,
> Should mar it into wilderness.'

However, an opportunity for retribution to Father Thames appears at hand, and for redeeming our characters as marrers of Nature for Mammon. The science of sanitary economy is worthy of your consideration, and I trust we shall hear some lectures on the subject, and timely suggestions tendered to the commissioners just appointed under our new local Act, for rendering innoxious the principal gas generated by sewage matter—making the matter itself profitable; considerations highly useful to us in Chelsea, where streets and squares are rapidly covering every yard of ground. Not fifty years ago, for the greater part,

> 'Whereupon it stands,
> The vacant winds did whistle, and the laughing sunshine
> Sported in wild freedom.'"

Caxton Monument.—"A Practical Man," writing to the *Morning Chronicle*, suggests that the best monument for Caxton would be a "Caxton Hospital" for decayed printers. It might be erected among the buildings of the intended improvements in Westminster; and might afford an asylum for a certain proportion of decayed literary men as well as printers.

## NOTES IN THE PROVINCES.

A new town-hall and market-house are to be built at Brentford, under the Small Debt Act provision for the erection of county courts in county towns.——The extension of the fortifications at Blockhouse, Portsmouth, and the artillery barracks is now nearly completed; and tenders will shortly be sent in for the erection of the battery and barracks at Point.——At a special meeting of the Cowes Commissioners on Monday week, an attempt to secure a supply of water to scour the existing sewers, and to reserve the water in the public highways for the exclusive supply of the poor, was resisted by seven of the Water Company's directors, against seven other commissioners, the chairman, one of the seven directors, giving his casting vote against the proposal. A protest was made against such voting by interested parties as contrary to the local Act. The commissioners are determined on having the poor supplied gratuitously, and the general consumers at a reasonable rate. They are about to engage an engineer to furnish plans for effectually sewering the town.——The second graving dock at Southampton is now excavated and its size marked out. A portion only of the dock wharf will require to be taken down for the entrance, which will always be at high-water only. The saving in construction, compared with the first, will be estimated, says the *Hampshire Advertiser*, when we state that the coffer-dam alone cost 10,000*l.*! The entrance to the new graving dock will not require one.——A correspondent of the *Times* proposes that the 66,000 acres of the New Forest, which cost more than they yield by 1,469*l.* a year, and have yielded no timber for public purposes for eight years, should be cut down, inclosed, and cultivated, so as to yield an annual revenue of 30,000*l.* in place of 9,000*l.* A "Resident Foreigner," however, in response, hopes the *Times* will raise its potent voice to deprecate the act of vandalism proposed; for should such utilitarian principles gain ground amongst this money-loving generation, woe to Kensington, Kew gardens, Blenheim,—all the loveliest spots in England! What would the Chamber of Deputies think, he asks, of a project to destroy the forest of Fontainebleau or Compiégne?——Our appeal, and that of the *Bridgewater Times*, on behalf of the church of St. Mary, Bridgewater, has at length been responded to so far as regards the restoration of decayed stonework, the pointing of the walls after removal of the old plaster, the putting on of a new slate roof, &c. "It is not a little curious, in connection with this matter," says the *Bridgewater Times*, "to note the difference between the present time and the palmy days of jobbing, in what was proverbially called 'churchwork.' The contract for removing and clearing away the plaster from the tower and walls was undertaken the other day for the sum of 8*l.*, and the pointing and making good the walls for somewhere about 200*l.* For performing the same work, some years since, it cost the parish nearly 1,280*l.* Glorious old times those for jobbing and corruption! No wonder that there are many men who look back upon them with regret. They'll never look upon their like again."——The re-erection of the monument, near Carmarthen, in memory of the gallant deeds of General Sir Thomas Picton, is progressing rapidly.——On Thursday week Clydach new church was consecrated by the Bishop of St. David's.——The present proprietor of Beeston Castle, Cheshire, is in the act of rebuilding this ancient structure. In *Nixon's Cheshire Prophecies*, it is stated that "Beeston Castle shall not be rebuilt so long as a *king* remains on the throne of England."——St. Cuthbert's Church, Bedford, is to be consecrated on 8th instant.——A curious relic of antiquity was lately discovered at Silchester, the well-known Roman station. It is a small bronze eagle of elaborate workmanship, the plumage distinctly defined, but the displayed wings gone; from all appearance, it headed a staff or wand.——The *Burton Herald* complains of a super-refined delicacy which is actively at work in the 'mutilation' of church water-spouts, &c., at Buxton, and is in dread of the spread of those Quixotic and indelicate she-Yankee notions which lead to war against the naked legs of chairs and tables, tongs and pokers. Modesty and purity of thought and fancy are the best fig-leaves

The Builder.

No. CCXXX.

SATURDAY, JULY 3, 1847.

ANXIOUS to convey early information to our readers on all occurrences within our province, and to offer such opinions and suggestions as appear desirable, we occasionally find at the close of our week an accumulation of subjects, each worthy of separate and lengthened notice, for the full consideration of which we have neither time nor space. This happens to be the case on the present occasion; and we propose, therefore, to throw them together, in the shape of a gossipping article, and to return hereafter to such of them as may call for further notice.

This will especially be the case with the "Report of a Special Committee of the Council of the Government School of Design," which, after great delay, many questions in the House of Commons, even its removal from the House after being placed there, has at last made its appearance, and will probably lead to an improvement in the management of the school, at present, undeniably unsatisfactory and inefficient. The report itself (occupying seven pages and a quarter out of the 144 contained in the blue book) is very brief, but, taken in connection with the evidence and statements laid before the committee,* will be found valuable.

According to the report the following are the principal points complained of:—

"1. That the principles of ornament, and the practice of original design as applicable to manufactures, are not efficiently taught.

2. That a knowledge of manufacturing processes, so as to enable the students to unite fitness and practicability in ornament, is not communicated.

3. That a large proportion of the students receive instruction only in elementary drawing, and, consequently, that an expensive class of masters are employed, especially in the morning school, in that elementary instruction, instead of in teaching the higher branches of art.

4. That, in consequence of the space occupied by the elementary classes, there is not sufficient accommodation for painting. (The deficient ventilation complained of, has since, to a great degree, been remedied).

5. That there is not sufficient accommodation for modelling, and none for casting.

6. That the collection of works of art, and books of prints, belonging to the school, are, from inaccessibility, and want of the means of reference, by descriptive catalogues, of less use to the students than ought to be the case.

7. That the directorship is a barrier between the council and the masters; prevents a direct communication of the masters with the council, and the prompt application of remedies to inconveniences complained of; thus diminishing their sense of responsibility, by depriving them of the credit of success, or discredit of failure, with the classes entrusted to them.

8. That, under the present arrangements, the council is burthened with the management of many official and financial details, which might be left wholly to some official person, reserving the time of the council for the consideration of the more important matters relating to the general arrangements of the school, its main objects, and the best mode of carrying them out."

* The committee consisted of the following members: Mr. Cockerell, R.A., Mr. Etty, R.A., Mr. Gardiner, Mr. Hawes, M.P., Mr. R. Ker, Mr. Lefevre (chairman of the committee), Mr. Richmond, Mr. Westmacott, R.A., and Mr. Wyse, M.P.

The parties examined were Mr. Wilson, director, Mr. Redgrave, Mr. Townsend, Mr. Hosking, Mr. Le Jeune, Mr. Richardson, and Mr. Stevens. In addition to letters, &c., from the above, there are also printed statements from M. Belloc, director of School of Design, Paris, Mr. R. Burchett, a late student, Mr. Dyce, A.R.A., Mr. R. Ker, Mr. Poynter, Dr. Cooke Taylor, Mr. Thompson, of Clitheroe, and Sir Richard Westmacott.

After expressing their conviction that the power of exact imitation is the first thing to be acquired, the committee suggest that some knowledge of anatomy and structural botany should be given, in addition to the several heads of instruction already attended to. A thorough revision of the copies now in use in the school must be made. The complaint that the principles of ornament and the practice of original design as applicable to manufacture are not efficiently taught demand the most serious attention of the council. While they think that the advantages derived from the present instruction is under-rated by some of the witnesses, they say:—

"We cannot, however, regard this instruction, which appears to be neither general nor systematic, as *the whole* which ought to be given in respect of ornamental design. On the contrary, having regard to the principal object for which the School of Design was instituted (the teaching of design with a view to the improvement of those branches of manufacture which are susceptible of ornament), and to the intentions of Government and Parliament, and the amount of the funds devoted to this purpose, we think that we should endeavour to devise and carry into effect a systematic and complete course of instruction, which should embrace the theory and principles of ornamental design (including the history and explanation of the different styles), and the application of those principles to the various kinds of manufacture, to the end that the power of making original designs may be acquired by the pupil, and may be exercised by him, whilst in the school."

They recommend lectures, a course of reading, analyses of the principles of ornamental art, and that suitable themes or subjects for original designs should be submitted to the students. They also recommend the creation of several classes, according to sufficiency, for instruction in design, a public exhibition of the works of the students, and the distribution of rewards. They think it desirable that the masters who teach design should possess a general knowledge of the peculiar conditions to be observed, in producing designs for different manufactures. The establishment of a few subsidiary schools in the metropolis, where the elementary portion of drawing might be taught by subordinate instructors, so as to give greater accommodation for the study of design at Somerset House, is recommended.

As to the director: whether under that or another name, they consider a paid officer for the supervision of the instruction and discipline of the school indispensable.

"The committee admit the difficulty incidental to this arrangement, namely, that masters of adequate talent and eminence in their profession, will feel unwilling to serve in subordinate relation to the officer in question, who, however well qualified for his general duties, may have less knowledge and experience than the master in the branches of instruction which they teach. Your committee think that the best mode of meeting this difficulty is, by defining with as much accuracy as possible, the duties of the masters: by not permitting the director to interfere with the masters in the management of their classes; but by reserving all such interference to an instruction committee, and by allowing the masters to communicate freely and directly with such instruction committee, and also to report respecting their classes and their own branches of instruction, to the council.

Your committee approve of the principle, that the masters to whom classes are entrusted should each have the full credit of success of his class, and the discredit of failure."

Throughout the evidence the importance of the point here alluded to, and to which we have often referred, is strongly dwelt on. Take, for example, one extract from Mr. Townsend's evidence. In reply to a question put to him by Sir Richard Westmacott, he said to the chairman:—

"This, Sir, involves a point of much nicety. Will it be offensive that I speak with unreserved candour? . . . . . *The Chairman.*—By no means: we are ready to hear all your opinions. . . . . I do then firmly believe (and I have had as much experience in the school as any artist, except Mr. Dyce, Mr. Herbert, and Mr. Wilson), that at the present moment the *whole system* is one which is not calculated to carry out the objects the Government had in starting the school. The truest, most powerful stimulus to the masters would be an honourable distinction in the conduct of the school: from this they are now shut out. Their offices are not posts of honour. The improvement of art is never obtained by the depression of its professors. Yet, at the present moment, I feel the situation I have obtained there to be valuable only in regard to pecuniary emolument, and that is not very great. I cannot conceive that it can be a proper arrangement, that the artists who occupy the situations of the chief working officers in a great Government Institution should in any way feel themselves put in a subordinate position, they being the really efficient workers out of all the operations of instruction in the school."

"The head masters are looked upon as inferior to the director, as in fact the mere servants of the council, bound to work out the ideas of the director, whether they can shew that those ideas are correct or not."

That it is so is clear; and this must forthwith be altered. An honourable distinction in the conduct of the school *is* the best stimulus that can be given to the masters.

Enough, however, on this head at present: we must now look at art in another place, namely, in Westminster Hall, where are gathered together the 123 works of art submitted in competition to the Royal Commissioners of Fine Arts, as mentioned last week.

Before doing so, however, let us once more draw attention to the preparation for the destruction of the hall which has been made around it. Mr. Stuart Wortley pointed out, the other night, in the House of Commons, that the screen which had been used for the exhibition of the cartoons would tend, should a fire occur, to the destruction of the whole fabric. We are much more fearful, however, of the erections outside,—a parcel of wooden sheds, with fire-places in them, piled round about the hall as if for the express purpose of burning it down. Surely some other arrangement for the officials here accommodated could be made. The reply that Mr. Wortley received to his remark will be less satisfactory to artists, by the way, than it was to him. Lord Morpeth said there would be no exhibition of drawings or cartoons in Westminster Hall after the one then about to open; as soon as that exhibition closed, the woodwork would be removed.

But as to the exhibition itself. It is certainly most creditable to the country; and remembering what other works have been produced in England during the time since this competition was advertised, may be regarded as little less than extraordinary.

In the notice of the exhibition which appeared in our last number, written before the decision of the judges* was known, nearly the whole of the selected works are pointed out for special commendation, as an examination of the following list of the successful competitors will shew.

*Premiums of Five Hundred Pounds.*—"Burial of Harold at Waltham Abbey," F. R. Pickersgill, 8, Leigh-street, Burton-crescent; "Alfred inciting the Saxons to prevent the Landing of the Danes, by encountering them at Sea," G. F. Watts, 48, Cambridge-terrace, Edgeware-road; "The Battle

* Lord Lansdowne, Sir Robert Peel, Mr. Samuel Rogers, Sir Richard Westmacott, R.A., Mr. Richard Cook, and Mr. William Etty, R.A.

of Meeanee," Edward Armitage, 13, George-street, Adelphi.

*Premiums of Three Hundred Pounds.*—"Richard Cœur de Lion forgiving Bertrand de Gourdon," John Cross, 85, Fetter-lane; "Edward's Generosity to the People of Calais during the Siege of 1346," Paul Falconer Poole, 1, St. John's-place, Lissongrove, North; "Christ Bearing the Cross," and Reconciliation of Oberon and Titania," J. Noel Paton, Wooer's Alley Cottage, Dunfermline.

*Premiums of Two Hundred Pounds.*—"Parable of Forgiveness," and "Wisdom," James Eckford Lauder, 35, Upper Charlotte-street, Fitzroy-square; "The Departure of the 'Primitive Puritans,' or, 'Pilgrim Fathers,' to the Coast of America, A.D. 1620," Charles Lucy, Tudor-lodge, Albert-street, Mornington-crescent; "Henry V., when Prince of Wales, believing the King to be dead, takes the Crown from the Cushion," John Callcott Horsley, The Mall, Kensington Gravel-pits.

Against the decision of the Commissioners we shall not offer a word of objection: in the main we agree fully with them, and knowing that they have given much more time and thought to the inquiry into the relative merits of the various works submitted, than observers like ourselves could do, we should hesitate before we differed from them as to the position in the list of the nine selected pictures.

Mr. F. Pickersgill's painting is a noble work, exhibiting great natural ability, combined with the effects of unflinching study and perseverance. The low tone which pervades it, harmonises well with the solemnity of the event, and the general treatment of the whole is no less striking than the judicious choice of subject. It stands most deservedly at the head of the list. To Mr. G. F. Watts we would give much praise. His work, though inclining somewhat too much towards the early Italian masters, has rarely been surpassed for fine drawing and purity of style.

Mr. Edward Armitage's "Battle of Meeanee," is painted in close imitation of Horace Vernet's best style, and is remarkable for its energy of action. The eye wanders in vain for a focus, all is glitter, confusion, and animation; but it is, nevertheless, a marvellous performance.

Mr. John Cross's "Richard Cœur de Lion forgiving Bertrand de Gourdon," is evidently the fruit of a continental education. The figure of the assassin is ably conceived; his momentary fear and astonishment are accurately delineated, and wonderfully suited to the cause of those emotions. The king is not so happily portrayed. The head is the head of a saint rather than that of Richard, a lamb in peace, a lion in war, under whose battle-axe hundreds fell; but in spite of all this, it is a most meritorious production, and in every way worthy of the awarded premium.

For sentiment, and exhibition of sorrowful emotions, Mr. Poole stands almost alone. His present work, rich in the most touching episodes, must affect the spectator, let him be who he may. Beautiful in colour, although eccentric in composition; it is a work of which the country may be justly proud.

The two contributions of Mr. J. Noel Paton are in all respects worthy of a matured hand, more especially the smaller: it abounds in talent, every square inch teems with the fruits of a most lively and imaginative fancy, giving an excellent notion of what fairy land is, or at all events, ought to be. His larger and more important work, reminds one too forcibly of the old masters.

Mr. James Eckford Lauder's "Parable of Forgiveness" is a clever embodiment of the subject, novelly conceived and well coloured; the composition perhaps wants unity.

Mr. Lucy's "Departure of the Primitive Puritans to the Coast of America (34), is a great improvement on any former exhibited work by him, nicely conceived and full of character.

Mr. Horsley has shewn much feeling and careful execution in his "Henry V.:" the best part in the picture is decidedly the sick king; the light on the head and face is beautifully managed,

Independently of the prize pictures, there are many of a high class of merit, amongst which those by Mr. Corbould, Mr. Townsend, Mr. Dobson, Mr. Cave Thomas, Sir W. Allan, Mr. Dighton, Mr. Woolnoth, Mr. R. S. Lauder, Mr. Foggo, Mr. Morris, Mr. Knell, and Mr. Goodall, may be named. Mr. Linton has two excellent landscapes.

It may be hoped that further prizes will be given, in which case we trust Mr. Corbould will not be forgotten. His picture "William Eynesham Reciting the Valour of the Rose of Rouen," is full of genius and beauty.

We further hope that some of the many fine works here exhibited will be purchased. Their size will operate against the sale of them to private buyers; but our wealthy corporations might well expend upon them some of their surplus funds, for the adornment of their halls and meeting-rooms. Let London, at all events, set an example. In Oxford, there would be good room for a few of them, and we hope the hint will not be lost sight of.

To this latter place we railed down last week, for a few hours, to see what "The British Association for the Advancement of Science" were doing, and found it a brilliant meeting, so far as respects the number of eminent men there assembled, though scarcely so as to the number of "new things booked." We are not amongst those, however, who will complain of this. The great purpose of the Association is to bring men of all countries, but of like mind together, and to spread a taste for science throughout the country. We did not hear the promised paper on the Dee bridge failure, but look for it.

The excitement caused by this failure is not yet allayed. The Railway Commissioners however, appear to be taking steps to prevent the recurrence of a similar accident. Mr. Strutt said in the House a few nights since relative to Captain Symond's report on the bridge in question:—"The commissioners have since taken the report into consideration, and the conclusion they have drawn from it is, that further experiment and examination are necessary with regard to the use of cast-iron in the construction of railway bridges. The commissioners have reason to believe, that though there has been sufficient experience to regulate the use of cast-iron where it is subjected to steady pressure, additional experiments and further information are required as to those cases where, as in railway bridges, it is liable to the passing of heavy weights at great velocities, and where the vibration is caused under different circumstances. Taking this into account, the Board has recommended the Government to appoint *a commission to investigate the subject, with power to make experiments upon it;* that commission will be constituted partly of gentlemen of eminent scientific experience, and partly of practical engineers. In the meantime, circulars have been issued to all the railway companies in the United Kingdom, requesting them to make *a return of all the cast-iron bridges* they have on their lines, their dimensions, and other particulars; they are also recommended, in case there are the slightest doubts of the stability of any bridge, at once to give it additional temporary support, and, till the report of the experimental commission is made, to run the trains over it with great caution, and only at low rates of speed."*

The necessity for this return (which we urged last week without being aware of the determination come to by the commissioners) is great and obvious. The truth of the statement, that a flaw had been discovered in the girder-bridge over the Tame was denied by a correspondent, but we are now further assured that the report was correct. The deflection and oscillation were very considerable when a train passed over the bridge, and on examination, a fracture in one of the girders was discovered. The *Birmingham Journal* says, that with the view of making it secure, the permanent way has been raised, and workmen employed in driving huge piles between the piers to support the girders. "Four rows of piles have been driven under each of the arches, giving them in effect all the support of four additional piers, and there cannot be a doubt that they are absolutely essential to the safety of the structure."

We are disposed to believe that the contemplated investigation will shew the necessity for using *wrought*-iron in such situations, and hope it may lead to the arrangement of means for rolling large beams economically.

We should be glad to see the Institute of Architects move in obtaining a series of experiments as to the best means of effecting this. A memorial to the Government at this moment might be useful.

The Institute, as will be seen in another page, closed the Session on Monday last. We cordially echo the chairman's appeal to the members, calling upon them to supply remarks and information to maintain the interest of the meetings. *Apropos* of the Institute, and, as amongst the events of the week, we may notice the appearance of Mr. Donaldson's "Architectural Maxims and Theorems," being the first attempt, as the author says, to express some of the principles of the art in an axiomatic form, or as a series of distinct propositions. "The writing in aphorisms has many excellent virtues, whereto the writing in method does not approach," says Bacon: and again;—"knowledge, while it is in aphorisms and observations, is in growth,"—and upon these hints the professor has spoken. We cannot better close our present rambling article, than by quoting one of the maxims, to shew their character.

"Architecture is an aggregate of the Fine Arts; if alone, she is deficient in expression; if united to one only, she is still incomplete; and only acquires all her majesty when combined with both her sisters."

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METROPOLITAN BUILDINGS ACT AMENDMENT BILL.—The second reading was fixed for Thursday night. We have every reason to hope, however, that it will be withdrawn.

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* A correspondent, who dates from Hull, says:—"It appears to me that the vibration in iron girders might be very much diminished by covering the whole of the platform of an iron bridge with saw-dust, bark from a tan pit, or the small chips from a ship-yard, say one foot thick, and placing upon this a floor of battens or planks, with the rails upon them. The loose nature and partial elasticity of such materials, so laid, would, I apprehend, prevent the communication of a vibratory motion to the girders underneath them. I have seen, to my mind, at another kind of construction for railway viaducts might be adopted, and that is, by suspension-bridges, constructed of boiler plate. The principle in the construction of such a bridge would consist in employing ribs of boiler plate, of suitable gauge, placed parallel to each other at certain distances apart, the space between being filled in with solid timber, or by trussing. In small structures, solid timber might be used, but in bridges where the points of suspension are far apart, and the ribs of great depth, a system of trussing would be necessary. The object aimed at in either case is, of course, to prevent the ribs from twisting or winding. The ribs would require to be rolled to certain lengths, and afterwards annealed; the connecting of the several parts of the ribs together, lengthways, should not be done by any method of riveting, but by tie bars passing transversely through them, and secured by keying with dove-tailed wedges, so as to stiffen the plates. I would place three ribs together, the outsides of the outer ones to be covered with planking, the inner spaces filled in solid: every set of three ribs should carry a rail, a [illegible] their richness. In the interstices, three sets of ribs, all [illegible] about four feet apart, and thus part wood, have to be trussed. W. L.

BATHS AND WASHHOUSES.—From the statistical and other returns presented at the first anniversary festival in celebration of the metropolitan establishment, held on the 16th inst., it appears that from the opening on August 3rd, 1846, to June 12th, 1847, 80,670 bathers had frequented the establishment, of whom 72,810 were males and 7,860 females. The washing was for 82,872 individuals, and was represented by 20,708 women, who may be estimated to have washed 800,000 articles of clothing: besides 800 daily bathers, 200 to 300 are refused admission from want of baths. Receipts including 1,375*l.* from working of establishment, 5,955*l.* Expenditure, including cost of building, fittings, &c., 6,759*l.*—debt 804*l.* Profit for ten months, 446*l.*—The building in St. Martin's-in-the-Fields, the tenders for which we lately gave, is to contain 64 baths, and 54 washing places. The unanimity of the rate-payers of St. Martin's in favour of these proceedings, forms a curious contrast with the animosity and ado about the like proposal in Marylebone. It would be rather a sickening process, to detail the bickerings and petition prayers—plus con, minus pro—of late got up anent the Stingoitic project, in which Sir Peter Laurie has taken a distinguished lead on the adverse, or dirty side. The latest move, however, we may state, consists in the retrogade or negative one of "nonconfirming a minute approving of the recommendation of the commissioners, for the purchase of the site of land at the Yorkshire Stingo"—the nonconfirmist meeting, however, negatively promising the possibility of veering round once more, should the offer of government to purchase a portion of the land be repeated, and the remainder be still sufficient.

A METROPOLITAN NUISANCE.—At the recent conference in support of the Bill of Health, the Marquis of Normanby, on the principle that one example was worth a good deal of declamation, detailed a few particulars in the history of one nuisance, viz., the pestilential pool of 700 feet in length and 400 in breadth, which *formerly* existed in Lamb's-fields, Bethnal-green—formerly, he said, because now, although improvement had been brought to bear upon this neighbourhood; although science, skill, enterprise, and speculation had had their share in the changes effected there; although the Eastern Counties Railway had reached Lamb's-fields, and over this pestilential pool thousands were borne upon the wings of vapour; yet, so far from the condition of the locality being improved thereby, it had deteriorated to such an extent, that now the length of the pool in question was 2,000 feet in place of 700! Thus then, while all that science could effect in order to develop wealth was successful, not only was the condition of this place made worse, but the condition of the people who lived there was deteriorated in the same extent. At that moment, he understood that an application had been made to the Commissioners of Sewers for the Tower Hamlets, and that they had not granted it, for removing this very evil, by cutting a sewer of 200 feet. Now, was not this a great shame?

GYPSUM: TUTBURY CHURCH: To the Editor of *The Times*.—SIR: From a paragraph in your paper of Saturday, extracted from THE BUILDER, it would appear that it was not generally known that gypsum when wrought with the chisel would long resist the action of the elements; will you allow me, through the medium of your columns, to call the attention of your numerous readers, interested in such subjects, to some very curious and beautiful grotesque sculptures of animals in gypsum, which form two of the divisions in the great arch of the western door of Tutbury Church, Staffordshire? The church formed part of the ancient priory, and was erected in or about the eleventh century; it is in the Anglo-Norman style, and I think it is one of the finest specimens of that style remaining in the kingdom. It is built of a very enduring stone, and the ancient part (for there have been modern additions) is almost as perfect, and the masonry as sharp, as when it was first erected. The gypsum sculptures above-mentioned are now in as perfect a state, or nearly so, as they were when they left the workman's chisel after a lapse of nearly eight centuries. Gypsum is very abundant in the neighbourhood of Tutbury, the chamber floors of all the houses (with few exceptions) of the town and country around being laid with it.—R. TYRER.

BRITISH ARCHÆOLOGICAL ASSOCIATION, June 25.—The mural paintings recently discovered in Great Waltham church, Essex, were the subject of some remarks by Mr. Fairholt at the meeting of this association on Friday in last week. Mr. Fairholt had made drawings of them, which he exhibited. He observed, that on visiting the church, which is now undergoing a thorough repair, he found the entire surface of the walls covered with fragments of painting which had become revealed in the process of removing the many coatings of whitewash from them. The most perfect of the series is situated immediately over the arch of the chancel, in a space about 9 feet high by 15 in width; in the centre is a figure of the Saviour, seated on a rainbow exhibiting his wounds; above him are attendant angels playing the trumpet and lute, with the sun and moon over their heads. On the right of the Saviour is a group of six crowned female figures, the foremost of which is regally attired, and has a *nimbus* round the head. This group is in a fair state of preservation, but that on the other side is not; it consists of the same number of male figures in attitudes of adoration, and their costume, in the general style of the drawing, appears to fix the date of the picture to the middle of the 15th century.

IVY ON CHURCHES.—The paper of inquiries to churchwardens, issued by the archdeacon, always contains the question, "Is there any ivy growing on the walls, &c." A rural dean has appealed to the Archdeacon Ormerod, on his primary visitation, to consider before he issues his fiat for the removal of this ornament of many of our churches. He contends that, so far from the ivy rendering the structure damp, and so hastening its decay, on the contrary, nothing so effectually keeps the building dry, as may be seen by examining beneath the ivy after rain, when it will be found that the walls are dry, though every thing around is deluged with wet. And further he contends, that "its exuberant and web-like roots, issuing as they do from every portion of the branches, and running all over the surface on which it grows, bind everything together that comes within their reach with such a firm and intricate lace-work, that not a single stone can be removed from its position without first tearing away its protecting safeguard." In proof of this, he refers to ruins of our ancient castles and abbeys; "for while in those parts of the structure that have not had the advantage of this protection all has gone to utter decay, where the ivy has thrown its preserving mantle every thing is comparatively perfect and fresh, and oftentimes the very angles of the sculptured stone are found to be almost as sharp and entire as when first they came from the mason's yard."

VISITORS TO ROYAL PALACES, &c.—Captain Pechell, M.P., has procured a return of the visitors to various royal palaces, from which it appears that the total number of visitors admitted, free of charge, to see the state apartments at Hampton Court Palace amounted, in 1845, to 160,791, and in 1846, to 170,879. The number of visitors admitted to view Windsor Castle, amounted, in 1846, to 27,142. To the Royal Gardens at Kew, now one of the most accessible as well as delightful resorts to metropolitan residents, 28,139 persons were admitted in 1845, and 46,573 in 1846.

NEW MOTIVE POWER.—Mr. Fox Talbot, we hear, has taken out a patent for a new plan for generating and applying motive power. This he has effected by exploding gun-cotton alternately on each side of a piston. At the bottom of the cylinder, on each side, are two circular holes, in which the explosive material is supplied by a tubular slide. Passing through the cylinder is a platina wire, for the purpose of being excited by the galvanic battery, and thus exploding the cotton.

THE ACCIDENT IN BERMONDSEY.—The remark in our last number in respect of the fallen arch in Bermondsey, has led a gentleman concerned in the matter to forward us proof that due time was taken in the work. The evidence of Mr. Beazley and Mr. Grissell, at the inquest, fully establish the fact that the work was properly done.

PROJECTED WORKS.—Tenders have been called for by advertisement for the various works necessary in the restoration of St. Mary's Church, Scarborough; the erection of a Parsonage House near Luton; the various works required in additions to Chignal Smealey Church, near Chelmsford; the erection of a dwelling-house and offices at Cuckfield; a church at Kentish Town; and Catacombs, vaults, &c. at the General Cemetery, Hull; extensive additions to stabling at Newmarket; also for the construction of 3¼ miles and 5 miles of the Vale of Neath Railway; and for the supply of timber of various kinds, sleepers, keys, &c., malleable iron, chairs, castings, tubes, brass and copper, &c. for the Newcastle and Carlisle Railway.

## TO CORRESPONDENTS.

"*P. M.*" shall hear from us.

"*Nauticus*" is again quite illegible.

"*A. B.*"—Proper precautions must be taken, or it will not be.

"*P. S.*" (Falmouth).—We shall be glad of any information.

"*Whitehouse and Co.*"—The letter can only appear as an advertisement.

"*G. N.*"—We cannot reply without further information.

"*Sewer Traps.*"—By an error, not our own, the titles of the two sewer traps described last week are reversed. The first is Mr. Chadley's, the second Mr. Walker's.

"*T. L.*"—We cannot give the information required

"*T. B.*"—Ditto.

"Δ."—Next week.

*Received.*—"J. S." "J. K." "E. W." "C. H. C." "H. T." "The People's Journal," Part XVIII. Edited by John Saunders: "Wonders of the Wire, a Manual of the Electric Telegraphs," by T. Phipson (Gilbert, Paternoster-row); "Westminster and Foreign Quarterly Review," for July; "Equitable Banks of Interchange;" "The Tradesman's Book of Ornamental Designs," Part II. (Orr and Co., Paternoster-row); "La Revue Générale de l'Architecture," Dirigée par M. César Daly, Architecte, Vol. VI.; "Etudes sur la Théorie des Voutes," par M. Fabré; "Du Symbolisme dans l'Architecture," par M. Daly; "Note sur l'Hopital en Fer du Camp Jacob," par M. Romand; "Wood's Edition of the Songs of Scotland," Nos. IV. and V. (Novello, 69, Dean-street.)


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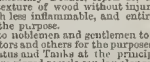
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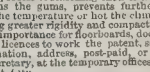
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**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven:

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves at 7d., 8d., and [illegible] per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE. Kitchen range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE most respectfully solicits** the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from [illegible] per inch and upwards.
Bright ditto with Black and Bright Bars, [illegible] and upwards.
Self acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| [illegible] | [illegible] | [illegible] |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell hanging in superior style, hung in secret, 3s. per pull.

**CHARLES SMITH and SON, 25, GREAT** CHARLES-STREET, BIRMINGHAM (late STANDLY and SMITH, formerly STANDLY [illegible]), Bull-street, Locksmiths, Bell-hangers, Brass founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS and ENGINEERS [illegible] lunatic asylums, &c.

C. S. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar locks [illegible] iron frames [illegible] at the MODEL PRISON, LONDON, and TWENTY THREE SIMILAR GAOLS, where they have given entire satisfaction.

[illegible] attesting the efficiency of the labels, &c., invented by them.

[illegible]

C. Smith and Son also are prepared to contract for the supply of [illegible] of the nobility and gentry, churches [illegible] staircases, grates, [illegible] metal sashes of all kinds, and every description of ornamental brass and iron [illegible].

C. S. and Son beg to refer to the extensive works performed by them at Windsor Castle, [illegible] Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work [illegible].

N.B. C. SMITH and SON do not [illegible] advertisement [illegible] "Patent, Warranted, Secure," that are neither the one nor the other.

CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C. CHUBB and SON having just erected a** Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron Doors [illegible] purposes, and Fireproof Safes at a great reduction in price, and of very superior quality. All their Iron Doors and Safes are fitted with C. CHUBB and SON'S best DETECTOR LOCKS.
57, St. Paul's Church-yard, London.

TO ARCHITECTS AND SURVEYORS.

**C. CHUBB and SON having ascertained** that some builders are in the habit of substituting inferior and insecure Iron [illegible] when "CHUBB'S MAKE" are ordered, they call the attention of Architects to the subject. In all specifications where it is intended to have the articles made [illegible] C. CHUBB and SON, they respectfully request that Architects will specify "Iron doors manufactured by C. CHUBB and SON, of St. Paul's Church-yard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the [illegible] of their manufacture.

PRO BONO PUBLICO.

**CAUTION. To Purchasers of Locks, fire-**proof Doors, Safes, &c. JOHN LEADBEATER, many years manufacturer for Chubb, LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c., that he can supply them IMPROVED DETECTOR LOCKS for universal purposes, STRONG WROUGHT IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c. on the most [illegible] principles of security against FIRE and THIEVES (without the aid of "expensive machinery," which is employed by some inexperienced makers, but must be paid for at prices [illegible] per cent. [illegible] other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved detector locks or latches. Some thousands of Leadbeater's strong [illegible] and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience [illegible] with any other house in London. A large assortment on sale and made to order. A pair of extra strong wrought-iron fire-proof folding doors with ventilating gates, well adapted for a banker's strong room [illegible] doors for party walls [illegible] secured by the BEST DETECTOR LOCKS IN ENGLAND, 6 feet high by 2 feet 2 inches wide and upwards, price £10 each, always on [illegible] at LEADBEATER'S MANUFACTORY, 127, ALDERSGATE-STREET, LONDON.

NOT TO BE EQUALLED IN PRICE AND QUALITY.

**E. TANN and SONS, Patent Reliance** Fire-proof Safes, Doors, &c., Fitted with their superior Patent Reliance [illegible] from all others. [illegible] a Chemical Preparation and Patented, being the only genuine Chemical compound that can be applied to Iron Safes.

CAUTION. [illegible] E. TANN and SONS are [illegible] the Patentees.

PATENT RELIANCE LOCKS, LATCHES, &c. [illegible] of every description to which Locks can be applied.

E. TANN and SONS are the oldest Trade Manufacturers, established [illegible] Iron Safes, Doors, Rooms, Chests, Locks, &c. of every description. Dwelling, 2, Minerva-terrace, Hackney-road. Manufactory, 1, Hope-street, [illegible]

N.B. Safes Doors, Chest-doors for party-walls of every description kept in Stock.

**HOT WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and [illegible] drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed have constantly expressed their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler which requires no brickwork may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash-pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c., all of the best description, at very moderate prices. CAST IRON UPSETS.

**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark Bridge, and the Grove, Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

IRONFOUNDRY.
168, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
Late HENDRY and GLOVER,

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain water Pipes, Heads, Shoes, &c.

**PUMPS.—The attention of Architects,** Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brick-fields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to [illegible] kept for hire. Estimates given to Drawings if required.—M. A. RICHARDS, [illegible] Old Barge-house-street, Commercial-road, Lambeth.

PERLET'S IMPROVED DOUBLE-ACTION PUMP.

**JOHN CLARK feels desirous of drawing** the attention of the Nobility, Gentry, Contractors, and the Public in general to PERLET'S IMPROVED PUMP, worked from a single cylinder, causing a constant stream of Water and which, from its simplicity, [illegible] into a Fire engine in [illegible] a great amount of extra friction, and increased power is obtained by its use. It has this advantage superior to any Pump yet invented [illegible] broken [illegible] in a few minutes [illegible] Temple-street, Whitefriars, London.

J. C. has also a large assortment of every description of Pump: [illegible] Liquid Manure, [illegible] for Excavation, either for Sale or Hire.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Footwalks, Malt [illegible] Floors of Warehouses and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, [illegible] WHARF ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

ANSTON QUARRIES.

**MESSRS. Wm. WRIGHT and Company** beg to inform Architects, Engineers, Builders, Stone Merchants, [illegible] Parliament [illegible] WRIGHT and Co., Anston, near Worksop, Nottinghamshire.

CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.

**P. FOUCARD and W. TUCKWELL,** Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf imported [illegible] exclusively from their quarries, at Allemagne, which, for present use is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

ARCHITECTS AND BUILDERS.

**THE WESTMINSTER MARBLE** COMPANY are enabled, with their patent machinery, to execute every variety of marble work in a superior manner, at a considerable reduction in price. The show rooms contain a large assortment of elegant [illegible] chimney pieces and monuments. Country builders will realise a great saving by forwarding orders to this establishment. A liberal commission allowed to the trade for acting as agents.

[illegible], Millbank, Westminster.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-**tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Cannings [illegible] 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has been introduced into Buckingham Palace, the drawing-rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The [illegible] black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy [illegible] exceedingly moderate terms. Welsh slate slabs, of the finest description, at [illegible] N.B. The trade supplied with whole cargoes, self-faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly-discovered Liquid Composition, which Messrs. G. and T. Wallis [illegible] introducing to the Trade, possesses the important qualification of effectually stopping [illegible] and preventing them [illegible]

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article [illegible]

In the [illegible] it is put on to the work with [illegible] used in all climates and situations [illegible]

Sold [illegible] Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The property of this Paint is peculiarly for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water pipes; Hothouses, [illegible] Its adhesion is so great that [illegible] remove it. It [illegible] and is not affected by spray of sea water.

PROTOXIDE PAINT is sold ground in oil and, compared with white lead, its property of covering is as 7 to 5, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

ZINC WORK.

**MESSRS. F. and J. HARLAND beg to** call the attention of Builders and others, to the following list of prices, for cash:—

[illegible] inch Pipe ...... per foot [illegible] | [illegible] inch Gutter ... per foot 4½d.
2½ ditto ........... „ 5d. | 4-inch ditto ...... „ 5d.

Including fixing.

Flats Covered and Cisterns lined, from [illegible] to [illegible] per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Alms-houses.

N.B. Orders by Post punctually attended to.

By Her Majesty's Royal Letters Patent.

**PATENT ASPHALTE ROOFING FELT, as used by**

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk, and other Railways,
And the Corporation of the City of Edinburgh.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT," of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S PATENT

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey, side of Westminster Bridge, London.

**THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the** following useful purposes.

Foot Pavements.
Kitchen Floors, particularly where it [illegible] to keep damps from rising.
Garden Walks and Terraces.
Carriage Drives.
Coach houses and Stabling.
Dog-kennels.
Barn Floors.
Granaries.
Tun-room Floors.
Malt-house Floors.
[illegible] &c. &c.
Covering of Railroad and other Arches.
The [illegible] effect in [illegible] to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, [illegible], &c. &c.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly [illegible] the great advantage to be derived from the [illegible] of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the [illegible]

In order to guard against the use of spurious material it is important that [illegible] for Works to be executed be made direct to this Company; and as a further protection, it is suggested that [illegible] Contractors should require a CERTIFICATE from the Company that the [illegible] of material has been [illegible]

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

L. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

sion at Wolverton. The loss to the company by that one accident will amount, it is understood, to between 20,000*l.* and 30,000*l.*,—a sum which would of itself have paid for a great many additional breaks and breaksmen, besides thus saving a good many lives, which no 'compensation' can either make up for or replace. And in conclusion we would as earnestly call on Mr. D'Israeli, as a legislator, to *suspend* a director forthwith if the public appeal now ringing in their ears shall prove as unavailing as we fear it may; and to that end he need not go far from his seat on the opposition benches of the Commons House of Parliament to find the fitting subject; before whose cool and calculating eye we would, in the meantime, moreover, wish very much to place the following little intimation of means already adopted, by decree, in the certainly somewhat imperious, if not the less really free, dominions of his majesty the Austrian Emperor, for the prevention of injury *to* railways;—an intimation extracted from *Galignani*, and from which it appears, that in Austria they are *beginning* to know a little better how to deal with such subjects than we do. We only wish that the trifling little amendments, which we have taken the liberty of appending in brackets, and which might as well have been inserted in the original, were embodied at least in an Act like the one alluded to, and carried by Mr. D'Israeli *versus* Mr. Hudson,—that is, in spite of him,—through our own House of Commons:—"Any damage done to [or by] railways, to [or by] the machines, means of conveyance, &c., of a nature to endanger the lives, safety, or property of individuals, shall be punished with from one to five years' imprisonment [of all concerned] if no accident occur; and with from five to ten years in the event of any accident. Any act [or omission] causing any such injury is to be punished with the same penalties; and any *employé* [director or other manager] of the *railway causing accidents*, whatever may be their consequences, by his negligence [or neglect of effectual means of prevention], is to be punished with from five to ten years' imprisonment; if the consequences of the accident are very serious, with from ten to twenty years' imprisonment; and if death be caused, with the punishment of death [to his *directorship*,—of course by *suspension*]."

## SOCIETY OF ARTS, ADELPHI.

GLASS—STONE.

JUNE 9.—Mr. George Moore, V.P., in the chair. A paper by Mr. Deacon was read, "On the manufacture of the sheet and patent glass, as practised at the St. Helen's Glass Company's, Lancashire." The process consists in blowing out the glass in the ordinary manner into the form of a large glass bottle: it is then brought into a form almost cylindrical, and split and distended by means of heat, and formed into a flat sheet.

A paper by Mr. Teycheune, "On his process for rendering all soft and porous stone hard and impermeable, and also for varying the colours of the same," was also read. The process employed consists in drying the stones in a heated apartment until all dampness is evaporated: the stone is then cut to the form designed. Coppers are constructed in a manner adapted for being heated by fire or steam, and these contain the composition or stone to be hardened. The composition employed is coal-tar, fine sand, asphaltum, resinous and bituminous substances, and mineral caoutchouc, vegetable resin, gums, oil, iron-filings, carbonate and silicate of lime, granite-stone (in powder), carbonate of lead, coarse clay, ochre, sand, other mineral earths, and salts. This composition is to be boiled with the stones several hours.

A communication was read by A. Angus Croll, on the domestic uses of gas. The author commenced by stating the difficulties which have hitherto stood in the way of gas being introduced and used for domestic purposes, and then proceeded to give a lengthened statement of its cost for lighting rooms, &c., as compared with oil or candles. He also described the new processes for purifying the gas as employed by the various Gas Companies in and about London, and concluded by exhibiting several models of his new dry gas meter, which he said is also being used as a surgical instrument for ascertaining the state of the lungs.

## WESTMINSTER COURT OF SEWERS.

A COURT was held on the 15th ult. at the Sewers' Office, Greek-street; Alderman John Johnson in the chair.

A communication was read from the Railway Commissioners with reference to the rights of the Commissioners of Sewers being preserved in the construction of railways, and that a clause might be introduced in any bill for that purpose.

The question of the hydrostatic valve, for preventing the emission of noxious vapours from the gratings of sewers, the invention of M. Abate, and already described in our pages, was brought before the court, and referred to the surveyor to report thereon. The subject of untrapped drains was also brought before the court, in a communication from the paving-board of St. George's, Hanover-square.

C. Haimsworth, who had been summoned to appear for irregular drainage in Henry-place, Portland-town, was fined 10*l.* unless the orders of the court were complied with within one month.

Mr. Adams, of the Sun Tavern, Curzon-street, May-fair, was summoned for an illegal drainage into the King's Scholars' Pond Sewer. He stated, that the house had partially drained into it for twenty-five years, and called a workman to prove this fact. The matter was adjourned to the next court.

*The Public Health of Marylebone.*—The court appointed this day for the purpose of receiving tenders for the first portion of the works recommended by the surveyor for effecting the above object, viz., for 2,950 feet of sewer along Berwick-street, St. James's; and Wells-street and Great Titchfield-street, Marylebone. The tenders delivered in were as follow:—

| | |
|---|---|
| J. Barr ..... | £2,960 0 |
| H. Perkins ..... | 2,716 0 |
| Scisson and Co..... | 2,430 0 |
| Hill and Co..... | 2,368 0 |
| Williams and Co..... | 2,340 0 |
| J. Yeoman ..... | 2,199 0 |
| Humphreys and Thirst.. | 2,185 0 |
| J. Walter..... | 2,031 19 |
| W. Dethick ..... | 1,883 0 |

Mr. Dethick's tender was accepted.*

## INSTITUTION OF CIVIL ENGINEERS.

JUNE 15.—The president in the chair. The paper read was, "On the Law which governs the discharge of Elastic Fluids under pressure, through short Tubes and Orifices." By Mr. William Froude.

The law proposed was a modification of that which has been usually assumed, viz., a simple application of that which holds good with respect to non-elastic fluids. This law is generally, that the velocity of issue is directly as the square root of the density; but this law neglects wholly the reaction that must arise from the expansion necessarily taking place in the course of issue. The nature of the action was illustrated by the following example:—If a balance be supposed, with an equal weight in each scale, one of the weights being a spiral spring, like that of a spring balance, compressed lengthwise with its axis vertical, and held in a state of compression by a cord; now let the cord be suddenly severed, so that the spring is enabled to extend itself vertically,—the scale in which it stands will obviously be depressed, the spring re-acting on it as it expands upwards, and continuing to press till wholly relaxed; or if the scale in which it stands were ascending by a preponderance given to the other scale, the rate of its ascent would be in the same way retarded.

The amount of the retardation would depend on the strength and weight of the spring, and on the length to which it would extend itself when released. Now, in the discharge of an elastic fluid, there is an action strictly analogous, operating continuously, however, instead of *per saltum*, the strength and weight of the spring being represented by the elasticity and density of the fluid, and the length to which it would extend itself by the degree of expansion in the course of issue.

The reduction in quantity of discharge, due to the action, was to be measured by the velocity imparted by expansion to each particle of the elastic fluid in course of issue; the velocity of each particle after expansion would be its velocity before expansion, multiplied into the rate of expansion, and the primary force must be subdivided in generating each additional unit of velocity, so that the portion applicable to the generation of velocity before expansion, would be the whole force divided by the rate of expansion; thus the velocity before expansion would be divided by the square root of that rate. For instance, an elastic fluid expanding four times in course of issue, would be discharged with only half the velocity of a non-elastic fluid, under the same circumstances of pressure and density. This modification was shewn to fulfil the general dynamical law, "that a given force acting for a given time will produce a given momentum, whatever be the weight of the mass acted upon,"—this seemed to be the essence of the law for non-elastic fluids; but it was disregarded by the unmodified application of that law to elastic fluids, in which there would be a great accession of velocity, of particles issuing under a given pressure, without any reduction of quantity discharged in a given time; if, however, the quantity be reduced as proposed, in the ratio of the square root of the density, and the velocity be accelerated in the same ratio, the final momentum would be the true equivalent of the pressure.

This, in its practical application, explained what was inexplicable by the ordinary theory,—the difficulty experienced from the back-pressure of the waste steam in locomotive engines; and a diagram was given, shewing that at sixty miles per hour this would be at the least equivalent to 8 lbs. per inch throughout the strata, thus shewing a loss of nearly fifty horse-power.

After the meeting, Mr. Lambert exhibited his flexible diaphragm water-valve, which was intended to remedy some of the defects of the plug-cock. It avoided the leakage and necessity of repairs.

June 22nd.—The paper read was by Mr. Joseph Glynn, giving "An account of the plans that have been proposed for connecting the Atlantic and Pacific Oceans by a navigable canal."

The author took a review of these projects, from the time of Cortez, who proposed to cross the Isthmus of Tehuantepec by joining the waters of the river Coatzoccoalcos, which flows into the gulf of Mexico, with those of the river Chicapa, flowing into the Pacific by the Bay of Tehuantepec; a plan which has lately been revived by Don José de Garay, who with the assistance of Signor Moro, surveyed the country from sea to sea, and shewed that the chain of mountains is there broken for about thirty-five miles, giving place to an elevated plain, or table land, called the Mesa de Tarifa, where both these rivers originate, and where their junction would be easily effected. The objections to the plan are the length of the river navigation, about 200 miles, and the ascent of the stream to the Mesa de Tarifa, about 200 metres, or 656 feet above the ocean.

The Isthmus of Panama presents fewer obstacles than any other points. The whole distance from sea to sea is only about thirty-nine miles, and the country is traversed for nearly the whole width by the great river of Chagres and its tributaries, which are interlaced, as it were, with the streams flowing to the Pacific. The chain of mountains here sinks into extensive savannahs and forests, with a few detached and isolated hills of small elevation, seldom exceeding 500 feet in height.

The country was surveyed in 1828 at the instance of General Bolivar, by Mr. Lloyd, an English officer, who also took the levels, and determined the difference between the two oceans to be 3½ feet (3·52), the waters of the Pacific being the highest.

The maps, plans, sections, and other valuable information deposited with the Royal and Geographical societies, seem to have created but little interest in England; but they have been diligently examined, and extracts and copies taken by foreigners, who have had free access to them, especially by the French; and M. Guizot lately sent M. Napoleon Garella as engineer-in-chief, with a numerous staff of assistants, to make a further survey, and ascertain the practicability of making a canal. This

* In reference to the large balance in hand at the end of last year, alluded to in our last, we were informed that that sum had been reduced on the 18th of June last to £1,919 the payment of works in hand, to 7th inst. 18s 6d, which balance had been still further reduced at the present time.

survey has fully confirmed that of Mr. Lloyd, and proves that there are no obstacles which engineers and contractors of the present day could not encounter and overcome without much difficulty and expense,—the difficulties being more of a political character, and to be dealt with by statesmen rather than by engineers.

## New Books.

*Engineering Field Notes on Parish and Railway Surveying and Levelling.* By Henry James Castle. Simpkin and Marshall.

This is a work of considerable importance to practical engineers, inasmuch as it supplies them with a fund of useful information in reference to general surveying, but particularly so as regards levelling and the laying out of railways. The impression before us is the second that has been required, and is dedicated to Sir Richard Bonnycastle, a gentleman of high scientific attainments, and eminent as a surveyor in difficult and almost inaccessible localities. The author himself is advantageously known to the public, not only on account of his scientific labours, but from his extensive experience as a practical surveyor in the woody regions of Canada and elsewhere. Our space is too limited to admit of extracts as specimens of the manner in which the book is got up, but we may state in general, that the typography is good and the language sufficiently perspicuous to be comprehended by practical men of even the meanest capacity. This speaks in commendation of the work, for modern writers, through the vanity of display, are apt to treat their subjects in a manner that can only be understood by men of science and extensive mathematical reading.

The work is divided into five parts, and subdivided into chapters, each chapter giving a lucid detail of the subject under consideration. The directions in Part I., on running the base lines and carrying on the range in case of obstacles, are particularly valuable, and worthy of the reader's attentive perusal; and the surveys of Hendon, Finchley, and Wigston, with the method of plotting, cannot fail, if carefully considered, to impart correct and extensive information in regard to those very important topics.

In Part II., where the mode of surveying by the theodolite is given, much useful matter is contained; but we cannot help thinking that the chapter on trigonometrical problems might have been extended with very considerable advantage, as there are many cases which occur in modern practice of some difficulty, that the author has not alluded to; and he might, with some show of candour, have acknowledged the source from whence he obtained the principle on which he grounds his solutions. We are somewhat cognizant of this subject, and beg leave to refer our author to an early number of *Colburn's United Service Journal*, and say if the idea did not originate there, although the writer's name does not appear. "The lion is known by his paw."

The trigonometrical survey of Hampstead Heath, as connected with Streatham Common, will be found particularly useful to young surveyors; but we are forced to say that the example of triangulation, given in chapter 10, Part II., is not good; many much more instructive and interesting examples might have been selected from the "Ordnance Survey," and the author would not have depreciated the value of his work by producing them.

Part III. explains the method of surveying by the circumferentor, an instrument, which, as improved by the French, is likely, in our present extensive operations, to come into very general use. Part IV. is on levelling, one of the most important and delicate branches of general surveying; the author's mode of treating the subject is particularly judicious, and young surveyors will find their advantage in attending to his remarks. Part V. treats of railway curves, and the manner of staking them out. This is an important branch of modern engineering, and cannot be too carefully attended to by the aspirants to constructive fame. The work concludes with an appendix, containing field-notes, and a traverse table for carrying on a survey by the circumferentor; a mode of practice which we anticipate will meet a very general appliance in subsequent operations in the field, as the instrument is very simple in its construction, and easily understood.

*A Popular Atlas of the World, Illustrated by Geographical and Statistical Descriptions.* Edited by James Wyld. London. Wyld, Charing Cross, Nos. 1 to 4.

To Mr. Wyld, one of the most enterprising of our map publishers, the public are indebted for constant attention to passing events, and the supply of the best information in his department, at the right moment. The discovery of a new island, or the success of our arms in India, is no sooner announced, than Mr. Wyld issues a map of the locality, accurately though speedily prepared.

The work now before us, as its name explains, is of another kind. It is an endeavour to place a first-rate atlas within the reach of all, and deserves to be supported. Each monthly No. (of which there are to be 24) contains two large maps and illustrative letterpress at a very low price.

## Correspondence.

PLASTERING ON CLAY WALLS.

Sir,—In different parts of England there are cottages built with clay, and when newly plastered and whitewashed, they have a very neat appearance. But the misfortune is, that it does not continue long, for the frost and weather soon make the plaster break off from the clay-walls. Now the object of my troubling you is to know, whether any thing can be or has been invented to remedy this evil. It is an important question, and there are thousands that will be benefitted by a successful solution of it. I am, Sir, &c.

A Young Architect.

## Miscellanea.

Union of Chinese Masons and Carpenters.—After the recent extraordinary feat of British alacrity and valour in the taking of every fort on the Canton river, and the spiking of about 900 cannon by 1,000 men, without the loss of a single man, a proclamation was issued by the Chinese gentry, &c. of Canton, intimating, that as the English barbarians wished to build a temple for public worship; and also, across the river in Honan, to take possession of a tract of ground and to build a fort, the great body of masons and carpenters in the two cities (the old and the new) of Canton, had held a public consultation, and agreed together, that if the English undertake the prosecution of their works, as aforesaid, the men employed in these trades shall none of them be permitted to engage to complete their works on their own responsibility. And if at Hongkong, Macao, or Whampoa, there should be men who are willing to undertake it, the people of our two trades will make it their business to search out every workman of this sort by name and kill him, and to notify the inhabitants of the district to burn up the dwelling of every man who ventures to assume such a responsibility, which will be done without the least delay.

Freemasons' Asylum.—At the twelfth annual festival in aid of the funds of this incipient institution, held on Wednesday week, in the Freemason's Hall, Great Queen-street, Dr. Crucifix stated, that the committee proposed at once to erect the long-projected asylum, and intended in the ensuing month to submit a plan to the grand lodge for the purpose of carrying out the object of the association, by the immediate construction of a suitable building, towards the erection of which 4,116*l.* had already been contributed. He subsequently announced that 500*l.* had been subscribed at the dinner-table.

Association for Testing new Inventions.—An idea already broached in The Builder has, it appears, assumed a practical form by the establishment of a company in France, "for the purpose of studying, constructing, and experimenting on new inventions connected with locomotives." A correspondent of the *Mining Journal* suggests the utility of such an association in England for the redemption of really valuable inventions from neglect or difficulty and oblivion.

Gibson's Statue of the Queen.—The silence which prevailed in respect of this long talked-of work was somewhat curious. Report said it had been lost at sea on its way to England; in truth, however, it was safely landed at Southampton, and is now in the Royal Academy. *The Roman Advertiser* has given two articles on the statue, from which we learn that the colour, applied sparingly in its decoration, has led to a contest of opinion. We extract one or two paragraphs. "This work has become an object of much attention from the style in which the artist has completed its details, with the use of colour in the ornaments and embroidery of the dress. We need not dwell upon its beauties, except to say that its completion has enhanced those which, when in an unfinished state, were already so distinguishing; and that in majestic gracefulness it not only raises the subject to its highest ideal without sacrificing truth of resemblance, but is a personification of the royal so obvious, that if discovered centuries hence, we believe there could be no hesitation in recognising it as the statue of a queen, even without the tiara, or any other insignia. We felt some alarm for its reputation on learning that it had been coloured, and visited it again, doubtful of receiving an impression so agreeable as the first. But the application of colour is so delicate, the tone so subdued, that no effect of glaring contrast is produced, and the pale purity of the marble does not, as a whole, suffer from the partial tinting. Nothing more is coloured than the rim of the tiara and the dolphins that ornament its circlet, in yellow; the wave-formed embroidery of the robe, and the rose, shamrock, and thistle at the corners, in red and blue; the acorns pendent from the extremities, where the Greeks wore weight of gold, in yellow." "The statue is one in which much detail is introduced, in which the effect sought is that of the majestic both from character and position. In such a one, where ornament is befitting, and richness, as far as suitable to sculpture, an attribute of propriety, the introduction of colour partially, and under the control of so refined a taste as this artist's, does not (speaking from our own impression) jar against principles, nor approach so near to the real as to prejudice the ideal of the subject. Though the detail is rich, it is softened almost to shadowiness, and not much nearer to the glare of dyed draperies, as actually worn, than the paleness of the marble to the warm hues of the flesh. It adds so much of the effect of splendour to the figure as to enhance its abstract character, that of female royalty, rather than destroy its purity in general effect."

Overbech (says a correspondent of the *Daily News*) has just executed one of those graceful and touching little outline drawings in which his real genius is conspicuous; and his present effort will be shortly known extensively in Edinburgh. Bishop Gillies, who is personally a most amiable and kindly man, full of zeal for bettering the operative classes, has founded, it appears, a sort of holy guild in modern Athens, and prizes are given to those of the brotherhood who excel in "thrift and cleanliness." Overbeck was asked by the patriotic prelate to furnish the design for a medal to be distributed on these occasions, and I have seen the result. It is the holy dwelling at Nazareth displaying a modest but neat interior; Mary is at her distaff on the right, Joseph plying his axe on the left, and the mysterious young indweller among men is humbly engaged sweeping the chips of wood from the earthen floor with simple dignity. The general effect is harmonious and beautiful.

Alterations in Westminster Abbey.—A correspondent of *The Times* complains that the alterations for some time contemplated (not in Westminster Abbey alone) for the laudable purpose of increasing the accommodation of the public at divine service, were only delayed till the force of public opinion against them had settled down, and that the plan of removing the screens between the transepts and the choir, and fitting up the former spaces with seats, is now being carried into effect, although he conceives the nave to be the proper place to be appropriated to that purpose, the only obstacle being the organ screen, the architect of which objects to have it taken down.



WATER ENTRANCE TO THE DOGE'S PALACE, VENICE.

## RAILWAY ACCIDENTS AND THEIR PREVENTION.

### FORTUNATUS'S 'WISH,' AND THE RESPONSES THERETO.

THE public demand has lately risen into one simultaneous outcry for the adoption of means for the effectual prevention of accidents by railway, which a civil engineer in the *Times* declares to be *perfectly possible*. The chief desiderata, besides those relating to security of the works, to which we have already elsewhere given repeated attention, are the adoption of means requisite for a direct communication between passengers and guards, and between guards and engine-drivers, and for the more effectual power of instantly checking the onward progress of trains towards otherwise inevitable destruction. New suggestions are ever being added to old for the attainment of these most desirable objects, which directors, however unwilling, will feel it no easy matter much longer to delay setting about in earnest; for the public or not to be longer obfuscated and baulked in their determination by the implied ignorance of practicable means, as lately expressed, on Colonel Sibthorpe's notice in the Commons of the increase of accidents, by Mr. Hudson, who "wished that those who complained of accidents would suggest some of those precautions which hitherto the directors of railway companies had failed to discover." None are so blind as those who do not wish to see, or have not the spur of self-interest in enabling them to see. The turning over of a few pages not only of THE BUILDER, but of any other periodical which pays the least regard to the welfare or safety of the public, above that fractional quantity paid to so humane an account by railway directors, would have at once forced on Mr. Hudson's obtuse vision, abundant evidence of the fact, that "those who complain of accidents" [and have they nothing to complain of?], *have already* suggested an abundant variety of those precautions which, however, it would cost directors some little expense at first to realize, and which they have accordingly "failed to discover." Is the mystery of the railway break so profound or obscure, that any one can fail to discover that even an ordinary break, with a breaksman at each, or even each second, carriage in a train, would secure a power of preventing accident by concussion not now possessed? Is the ingenuity of railway engineers and others interested—or rather *dis*interested—so sadly at fault that practicable and efficient (and neither trouble-some nor expensive) means of establishing a direct communication between passengers, guards, and drivers can be neither suggested nor realized? Is there any one *else*, then, besides Mr. Hudson, possessed of cool *moral* courage sufficient to maintain the affirmative of these two simple questions? Why, both immediately before, as well as immediately after, he gave expression to his 'wish,' the newspaper press was literally deluged with additional suggestions, many of them by practical men; and strange it would be, certainly, if some of these suggestions were not as practical as their authors. An 'engine-driver,' in the *Times*, plunged still more deeply into causes, past, present, *and to come*, and their inevitable consequences if sufficient means of prevention be not timeously adopted. The suggestions of a 'civil engineer,' already noticed, as to guards, signals, &c., are eminently practical. A correspondent of our own [J. J., of Battersea], adds another to the numerous suggestions already published on the subject of the means of intercommunication between guards and driver, namely, that the usual 'danger flag,' with a bell attached, be affixed to a conspicuous or convenient part of the engine, on an iron staff or pole, about 3 feet in length, so jointed as to lie horizontally till in use, when it may be raised to the perpendicular by a line of catgut, running on friction wheels along the train, beneath the seats of the guards, and through each carriage, under proper protection, the separate portion of the line in each carriage being linked, one with another, by means of a screw, between the carriages; so that either a guard or a passenger may give the signal. Our correspondent is prepared to furnish details for the working of his plan, by means of which, also, one guard may alarm his fellow guards as well as the engine-driver, while the danger-flag would also attract the attention of the officers on the line. If it should be thought prudent to prevent the passengers from communicating directly with the engine-driver, of course the arrangement might be modified accordingly; while, at the same time, we should think, they might be entrusted with the power of at least alarming the guards, as these, one another. In raising the signal and giving the alarm, on the plan in question, the guard "has merely to press the gut into a notch made in the friction wheel, and turn it: it will then immediately wind up the gut from both ends, and, therefore, raise the signal, and alarm the guards by means of a bell fixed near to each of them, the revolution of the friction wheel to be made to strike the bell." A correspondent of the *Mining Journal*, again, suggests that a small electrical telegraph, at a trifling cost, be placed in each guard's *van* [which is always in the *rear*], and thence communicate with the engine-driver at the opposite extremity of the train; so that only the guards would have it in their power to stop the train, while other means of course might be adopted for the communication between passengers and guards. For that purpose, a correspondent of *Herapath* proposes that a small portfire should be placed in each carriage. A new invention also for the more speedily arresting the course of a train in cases of danger has been patented and lately exhibited by a Mr. Lee. It provides for two classes of danger. For unexpected concussion, a buffer projects from the carriage or engine, and any force coming in contact with it lets down a drag or break upon the rail, which immediately stops the carriage. Although, perhaps, this contrivance would not at once stop the whole train—though with a buffer to each carriage that might almost be accomplished—it would prevent the occurrence of what is most to be feared in cases of concussion—that is, the dreadful effects caused by the meeting of two opposite forces, the progressive and the arresting, by which the carriages in the centre of a train are frequently heaved up or completely crushed. In the other case, that of foreseen danger, the conductor of the train can, by turning a handle, almost immediately arrest its course. It was stated by the inventor, that on the Croydon Railway a train of 19 carriages, descending an incline at a velocity of 35 miles an hour, was, by breaks to one carriage only, brought to a dead stand within 55 yards. Breaks to one carriage in nine are considered to be the requisite average. Still more recently a Mr. Thomas Blanchard, in the *Times*, proposes the adoption of perhaps a still more feasible, or practical and economical, as well as powerful system of breaks. He suggests, that while every carriage is provided with a break, each break could be connected with that of the preceding carriage by an iron rod, and this union be continued throughout the whole line of carriages; so that one rod, connecting all together, might be fixed to the machinery of the locomotive in such a way, that when the engineer saw danger, and wished suddenly to stop the train, he could, by means of a lever, reverse the movement of the engine, and instantly cause it to act temporarily on a screw, which would tighten the connecting-rod of the breaks, so as to lock the wheels of every carriage, thereby offering immense resistance to the impetus already given. That the buffers of carriages should be all precisely on the same level, has been also repeatedly suggested for the prevention of that tendency which the lower has to throw up the carriage to which the higher is affixed; but even on that subject a new suggestion has been offered, namely, that the buffers in front be concave, while those in the rear be convex, or *vice versa*, so as to lock into each other, or tend to do so, even though not exactly on the same level. Then, too, for the more thorough protection of passengers, even in such an event as that of a mutual crush of carriages in a concussion; another correspondent of the *Mining Journal*, Mr. J. J. Grylls, of Llanelly, in pointing attention to the utter unsuitableness of the carriages used on railways for passenger traffic,—their flimsy construction, their hitchings and buffers, and, above all, their box-like and totally unprotected form, as altogether inadequate to the service required, describes a plan for their reformation. The form of each separate compartment or carriage, he suggests, should be round,—a hollow globe—instead of an oblong or a square. It should be a framework of "*angle iron*," such as is used in shipbuilding, &c., the ribs uniting or meeting at the centres which come in contact with the next carriages; and a strong cap, or plate of iron, should receive the ends of the curved angle-iron—the whole to be cross-stayed, and the iron galvanized. A doorway on each side could easily be arranged, without much detriment to the strength of the whole. The arrangement of seats *round* the inside would be pleasant and safe—*safe*, compared with the present edges of two boards ready to meet, in case of accident, just below the knees of the passengers; and the ventilation might be greatly improved. Place this kind of "*shield*" upon a strong iron frame, and allow the carriage wheels, which by this plan might be larger, and suit increased speed, to run altogether clear of the body of the carriage, and so avoid the imminent danger arising from wheels and axles *under* the carriage. A very suitable and simple buffer frame, he adds, might be made so as to be equally efficient in curves, which the present are not, and in straight lines. The advantages of such an arrangement and construction of carriage, he observes, are very numerous—some of which he proposes to point out, with drawings of the plan.——In short, Mr. Hudson's 'wish' has been as promptly and as superabundantly responded to as if the iron crown, or crown of brass, of this most fortunate speculator, had been Fortunatus's wishing cap itself.——Meantime, however, Mr. Hudson and his directorial colleagues never "fail to discover" any thing in the form of even a mere shadow of coming events that may tend, or appear to tend "to endanger the security, and to depreciate the value" of railway property, or to "interfere with that freedom of action which is indispensable to the efficient management of railways;" and accordingly, H. M. Mr. H., and a host of his fellow "chairmen," were not slow in setting their faces, and their holographs, against the Government Railway Bill (or rather the Railway Government Bill), one form of which they had previously strangled, and another they were lately inviting, by circular, all interested to assist in effectually opposing,—which they did, in truth, to purpose.—But we were treating of what very plainly tends "to endanger the security, and to depreciate the value" of human life on railway property, and of course any allusion, either to railway directors, or to circulars issued by them, to their fellow-chairmen, inviting them, as "all interested," to assist effectually in this common cause of humanity, is somewhat irrelevant. We must return, therefore, to that cause for a moment, the importance of which will be our sufficient excuse, in order that we may briefly add from the *Times* the general suggestions of "one who has travelled much by railway," for the obviation of a variety of the dangers of railway travelling. And this we do designedly *ad nauseam*, and merely just to shew, by one proof more, without any special reference to its merits in comparison with others, that such suggestions as Fortunatus wishes for are, in fact, "as plentiful as blackberries," or as pearls from the mouth of that unhappy sister of Fortunatus, who delivered the article, like syllables in speech, by paragraphs at a time.——1. Buffers throughout a train ought to be of exactly the same height from the ground, so as to strike fairly, centre on centre, otherwise in a concussion the lower will throw the higher with its carriage upwards. 2. Every carriage ought to have a break. 3. Passengers might signal to the guards by help of a sufficiently powerful bell at hand in each carriage; and guards, in turn, to the driver by a few pre-arranged notes on the bugle, as of old. 4. No engine in the least degree unsteady ought to be allowed to run at all. 5. Absolute punctuality, both in starting and arrival, ought to be enforced. 6. No oscillating carriage or truck, any more than engine, ought to be allowed to run, and no truck should be placed before a carriage. Lastly, luggage-trains ought not to run on passenger lines at all—actively or passively they have caused many accidents.——As to any thing like a saving of money by staving off the outlay of any little expense that may be necessary in the carrying out of effectual means for the prevention of accidents in the working of trains, exclusive of those arising from defective works, to which it is not the object of the present article more particularly to allude, we would earnestly call on railway directors to consider the result of one of the recent accidents, namely the concus-

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CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and am able to the facility with which I can execute orders. I am enabled to offer large or small parties, or the trade generally, Glass from ONE SHILLING PER FOOT SUPERFICIAL, and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

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SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

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| | Fourths | 4 | 10 | 0 | | | |
| | CC | 2 | 8 | 0 | | | |
| | C.C.C | 3 | 4 | 0 | | | |

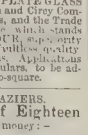
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of Sashes and Frames, and Joiner to the Trade, 121, Bunhill row, Finsbury-square. Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 1,000 DOORS, and a large variety of Sash and Frames, always on sale. Glazed work securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger of sash-cord limb, cleaning and repairing. It is in full operation (four different ways), forms a complete vent (at or and sunblind), all simple, cheap, and effective. Apply for licenses and to inspect it (small cents. to HERRINGS Patent Steam Bed-Feather Factory, 14, Kings.ate street, London.

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THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 31, Old Bond-street Wicks, late Sir F. Chantrey's Foundry, Jeckelston-place, Pimlico

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, bed moulds, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Models, &c., 42, Parker-street, Drury Lane. Modelling executed for the Trade.

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Modelling executed with strict attention to Drawings. Workshops and Stores, No. 1, Brewer-street, North, near Sadler's Wells, St. John-street Road. Residence removed from Upper-street, Islington, to 19, Goodwin's-road, opposite the Batchess of Oldenburgh, Clerkenwell.

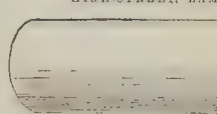
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Best Fire Bricks of every description.

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TUBULAR DRAINS IN STONE WARE, Manufactured by HENRY DOULTON AND Co. POTTERS, HIGH-STREET, LAMBETH.



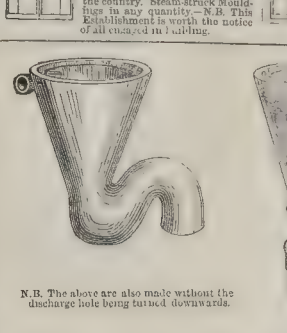
The only Efficient Mode of Drainage is by Tubular Drains from their form they give every facility for a perfectly free passage The material of which they are composed is impermeable, prevents fermentation, and cannot corrode, in addition to which, they are glazed inside

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon and Hon Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand. A



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their

CLEANLINESS AND CHEAPNESS.

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

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THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c. Patronized by

HER MAJESTY'S WOODS AND FORESTS,
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ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hyde-park-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited for their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only Works in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL ROW LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

**THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.**

At present and economical apparatus was, however, still wanting, the present defective and complicated construction being as is too well known the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages.

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water, and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER. This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING. This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

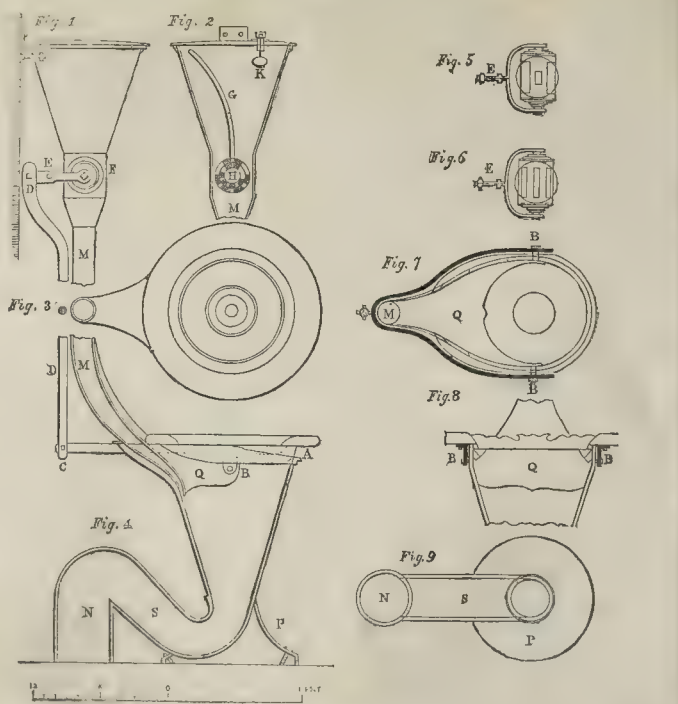
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE.—The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws, and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a recess, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES.—As a most valuable invention, and where vermin would much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be locked up, but to render them at an endless number of wires and handles have to be made use of, and consequently continual derangements and annoyance. Instant obstruction in the pipes, owing to the force of water being insufficient to clear them, as they are introduced to the Companies' servants and public, all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.

Fig. 2. Section of the measure and cock, shewing its position when part of the water has come in.

Fig. 3. Plan of top of seat, of torrent-pipe M, and action rod D.

Fig. 4. Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action rod D, to let water in and out it off.

Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.

Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.

Fig. 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.

Fig. 9.—Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve S, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls, and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent-pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil pipe, connected with N, forward. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

### *Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus as generally applied in superior houses, with its complication of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr. Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

### TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its application to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets, 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

Mr. JOS. E. DOWSON

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

**And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.**

## DOWSON'S EARTHEN PIPES,

GLAZED INSIDE,

FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion. And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently with no force to hurry the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured not only by the foundation being always wet, but also by the deprecations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains. LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

Messrs. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

**A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.**

LONDON: Printed by CHARLES WYMAN, of No. Castelnau Villas, in the Parish of Barnes, in the County of Surrey, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 5, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields in the County of Middlesex; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent Garden, in the Parish of Saint Paul, Covent Garden, in the said County.—Saturday, July 3, 1847

# The Builder.

A JOURNAL FOR

The Architect, Engineer, Operative & Artist.

VOL. V.—No. 231. JULY 10, 1847. Price ..... 3d. Stamped ..... 4d.


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**WANTED**, at the Railway Station and Hotel now erecting at Newhaven, in Sussex, a number of ood hands in the above branches.—Apply on the works.

**WANTED**, in a Builder's Office, a Good Draughtsman, competent to take out quantities, esti-nate and measure up work.—Apply to D. H., office of "The uilder," 2, York-street, Covent-garden.

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**WANTED**, an Experienced Person to undertake the Management of an important Sea-work on ehalf of the Contractors. A thorough practical knowledge of iling, Masonry, and the use of the Diving-bell, is indispensable.—ddress, with full particulars, to A. Z., 32, Moorgate-street, London.

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**WANTED**, by a Respectable Young Man, who has been Timekeeper and Stockkeeper on a large state, a similar Situation. Can work at the bench if required. The ighest references can be given as to honesty and capability.—ddress A. B., Post-office, Cundall-street, Westbourne-terrace.

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**WANTED**, by an experienced Mason, a Situation as Foreman or Superintendent of Works; has practical knowledge of the business, taking out quantities, making working drawings, &c. Good references can be given. Address, I. N., 13, Priory-street, Camden New Town.

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A PRACTICAL Clerk of Works is open to an Engagement.—Address A. B. C., Office of "The Builder," 2, York street, Covent-garden.

A YOUNG MAN, of good Education, is desirous to obtain a Situation as Time-keeper or Light Porter Address to W. CHAPEL, Richmond-street, Edgware-road.

TO BUILDERS AND OTHERS.

A YOUNG MAN, of good practical experience in Carpentry and Joinery, is a good workman, and has a knowledge of making working drawings; is a quick calculator, and has had some practice in estimating, wants employment where he can employ his time to business generally, and have an opportunity of general improvement. Will be his own security if required. Good reference given. Address, pre-paid, to J. M., No. 1, Albert-street, Cambridge-road, Mile-end.

A CIVIL ENGINEER, in considerable practice, has a Vacancy for a Pupil. For particulars address, R. S., Office of "The Builder," York-street, Covent-garden.

TO ARCHITECTS, SURVEYORS, &c.

AN Architect's and Surveyor's Assistant, who is disengaged from Five o'clock in the Evening, would be happy after that hour to assist in making out working or finished drawings, or in measuring or taking out quantities, &c. Address, O. P., Office of "The Builder," York-street, Covent-garden.

TO PARENTS AND GUARDIANS.

A GENTLEMAN residing in the vicinity of Kensington Gardens, and who has been engaged for the last thirty years as a Practical Architect, is willing to take into his family as a Boarder a Youth being educated to a profession (an Architect would be preferred).—For further particulars, apply by letter addressed to A. B., Mr. Wade, Stationer, Kensington.

TO ARCHITECTS.

A GENTLEMAN, who has had considerable experience in Designing and Superintending the Erection of Ecclesiastical and Domestic Buildings, wishes to obtain an Engagement in the office of a respectable Architect. The most satisfactory references can be given. Address, S. G. Y., at the office of "The Builder," 2, York-street, Covent Garden.

TO ENGINEERS AND SURVEYORS.
TOWN OF BRIGHTON.

NOTICE IS HEREBY GIVEN, that the Commissioners acting under the Brighton Improvement Act are about to appoint a person to act as their SURVEYOR, at a salary of 250*l.* per annum, together with a salary for an Office Clerk or Assistant.

Particulars may be obtained at my Office, either personally or by letter, at which place testimonials from Candidates must be left on or before the 21st day of July instant.—By order,

LEWIS SLIGHT,
Clerk to the said Commissioners.

Clerk's Office, Town Hall, 1st July, 1847.

## PUBLICATIONS.

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## COMPETITION.

TO ARCHITECTS.—MIDDLESEX ADDITIONAL PAUPER LUNATIC ASYLUM.

THE Committee of Visitors who have been appointed to superintend the erection of an Additional Lunatic Asylum for 1,000 Patients in the County of Middlesex, invite PUBLIC COMPETITION for Plans and Estimates for such a building, and propose to present a Premium of 200*l.* to the party whose design they shall most approve, and further premiums of 200*l.* and 100*l.* to the party whose plans they shall deem second and third in excellence.—Particulars as to site with all needful information and instructions, as also the conditions on which the premiums will be offered, may be had at my office, at the Sessions House, Clerkenwell Green, on any day between the hours of Eleven and Four during the present month.

JOHN S. SKAIFE,
7th July, 1847. Clerk to the Committee.

METROPOLITAN BUILDINGS ACT.
NOTICE TO CANDIDATES FOR DISTRICT SURVEYOR SHIPS.

Office of Metropolitan Buildings, 6, Adelphi Terrace,
7th July, 1847.

NOTICE IS HEREBY GIVEN, that the Examiners appointed by and in pursuance of the Metropolitan Buildings Act will hold their next Examination of persons desirous to obtain a Certificate of qualification for the Office of District Surveyor on FRIDAY, the 16th day of July, instant, instead of WEDNESDAY, the 21st, as previously notified.

Persons desirous to be examined must apply on or before the 14th instant, and their applications must be accompanied by a preliminary statement, according to the course of examination prescribed in the Rules for that purpose, copies of which, and any other information on the subject, may be had at this Office, or at Mr. WEALE'S, Architectural Bookseller, 59, High Holborn.

Subsequent examinations will be held in the months of October, January, and April, or at such other periods as shall be appointed, of which due notice will be given.

ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.

BUILDERS' BENEVOLENT INSTITUTION.

A GENERAL MEETING will be held at the Freemasons' Tavern, Great Queen-street, Lincoln's Inn fields, on MONDAY, the 19th of July, 1847. The chair will be taken by Mr. H. BIERS, President of the Master Carpenters' Society, at ONE O'CLOCK TO A MINUTE.

This Society is established to render assistance in old age to deceased members of the building trades, also to workmen in case of accident. The attendance of all parties desirous of promoting the object of the Institution is respectfully requested.

## CONTRACTS.

TO BUILDERS.

PERSONS desirous of Tendering for the Erection of a Dwelling House and Offices at Cuckfield, Sussex, may inspect the Plans, Specifications, and terms of Contract on application to Mr. F. W. HOLLOWAY, Cuckfield, on and after Saturday, 10th July. Sealed tenders to be addressed to the Rev. T. A. MABERLY, the Vicarage, Cuckfield, on or before Friday, 23rd of July next. The acceptance of the lowest tender will be optional.

ST. PANCRAS CHAPEL, LATE THE OLD CHURCH.—TO BUILDERS.

THE Church Trustees of St. Pancras, Middlesex, will meet at No. 3, Gordon-street, Gordon-square, on MONDAY, the 26th day of July instant, at Ten o'clock in the forenoon precisely, for the purpose of receiving TENDERS for taking down and rebuilding the above chapel. The trustees do not pledge themselves to accept the lowest tender. The drawings, specification, form of contract, and bond, to be entered into by the contractor and his sureties, may be seen at the office of Messrs. SCADDING and SON, Solicitors, 3, Gordon-street, Gordon-square, from whom all necessary information may be obtained.

CONGREGATIONAL CHURCH, KENTISH TOWN.

THE Committee for erecting the above Church are desirous of receiving TENDERS. The Drawings, Specification, Form of Contract, and Bills of Quantities lie at the Offices of the Architect, Mr. H. HODGE, 5, Lyon's Inn, Strand, until the 13th of July next, on which day all Tenders are to be delivered at the above Offices, addressed to Mr. HALTON, Hon. Sec. Two approved securities will be required.

The Committee do not bind themselves to accept the lowest Tender, nor any, unless satisfactory.

TO BUILDERS

BUILDERS desirous of competing for the Erection of a Pair of Semi-detached Villas for H. BUDD, Esq., in Twickenham Park, Middlesex, may see the Plans and Specifications at the office of Mr. J. P. HOPE, Architect, Tudor Cottage, Richmond-hill, from Monday, the 12th, to Monday, the 19th (all) inclusive. The tenders to be delivered as above on or before Wednesday, the 21st June, at three o'clock. Mr. BUDD will not bind himself to accept the lowest tender, and the person whose tender shall be accepted will be required to find two securities for the due performance of the works.

Richmond, July 8th, 1847.

TO BUILDERS SHEFFIELD ATHENÆUM AND MECHANICS' INSTITUTE.

PARTIES desirous of Contracting for the Erection of the New Building for the above Institution at Sheffield, may see the Plans and Specifications at the Mechanics' Institute, 23, Tudor-street, Sheffield, on and after WEDNESDAY, July 14th, from ten o'clock, A.M., to six P.M.; or at the office of GEO. ALEXANDER, Esq., Architect, 30, Bedford square, London, to whom all questions are to be addressed. Tenders to be delivered, addressed to JOHN TAYLOR, Esq., Mechanics' Institute, Sheffield, on or before Wednesday, July 28th. The Committee do not bind themselves to accept the lowest tender.

TO MASONS AND PAVIORS.

THE Board for repair of the Highways of the Parish of West-Ham, Essex, are ready to receive TENDERS for about 2,000 feet run of Curbing Nose-Stone, Curb or Aberdeen, Cornish or Devonshire Granite Curb, to be laid down at and near to Balaam-street, Plaistow, in the said Parish. They are also ready to receive TENDERS for about 10,000 feet superficial of 8-inch Yorkshire Paving-Stone, to be laid down on the Footpath from the Swan Inn, at Stratford, to West-Ham Church-yard, and from the said Church-yard towards Plaistow-lane. Also, for about 170 yds. superficial of 6-inch Granite Crossings. Persons willing to tender for all or any of the said Materials and Works may see the Specifications and obtain all other particulars of Mr. ROBERT BAKER, Assistant Surveyor to the said Board, at his house, near West-Ham Church. Tenders to be delivered into Mr. M'PHERSON, at Plaistow, the treasurer to the Board, before six o'clock p.m. on the 20th of July instant, and no Tender will be received unless delivered in to him before that hour on that day.

GEORGE DACRE, Clerk to the Board.

Stratford, Essex, 6th July, 1847.

PREMISES TO BE LET, TUDOR STREET.

THE Committee appointed for carrying into execution the Act of Parliament, for making a Street from Whitefriars street to Tudor-street, do hereby give notice, that they will meet at Guildhall, on MONDAY, the 12th day of July next, at One o'clock precisely, to receive TENDERS in writing, sealed up, for Letting on Lease for 42 years, from Michaelmas next, a House and Premises, on the south side of Tudor street, the east side of Water-street, and the west side of King Edward street, subject to a portion of the site thereof being laid into the street by the lessee, in conformity with the Plans and Conditions, to be seen at the Office of Works, Guildhall.

Guildhall, 29th June, 1847. MEREWETHER.

# THE BUILDER.


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TO ARCHITECTS AND SURVEYORS

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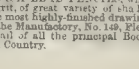
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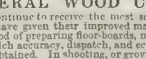



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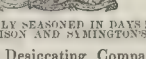
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The Builder.

No. CCXXXI.

SATURDAY, JULY 10, 1847.

WE have an especial interest in the character, conduct, and reputation of builders. The designation BUILDER, which we bear, includes, rightly thought upon, a large portion of society. Every arranger, inventor, artist, poet, is a BUILDER: some build up fine thoughts, others fine fortunes or a noble reputation; and to all these, in their turn, our publication appeals. The term is, indeed, wide spreading; applying, not to speak irreverently, even to the Creator, who is himself called the GREAT BUILDER.

When we said at the commencement, however, that we had an interest in the character and reputation of builders, we meant builders, specially so called,—the constructors of our houses, churches, bridges, and palaces; an important and numerous body of men, in whose support, advancement, or defence, collectively, we are always ready to exert ourselves, whatever remarks we may feel it necessary to make on isolated occurrences or individual members of the body.

A monthly periodical, of high standing, has recently admitted into its pages some very vulgar abuse of the class in question,—abuse founded on ignorance and smartened up with malignity. The writer politely says:—

"There is nothing drier and more unprofitable under the sun, nothing more nearly approaching to a state of addle, than a builder's brains. Your regular builders (and, indeed, not a few of your architects) are the sorriest animals twaddling about on two legs; mere vivified bags of saw-dust, or lumps of lath and plaster, galvanised for a while, and forming themselves into strange, uncouth, unreasonable shapes. A mere 'builder' has not two ideas in his head; he has only one; he can draw only one 'specification,' as he calls it, under different forms; he can make only one plan; he has one set of cornices always in his eye; one peculiar style of panel; one special cut of a chimney. You may trace him all through a town, or across a county, if his fame extends so far; a dull repetition of the same notion characterises all his works. He served his apprenticeship to old Plumbline, in Brick-lane; got up the *Carpenter's Vade-Mecum* by heart; had a little smattering of drawing from Daub the painter, and then set up in business for himself."

He here confounds architects and builders; but he afterwards treats the former to a special dose; singling out, it is true, one of a class, and not, as in the case of the builders, abusing the whole body without exception:—

"As for Triangle, the architect who built the grand town-hall here, the other day, in the newest style of Egyptian architecture, and copied two mummies for door-posts, and who is now putting up the pretty little Gothic church for the Diocesan Church-and-Chapel-Building and Pew-Extension Society, with an east window from York, and a spire from Salisbury, and a west front from Lincoln—why, he is the veriest stick of a designer that ever applied a T-square to a stretching-board. He has studied Wilkins's 'Vitruvius,' it is true, and he has looked all through 'Hunt's Tudor Architecture,' but his imagination is as poor as when he began them; he has never in his life seen one of the good buildings he is pirating from, barring St. Paul's and Westminster Abbey; he knows nothing finer than Regent-street and Pall-mall, and yet he pretends to be a modern Palladio. It will not do, all this sham and parade of knowledge; we want a new generation, both of architects and builders, before we shall see any thing good arising in the way of houses—but as this new progeny is not likely to spring up within a few days, nor even years, we may as well buckle to the task of criticism at once, and find out faults, which we shall leave others to mend."

The writer then proceeds to make out his case against the poor architects and builders, by pointing out these faults, the majority of which, as he admits in his progress, are the faults of employers, and of employers alone. Does the builder of a country squire's mansion (to such he is referring) recommend thin walls instead of thick; a cheap, small, trumpery structure, rather than a sound, well-finished, costly residence? A reply to the question must be unnecessary. Such a house as the writer recommends, the employer remarks, "is horridly expensive! Why, a house built after this fashion would cost three times the amount of any one now erected upon the usual specifications!" and our critic replies, "Of course it would. Materials and labour are not to be had gratuitously; but then, if the house costs three times as much, it will be worth three times more than what it would otherwise fetch, and it will last more than three times as long." No doubt of it, we echo. But how does this prove our "regular builders are the sorriest animals twaddling about on two legs; mere vivified bags of saw-dust, or lumps of lath and plaster, galvanized for a while?" How does it shew that there is "nothing drier or more unprofitable under the sun, nothing more nearly approaching to a state of addle, than a builder's brains?"

We have not quoted this foolish tirade because we thought it needed contradiction, but simply as affording us an opportunity to assert what we honestly believe to be true, namely, that our builders, as a body, are an intelligent, shrewd, and able set of men, capable of carrying out in a perfect manner works of any magnitude. We are not speaking now merely of the Cubitts, Peto, Grissell, Baker, Piper, Jackson, Kelk, Hayward, or a score other men, who stand at the head of the list, but of the body generally; and we are quite satisfied by long experience, that what we say is correct. The enormous extent to which our engineering works have been carried, the millions spent in the construction of railways, bridges, stations, &c., have, further, led men of education and capital into practical operations, who before confined themselves to devising and superintending. The builders of to-day are a very different set of men from the builders of thirty years ago. There are amongst them many sharp, and even scamping practitioners, but few whose brains are in "a state of addle," or who can be justly considered as "vivified bags of saw-dust," or "galvanized lumps of lath and plaster."

The want of skill amongst certain classes of our operatives, the badness of much of our construction, and the causes which have led to these deficiencies, are different matters requiring separate consideration. It is our aim by spreading abroad knowledge, to lessen these evils; and if we may venture to believe statements often made to us, considerable success is attending the effort. We see the course plainly before us, and have no fear for the future.

Amongst other points to be urged is, the maintenance of a proper feeling between masters and their operatives; and under this head we are led to give here the substance of the memorial, addressed by the carpenters and joiners to their masters (to which we alluded last week), because of its good tone and propriety of diction:—

"We have long witnessed, and been participators in, numerous evils, arising from the very limited time and unseasonable hour that is left to us to expend our weekly earnings, for the benefit of ourselves and those dependant upon us for subsistence and support. These evils with their inevitable consequences, physical, mental, and moral, we deeply deplore and seek to remedy; and earnestly hope to meet with like sympathy from you.

We therefore have been induced to solicit you to grant us the privilege (without diminution in our wages), of leaving our work at four o'clock* on Saturdays, which will reduce our hours of labour to 58½ per week.

In making this request, we would direct your attention to the fact, that this privilege has already been granted by employers in various parts of the country, and also to several trades in the metropolis, and has been found to operate most beneficially both to employers and employed; and it is our earnest conviction that all measures which manifest a regard for the well being of the workmen, tend also to the interest of the employer.

We also venture to hope that this mode of making known our wishes may meet with your cordial approval, as tending to conciliate and unite our interests, and that in future all differences between employers and employed may be settled in an amicable manner, without resorting to such injurious measures as strikes.

The trade in general, take this opportunity to express their gratitude to those employers who do not detain their workmen in waiting for their earnings, beyond the hour of leaving work, and earnestly impress upon all others to follow such admirable examples, feeling certain that they will be fully repaid in the increased satisfaction and good feeling of their workmen.

In conclusion, we now leave this memorial in your hands, trusting that it will meet with your favourable consideration and early attention, and that you will reciprocate the friendly spirit in which it has been presented."

We support the request, and are satisfied that the masters will lose nothing by granting it.

In connection with the welfare of the operatives, we would draw attention to "The Builders' Benevolent Institution," founded for the purpose of affording relief to persons connected with the building trades, and which seems well entitled to the support of all who have men working under them.†

## A SPHERICAL CHURCH.

THOSE who recollect how much Mr. Goldicutt's design for the Nelson monument was criticised, would be ill-prepared for another project, lately published. This is no less than a design for a church in the form of a globe, supported by kneeling figures. The account of this "religious monument in a sphere" is prefaced by some observations, perhaps intended as a preparation for the system, against the shock which the sudden administering of so huge a pill would otherwise occasion. They partake much of the character of those with which what we should call an enormous hoax, is ushered in every where. When we find an argument commenced with "it is an undoubted fact," we do the reverse of what is intended, and examine. The result generally shews a positive untruth. We do not say quite so much of the observations alluded to, although they are not conceived independently, and with a clear view of the circumstances, but are influenced by the disposition mentioned. They are indeed, in a great measure, founded in fact. "Never," says the writer, "had any century a more marked tendency than ours to emancipate itself from opinions and rules transmitted by the past. Philosophy, politics, science, industry, literature, have manifested to a great extent this need of independence. The fine arts themselves are directed into new

* Not *three*, as stated last week.

† An advertisement of its first general meeting will be found in another column.

channels." Now, all this may be true under one aspect.

It is almost impossible to characterize the present century by any one tendency whatever. The diffusion of knowledge, whether it be by new discovery, or research into the discoveries of the past, may be its most remarkable characteristic. But such a postulate as that above, which would receive immediate assent from many, would appear a positive error to others, because irreconcileable with their own pursuits; and cannot be received as of sufficiently general application, at least if painting and sculpture be included. These arts are as much under the dominion of the past as that of architecture; in Germany, painting is, perhaps, more so. The writer continues:—"But by a strange anomaly, whilst painting and sculpture, which serve to express the constant and unalterable forms of animated nature, became obedient to this want of innovation, it seems that architecture alone, called to give to inert materials variable forms, changing without end, can express itself only with the aid of antique conceptions!" We have long since pleaded, that this common accusation against the modern practice of architecture, was not made with due consideration for the comparative state of other fields of ingenuity, and however we are able to defend the unquestionable lack of invention in modern times, common fairness requires that the state of architecture should not be estimated without a comparison with other branches of ingenuity, and a correct estimate of what may have always been, and may really be, inseparable from its existence. We believe that architectural forms are impressed upon the recollection, as they are not in painting and sculpture, and that the opprobrium of adherence to precedent might be attached to works both of literature and art, where its presence is scarcely suspected by ordinary observers. The error of architectural critics is, that they forget, that *originality* is not necessarily a merit. One of the most original conceptions in architecture was placing the capitals of columns where the bases should be, yet that did not raise the value of the work of art. Thus it is, that projects such as we are about to describe, become the admiration of those who know a little, and a supposed cause for shame in those who follow in what is called—the beaten track;—skill in architecture is not necessary to produce a hundred such inventions.

With this desire of avoiding any resemblance with buildings devoted to pagan worship, the Count Cesare della Chiesa di Benevello, of Turin, has projected a building, which, although of so singular a character as to merit particular description, does not, we say, merit the rank as a work of art, which seems to be claimed for it. The building, if it were capable of being executed, would consist of a vast globe, covered with gilt metal, intended to symbolize the universe, suspended in the air, or supported only by eight colossal cherubim, in kneeling posture, ranged in pairs. In the intervals between each couple of figures, are placed the great doors and the steps of ascent, the whole being raised upon a lofty stylobate, elevated upon an extended superstructure, which is ornamented with a bas-relief, representing the history of humanity from its commencement to its end. The stylobate is reached by three staircases, consecrated to the three divine virtues. At the four angles of the lower stylobate are placed figures in bronze, emblematic of the four evangelists, moveable upon pivots, so that by their wings they will turn with the wind, and, says the account, give animation to the building by their motion. The four staircases, already spoken of as giving access to the building, are consecrated to the four cardinal virtues. On the summit of the two intersecting arcs which support them, the pavement of the church is placed a little above the lowest part of the globe. In the centre of the space is the altar; and from it a column can be raised to a considerable elevation, supporting a tabernacle in gilt bronze. The incense introduced within the cavity of this column would escape from the censers of the angels, grouped around the Divine image, at the summit. The choir for the priests is disposed around the central altar, a communication being provided between this station and the sacristies beneath. Round the sphere, to nearly half its height, are disposed the benches for the people, in concentric ranges, surmounted by a range of galleries. The upper hemisphere represents the heavens spangled with stars; and there are three ranges of gilded figures, representing the three principal hierarchies, encircling it. At the summit of the sphere is an opening for light, glazed. There will be represented, says the account, the vigilant eye of Providence, shedding rays tinged with the seven colours of the rainbow, thus recalling to all the faithful the sublime words of Genesis, the first pronounced by the eternal power over chaos, "Let there be light." The segment of the sphere beneath the altar, is reserved for the organs. They are so disposed, that the sound will penetrate into the church by four openings around the altar, and the organist has also the means of directing the sound through the instruments of the celestial quire above, so that he can, turn by turn, depict the groans of hell, or the harmonious anthems of the blessed. Two ambos, and two baptismal fonts, or two confessionals, in the intervals of the four doors, will complete the interior distribution. Bells are placed near the level of the tribune, or gallery,—supports being carried up from the kneeling figures which bear the globe. The Count Benevello thus argues in favour of his design:—"If material and terrestial things ought to have an influence upon our minds, to recal them to the sublime and incorporeal, it seems to me that this would be the effect of this temple suspended in the air, enriched by so many symbols of our faith, and so many colossal works of sculpture." * * "When there is joined the mystery of the light with varied tints suffusing the spectacle, the alternation of harmony sometimes arising from the recesses of the earth, and sometimes gushing from the heights of heaven, perhaps it would not be an error on my part to think, that this temple would surpass in majesty and intensity of sensation, the ordinary character of our religious edifices, whether those in which the view is interrupted at each instant by columns and pilasters, or in which the sacred words, always uncertain and confused, reach with difficulty a small number of auditors, or, in fine, where often nothing can be found to recal any idea of the sanctity of the place, if at all times the appearance does not occasion ideas which are nothing less than profane."

In some remarks, which are appended to a notice of this design, by a French contemporary, we find several judicious comments upon this singular project. It is feared, that the eyes of the assembly would be more occupied in watching the motions of the priests, or the different effects of the light, as perchance the green ray might fall upon the face of a pretty woman, than attending to the words of the divine office; and that the circular arrangement is the worst that could be chosen. Some fear may also be expressed at the possibility of producing a structure better adapted for a swallow's nest than for a church; and should *one* support fail, the whole assembly might bowl away in a novel, but very unpleasant manner. At least, the appearance of insecurity it would be hardly possible to overcome; and the long steps of ascent would be especially inconvenient to old and young. Nevertheless, to ourselves, although the general design does not appear to merit any higher encomium than we have passed upon it, some of its features, and some of the arrangements of the interior, seem to be curious, if not praiseworthy, and suggestive at a time when opinions differ as to the best arrangement for ecclesiastical edifices.

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Glasgow and West of Scotland Association for the Promotion of the Fine Arts.—On Monday week, a meeting of the members of this association was held in Carrick's Hotel. The secretary, read an interim report of the committee of management. It proposed that the name of the association should henceforth be "The Glasgow Art-Union," and that the system of money prizes should be adopted. The prize picture of last year—"Prince Charles Edward" had been engraved, and was in course of distribution to each member. The rules and regulations, drawn up from those of the London Art-Union, were then submitted, as also the draft of a petition to the Privy Council applying for license. The report, the regulations, with a few verbal alterations, and the petition, were agreed to.—*Glasgow Reformers' Gazette.*

## THE GRANITE QUARRIES OF EGYPT.*

The granite quarries of Syene remain a lasting proof of the greatness of ancient Egypt. At that place (now called E' Souan) the valley of the Nile is traversed by a range of granite rocks, which rises in some places to a height of several hundred feet, forming that barrier in the course of the river which is the cause of the cataract of E' Souan. On either side of this range extends the bare *Sahara*. The sole elements of the scene are sky and granite. Exposed to the full action of the weather, these rocks are in a state of continual decomposition, and by that process have formed vast heaps of siliceous sand, composed of the crystals of granite in all stages of comminution. Enormous piles of boulders lie about in every direction, but principally in the bed of the river, where the rock appears to have given way to the force of the water, and crumbled down into these fragmentary masses. The rocks lying on the east bank of the Nile are the most compact and solid, and it is here that they have been quarried of those huge blocks which were used by the ancient Egyptians for obelisks, colossi, and other architectural works. These quarries extend for several miles along the granitic formation. The cuttings do not penetrate deeply into the substance of the rock, but in whatever part the surface is firm, and without seams, it will be found to have been cut into, and turned to advantage.

Even at the present day, after a long lapse of ages of total abandonment, the operations of the workmen may be traced with the greatest ease. In one part, the fresh surface of the rock shews distinctly where a block of stone was removed; in another, you meet a large obelisk, half detached, and to appearance as if just fallen from the perpendicular, like the less fortunate of Cleopatra's Needles at Alexandria: here are long lines of marks produced by the wedges of the workmen, and there heaps of chips, the result and refuse of more minute operations. Without difficulty you might fancy that the quarry-men were but absent at a meal, and would return to resume their work.

The mode of separating the blocks was very simple. Along a certain line of surface, a row of wedges was wrought, at intervals, into the substance of the rock, which, after being advanced to the necessary depth, were struck with heavy hammers; a rent was thus formed in the line of operations, and the superincumbent mass, being detached, was easily separated by proper levers. This is the very plan now adopted in our own quarries, with the exception, that, in those I have seen in this country—for instance, at Peterhead,—the wedges are not applied to the rock *in situ*, but to large masses, which are first detached by blasting. This may suit the Scotch granites, which have a much greater number of seams than the true Syenite; but it would never produce an obelisk, even on the banks of the Nile.

The most remarkable circumstance connected with the quarries is, that the surface of the rock exposed in the quarrying is hardly at all discoloured by the long exposure it has been subjected to, and when compared with a freshly-broken bit of rock, presents the full rosy colour of the feldt-spar. So striking is this, that on seeing the two compared, one naturally asks himself if these can possibly be the quarries wrought by the ancient Egyptians—that people whose history almost extends beyond the bounds of the legitimate historic age! As in the case of the tombs of Baben-el Melook, and most of the earliest monuments of Egypt, the finger of time seems to have respected the works of this extraordinary people; it is only where sacrilegious man has been able to interfere, that desolation has overtaken their all-but-everlasting works. Nearly four thousand years have fled since the Augustan age of ancient Egypt; its civilization, its dynasties, and its very people have disappeared from the face of the earth. But these eternal rocks remain to attest the power and greatness of that kingdom, and to demonstrate to him who is willing to learn, that, although to the great bulk of mankind, forty centuries may be all but inconceivable, it is but a drop in the ocean to the countless ages through which has rolled on this our terrestrial orb.

In order to be able to draw any deductions

* From a Journal by Dr J. B Mitchell, still unpublished, of a series of travels, with Lord Eastnor, in the Turkish and other dominions, Egypt, Syria, Palestine, the isles of ancient Greece, &c.—in the latter accompanied also by Mr. Layard.

from the appearance of the Syenite quarries, regarding the progress of discolouration and disintegration, it is necessary to determine the time when they were worked. I do not know that there is any direct historic evidence on the subject; from a number of considerations however, it would appear to be pretty certain, that the quarries of Syene have hardly been in use since the early dynasties of the Pharaohs. The purposes to which the Syenite granite was chiefly applied, were the forming of colossi and obelisks, and the lining and casing of pyramids and some of the propylæa of the temples. Now all the colossi that are known are of very ancient date. The principal ones bear the names of Amenoph III., corresponding to 1430 B.C., and Rameses II., to 1350 B.C. The greatest number of the obelisks known, are works of the Pharaohs of the Rameses dynasty, from 1400 to 1300 B.C. The obelisk at Heliopolis, is inscribed with the name of Osirtasen I., who lived about 1900 B.C. There are one or two obelisks which are exceptions in regard to their antiquity, if we may judge by their less perfect style of workmanship and the absence of any ancient name; but these, in all probability, are old Egyptian monuments, which have been dressed over again and reinscribed in Greek or Latin for some special purpose. None of these spurious-looking obelisks exist in Egypt—that which stands in the Atmeidan at Constantinople, and one or two at Rome, as for instance that near San Giovanni in Laterano, are of this description. The great pyramids which were cased externally with granite, as well as lined throughout the passages with the same material, are of the time of Suphis—fully 2000 years B.C.—and the immediate successors of that monarch. The only two temples in which I remember to have seen granite propylæa, are one at Karnac by Osirei I. 1335 B.C., and that of Medinet Haboo, by Rameses III., about 1380 B.C.

Besides these facts in favour of the supposition that the quarries of Syene were wrought principally in the Pharaonic ages, we have negative proof in support of this view, in the fact that no granite was used in the construction of the temples raised under the Greeks and Romans, and no colossi or original-looking obelisks have been discovered of Ptolomaic or later date. In further support of this opinion we find the names of early Pharaohs cut on the rocks in the neighbourhood of the quarries; as those of Thothmes III., 1495 B.C., and Psamatik I., 664 B.C. Indeed, it stands to reason that the greatest works of a people should be constructed during the period of their greatest power and prosperity, which undoubtedly was that of the Rameses dynasty.

From these considerations, then, it would appear that the quarries of Syene were wrought chiefly, if not exclusively, in the days of the Pharaohs, and, consequently, that the surfaces that were formed in the process of quarrying, and which we have an opportunity of examining at the present day, are of very ancient date.

It is easy to distinguish, by the marks of the tools, the surfaces of the rocks which have been exposed by the operation of quarrying; but they are, moreover, very readily recognised by the marked difference of colours which they present, when compared with the surfaces which have remained untouched. The latter, far from shewing any of the pink colour characteristic of Syenite, are covered with a dark brown crust of decomposing crystals, in some instances so loose as to be easily removed by a slight blow of a hammer. The quarried surfaces, on the contrary, are fresh, clean, and compact, and retain the vivid pink of the felspar intact. In these respects they agree with the chips, which we must suppose to have been formed at the same time. So very fresh is the colour of some of these surfaces, that it is only on comparing them with a newly-broken specimen that their somewhat darker hue is distinctly visible. There is hardly any difference of colour among the quarried surfaces.

We have thus shewn that the quarried surfaces must be about 3000 years old at least, and that during that great space of time they have hardly at all been affected by the action of the atmosphere, while the natural surfaces have been greatly acted upon. The obvious deduction from these facts is, that an immense series of ages must have passed away since the rocks of Syene were brought into the position which they now occupy. It is quite impossible to say what length of time has elapsed; estimating it by the very slow progress of the discolouration, it might be 10,000 years or it might be 100,000. But even these are moderate numbers, compared with what we should be obliged to give, were we to bring into comparison with the surfaces of the quarries the decomposed granite which covers the ground far and near to a great depth, and which must all have originally formed part of the solid rock. When a surface exposed for 3,000 years has not in the very least given way to the influence of the atmosphere, what an inconceivably vast period of exposure was necessary to wear away many feet of solid granite, and especially as that formation, as it occurs in Egypt, is one of the most durable of compound rocks, from its containing so small a quantity of alkaline matter and protoxide of iron.

The above remarks receive a striking corroboration from some facts regarding the discolouration of the rocks in the bed of the Nile at Philæ, and the immediate neighbourhood of the cataracts of E'Souan.

## THE BUILDERS' SOCIETY AND THE REFEREES.

SIR,—I take leave to forward to you the following copies of correspondence between the Committee of the Builders' Society and the official Referees and Registrar, and to request that you will give them early insertion.

I am, Sir, your most obedient servant,
THOMAS PIPER, Jun.

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At a meeting of the committee of the Builders' Society, held at the Freemasons' Tavern, Great Queen-street, on Monday, the 28th ult., it was resolved,—

"That in pursuance of the suggestion contained in the letter of Mr. Symonds, of the 17th ult., copies of the correspondence between this committee and the official referees and registrar be sent to the editor of THE BUILDER, with a request that he would insert them as early as convenient."

173, Bishopsgate-street Without, 2nd June, 1847.

Dear Sir,—I am desired to forward for your information and that of the official referees, copies of the report of the Builders' Society upon the bill now before Parliament for amending the Buildings Act, and to say that a copy has been sent to Lord Morpeth, and an interview asked with him on the subject.—I am, dear Sir, yours faithfully,
THOMAS PIPER, Jun., Hon. Sec.

A. Symonds, Esq.

Office of Metropolitan Buildings,
6, Adelphi-terrace, Strand, June 4th, 1847.

Sir,—With reference to the report of the committee of the Builders' Society upon the bill for amending the Metropolitan Buildings Act, which was transmitted by you yesterday, I beg on the part of the official referees and myself to return our acknowledgments; and at the same time to observe that some of the views stated in that report are founded upon misapprehensions, which it appears to us might have been obviated by some previous communication with this office.

I may mention one instance in the observations on the clauses 4 and 5, in which it is stated that "it would be desirable that all decisions should be registered, indexed, and be accessible, as some public documents already are, to the public, upon payment of a nominal fee." This is already done to an extent, I believe, not attained in any other office, and the fee of sixpence per volume may be deemed nominal, since all the awards on the same subject are included in the same volume, so that without any labour or research, whatever has taken place upon the same subject may be at once seen.*

It is to be regretted, however, that the public have scarcely availed themselves of the facilities of this office, and with a view to extend them, and literally to bring home the information to the builders and other parties concerned, the provisions of the clauses referred to have been recommended; and if Parliament should think fit to adopt them, I hope to be enabled to explain and make familiar to the public the bearings of the various cases, and thus practically to develop the meaning and application of the law, and render it less and less necessary to refer matters to the official referees.

I may take this opportunity of observing, that by an arrangement I have made in the office, it is the duty of the surveyor to give every assistance to the public in preparing their requisitions and applications, and I am in hopes that when this part of the arrangement is put on a proper footing, much of the difficulty which the public have experienced will be obviated.—I have the honour to be, Sir, your obedient servant,
ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.

* This has been distinctly stated in THE BUILDER more than once.—ED.

10th June, 1847.

SIR,—I am desired to thank you for your polite communication in acknowledging the report of the Builders' Society Committee upon the proposed bill for amending the Buildings Act, and to say, that it will be acceptable to the society if you will be so kind as to point out what those views are "which are founded upon misapprehensions, which might have been obviated by previous communication with your office."

The society desire me to forward to you a copy of the bill, interleaved with the alterations suggested by them to Lord Morpeth, in order that you may distinctly understand what it is that they have proposed.

In consequence of your note, it was stated to Lord Morpeth, that the suggestion of increased publicity to the awards and facility of reference had already been anticipated, and that, therefore, the remarks made in that respect might be considered to have been met. May I be allowed to inquire whether it would be acceptable to you, that your letter of the 4th June should be made public beyond the limit of the Builders' Society, in order that it may be generally known how complete your arrangements are for the public becoming acquainted with the awards and decisions of your court.—I have the honour to be, Sir, your most obedient servant,
THOS. PIPER, Jun., Hon. Sec.

17th June, 1847.

SIR,—With respect to the report by the committee of the Builders' Society upon the bill now before the House of Commons, I beg, on the part of the official referees and myself, to acknowledge the receipt of your letter of the 10th instant relative thereto, and to inform you, that the official referees feel, that it would not be possible for them to encounter the loss of time and labour of detailing in writing such explanations as a compliance with your request would involve, although they think that explanations might have been afforded at an interview with the committee before they had framed their report. There does not appear to be any objection to the publication of my letter, or the substance of it; but, on the contrary, it is desirable that the committee of your society should adopt any means which they think proper, to inform builders and the public of the arrangements which have been made at this office for facilitating the transaction of the business.—I have the honour to be, Sir, your obedient servant,
ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.

## INFORMATION UNDER THE BUILDINGS ACT.

### MAGISTRATES AND THE REFEREES.

IT will be remembered that reports have appeared at different periods in THE BUILDER, respecting an information promoted by Mr. Boulanger, against Mr. Sugden, a builder, for erecting houses near to a dangerous manufactory. The proceedings in that case are still pending. Subsequently another information has been laid by Mr. Hesketh, the district surveyor, against the same premises, under another clause of the Act, for the illegal width of the street or alley, and an award was received from the official referees, declaring that the aforesaid buildings had been erected contrary to law. The award was followed by the usual certificate, and under its authority Mr. Hesketh applied to the sitting magistrate at Southwark police office (Mr. Secker), to give effect to the certificate of the official referees.

Mr. Petersdorff, the barrister, appeared on behalf of Mr. Sugden; Mr. Hesketh's case was unsupported by counsel.

Mr. Hesketh stated his case, and produced the original award, as made by the referees. Mr. Petersdorff took an objection to its reception, and contended that the Act only required that a copy of the award should be produced as *prima facie* evidence. This led to a long discussion, when Mr. Secker determined that it was good evidence, as it was absurd to suppose that a copy could be received and an original document rejected. Mr. Hesketh was then cross-examined by Mr. Petersdorff, in which he denied most positively that during the progress of the building he was ever informed that Mr. Boulanger had a fourteen years' lease of his premises. Several witnesses were then examined to show that the line of street or alley was laid out before the Buildings Act came into operation, and that houses were commenced at each end. When the street was

originally laid out, it was intended that Mr. Boulanger's should be removed, but lately he had increased his terms so that they could not be listened to.

Mr. Petersdorff then addressed the bench, and asked seriously whether there had been such a violation of the Act as to warrant the destruction of the seven houses named in this information. The legislature, he contended, never intended to interfere in any way with buildings in existence or in progress, as the Act has no operation on streets, buildings, or matters referring to buildings commenced before 1845, and he was not aware to what extent they were required to be completed to bring them out of the reach of the operation of this Act. He did not think it was necessary that every house should be commenced to be protected, for he might assume for argument that No. 2 was begun, No. 4 begun, No. 3 not touched, and No. 1 considerably advanced: in such a case, he would ask, was the entire line to be destroyed? The legislature never entertained any thing so absurd.

Mr. Secker took time to consider his decision, and on the re-assembling of the parties on Monday he delivered his judgment. He was of opinion that the line had been laid out before the passing of the Act, and that the alley or street was fit for use by the public having passed over it. He, therefore, felt bound to dismiss the information.

This decision, consequently, nullifies the whole proceedings of the official referees.

## ARCHITECTURE AT UNIVERSITY COLLEGE.

THE distribution of the prizes at University College took place on the 1st instant. Sir H. De la Beche was in the chair. Professor Donaldson had, during the session, which commenced in the middle of October, 1846, and had continued until the middle of June last, visited with his classes the British Museum, St. Paul's Cathedral, and Westminster Abbey; describing to his pupils the antiquities in our national collection, and the architectural and structural points of the two last named edifices; pointing out especially the construction of the various parts. The series of questions which the classes had to answer, embraced all the subjects treated of in the course of the 110 lectures delivered at the college. The prizes were awarded as follows:—

FIRST YEAR'S COURSE.

*Fine Art.*—Charles Poland, 1st prize and 1st certificate; Unknown, 2nd prize and 2nd certificate.

*Science — Construction.*—H. Darbishire, 1st prize and 1st certificate; Charles Poland, 2nd prize and 2nd certificate; Unknown, 3rd certificate.

SECOND YEAR'S COURSE.

*Fine Art.*—W. Tarue, 1st prize and 1st certificate; G. B. Smith, 2nd prize and 2nd certificate; J. W. Mc Kenzie, 3rd certificate.

*Science—Construction.*—G. P. Boyce, 1st prize and 1st certificate; W. Tarue, 2nd prize and 2nd certificate; G. B. Smith, 3rd certificate.

It had been unusual to award second prizes, but the professor was so well satisfied with the replies second in order, that he was permitted to add another prize.

From some irregularity, the pupil who obtained the 2nd prize in fine art, first year, and the 3rd certificate for science, had omitted to give in his corresponding number into the office, so that they could not be awarded.

The professor is anxious that the author of the papers numbered 54 should call upon him.

We learnt with satisfaction that the class of architecture at University College had increased in numbers one-half beyond those of the preceding session.

THE CITY.—The site of a house in Newgate-street, the rent of which has fallen in, is to be appropriated to widening the street. A petition to Parliament against intramural burial has been agreed to. Some city ground at Holloway is to be appropriated to the erection of a new reservoir. The salary of Mr. Bunning, the clerk of the city's works, has been increased to 2,500*l.*

## NOTES IN THE PROVINCES.

THE incorporated church building and repairing society have granted money towards the rebuilding of the churches of St. Dogmell's, near Cardigan; Llanfyhangel-y-Pennant, near Tremadoc; and Llaugoed, near Carmarthen; towards the erection of churches at Sighill at Earsdon, Baldhie near Truro, St. Jude's in Bristol, Pimlico, and Lyne at Chertsey; and for the enlarging, &c. of churches at Chudleigh, Thorpe, Northallerton, Tichbourne, Chignall, Smealley, and Stokenchurch.——At the Suffolk quarter sessions instructions were lately given either to repair East Bridge, or build a new one, at a cost not exceeding 200*l.* It is also proposed to rebuild St. Olave's Bridge by loans on rates exhaustible in fourteen years. The plans and specifications were lodged. Messrs. Perry and Garner's tender of 555*l.* for a temporary bridge was accepted by the committee, and the contract for building the permanent bridge was ordered to be prepared on receipt of tenders.——Plans by Mr. Round, architect, have been selected for a church at Penge, near Sydenham, Surrey, for the use of the watermen's almspeople and others. Her Majesty the queen dowager has presented a donation towards the erection.——The lowest tender for the masonry and brickwork of the proposed improvement of St. Mary's churchyard, Southampton, was that of Mr. W. Morse, builder, and for the iron-work, that of Mr. J. Churton. They were a few pounds above the surveyor's estimate, and more than the fund subscribed.——Some planks on an iron frame, supporting the pavement of the Worcester bridge, have proved to be in a rotten state, by the sudden sinking of one or two of the flags. Our contemporary, the *Worcester Journal*, is looking to the safety of the public, both above bridge and below, in crossing these 'rotten planks,' till something better be substituted. ——The lamentations of the Tauntonians on account of the 'very dirty' and unhealthy state of their town and its bad drainage have not yet ceased, notwithstanding the mighty projects started from time to time in order to put a period to their existence. A recent correspondent of the *Somerset Gazette* attributes the defective drainage chiefly to the substitution of macadam in place of the old pitched causeway, on the 'crown' of which the higher-minded order of the ancestorial inhabitants of towns of old were wont to walk in stately majesty. The inconsiderable fall towards the river is also pointed to as a cause, but so long as the alleged want of general communication with the main drains continues, nothing like cleanliness or health need be hoped for.—— The foundation-stone of a new school-room, for the Cheltenham charity schools, was laid on Thursday week. —— Owing to the decay of the surface of the stone of which the Hereford Shire-hall is built, says *Felix Farley*, it has been found necessary to give it a coating of boiled oil. This plan of 'doing' the hall 'in oil' seems hardly to comport with the dignity and beauty of the Doric architecture, giving the building, as it does, a soaked leather aspect.——From reports read at the Herefordshire sessions, it appears, that repairs of several of the county bridges have been effected, and that others, particularly Little Hereford, Stretford, and Morbage bridges, are much in want of repair or improvement.——In a paragraph recently copied by our contemporaries of the newspaper press, it was stated, that "the Woods and Forests, which formerly promised the strand of the Birkenhead Docks, have now laid claim to the margin of the Wallasley Pool, on which the docks are erected," and that "the Government, also, which promised a subsidy of 50,000*l.* to aid the works, now states that it has not the requisite power; and consequently, the company has determined to close the works. The corporation of Liverpool," it was added, "have also put in a claim to the strand." It has since been announced, however, by the *Liverpool Herald*, that the docks have been re-opened, "the resolution moved by the chairman of the Dock Commissioners at their last meeting, having been found to be illegal," and that "the commissioners have taken the best steps they can to remedy the evil effects likely to result from it."——The foundations of the extension of the Manchester Royal Infirmary have been begun, and the ceremonial stone was to be laid to-day (Thursday).——The first stone of Trinity Church, Wicker district, Sheffield, founded by Misses Harrison, was laid on Friday last.—— Mr. Thomas German, of Preston, has given a thousand pounds for the erection of a tower and spire to the church of St. Peter's, in that town.——In a recent charge, Archdeacon Wilberforce stated that one-eighth of the churches in the East Riding of Yorkshire had been restored or rebuilt within the last seven years.——Our town council, says the *Newcastle Advertiser*, have evinced their sense of the importance of sanitary reform by taking steps for enforcing some of the most valuable clauses of the town improvement Act. An excellent precedent. ——The foundation-stone of the Wesleyan chapel and school-room at Witten-park Ironworks, says the *Gateshead Observer*, was laid on 24th ult. The proprietors of the works have presented the site and the stone: subscriptions received, about 100*l.*——Upwards of 500 workmen are now employed at the Sunderland docks, the several contractors working with energy at 'double shift,' to suit the tides. In a few days, says the *Sunderland Herald* the further letting of the excavation of the wet dock and half-tide basin, together with the building of the walls round the same, will require a further large number of hands. ——A joint-stock Water-work Company, according to the *Carlisle Journal*, is about to be formed at Penrith, on a report, by Mr. James Simpson, the engineer of the Carlisle Waterworks.——The Berwick barracks, according to the *Berwick Warder*, have recently undergone extensive repairs, in compliance with an order from the Board of Ordnance to that effect. ——Another of the Scottish granaries has given way at Craigie, Perthshire, under the enormity of the load of its accumulated treasures. "More granaries throughout the country have fallen within the last six months" says the *Edinburgh Register*, "than during the previous sixty years—certainly no proof of the scarcity so loudly asserted to exist in the land." Yet it was not from the weight of well-filled stomachs, that the Perthshire highlanders were brought down upon their marrow bones.—— The Town Hall of Linlithgow, was completely destroyed by fire on Thursday week. It is supposed that the burning rays of the sun ignited the old wood of the roof, probably, as suggested in another instance by a correspondent of our own, while the wood, so reduced to 'touchwood,' was in contact with iron made hot by the same means. Thus the necessity for a watchful repair of such old structures is always great, as the risk is imminent.——The average daily number of persons employed on the Relief Works in Ireland, during the week ending 19th June amounted to 60,288, and the total cost thereof to 28,835*l.* The road works were all stopped on 19th June, previously to new arrangements on a reduced scale.

## DUTY ON BRICKS, PAPER, AND LIGHT.

MR. EWART, M.P., in the course of an able speech in favour of direct rather than indirect taxation, recently delivered, made the following remarks, to which too large a circulation cannot be given.

The duty on PAPER he held to be a most objectionable tax. Its levy cost much vexatious interference. An account, he believed, must be taken of the daily produce of the paper-manufacturer. The number of sheets in every ream must be given. Every ream must be labelled: every label must be written on. If the paper be afterwards destined for exportation, the label must be removed. All this was interference; and it was a tax of the most intolerable kind in this age, because it was *a tax upon time.* To tax the *time* of the trader, was (in his, Mr. Ewart's eyes) one of the greatest fiscal offences that could be committed. Yet, in all these little matters, the workman must attend the steps of the excise-officer. He believed that our paper-manufacturers were undersold abroad, notwithstanding that a drawback was allowed on the paper which was exported. This disadvantage he could only attribute to interference with the trade. If emancipated, it would probably expand into full freedom, like the glass-trade. Even now it had a latent tendency to do so. A manufacture of paper from straw had been

begun; and he believed that boxes, now made of wood, would frequently be made of paper, if our manufactures were unshackled. But there was, in his mind, an insuperable objection to this paper duty, and these paper fetters altogether. They formed a tax and a burden upon the literature of England. He believed that two-thirds of the paper manufactured were used for the purposes of printing. There was also this anomaly in the duty: much of our paper (especially the paper of which newspapers were made) was formed out of the sweepings of our cotton and flax-mills. There was no duty on these articles as raw materials; but they paid a duty when they entered the paper-trade. Turn cotton into calico, it was duty free; convert it into paper, it was taxed. The effect of the repeal of the duty on almanacks was an instance of the effect of repealing a duty upon literature, however lowly. But he held the mere duty on paper not to be so great an evil as the intermeddling with the paper trade. If these domestic restrictions were removed, our language and our literature would naturally expand. He next turned to an impost on a common article of great and increasing importance—he meant the Excise-duty on BRICKS. In this case, as in the case of soap, there was no duty on the manufacture of Ireland. Indeed, comparatively, there was scarcely any duty in Scotland, since nature had provided Scotland with an ample supply of valuable stone. But where the duty did fall in Scotland, it was, by comparison, the more oppressive. This duty was originally imposed by Mr. Pitt, in 1784, to meet the exigencies of the debt created by the recent war with America. At first it extended to stone, as well as to bricks; but the stone interest was successful in its rebellion against the duty. Mr. Pitt was obliged to yield. He left the brick duty alone remaining; but he acknowledged the impolicy and partiality of its character. In fact, he maintained that this was, in the language of the Commissioners of Excise Inquiry, 'among the most objectionable of the duties of Excise.' Since the glass-duties had been abolished, how great had been the development of that most beautiful fabric! The window of every glass-shop indicated that science and art combined to improve and to embellish it. Few would suppose that there was a connection between the arts and the making of bricks; but he remembered that when it was asked in a committee (on the connection of art with manufactures, of which he was chairman, in 1836) why we did not make bricks of various shapes, as in the time of Henry VII. and Henry VIII.? the answer was, that the restrictions of the Excise prevented us. He found this evidence singularly corroborated by the valuable testimony of Mr. Wood, the chairman of the Excise Board in the last session of Parliament. That gentleman, in his evidence before the Committee of the House of Lords, on 'The Burdens on Land,' stated that some of the excise regulations on the manufacture of bricks had been relaxed, and that 'the consequence of this alteration was, that great facility had been given for making bricks of ornamental shapes, and enabling architectural ornaments to be made in brick, previously in effect prohibited.' He (Mr. Ewart) had no doubt that so ordinary a trade as the brick trade, when emancipated, would be made still further obedient to the purposes of art. He had limited the foregoing suggestions to duties of Customs and Excise. He admitted the injustice and impolicy of other duties also. The WINDOW DUTY was one of a most unequal and impolitic character. The insurance duty was a tax on the foresight of the parent and the resources of the family; and other duties were, in various ways, objectionable. But he principally assailed those duties which obstructed or choked up the sources and springs of labour.

TABLES FOR ESTIMATING EARTH-WORK.—Mr. Charles Sibley, son of the district-surveyor for Clerkenwell, and Mr. Rutherford, of Woolwich, have recently published an elaborate set of tables for estimating the contents, in cubic yards, of the earthwork of railways and other public works, which appear to have advantages over others, and will be found useful.* We shall take an early opportunity to look to them more closely.

* Longman and Co., Paternoster-row.

## IMPROVEMENT OF SMITHFIELD MARKET.

WE have received, with the following, from a naval officer of high standing, drawings, exemplifying his proposal, but think it unnecessary to engrave them.

I would suggest that a platform be built on arches, occupying the whole extent of the present site, leaving a street, or road-way, all round, 60 feet broad. That the elevation be such as to allow of a piazza of shops all round, vaulted; that in the centre of the platform two or three, or more, arched ways should pierce the platform from side to side, of sufficient height and capacity to receive water-tight waggons on four wheels. That leading to the platform above there should be a sloping road-way at each angle, with balustrades; and that the platform be roofed in, in square compartments, open on all sides, supported on iron pillars; one-half of the space to be apportioned to the sale of cattle, the other half to the slaughter of them.

That each of the said compartments be floored with broad flags, laid in cement, the whole having a slope to a perforation of a foot square, corresponding to one of the central arches, under which a waggon, as before described, is to be placed, to receive all the droppings and offal of the cattle. That the waggons, when full, be removed by means of a railway landward, or a souterain railway, leading to the river, as the ground affords sufficient fall to conquer the *vis inertiæ*, when the waggons are once set in motion. Arrived at the river, the contents of the waggons to be delivered into barges, prepared to receive them on board at once, and their contents to be entered into the barges by a trap-door in the centre of the waggon. Empty waggons to immediately supply the place of those removed.

*Advantages of the Proposed Plan.*—1. All nuisances would be removed when once the cattle ascended the platform. 2. The air would cease to be contaminated, as all offensive matter would be speedily removed, and previously remain covered in waggons. 3. The meat, when ready for the market, would at once be received into the vaulted shops, and thus escape being shaken when carried over the pavement. The shops would be always cool, and from both these causes the meat would remain sweet much longer. 4. Business would be transacted much more expeditiously, and at less expense, nor would there be any interruptions from vicious characters. 5. The value of the manure, which at present runs to waste, would be such as in a short time to pay all expenses, and return a large revenue.

The above plan is not only applicable to London, but to all towns in the kingdom, and the offal thus made available as manure of the best kind, with little labour or expense.—A. D.

## IRON TUNNEL OVER THE MENAI STRAITS.

A CORRESPONDENT of the *Mining Journal* calls for further investigation before the iron tunnel be put up. He says:—"According to my informant, its length is to be 460 feet, clear of the points of bearing—so that I presume the entire length cannot be far short of 470 feet; its diameter 30 feet, to be constructed with wrought-iron plates, varying from $\frac{3}{4}$ in. to $\frac{1}{2}$ in. thick—therefore, supposing the average thickness to be $\frac{5}{8}$, and including the needful *powerful ribs and stays to resist the vertical and lateral pressures and strains*, together with the interior framing and rails, I estimate its weight at upwards of 30 cwts. for every foot of its length, or about 700 tons. Now the depth of the tube is 30 feet, which is about $\frac{1}{15}$th part of its length, therefore, according to my machine, the strain by its own weight at the middle will be equal to $7\frac{1}{2}$ times its weight—viz., 5250 tons—and suppose a train with the engine and load to be 100 tons, equal to 750 tons—together 6000 tons. According to Barlow's theory, the safe capacity to resist such a strain ought to be equal to 18,000 tons; and to Tredgold's, 24,000 tons. Now let us see what is the capacity of this projected tunnel, or tube:—The circumference is (say) 90 feet; the tension property in the lower half, 45 feet. Suppose the plates average five-eighths of an inch thick, it would give $7\frac{1}{2}$ square inches on each foot; say, that each inch would sustain, before breaking, 20 tons, this would make 150 tons to each foot, which, multiplied by 45, gives a capacity of 6,750 tons! *so that its own weight, and the load, would, according to this calculation, produce a strain nearly equal to the breaking point.* Now, as wrought-iron will begin to stretch at the strain of 10 or 12 tons to the inch, it must be manifest that little more than half its weight would produce a permanent set, and render it *perfectly unfit and unsafe* for the desired object."

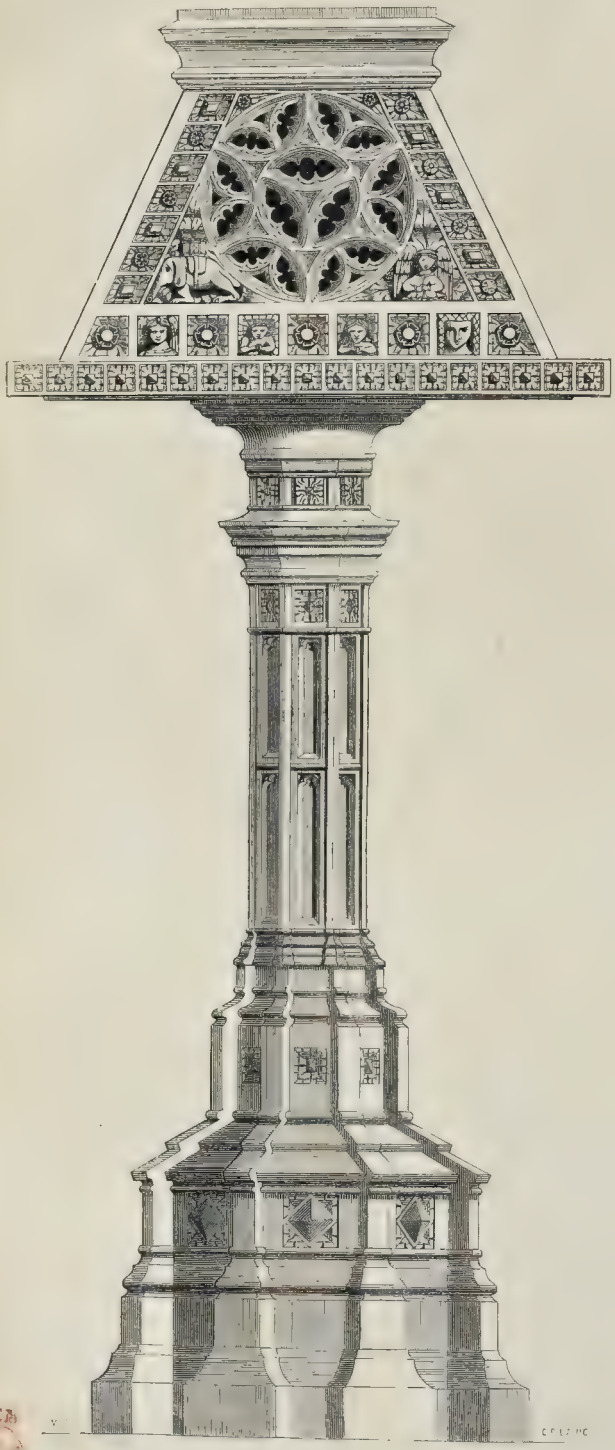
## PROGRESS OF THE HEALTH BILL.

IN accordance with the prospect of perseverance in the determination to carry out something like the sanitary initiative during the present session, Lord Morpeth's bill was fairly launched into committee on the 1st instant; and, in face of a rather sulky than obstinate 'opposition,' one clause after another was telled over into the shape of incipient law, either by majorities ranging from 91, for going into the committee itself, down to 42, the lowest majority gained on the highest opposition offered, or *nem. con.*, onwards rather slowly to clause 21, on the 6th instant.

During the progress thus made, however, two clauses, Nos. 17 and 21, were postponed for consideration or modification by Government, and two others, formerly Nos. 19 and 20, were found to have been omitted altogether. The omission of these two latter clauses, Lord Lincoln declared would render the bill, in all but a few cases, either nugatory or inoperative, or altogether absurd. It would even, his lordship alleged, lead to the exclusion of such 'hives of industry' as Liverpool and Manchester; and accordingly Lord G. Bentinck, at once taking the credit to himself of reasons only that moment suggested to him, declared that he was justified in, and that the country would perceive he had good reasons for, throwing himself as a stumbling block in the way of this bill; and he accordingly forthwith called on Lord Morpeth to abandon at once so 'heterogeneous a mass of confused and blundering legislation.' His lordship (Lord Morpeth), however, assured his noble friends that as the boundaries of Liverpool and Manchester had been fixed by the corporation Act of 1835, 'those two hives of industry could at once have the benefit of this measure applied to them.' The reason why Government had thought proper to exclude the two clauses in question was, that the one conferred a power of extending boundaries to her Majesty in council, which should if possible be dispensed with, while the other provided for an increase in the number of a council dependent on the exercise of the first; whereas it was now conceived that the more proper mode of procedure would be to pass a separate Act, analogous to other boundary Acts, allowing the sanitary bill to operate in the meantime wherever it properly could, and which it still would do to a much more general extent than was imagined. As to the allusion to 'districts' surrounding towns in clause 6th, the withdrawal of the word was agreed to, and a modification promised, so as still to include suburbs while excluding rural districts. It is proposed to have but one paid commissioner, the expense of the commission to be confined to 1,000*l.* per annum. Clause 13th, if necessary to clear meaning, is to be amended.

In allusion to much reasonable grumbling against the exclusion of the metropolis, Lord Morpeth explained that, by the advice of the Health of Towns Association itself, he had excluded the metropolitan district from the operation of this bill, in order to reduce the risk of excluding the whole country till another session; and Lord John Russell remarked that honourable gentlemen opposite spoke of this question as if it were proposed *to exclude the metropolis from any sanitary regulations*, when the fact was, that the intention of the government was, to introduce a measure with respect to the metropolis in the next session of parliament. Honourable gentlemen opposite had expressed extreme zeal for the sanitary reform of the metropolis, as well as of the various towns throughout the country, and would no doubt be sorry were the result a defeat of both of the ends in view. He therefore hoped they would, at least, be defeated in their present object, as they might rest assured that the metropolis itself, as well as the country

WOOD LETTERN, DETTLING CHURCH, KENT.



at large, would thus be all the sooner provided with sanitary regulations. It was also explained that, to comprise the metropolitan area of drainage and supply of water, it had been found necessary to extend the limits of exclusion from four miles radius round St. Paul's, to ten.

During an incidental discussion on the subject of intramural interments, it was elicited that, while the vested interests of the clergy and others had hitherto prevented the removal of those plague-spots—the churchyards and the burial grounds—from the midst of dense populations, Lord Morpeth intended to follow up the Health of Towns Bill with another for the abolition of interment in towns.

## LETTERN, DETTLING CHURCH, KENT.

The use of the ancient Lettern has (with the exception of a few yet in use in some of the cathedrals), been almost entirely superseded by the more modern reading-desk, so that but few good specimens are now to be found; they have rarely been used in this country since the reformation, and then only in cathedrals or college chapels to hold the Bible. The usual place for the lettern was the middle of the choir, the most convenient spot from which to read the lessons; they were sometimes made of stone, marble, or brass, but more generally of wood, and it was the custom of the Roman Catholic church to deck them with hangings, so as to accord with the high altar. The oldest specimen at present known is that at Crowle Church, Worcestershire, which is of the early part of the thirteenth century, and another beautiful specimen may be found at Wenlock, in Shropshire: these are of marble. Brass letterns are to be found in Canterbury cathedral, in many of the college chapels, and in a few parish churches, but they are more rare than those of wood. The common form of a brass lettern is that of an eagle with the wings spread, so as to bear the book. Of wood letterns, examples are to be found in Norwich and Wells cathedrals, and in many parish churches; but none of these are equal to that in Dettling Church: it is made with a desk for a book on four sides (the most common form is that with a desk on two sides only), and is more highly ornamented than any other specimen. The four sides are totally different as to design, but all of equal beauty. There has apparently been a finial at the top, which is now destroyed, and something seems wanting at the base, though altogether it is in very good preservation and free from paint, which may possibly be accounted for from the fact of it having been for a number of years kept in a small closet at the base of the tower, in close companionship with the coals. The stand is 5 feet 3 in. in height. This lettern is now in the north aisle, quite out of view, and I suppose out of favour too, as it is never used. From its beauty, it would be an ornament to any of our cathedrals, where it would be more suitably placed than in Dettling Church, which is without one interesting feature.

Wm. Caveler.

## CARVED IMPOST AT IPSWICH.

Of the many curious examples of decorated corner-posts existing in Ipswich, the most highly enriched is the one here engraved, which forms a portion of the Royal Oak Inn, in Northgate-street. The upper portion represents, on one side, a blacksmith at his forge; and, on the other, a female head,—perhaps one is Vulcan, the other Venus. Beneath the figures is an enriched scroll-ornament, with heads of griffins, &c., in the style of the renaissance. Of the other imposts in Ipswich, the most curious is one in the court-yard of an old mansion in St. Clement's-street, which has a figure of Mars, and another, supposed to represent Queen Elizabeth, but which may be simply a figure of Justice. Another, at the corner of the Half-moon public-house, in Lower Brook-street, represents a fox preaching to some geese, one of which he is eventually carrying off as his prey. All these carvings are of the same period, the sixteenth century; but our readers will remember an example executed probably a century earlier, which we engraved in The Builder, p. 547, vol. iv., and which formed the corner-post of the ancient hostel, known as the New Inn, at Gloucester.

CARVED IMPOST, AT IPSWICH.



## DOOR KNOCKERS.

SIR,—Amidst the motley assemblage of heads, or rather faces, of both sexes, animal and human, having iron rings, held by unnatural mouths, drilled through their jaws, of mean, puny, and unsightly cast-iron abominations, and of "genteel" brassy tokens of bad taste, it really gives one great pleasure to lay hands upon a good, substantial, and honest-looking door-knocker, one that unshrinkingly proclaims the services it renders to the community; and that pleasure is enhanced when it displays upon its bold face (as this does) the presence of art.

The inclosed is a wrought-iron specimen on the door of a private house in Whitehall Gardens, and, to all appearances, was placed there when those buildings were first erected. It is about 10 inches high. The bodies of the animals are wrought all round, and project 2 inches from the door. The joint, or hinge, is formed on a piece of iron, fixed behind the point where the tails are coupled together. The knock is made with the shell, in which the lower part of the legs are represented as being immersed in waves of water.

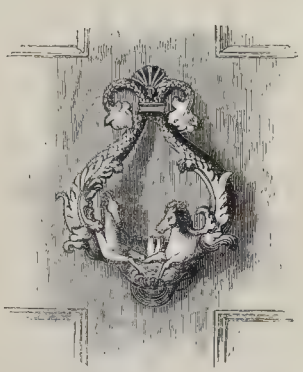
In Gray's time it was seemingly the practice to have them very massively executed; for, in "The Toilet," he says:—

> "The thund'ring knocker wakes the street no more,
> No chairs, no coaches, crowd her silent door."

Though we are, fortunately, seldom troubled with this nuisance, and never with the blast of a horn announcing the arrival of a visitor, we can still improve as much in decorating this useful appendage, as we are already in advance of the time when they had to "clipe at the door, or knocker, with a stone." (Chaucer.)

The only objection likely to be raised is the expense, it being usually left to the ironmongers, who use the old patterns; but surely this consideration cannot enter into the minds of such as would wish their houses to be, like the great monarch's palace, "all art."

I am, Sir, &c., B.



WROUGHT-IRON KNOCKER.

## RAILWAY JOTTINGS.

The resistance of the air to the rapidity of the flight of the locomotive and its train while in motion, is about to be 'compensated,' as it were, in rather a novel way, by an increase of energy and speed, to which that resistance itself is to be made subservient, according to its intensity, so that the greater the actual resistance, the greater the possible compensation, so far, at least, as an air-blast, by urging the engine fire, is capable of aiding in the generation and sustainment of power, and especially in the saving of so much of it as would be otherwise necessary in the sustainment of the ordinary air blast itself. The resistance of the air confronting the line of locomotion, yields, to all intents and purposes, an air blast capable of being thus harnessed by human ingenuity, and made to assist in counteracting its own inevitable tendencies, and that *especially* when the negative rush of air is seconded and reinforced by a positive current, also *in the teeth* of the locomotion. Indeed, such a triumph over Nature's laws, if practicable and complete, is only to be won by one of the happiest hits, if not the highest efforts, of human ingenuity; such as that by means of which, *e. g.*, the contraction and expansion of the brass and steel of clock and watch-work by cold and heat were 'compensated' through the appliance of these very tendencies themselves to the 'compensating' pendulum and balance. The end in view in the present instance is attained by the guidance of the rush or blast of air along a series of deflecting plates on the sides of the ash-box, which is divided into three longitudinal chambers,—so that, when the engine is in motion and exposed to the resistance or negative rush of the air, it impinges on these plates, and passes towards the fire-bars and the furnace, where it does the requisite duty; the resultant air and vapour passing afterwards along a second series of plates, inserted into the smoke-box, and leading into a chamber, terminating in an annular opening which surrounds the exhaust-pipe, and through which, and up the chimney, it is propelled with conditional force, according to the velocity of the engine and the resistance of the 'blast.' If necessary, the new blast may be shut off, or the ordinary blast reverted to. The patentee who has thus ingeniously made way with the wind in his face is a Mr. Kite.——The settlement of a much agitated question is likely to be promoted by a recent decision of the Chief Baron in the Court of Exchequer, in the case of a holder of 1,000 shares in the "Hull and Lincoln Direct" line against the directors for repayment in full of his deposits. Verdict for the defendants, who had offered the plaintiff his share *pro rata* of the surplus.——On the Maldon, Witham, and Braintree line upwards of 1,000 labourers are busily employed by Mr. Jackson, the contractor for the Royal Exchange, and several Government works. The navvies are said to be as steady and well conducted as those for whose orderly conduct on the Cambridge line the same contractor was complimented by the Vice-chancellor.——The Minster and Deal line was opened on the 30th ult.——At a recent meeting of the Southampton Improvement Board, according to the *Hampshire Advertiser*, Mr. Hicks denied that any filling in of the old canal, below the new tunnel on the Dorchester line, with concrete, had taken place, as had been stated by the sub-contractor.——On Wednesday week a clay cutting of the Bishopstoke and Salisbury branch suddenly gave way, and buried several labourers, seriously injuring two of them.——The *Hampshire Independent* says, in allusion to the sinking of the viaduct on the Avon, that "the bridge had never been considered safe, and the centres have never been removed. A gradual sinking has been going on for some time, and last week it was found necessary to prop up the arches by a great number of strong supporters, and to carry over the rails on timbers of great strength and thickness. The arches are now being repaired, and it is hoped the traffic can be still carried on uninterruptedly."——The entire construction of the Trent Valley line of fifty miles, lately opened, has cost 1,050,000*l.*, or about 21,000 per mile. The first sod was turned in November, 1845.——The foundation-stone of the Gonerby tunnel, on the Ambergate, Nottingham, and Boston line, was laid on the 21st ult. It will be 650 yards long, 30 feet high, and 24 feet wide, and will require 5,000,000 of bricks to case it.——The foundation-stone of the Helmshore viaduct, on the East Lancashire line, was laid on Thursday week. It is to be 400 yards long, double, and divided by retaining walls in the middle. There are to be fifteen arches, the principal of which is about 50 feet in height. They are to be erected on a curve of about ¾ mile radius. The works on this and other parts of the line are already in a forward state.——The keying-in of the largest arch of the extension viaduct at Huddersfield, on the Manchester and Huddersfield line, also took place on Thursday week. There are forty-seven arches on this viaduct. At the crowning arch, the square width of the roadway is 35 feet; oblique width, 56 feet 9 inches; rise, 9 feet 6 inches; width between parapets, 25 feet. This arch spans the Bradford road at an angle of thirty-eight degrees.——Penny-a-mile Government trains have been established between Gateshead and the metropolis; fare 20s., children half fare; under three years free.——"Great works," says the *Berwick Warder*, "are in progress at Newcastle for the purpose of connecting the Newcastle and Berwick line with that which is to pass over the Tyne by the high level bridge; the foundations of which are now being proceeded with. This will be effected by a series of arches over part of the town, to make room for which several houses in the Castle-garth, Dean-street, Pilgrim-street, and the Manors have been removed, among which are the old Surgeons' Hall and one of the almshouses.——The bridge over the Tyne will form a new feature in that branch of architecture, uniting a railway on the summit of its arches, with a carriage-road suspended beneath them by iron rods."——The high level bridge over the Tweed, for the purpose of connecting the North British with the Newcastle and Berwick line will consist, according to the plan, of twenty-eight stone arches of 60 feet span, fourteen of which, the river arches, will have an elevation of 120 feet above low-water mark; the other fourteen sloping off the hill on the south side, towards the river. The contractors are busily employed with the land arch pier foundations and the river piles. The whole fabric is to be finished in three years, a temporary timber framework bridge, as already noticed, being designed to form a substitute till then. The stations on the Newcastle and Berwick are from designs by Mr. Benjamin Green, of Newcastle. They are all in the Elizabethan style. The architect has adopted a uniform system of combining two dwelling-houses together, by which he has obtained an increased elevation, and of course a more imposing appearance. At all the level crossings, too, the gatekeepers' and labourers' cottages are combined in one building, which, says the *Warder*, not only gives a very picturesque and pretty appearance, but also economises expense by reducing the number of cottages otherwise required. There is a bow window in every booking-office, so that the clerks can see both up and down the line while sitting at their desks. Each station has an arcade affording shelter from sun and rain, and the platforms are of the uniform length of 200 feet on both sides of the line. These are faced with ashler work, and laid with strong Lazenby flags. At Tweedmouth, where an important terminal station and depot are to be erected, the company are also about to build a row of fifteen cottages for their workmen, each containing two fire-rooms and pantry on the ground floor, and three sleeping rooms above, with yard, coal-house, piggery, and other conveniences, behind these; and, adds our authority, might afford some useful hints to the Cottage Improvement Society. The contractors are, from the North Shields line to Morpeth, Messrs. Rush and Lawton; from Morpeth to Lesbury, Messrs. Hattersley and Nowell; from Lesbury to Belford, Messrs. Mackay and Blackstock; and from Belford to Tweedmouth, Messrs. Grahamsley and Reed. Messrs. Mackay and Blackstock are likewise the contractors for the bridge over the Tweed. The working of the line is under the superintendence of Mr. Jas. Allport, and Mr. Hudson is the chairman. The telegraph is already in operation along the line from Newcastle to Morpeth, and the posts are placed all the way to Tweedmouth for its continuation northwards.——The operations at the station of the Caledonian line, in Lothian-road, Edinburgh, are being carried on with the utmost vigour and rapidity by large bodies of workmen. The station will comprehend an area of about twelve acres, and, inclusive of the price of ground and cost of station-house, will exhaust the large sum of nearly 100,000*l.* [according to the *Register*. *The Witness* states the cost of the 'terminus' itself at 30,000*l.*] The building is from the design of Mr. Tite, and the contract for its erection has been taken by Mr. Lind, the builder of the Assembly Hall and the Scott Monument. Considerable progress has been made in and near the deep cuttings by Grove-street, as the line enters the city. The whole of the Edinburgh branch, 27½ miles in length, is to be opened about 1st October next. From Beatock to 3 miles north of Lanark, a length of 39½ miles, the line is expected to be opened by 1st of March, 1848. Between Beatock and Carlisle, the first 40 miles will be ready by 1st August next. The working stock is being built chiefly at Greenock under Mr. R. Sinclair, locomotive superintendent of the Glasgow and Greenock line. At Perth, Stirling, and other places, also numerous carriages and waggons are in progress—all on the most recent and approved principles.——The *Boston Traveller* says, that two thousand able-bodied men can obtain employment as common labourers along the line of the Erie Railway between Otisville and Binghampton; wages offered 4s. a day.——The telegraph wire at the Western Railway depôt, in Charlton, says a Boston paper, was lately blown across the track by a high wind, and caught hold of a train, sweeping off three of the brakesmen, one of whom was killed. The posts of our own telegraphs should be occassionally looked to.—By the way, the result of the late cup-day at Newcastle, could not be forwarded from Derby to town, on account of the effect of the lightning on the needles. We lately noticed some new invention which promised to prevent such a casualty in future.

## ARCHÆOLOGY IN SUSSEX.

The Sussex Archæological Association held their annual meeting, at Chichester, on Thursday in last week, when the Lord Bishop presided, and a large number of members attended.

Mr. Freeman read a paper on Chichester Cathedral, but the reporters were so badly placed that they were unable to take any notes. The *Brighton Herald*, indeed, says, that with the exception of the vice-president and Mr. Britton, the speakers read and spoke in so low a tone of voice, and with such tremulous nervousness, arising from their being unused to address a numerous audience, that it was with extreme difficulty the distinct meaning of a sentence could be gathered.

Mr. Britton, before he read a paper on market crosses, particularly in reference to the antique Chichester cross, contrasted the present age, when so much intelligence was abroad, and inquiries were prosecuted on every side and on every subject, with the state of architectural literature and science when he commenced the world. He began his architectural studies literally alone: not a drawing, not a design, not a sketch fit to be seen was to be obtained. Mr. B. produced an early sketch of the great, but eccentric, Mr. Turner, who, at that time, would have made a sketch for a guinea that he would now expect to receive thirty guineas for. He also produced some original drawings of the well-known Captain Grose, the antiquary, and compared them with the beautiful and finished drawings of the present day, and now lying before the meeting, which shewed how much a knowledge of the science had extended, and how a taste for it was being diffused throughout society. After a few more prefatory observations, Mr. Britton proceeded to read a paper on market-crosses, which, he said, were intended originally to give shelter to persons attending markets. Religious men, immured in their cells, stood in need of the products of husbandry, and were dependent on them for food. To obtain a supply, inducements were held out to the country people to bring them into towns; and to promote this object they were exempted from tolls. Mr. Britton then gave a brief history of the various existing crosses in the country. Fortunately the history of Chichester-cross had been preserved by the

great destroyer—man. Its history was complete. It appeared that originally 10*l.* were given for the ground on which to erect a cross for "poor people," who were to be exempt from tolls on the produce they brought into the city. This was a specimen of the early introduction of free-trade principles. Mr. B. then produced a drawing of the cross, and observed, that the clock and an inscription on it did no honour to it, and if they were removed, and the cross restored, it would be one of the most beautiful in the kingdom. Mr. B. then entered more fully into the history of crosses. Most of them had been erected between 1480 and 1520. The first had been built by Queen Ellinor, and the example had been imitated in many parts of the kingdom.

The Rev. Vernon Harcourt read a paper on ancient Celtic barrows, two of which are situated on a hill a few miles north-west of Chichester; and the Rev. Mr. Shiffner read an historical paper on St. Mary's Hospital, in Chichester, of which he is custos. The date when this ancient and curious edifice was built is unknown, but it is supposed to have been in 1229. It was erected for the reception of nuns. The inmates had two rooms each on each side of the refectory, the roof of which reached within six feet of the ground.

The meeting then adjourned to the cathedral, every part of which was visited by the members.

Mr. Britton's suggestion, that the cross should be restored, was taken up very warmly, and the excellent Mayor, Mr. Mason, at the dinner which followed, called on the town energetically to subscribe for that purpose. We hope, sincerely, that it may be effected.

As to the works now going on at the cathedral, we have received but an indifferent account. We shall seek an opportunity to visit the building.

## BRITISH ARCHÆOLOGICAL ASSOCIATION

The council of the British Archæological Association have entered upon the preliminary arrangements for the approaching congress to be held in Warwick, and the town has been visited for that purpose by the general secretaries. A local committee has been formed to make preparations for the visit, and the mayor and corporation have placed at the disposal of the meeting the Town Hall, &c.; the County Hall, Museum, and Theatre, will also be at its service, if required. It will be presided over by the president, Lord Albert Denison Conyngham, and be patronized by Lord Brooke, Lord Leigh, Sir Charles Douglas, M.P., W. Collins, Esq., M.P., and others. The opening meeting will take place on Monday, the 19th of July, not the 26th, as at first advertised.

How the Romans Set to Work to Build a City.—"Great circumspection was used in the choice of a site for a city, and one of the methods adopted, previous to the forming of an encampment even, was the institution of religious rites, when the livers of the victims sacrificed were carefully examined, and if they were found diseased, others were subjected to the same test, in order to prove whether the unhealthy appearance resulted from accident. If the greater number of experiments proved healthy, it was considered that the water and soil were salubrious. When the external walls were built, the next object was the best means of disposing of the area between them; the streets were set out to exclude winds injurious to comfort, and all the sewers and drains were well considered. Their public buildings were established in convenient quarters, and their foundations made adequate to bear the weight placed upon them. Laws were established which prevented individuals from doing any thing which would interfere with the public health or enjoyment. These were the first and chief considerations. Every man in Rome had a cistern, and a constant supply of water for domestic purposes, as well as drains into the common sewer, which was discharged into the Tiber; and the whole was under the control and management of proper officers." With the exception of the discharge of the refuse into the Tiber, this was a system well worthy of imitation.—*Cresy before the Health of Towns' Commission.*

## THE ARCHITECT'S CHARACTER.*

It is for the architect or engineer further to remember, that in the pursuit of his profession he must not be content with merely qualifying himself for the exercise of it, as the mechanic or the tradesman may regard his avocation. He should prepare himself for the society and connections, to which his engagements will necessarily introduce him. It must be his endeavour to fit himself by appropriate accomplishments for intercourse with those who will employ him. He will be called upon to be associated with gentlemen of rank, fortune, and influence, with the nobles of the land, and occasionally perhaps will be admitted into the presence of the sovereign. He will have to reside as architect for days, nay perhaps weeks together, at the country seats, which he may be called upon to alter or rebuild, in society of the most brilliant class. Is it not then proper, that he should maintain his intellectual position, as a man of general knowledge in literature and science, as well as that in architecture? The higher classes have most of them a highly-wrought education, and their very intercourse with the world developes their faculties in a very superior manner, even when early instruction may have been neglected. It is important, therefore, that the professional man should not limit his attention to the department of knowledge which he may profess. He must refine his literary taste; enlarge his acquaintance with history; and make himself master of the topics of the day. This must proceed with the early studies of his art, and he must occupy the many leisure spare hours he has, by reading in that class, which will relieve the tedium of close application to the dry details of professional practice. His ambition must be to be the agreeable, intelligent companion, nay the valued friend, of those whose interests he may be called upon to protect, and whose property he may be required to improve by the results of his skill and taste. He must strive to be considered as something more than the mere necessity of the moment, disregarded and thrown off, when the time for his employment shall have passed.

* From an interesting lecture "On the education and character of the Architect," by Professor Donaldson, appended to "Architectural Maxims and Theorems." (Weale; Taylor and Walton, Gower street.)

## INSTITUTION OF CIVIL ENGINEERS.

STREET SWEEPING—SEA WALLS.

June 29th.—The president in the chair. This was the last meeting of the session, and several papers were read in abstract because there was not time for giving them in extenso.

The first was "On the advantages and economy of maintaining a high degree of cleanliness in roads and streets; with an account of the construction and operation of the street-sweeping machine, by Mr. J. Whitworth.

It treated of the general advantages of street cleanliness, the comfort of the pedestrian, the avoidance of impurity to the air from the decomposition of dirt on the pavement; less dirt and dust being carried into the houses, a saving in the cost of maintenance of roadways, and a diminution of the draught of carriages. The annoyances of the common method of cleansing were then detailed—with the importance of employing plenty of water in the cleansing of streets, to liquify the mud, to cause the dirt to swell and rise from between the stones, to cool and purify the air during hot weather, and to prevent the dust from being driven into the dwellings. It then shewed how much economy there resulted from having force enough to cleanse the streets thoroughly and simultaneously in wet weather, particularly by Whitworth's sweeping-machine, which is a cart drawn by one horse and managed by one man; it has on one of the wheels a toothed wheel working into a pinion, which gives motion to a drum over and around which passes two endless chains passing also around another drum at the lower extremity of a light frame suspended at the tail of the machine, over an inclined plane depending from the drum frame; these endless chains carry a series of broad brushes formed of an Indian rush of peculiarly elastic and durable nature; they travel at a velocity depending upon the speed of the horse, and impinging upon the ground with a force which is regulated by a coiled spiral spring, carry the dirt up the inclined plane into the cart, whence it is emptied when the receptacle is full.

The next paper read, was "An account of the sea defences of Romney Marsh, commonly known by the name of Dymchurch Wall, and the probable origin of the Marsh itself, or the manner in which it was reclaimed from the sea," by Mr. James Elliot, Jun., the resident engineer.

Romney Marsh, properly so called, forms a triangle, the base of which would be a line drawn from Romney to Appledore, and the apex at Hythe, and comprises about 24,000 acres. It is probable, that this marsh was caused in the first instance by the formation of a natural barrier of shingle, nearly where Dymchurch Wall now stands, by which the sea was excluded, and that the first artificial works were executed by the Romans, when they held possession of the country. They consisted of the erection of cross walls running from the natural barrier (the "Full") to the hills, at the base of which the ancient river Limene ran. The chief of these (the Rhee Wall), ran nearly in a straight line from Romney to Appledore, and it was at that spot where probably the main work was performed.

Upon the supply of shingle from the west being cut off by the extraordinary accumulation at Dungeness Point, the natural barrier at Dymchurch gradually became weakened, and it was necessary to take some steps to prevent its total destruction; the first measure adopted was the erection of an inland wall at some little distance, at the back of the "Full," and afterwards, the construction of large stone groins on this point or sea-side, at right angles to the line of coast, in order to increase the deposit of shingle. However, as the supply of shingle gradually decreased, on account of the constant movement to the eastward, and as all that escaped in that direction was permanently lost, these means were found insufficient, and a system of "arming," with brushwood and timber-piling was adopted. This was found to answer the purpose for a considerable period, but it also, in the course of time, gradually became insufficient; and it was found necessary, at length, after numerous experiments, to adopt a stone facing with an average slope of about eight to one, up to high-water mark, gradually increasing in steepness from that point, and terminating in a curve of seven feet radius. The stones, which were laid in a bed of concrete, where they were most affected by the waves, were of different sizes, averaging from eighteen to six inches in depth, the largest of them being in the middle, where the greatest wear and tear took place, and at which place rows of sheet piling were also driven for additional security.

This plan was adopted by the author after mature deliberation on the reports of Mr. Rennie and Mr. Walker, and a very careful examination of the locality. Part of the wall has now been standing for ten years, and has required a very trifling amount of repair, while the annual expense has been reduced from 10,000*l.* to 4,000*l.*, with every prospect of a still further reduction being effected, as upwards of two-thirds of the work are now permanently completed.

The last paper was, "On Ocean Steam Navigation," by Captain Henderson, calling attention to the fact, that in this great maritime nation, naval architecture was neglected as a science, as was proved by the experimental squadrons and some of the ordinary steam-vessels lately built. Neither the public nor science had derived any advantage from these costly experiments, owing to the absence of any information, in a systematic form, that correctly described the relative size, capacity, resistance, power, or speed of steam-ships; the present tonnage and nominal horse-power, for all purposes of analogy, being quite fallacious.

The meeting was then adjourned until the second Tuesday in January, 1848.

Almshouses for Printers.—The subscribers to the Printers' Almshouse Fund have determined on purchasing a plot of ground at Wood Green, Hornsey, adjoining that of the fishmongers and poulterers, for 450*l.*, and to erect thereon six almshouses, containing two rooms each, to accommodate twelve persons and their wives, with library, &c. It has been suggested to the Caxton Fund Committee to erect their monument in the quadrangle of the above institution.

## WESTMINSTER COURT OF SEWERS.

A GENERAL Court of Sewers was held on Friday the 2nd, Capt. Bague in the chair.

*Increased Powers of the Commission.*—The solicitor to the commission attended the court this day, and reported that last night the bill for enlarging the powers of this commission had finally passed both branches of the legislature, by which this court is invested with most extensive powers in furtherance of sanitary purposes. The Act, amongst many important provisions, provides that no houses shall hereafter be built unless a sewer or drain be first constructed to the satisfaction of the commissioners, and any person building a house in contravention of this regulation may be punished by fine or amerciament; that all houses within 100 feet of a sewer shall drain into such sewer at the expense of the owners or occupier; and if the owners or occupier do not carry on and complete the same with all reasonable dispatch, the commissioners may construct the same and recover the expense by distress and sale of the goods and chattels either of the owner of such house, or the *present* or *future occupier*, but the occupier to be at liberty to deduct this amount from his rent. The owners of tenements abutting on any street to be liable to the expense of any sewer running through the same. The commissioners have power to make sewers where none previously existed, and to stop up or divert old lines of sewers; and if they observe any stagnant cesspool, or any ditch, &c., likely to be prejudicial to health, it shall be lawful for the commissioners to require the owner of the property to put an end to and abate the same, and in case it is not removed in a reasonable time, to impose such fine or amerciament as may be equal to the expense of removal, and levy the amount upon the party in the ordinary mode of distress. The Commissioners of Sewers for the time being are authorised to raise loans to be secured on the rates, and powers are also taken to enforce the repairing and cleansing of sewers, drains, &c., and that where it may be difficult to ascertain the owners of property, it shall be sufficient to describe the property either by name or number, or any other convenient mode; and the property of the owner or occupier may be seized and taken to any place and sold, or the said party otherwise proceeded against.

After some discussion, it was unanimously resolved that the thanks of this court be presented to the members of Parliament, the solicitors, and officers, who had conducted this bill through its various stages.

The Act will come into operation forthwith. It contains all the essential portions of Lord Normanby's bill, with such other additions as have been suggested.

The solicitor next brought before the court the consideration of the Thames Conservancy Bill, now in progress through Parliament.

After discussion, the following resolution was agreed to:—"This court having considered the solicitor's report as to the Thames Conservancy Bill, resolved, that this court is satisfied that it is of the utmost importance for the public health and security to the sewage that the saving clause be retained, and that the solicitors do take every possible step to support it, or prevent the insertion of any clauses which may impair the efficiency of the saving clause."

The report of the committee on view of the Counters Creek sewer was read, which pointed out several cases of illegal drainage, and also the absence of any drainage whatever in some parts of the district of Kensal New-town. The committee said, that the state of it was of the worst description, and that their attention had been particularly drawn to it by the parochial authorities of Chelsea.

A report having been made on the want of drainage in Long Acre, which populous thoroughfare, it appears, is without any sewer whatever, it was stated by the clerk (Mr. Hertslet), that the property belonged to the Mercers' Company, who had been applied to repeatedly in every possible shape and way, but every effort appeared to be in vain, as the company could not be induced to move at all in the matter. It was suggested, that a jury should be called out to compel the performance of the work required. A commissioner said that his brother, who lately occupied a house in that street, had been compelled to quit it in consequence of the intolerable nuisance arising from the want of the accommodation above described.

## LOGARITHMOTECHNY.

Sir,—Mathematicians and the curious will, I have no doubt, be obliged to you for publishing the following result:—

Log. $\pi$ = ·497149879394133854351963828890698873651678334388.

For the information of the general reader, it may be necessary to add that $\pi$ is the circumference of a circle when its diameter is represented by unity, or—

$\pi$ = 3·14159265358979323846264338327950288419716939937511.

The logarithm of a number consisting of so many places of figures, has not been before calculated to any thing near this extent; for, by any of the known methods, such a calculation is almost impossible. Perhaps you will allow me further to add, that I have discovered a method by which the logarithm of any number, to almost any extent, may be calculated independently of other logarithms in a few minutes.—I am, Sir, &c.,

OLIVER BYRNE, Mathematician.

## Correspondence.

### OUR REPRESENTATIVES IN PARLIAMENT.

SIR,—Although, perhaps, it may occur to some that this subject does not come within the scope of your excellent publication, yet I think I shall be able to shew that it does very materially affect the interests of the classes to whose cause you are devoted. When I speak of "our" representatives, of course I refer to architects, engineers, artists, and builders, and my object in writing to you is to shew, that these classes are not properly represented in parliament, and to urge upon some public-spirited individuals of each class to come forward as candidates at the ensuing election.

All shades of political and religious opinion are represented in Parliament; the railway world, the legal world, indeed almost every profession has its advocate in Parliament; then why, I ask, should not *we* send our representatives to Parliament? Upon Parliament devolves the duty of framing laws and imposing duties and customs which vitally affect our interests, and who so capable of knowing the effect of the laws, duties, and customs as those whose every day avocation brings their working under their notice. I might bring forward many illustrations of this; thus, the Buildings Act, the Brick Excise, the Window Duty, and many matters connected with railroads, all come within the sphere of one or other branch of the building profession.

Then, again, the Parliament, in their national capacity, are erecting a palace for themselves; they have schools of design under their control, &c. &c., and surely those who have given their whole and undivided attention to these points, are most fitted to undertake their management. I have very great hopes that the present state of things will be remedied next session, for I have heard the names of two eminent builders, and one engineer, as likely to be "put up," and I should be very glad to hear the same of some eminent architects, and even artists, who might wish to retire, either wholly or in part, from the toils of their profession, and to devote a portion of their time to the public weal.—I am, Sir, &c.,

A. G.

### BUILDERS' TENDERS AND COMMITTEES—BATTERSEA PARK.

SIR,—Having observed many articles in your valuable paper on the subject of builders' competitions, I am induced to address you on the subject, in the hope that through the medium of your journal, some unfair dealing will be exposed with respect to some estimates which were delivered at the office of the Battersea Park Building Society, 9, Bridge-street, Blackfriars, in pursuance of an advertisement which appeared in THE BUILDER of the 1st May, 1847.

The advertisement invited builders to tender for building twelve houses at Battersea on the 11th May, and several tenders were delivered in consequence.

Although I, as well as two other builders, have repeatedly called at the office, we can gain no information as to whose tender was accepted, the amount of the tenders, or the names of the parties tendering.

At Battersea, I have heard that the works are to be carried into execution by Messrs. Thompson and Morgan, but can hardly believe that can be the case, as those gentlemen were named as the surveyors. I send you the amount of my tender, and also that of another builder, who joins with me in wishing you would invite all builders to send to you the copies of their estimates for this job, with a view to their publication, so that although the directors sit with closed doors, the builders may know if fair play has been meted out, or that many builders have been put to the expense of preparing an estimate merely *for the guidance of the directors* in making a bargain with their surveyors, and not with any intention of accepting any one of the tenders sent in, in compliance with the advertisement. I inclose my name, and am,—Yours, &c.

A BUILDER.

### CLAY-BUILT COTTAGES.

Sir,—Your correspondent, "A Young Architect," does not say in what part of England he has seen cottages built of clay. In India, I know such primitive buildings exist, but the natives take care to protect them from denuding influences, by filling and surrounding them, before inhabited, with wood faggots;—fire is then applied, and the whole structure is thus thoroughly burnt *en masse*. In our climate, such a proceeding is much more necessary, and the neglect of it has led to the evil your correspondent complains of.—I am, Sir, &c.,

CHARLES JOHNSTON.
(Author of Travels in Southern Abyssinia.)
Lincoln's-Inn-Fields, July 3.

### PLASTERING ON CLAY WALLS.

SIR,—In building clay houses, if a key be formed for the plaster in the same manner as that on plastering a ceiling or a partition, it would have the desired effect.

### IVY ON CHURCHES.

To show the baneful effects of destroying ivy on walls, some years since the then proprietor of Netley Abbey, in Hampshire, had a quantity destroyed. The consequence was, as the ivy decayed the stone-work mouldered and decayed, and a great portion fell down, which otherwise would have lasted for many years.

### THE NEW ENTRANCE TO THE GARDENS AT KEW.

If Mr. Burton would apply the same process of wax, as used by Mr. Herring, to the piers at the entrance to the gardens, it might possibly be the means of preserving their carving, which is already in some degree affected.

OPENING OF THE KEW ROYAL GARDENS.—On Saturday, the pleasure grounds in connection with the royal gardens at Kew, were, according to annual custom, thrown open to the public, and will remain so until the end of September, when they will be again closed until the Midsummer of 1848.

IPSWICH.—Sir,—The Mechanics' Institute "job" has failed—the supporters of the movement not being able to persuade the majority of the members into a belief of the superiority of the proposed site, or the chosen design, over the existing accommodation. One person, at least, is satisfied, or ought to be, viz.—the successful competitor, who fixed the premium at five guineas, and——obtained it.—Apropos of this degrading affair, the following is a contribution to the curious notices sometimes observable in shop windows, or other advertising localities. It is copied literally from a shop-shutter, in the parish of St. Clement's, in this town, and runs thus:—"Superior Black-lead pencils for Architects and Carpenters." It seems to carry its own comment, does it not?

For the better prevention of such accidents as that of the Dee Bridge, would it not be well to add to D'Israeli's suggestion of hanging an architect, and Sidney Smith's, of burning a bishop,—the smashing of an engineer?

Yours, Δ

## Miscellanea.

Restorations in Takely Church.—There has been from time immemorial in the parish church of Takely a beautiful font cover, carved in oak, of pyramidal form and elegant proportions, but which, from the lapse of time and neglect, had become much mutilated, and for a long period had been defaced by a thick coating of red paint. This interesting relic is a specimen of the florid gothic style, ornamented with three tiers of niches, rising above each other, and terminating with a beautiful finial. Each niche is surmounted by a canopy of elaborate open tracery work, and adorned with a profusion of pinnacles, crockets, and finials. Flying buttresses, of light and airy character, separate the niches from each other. By the care of the late respected vicar, the Rev. Charles Clarke, it has been restored, and is now worthy the inspection of every lover of ecclesiastical architecture. By an ingenious contrivance, the cover is raised or depressed at will. The counterpoise of a very large weight, concealed above the ceiling, is hung by spectacle pullies, from which two chains, running through the weight, are affixed to the finial of the cover; this is locked to the font, but as soon as detached by the turn of a key, it rises immediately to a certain height, and is as easily brought down when required. There being also in the church a large quantity of antique carved oak panelling, having tracery of the same character as the font cover, and which had long been cast aside as useless lumber, the Rev. Charles Clarke and the churchwardens wisely determined on having the old, rough, and deforming paint removed, and the broken work restored. With these, the pulpit has been embellished, and a reading-desk formed; and by the removal of some most unsightly pews, room was made for a series of open benches, having decorated ends, richly moulded; these also have been constructed out of the old panelling before referred to. The pulpit was originally octagonal, but there being only five panels left, it was carried back to an ornamented recess in the north wall, the beauty of which has only lately re-appeared by the removal of a thick coat of whitewash. This recess is in the Tudor, or late perpendicular style, square-headed, and ornamented with an ogee arch, richly carved and adorned with tracery, crockets, and finials, the whole being surmounted by a battlement, with a hollow moulding beneath, in which are placed the Tudor rose and square flower, characteristic of this style. The whole of these alterations were designed and carried out by Mr. Wm. Ollett, jun., wood and stone carver, of Norwich. Mr. Ollett's father is well known in the city of Norwich as a carver in wood, and particularly in ecclesiastical architecture. He was a candidate for a portion of the carved work in the new House of Lords.—*Chelmsford Chronicle.*

Towns Improvement Clauses Act.—The *Times* gives the following abstract of this Act, which received the royal assent on the 21st ult.:—"Wherever the Act is adopted, surveys and authentic maps of the districts within the limits of its operation are to be made, proper sewers and house drains are to be constructed, roads and footways are to be well paved, streets are to be laid out and improved with a view to general convenience, precautions are to be taken with reference to dangerous buildings and the execution of work, streets are to be duly cleansed, nuisances are to be abated; the consumption of smoke, precautions against fire, and the ventilation of public buildings are to be attended to; common lodging houses are to be placed under supervision, supplies of gas and water are to be afforded, slaughter-houses are to be regulated, and places for public recreation, public baths and washhouses, and public clocks are to be provided. For all these purposes of unquestionable general advantage general rates are to be raised.

The Carpenters' Tribute.—A beautiful piece of wood-work, representing a monumental tribune, was lately carried by eight men in a procession of 500, to the residence of M. Berryer, Rue Neuve des Petits Champ, Paris, and there presented to him as the only tribute of gratitude or recompense he would receive, for having ably defended the body of carpenters, accused some time since of a coalition.

Cromlechs.—At a recent meeting of the Society of Antiquaries, Mr. Britton addressed a letter to the president "On Cromlechs and Kistvaens," accompanied by the exhibition of numerous drawings of each class of such Celtic monuments. The object of this paper was to show that both the cromlech and the kistvaen were sepulchral in their origin, with this difference between them; the former consists of the largest blocks, which are put further apart from each other, without any attempt to fill the interstices; are placed on high ground in open view, instead of being immersed in a barrow, and the lid or roof is one large and prominent block, instead of being made of several pieces. The kistvaen, or *stone chest*, is an inclosure of stones smaller than those of the cromlech, placed in an upright position, almost or quite touching each other, inclosing a bottom of rock or stones; it is completed by a covering of several flat stones, and closely surrounded by a mound of earth. They are found not only throughout our own empire, but also in France, Spain, Scandinavia, Russia, and even in North and South America. They have therefore excited great discussion; and while Norden, Camden, Aubrey, Stukeley, Borlase, and Pennant advocate their funereal appropriation, Toland, Rowland, Pegge, and King maintain that they were altars for the sacrifice of human victims, as alluded to by Cæsar, Tacitus, Strabo, and others. Whitaker thought that to consider a cromlech an altar for the oblation of sacrifices, was burying good sense in a quagmire of learning. Mr. Britton quotes a long list of writers on this question, and decisively concludes that the true purpose of these monuments is sepulchral; and from the whole argument it can be reasonably inferred, that the British cromlech and kistvaen might be considered as rude representatives of the classic mausoleum and sarcophagus.

Copper, Tin, &c.—From a return just issued by order of Parliament it appears that the quantity of copper ore imported into the United Kingdom in the year ending 5th of January, 1847, was 51,623 tons; and of copper manufactures (entered by weight) 49 tons, old, and (entered by value) 4,670*l.* The net amount received in the various kinds of copper imported was about 55,000*l.* The total exports of British copper during the same year was 15,717 tons, and of foreign copper about 550 tons, besides 536*l.* worth of copper manufactures entered by value. The total quantity of British copper exported from the port of London was upwards of 6,197 tons; and from Liverpool, 4,360 tons. Of tin there were imported into the United Kingdom during 1846, 1,015 tons, and 3 tons 17 cwt. of tin ore and regulus. There were exported from the United Kingdom during the same period, 1,195 tons of British tin, and 1,051 of foreign. Of zinc, there were imported 7,245 tons, and of lapis calaminaris 150 tons into the United Kindom (duty free); and exported from the kingdom, 1,212 tons of British, and 4,783 of foreign zinc or spelter. Of lead, there were imported 7,862 tons of pig or sheet lead, 724 tons of lead ore, and 12 tons 13 cwt. of white lead. There were exported from the United Kingdom in the same year 53 tons 13 cwt. of lead ore, 6,421 tons of pig or rolled lead, 1,073 tons of shot, 349 tons of litharge, 812 tons of red lead, 1,436 of white lead (all British), and 4,700 tons of foreign pig or sheet lead, and 1 ton 17 cwt. of foreign lead ore.

Church Extension in St. Pancras.—The proposal of the vicar for the erection of ten churches has been generally adopted by a meeting of the clergy and gentry of the parish, who have liberally subscribed. The report of proceedings already taken, read to a recent meeting, concluded with a hope or expectation that, before the end of the year, much would be done. Since March last, the subscriptions, many of them annual, amounted to about 3,420*l.* Temporary churches have been built in four districts, and sites for several of those to be built have been granted, one, with a donation of 500*l.*, from the Duke of Bedford.

A Lofty Chimney in Whitechapel, attached to the extensive premises of Messrs. Bowman and Sons, 27, Great Alie-street, toppled over on Thursday last week, and fell upon the roofs of some adjoining houses, demolishing the garret roofs and floors, but injuring no one but a child. The chimney was always considered perfectly safe.

Projected Works.—Tenders have been called for by advertisement, for the works to be done in the erection of the congregational church at Kentish Town; the taking down and rebuilding of St. Pancras Chapel; the erection of a parsonage house near Luton; and two school-rooms for 400 children, with master's house, in Ipswich; the execution of builder's work to be done in the parish of St. Nicholas, Ipswich; the erection of three cottages, stall-feeding building, and cattle shed, near Houghton-le-Spring; the execution of the works on 2½ miles of the East and West India Docks and Birmingham Junction Railway; the erection of all the stations on the Manchester and Leeds Wakefield and Goole line, the building of the permanent station and station-master's house at Tweedmouth, on the Newcastle and Berwick line, including iron roofing, slating, painting, glazing, &c., and also for twelve cottages; the sinking of the shafts and the driving of the headings in five of the tunnels on the Monmouth and Hereford line; the sinking of twelve shafts for the tunnels on the Bristol and South Wales Junction line; also for furnishing and repairing York square or patent lamps, with fittings, and lighting &c., in Hampstead; supplying 100 iron lamp-posts, 100 lantern frames and ladder rests, and 100 gas lanterns in Bromley St. Leonard, Middlesex; also for a supply of 1,000 tons hard Guernsey granite for Brentford Union workhouse; and of paint, pig-lead, &c, for the East-India Company.

Battersea.—Sir: Your mention of "Old Chelsea" is just, kindly intended, and beneficial to every interest connected therewith. Now! do a kindly turn for "poor old Battersea;" be good enough to ask Viscount Morpeth why it is he confines his sympathies to the Chelsea side of the river? Why, after having given notices that the various properties would be required, he allows the matter so to falter that it brings ruin on all those weaker parties who are unable to exist for six months on their other means,—some in prison, some upheld only by the mercy of those to whom they are indebted; seek for information as to how it falls out, that while he is advocating every endeavour to advance the mental and bodily improvement of the people, he is leaving Battersea fields to be occupied every Sunday for horse-racing, drinking, &c. Ask him to satisfy all parties, that the report is untrue,—"That the expense is so much beyond the estimate, that it is necessary, by starving out, to reduce the property to the level of the means at the disposal of the commissioners."

I am, Sir, &c., Ecurd.

Glass in Greenhouses.—At the late meeting of the British Association, a paper was read by Mr. Robert Hunt, on the principles upon which the glass is selected for the great palm-house, at Kew. From experiments which he had made, under the direction of Sir W. J. Hooker, he had found that decomposition in plants always proceeded under the red ray, and therefore the principle of his plan for their protection was to select a colour in which the peculiar influence of such rays could be effectively secured. This was most satisfactorily effected by the use of green glass, to a recurrence to the use of which the old horticulturists in the neighbourhood of London had at once given their approbation. It was necessary, however, that no manganese should be used in its composition, as its introduction had a tendency to make a pink colour, which possessed one of those injurious attributes, which were to be avoided.

Iron.—A premium of 1,000*l.* has been offered by the Royal College of Chemistry, for the discovery of a method of rendering iron, when applied to ordinary purposes, as little liable to rust as copper.

Gratuitous Admission to Westminster Hall.—On Monday, the 19th inst., the public will be admitted, free of charge, to view the works of art now exhibiting at Westminster Hall.

Competition.—Plans and estimates are wanted for an additional pauper lunatic asylum for Middlesex, with a premium of 300*l.* for those most approved, and further premiums of 200*l.* and 100*l.* for those second and third in excellence. See advertisement.

A Surveyor is Wanted for the town of Brighton at a salary of 250*l.* per annum, and an office clerk or assistant's salary.

## CHARGE FOR ADVERTISEMENTS IN "THE BUILDER."

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For a series of advertisements above 5s. a reduction will be made.

## TO CORRESPONDENTS.

"*G. W.*"—It is beyond our province to supply plans.

"*Ino.*" (Manchester)—Shall hear from us.

"*L.*"—We will inquire into the circumstance.

"*F. A.*"—Having already spoken of the invention several times, we are not disposed to refer to it again until seen in operation.

"*S[illegible] L[illegible]*"—Next week.

"*Eton.*"—A correspondent informs us that some drawings in [illegible] are now visible on the walls of Eton College Chapel, in consequence of the removal of the wainscotting, which had hitherto [illegible] these portions of the walls.

[illegible] "A Railway Traveller," "Gwilym," "Young Surveyor," "W. R. S.," "J. P.," "M. S.," Garstang, "Londoner," "One of Your Numerous Readers," "H. T.," "A. T.," "J. T.," "W. W.," "J. B.," "J. K.," "Student," "C. C.," "A. U." Handel's "Dettingen Te Deum" arranged by Vincent Novello (Novello, 69, Dean-street, Soho). Handel's Oratorio, "Judas Maccabæus;" Haydn's Oratorio, "The Creation," Novello.

## ADVERTISEMENTS.

LAST WEEK BUT ONE.

**ROYAL ACADEMY of ARTS, Trafalgar-square.**—The Exhibition of the Royal Academy is now open. Admission from Eight o'clock till seven, One Shilling. Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Dep. Sec.

ROYAL POLYTECHNIC INSTITUTION.

**THE ELECTRIC TELEGRAPH COMPANY** has deposited for a limited period, a complete series of APPARATUS, illustrating the Principles of the ELECTRIC TELEGRAPH as now worked on the leading Lines of Railway. Also [illegible] specimens of their ELECTRIC CLOCKS, ALARUM, &c. [illegible] Works of interest explained. Dr. BACHHOFFNER'S LECTURES on NATURAL PHILOSOPHY. CHEMICAL LECTURES by H. M. NOAD, Esq., on the Evenings of Monday and Wednesday. The beautiful OPTICAL EFFECTS, include the last Dissolving Views, Diving Bell and Diver, with Experiments, &c. &c. Admission, 1s.; Schools, Half-price.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping knots in Wood, however bad, and preventing them [illegible] the paint above.

Many substances have been used and much time spent in endeavouring [illegible] but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, [illegible], and is very dry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-[illegible], and for Shipping. Its adhesion is so great [illegible] that the hardest friction will scarcely remove it. It [illegible] stuccoed buildings, and is not affected by spray of sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of covering is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

**STEPHENS'S PROCESS for DYEING or STAINING WOOD**, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation [illegible] when compared with the [illegible] which different woods present in their natural [illegible] colour to the wood without obscuring [illegible], is the object of this process, which surpasses paint [illegible] that the [illegible] which would take a month or six weeks [illegible] may be finished in one week by the [illegible] manner, and [illegible] pleasing when finished. The [illegible] are prepared and sold by HENRY STEPHENS, [illegible] in bottles of [illegible] and [illegible], Blackfriars-road, London. The [illegible] may be obtained in [illegible] per pound, which dissolves in water to form the [illegible] gallon of stain. N.B. The [illegible]

[illegible] office of "THE BUILDER," 2, York-street, Covent Garden, London.

DRUCE'S, No. 2 WHARF (late Paradise-wharf), Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the vicinity of Chelsea, Brompton, Fulham, Kensington, &c. &c., [illegible] of Wharfage, Cranage, or Delivery, by [illegible]. A weighbridge and drawdock. N.B. Depot [illegible]

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS**, South-[illegible] and the Grove, Southwark. At the above Works, [illegible] in having the superior make, and by the [illegible] of Galvanizing Iron as first introduced into this country [illegible] in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fences and Hurdles as usual. The Trade Supplied.

HANOVER-SQUARE ROOMS.

**INTAGLIO-RILEVATO.**—The general features of this superb and unique art have been adapted to [illegible] Decorative Furniture, and other objects of [illegible] and vertu, and it is in an especial manner recommended [illegible] of the regal, the illustrious, the [illegible] in the upper circles of society.

The Exhibition will remain open until Wednesday, the [illegible] five o'clock, at the Hanover-square Rooms, where [illegible] can only be had of R. TURLEY, Manufacturer and Proprietor.

**GREASE! GREASE! GREASE!**—JAMES THOMAS FITT begs to inform Railway Contractors [illegible] Patent Grease at the following prices:—White [illegible] per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

[illegible] addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

**RAILWAY and other Surveying, Levelling, &c., Practically Taught.**—The above with use of the Theodolite and other first-rate Instruments Practically Taught on a Survey for a Line of Railway for the next Session of Parliament. Pr[illegible] and Employment afterwards guaranteed. References [illegible] and others. Apply to G. M. TODD, Civil Engineer, 34, Shipperton Cottages, New North road, Islington.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

**THE Architectural Carving Company** beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond street Works, late Sir F. Chantrey's foundry, Eccleston-place, Pimlico.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only. 70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King street, Baker street, Portman-square.—Cash only.

**THOS. MILLINGTON, 87, Bishopsgate-street Without**, has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

**FOREIGN WINDOW GLASS**, superior to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 3d. per foot. Not less than a case can be had at these prices, and the order must be accompanied with a remittance. THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS**, equal to the Ancient.

| | s. | d. |
|---|---|---|
| Ruby in Sheets, a splendid colour, per foot | 2 | 3 |
| Green | 1 | 3 |
| Blue | 1 | 0 |
| Purple | 1 | 0 |

Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**PLATE GLASS.**—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the UNION PLATE GLASS COMPANY.

N.B. Rough Plate supplied one-fourth, three-eighth, one-half, and three-quarter-inch thick.—Warehouse, 13, Hatton-garden, Holborn. H. CHRISTIE, Agent.

EMBOSSED GLASS.

**EDWARDS and PELL, 15, Southampton-street, Strand**, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms. Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE.**—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 26 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE**, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen Tables**, at the following low prices, for ready money:—

| | | £. | s. | d. | |
|---|---|---|---|---|---|
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds | 4 | 4 | 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d per foot |
| | Fourths | 3 | 10 | 0 | |
| | C C | 2 | 8 | 0 | |
| | C C C | 2 | 0 | 0 | |

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Tarps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

WINDOW GLASS.

**JAMES PHILLIPS and Co., 116, Bishopsgate-street, Without**, beg to call the attention of the Trade to their reduced prices of Crown and Sheet Glass for cash only.

CROWN GLASS, in Crates.

| | | £. | s. | d. |
|---|---|---|---|---|
| Best | 12 Tables | 3 | [illegible] | [illegible] |
| Seconds | 15 „ | 3 | 7 | 0 |
| Thirds | 18 „ | 3 | 11 | 0 |
| Fourths | 18 „ | 3 | 1 | 0 |
| CC | 18 „ | 2 | 4 | 6 |
| CCC | 18 „ | 1 | 15 | 6 |

CROWN SQUARES, in 100 feet Boxes.

| | |
|---|---|
| 4 by 3 and 4½ by 3½ | 1½d. ℔ ft. |
| 5 „ 3 „ 5½ „ 3½ | 1½ „ |
| 6 „ 4 „ 6½ „ 4½ | 1½ „ |
| 7 „ 5 „ 7½ „ 5½ | 2 „ |
| 8 „ 6 „ 8½ „ 6½ | 2 „ |
| 9 „ 7 „ 10 „ 8 | 2¼ „ |
| Quarries 10 | 2½ „ |

Squares cut to order, 3d. per foot.

SHEET GLASS in Crates.

| | | | |
|---|---|---|---|
| Horticultural | 13 oz. | 2½d | ℔ ft. |
| „ | 16 | 3 | „ |
| Sheet Glass | 16 | 4½ | „ |
| „ „ | 21 | 4 | „ |
| „ „ | 26 | 7 | „ |
| „ „ | 32 | 8½ | „ |

BEST HORTICULTURAL SHEET GLASS, For Hothouses, Conservatories, &c., in sizes up to 40 in. long.

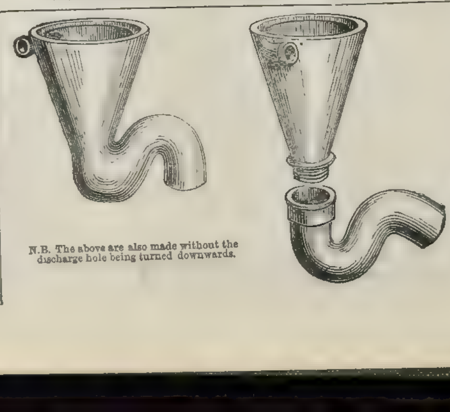
| | s. | d. | |
|---|---|---|---|
| 16 oz. per foot | 0 | 4 | ℔ ft |
| 21 „ | 0 | 6 | „ |
| 26 „ | 0 | 8 | „ |
| 32 „ | 0 | 10 | „ |

GLASS TILES AND SLATES.

| | 16 oz. | 21 oz. | 26 oz. | 32 oz. |
|---|---|---|---|---|
| Tiles made of Sheet Glass | 9d. | 11d. | 1s. 2d. | 1s. 6d. each. |
| Slates, 20 by 10 | 10d | 1s. | 1s. 4d. | 1s. 8d. „ |

Best Linseed Oil Putty, 8s. per cwt.

116, BISHOPSGATE-STREET, WITHOUT.



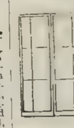
N.B. The above are also made without the discharge hole being turned downwards.

TO THE BUILDING WORLD.

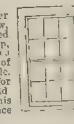
**H. BANKS, Manufacturer of Shop Fronts**, Sashes and Frames, and Joiner to the Trade, 78, Bethnal-green-road, London. Parties engaged in building will find the charges of this Establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.

N.B. Glazed goods securely packed for the country.

**CHAS. WM. WATERLOW,**

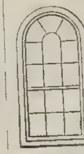


MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of [illegible] DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mould[ings] in any quantity. N.B. This Establishment is worth the notice of all engaged in building.

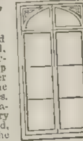


SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

**JOHNSON and PASK,** 1, Amwell-street, Clerkenwell, near the New River Head,



Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



**AIR PUMPS, Second-hand, for Sale**, about Thirty with Cocks, &c., of good workmanship (they have been used to work coin-presses after the system of Bolton and Watts for the Mints of Russia and Denmark), now lying in Holland.—Particulars and a drawing at EBEN HEATH, Jun., 33, Gracechurch-street.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

**PUMPS of Superior CONSTRUCTION**, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth, SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

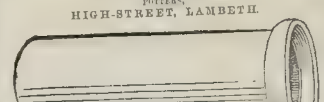
**PUMPS.**—The attention of Architects, Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brick-fields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 16-inch kept for hire. Estimates given to Drawings if required. M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

PERLET'S IMPROVED DOUBLE-ACTION PUMP.

**JOHN CLARK feels desirous of drawing** the attention of the Nobility, Gentry, Contractors, and the Public in general to PERLET'S IMPROVED PUMP, worked from a single cylinder, causing a constant stream of Water, and which, from its simplicity, can be converted into a Fire-engine in two minutes, or made useful for every domestic or other purpose. Can be strongly recommended for deep Wells, Mines, &c., in this respect not requiring an extra barrel, rods, rollers, &c., obviates a great amount of extra friction, and increased power is obtained by its use. It has this advantage superior to any Pump yet invented, that should any accident occur to the valves, either by being broken or become choked, they can be repaired in a few minutes, without disturbing the Pump. To be seen on the premises, 10, Temple-street, Whitefriars, London.

J. C. has also a large assortment of every description of Pumps, Road-side, Garden, Pedestal, Liquid Manure, on the most improved principles, and double-action, for excavation, either for Sale or Hire.

**TUBULAR DRAINS IN STONE WARE,** Manufactured by HENRY DOULTON AND Co. POTTERS, HIGH-STREET, LAMBETH.



The only Efficient Mode of Drainage is by Tubular Drains, from their form they give every facility for a perfectly free passage. The material of which they are composed is impermeable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They are laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

**SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES**, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

CHEAP PAN FOR WATER CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their CLEANLINESS AND CHEAPNESS.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being (as is too well known) the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER. From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required. Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

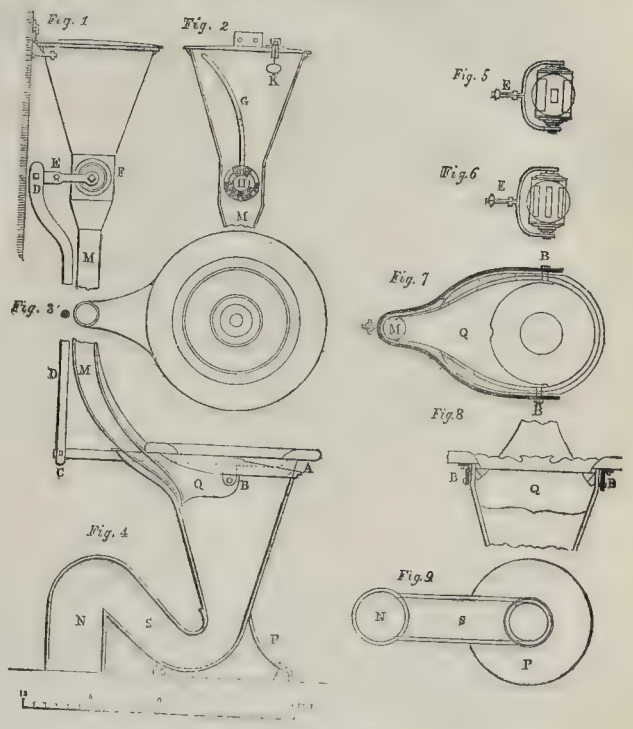
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE.—The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self-acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.

Fig 2. Section of the measure and cock, shewing its position when open for the water to come in.

Fig 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.

Fig 4. Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action-rod D, to let water in and cut it off.

Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.

Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.

Fig 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.

Fig. 9.—Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water drawing the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page* 70.)

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. London, Mr. Foden, Mr. Smith of Deansgate, and others. But the apparatus invented by Mr. Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is so facile, it requires no cistern, it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

### TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

Mr. Jos. E. DOWSON. J. QUICK, Engineer.

*To be obtained of the Sole Manufacturers,*

**MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,**

**And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.**

## DOWSON'S EARTHEN PIPES,

### GLAZED INSIDE,

### FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad: such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the depredations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains—LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

Messrs. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

**A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.**

# THE BUILDER.

**WHITTINGTON FUND.—Subscriptions** will at present be received from 11 till 2, and from 7 till 9 in the evening, at the Crown and Anchor Tavern, Strand, where books of the rules, with exposition of the objects and plans of the society, price 3d. may be obtained. G. W. YAPP, Secretary.
July 7, 1847.

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TO BUILDERS.

**GROUND TO LET, at Kentish Town,** near the Birmingham Railway. Bricks may be had on the ground at very low prices. Apply at No. 15, Gower-place, Euston-square.

---

BUILDING LAND.—BRICKS AND MONEY ADVANCED.

**GROUND TO LET, for Third rate Villas,** in pairs and threes, at Islington, fronting the High-road, for Ninety-nine Years, Land-tax Redeemed. Such a class of houses are very much required in this immediate locality.—Apply to Mr. TURNER, No. 3, Devonshire-cottages, Green lanes, Stoke Newington-green.

---

BEDFORD NEW TOWN, NEAR EUSTON SQUARE.

**BUILDING PLOTS, TO BE LET in** this desirable locality. The sewers are made, vaults turned, and foundations taken out, thus affording great facility to builders. No charge for road and paving. Respectable parties and others will be treated with liberality. For plans and particulars, apply to Mr ALLEN, 2, Bedford-street, Upper Seymour-street, Euston-square.

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CASSLAND ESTATE.

**FREEHOLD LAND to be LET, on Building Leases,** for a term of 80 years, divided into speculations of varying magnitude. The estate adjoins Victoria-park, and arrangements are made for a direct communication into the drive. This property possesses the peculiar advantage of a large extent of land on the south and east, being inalienable for building or manufacturing purposes. The soil is gravelly, and the locality is noted as one of the most healthy suburbs of the metropolis; distant about two miles and a half from the Royal Exchange. For particulars apply to Mr WALES, at the Estate-office, Cassland road, Hackney.

---

BUILDING LAND FOR ABOUT TWELVE THIRD OR FOURTH-RATE HOUSES.

**TO LET, at very moderate rents, a most** eligible plot of ground, near Kilburn Turnpike. A great demand for houses at moderate rents. Apply, to view the plans and particulars to Mr. H. BIERS, 13, Carlton-villas, Edgware-road.

---

PIMLICO.

**TO BE LET, on Building Leases, upon** very reasonable terms, some desirable Plots of Ground, in the Grosvenor Estate. Apply to Mr READING WATTS, Builder, No. 9, Motcomb street, Belgrave-square.

---

HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country.—For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford-row.

---

TO BUILDERS AND OTHERS.

**TO BE LET, delightfully situated in that** healthy and fast improving neighbourhood Westbourne Grove West, leading to the Hippodrome, Notting hill, several Carcases of Houses. The money may remain in hand until the buildings are finished or leases taken up. Also, several Plots of Building Land. Bricks and Timber may be had on the ground in advance if required.—Apply to Mr JAMES PAYNE, Builder, &c., at the Earl of Lonsdale, Westbourne Grove West.

---

FREEHOLD BUILDING LAND, close to a Railway Station, in a beautiful neighbourhood, surrounded by good roads, near a market town, and only twenty minutes distant from London.

**TO BE LET, on terms highly advantage-** ous to Builders, in quantities from half an acre upwards, the whole being nearly 100 acres. The mode of letting adopted by the proprietor will protect the estate against the intrusion of any objectionable building or works, and will secure to the builder when entitled to his lease, the option of a conveyance of the Freehold, and this in the case of each residence erected. Gentlemen may be generally indisposed to build houses for themselves, however tempting the site offered to their acceptance, but such is the salubriousness of the air, the extent and cheerfulness of the scenery, and the general attractions of this locality, that purchasers or tenants are sure to offer the instant that houses of inviting character shall be erected. A Map of the Estate may be seen at Mr JOHN DAWSON'S Land and Auction Offices, 41, Pall Mall, and Kingston, Surrey. Mr DAWSON is also still authorized to negotiate an absolute Sale of the whole or portions of this Estate.

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MANOR PARK ESTATE, STREATHAM, SURREY.

**TO BE LET, on Building Leases, in the** above Park, in this favourite and select district close to the Parish Church, upwards of Sixty Plots for Villas, Fifty for Terraces, and several for Shops and Stabling, the whole forming a belt round the interior of the Manor Park, which from its combination of undulating surface, ornamental water, and well grown timber is of singular beauty. Private roads, walks and drives are intended to be made within the Park. Facing bricks, both White and Red, Stocks and others of an excellent quality, and in any quantities, may be had on the Estate, and an allowance will be made in the price where used on the Estate. Gravel and Sharp-sand of a superior description are found in abundance on the ground and water is laid on. Advances will be made and other accommodation afforded to respectable builders taking an adequate interest in the property, which is likely to be immediately remunerative to them from a great and increasing demand for houses existing in this neighbourhood. For Lithographed Plans and Particulars, apply to Messrs. RANKEN, FORD, LONGBOURNE, and VICKERMAN, No. 4, South-square, Gray's Inn; Messrs. GOUGH and ROUMIEU, Architects, No. 10, Lancaster place, Strand; or Mr. WILKINS, at the Manor park Office, Streatham.

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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 232. JULY 17, 1847. Price ..... 3d.


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**CITY, TOWN, and COUNTRY ARCHITEC-** TURE: Nine Numbers now ready, with numerous detailed Plates of Street Elevations, Shop Fronts, and Public and Private Buildings; with Specifications, Estimates, and Remarks, containing a variety of new improvements in construction never before published. Price 3s. each No. to Subscribers

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N.B. The Largest Collection of Architectural and Engineering Works for Sale in England. Classed Catalogues Gratis.

JOHN WILLIAMS, and Co., Architectural and Engineering Publishers, 140 and 141, Strand, late Cadell's. Messrs. W. and Co. have for Sale, a Splendid Model of the Parthenon, cost the late John Nash 300 guineas; also an Original Portrait in oil, of Sir Christopher Wren. Price 15 guineas.

A CARD.

**W. THOMAS, Monumental Engraver,** 1, Brownlow-road, Queen's-road, Dalston

W. T. (of the Curtain-road upwards of 30 years) takes this mode of apprizing his friends and the trade generally, of his removal; and that those who employ a professional hand, will, by favouring him with their commands, receive prompt attention.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

STABLE and LUSH, Clerks.

TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES.

**HER MAJESTY'S JUSTICES and COM-** MISSIONERS of SEWERS for the City and Liberty of WESTMINSTER, and part of Middlesex, HEREBY GIVE NOTICE, that they have approved a plan, whereby an efficient drainage, at a very moderate cost, may be obtained for property in the above situations, abutting on streets where there are sewers. The plans and sections may be seen at the office of the Commissioners, No. 1, Greek-street, Soho. LEWIS C HERSLET,
Clerk to the Commission


### CONTRACTS.


TO CONTRACTORS, BRICKLAYERS, AND OTHERS.
Court of Sewers, Tower Hamlets.

**NOTICE IS HEREBY GIVEN, that the** Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on THURSDAY, the 29th day of July, at Twelve o'clock at noon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS (sealed up) from any persons or person willing to enter into contract for the works necessary in extending the Sewer in New-road, Saint George's, from Shorter-street to Cannon-street, being a length of 1,350 feet, or thereabouts. A plan and specification of the said works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. The Contractor will be required to sign a provisional agreement to secure the due execution of the said contract, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners: no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon.—Dated this 16th day of July, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the lowest tender.

TO BUILDERS, &c.

**NOTICE for Alterations and Repairs of** Residence, known as Glebe Lands, Mitcham, Surrey, into two distinct houses.—Plans with specifications, to be seen at 76 Blackman-street, Borough, where Tenders will be received till Tuesday, July, 27th.


### COMPETITION.


TO ARCHITECTS.—MIDDLESEX ADDITIONAL PAUPER LUNATIC ASYLUM.

**THE Committee of Visitors who have been** appointed to superintend the erection of an Additional Lunatic Asylum for 1,000 Patients in the County of Middlesex, invite PUBLIC COMPETITION for Plans and Estimates for such a building, and propose to present a Premium of 200l. to the party whose design they shall most approve, and further premiums of 100l. and 50l. to the party whose plans they shall deem second and third in excellence. Particulars as to site with all needful information and instructions, as also the conditions on which the premiums will be offered, may be had at my office, at the Sessions House, Clerkenwell Green, on any day between the hours of Eleven and Four during the present month.

JOHN S. SKAIFE,
7th July, 1847. Clerk to the Committee.

**NOTICE IS HEREBY GIVEN, that a** GENERAL QUARTERLY MEETING of Members of the INSTITUTION of BUILDERS' FOREMEN will take place on WEDNESDAY Evening next, July 28th, at the Salisbury Arms Tavern, Durham street, Strand, to Elect Officers and other General Business.

W. ALLARD, Sec.

**BUILDERS' BENEVOLENT INSTI-** TUTION.—A GENERAL MEETING will be held at the Freemasons' Tavern, Great Queen-street, Lincoln's-inn-fields, on MONDAY, the 19th of July, 1847. The chair will be taken by Mr. H. BIERS, President of the Master Carpenters' Society, at ONE O'CLOCK TO A MINUTE.

This Society is established to render assistance in old age to decayed members of the building trades, also to workmen in case of accident. The attendance of all parties desirous of promoting the object of the Institution is respectfully requested.

DRUCE'S, No. 2 WHARF late Paradise-wharf, Chelsea.

**TO THE TRADE.—Parties desirous of** delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**SOLICITORS' and GENERAL LIFE** ASSURANCE SOCIETY.

Eighty per cent. of the Profits given to the Assured.—Apply to any respectable Solicitor, or at the Office, 57, Chancery-lane, London.

CHARLES JOHN GILL, Secretary.

**BRITISH MUTUAL LIFE OFFICE.**— The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

ZINC WORK.

MESSRS. F. and J. HARLAND beg to call the attention of Builders and others, to the following List of prices, for cash :—

3-inch Pipe ..... per foot 4d. | 3-inch Gutter.... per foot 4d.
2½ ditto ..... " 3d. | 4-inch ditto ..... " 6d.
Including fixing.

Flats Corrugated and Cast-on Lined Roofing per foot superficial ; Cornice Gutters, 5d. to 7d.—No 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Alms-houses.

N.B orders by Post punctually attended to.

LIME AND CEMENT WHARFS. — Grey-stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney-pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials may be obtained on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs :—Albion Wharf, Holland-street, Blackfriars ; Millbank-street, Westminster ; Lime Kilns, Limehouse ; and Kingsland-basin, Kingsland-road. Orders and Lists of prices

PLASTER of PARIS of the very best quality, Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE. L...don, S. Consumers of Atkinson's Cement

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts—Three Cranes Wharf, Upper Thames-street ; St. George's Wharf, Upper Belgrave-place, Pimlico, Burton's Wharf, Commercial-road, Lambeth ; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being hydraulic, it is the best cement to use for building and lining cesspools, baths, chimney-pots, &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster

KEENE'S PATENT MARBLECEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, its application for which purposes it cheapens, progress of the building, by one-half.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Sidney-street, Liverpool

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

JAMES WESTON having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL WALL, POPLAR enables him to execute orders to any extent on the shortest notice. He therefore invites the favours of Engineers, Builders, and others, interested in works, who may be in want of the best cement, and plaster of Paris, to give him a trial, when they will be convinced of the superiority of the articles manufactured at his Works.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

GREAVES'S LIAS LIME and CEMENT. HUTTY and VEREY, 3, South Wharf, Paddington.

LIAS LIME as Mortar, is easily worked and forms a hard stock walls, hydraulic, railway, and other works ; its adhesive qualities being unequalled by any other.

As a CEMENT, it is more powerful than any other description of Lime, as it forms a solid mass—sets as firm as a rock under water—congeals in close boarded or Tanks

LIAS CEMENT is easily worked of a beautiful stone colour, equal to Portland stone, does not crack or scale off, is not liable to exposure to the atmosphere, and is well adapted for the building and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, desire to caution the public against spurious imitations, sold under this Name or Cement with views, generally, to deceive the Public, and more particularly to pass themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is perfectly free from chemical agency in the mixture with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses :—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in a few days, without the application of oil.
4. It is peculiarly adapted for internal and external walls, skirtings, architraves, mouldings, and ornaments of all kinds ; and for many purposes it has been extensively applied by Mr. H. Martin, on the Greenwich estate, &c.

For these purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls, &c., it is far preferable to Patent Asphalte, durable, and requires no repair. It can be laid on wood, or on the ground, or on any other surface, and can be made of the most beautiful colours, at the same price, or less, than common stone. The most satisfactory references can be given. To be had of the Patentees, Messrs. Stevens and Son, Martin-terrace, Penge, SURREY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Cunningplace, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT. The following are the principal properties possessed by this newly discovered and invaluable Cement :—

It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone cement to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will bear, and stand unchanged in any climate, the most numerous of years. It is equally adapted for home consumption and export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates all the year round. It will harden to any substance even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to fail. It may be worked into the White Lias Stone to any depth. It may be laid on Lime Washed or New Brick Work, and be prepared for painting immediately. Roofs, laid in Cement with this Cement will remain unimpaired by the severest storms. Any Plasterer may apply it, the instructions for use being very clear and simple. The first cost of this material does not exceed that of the cheapest Cement now in use ; but with all the above and (extraordinary and valuable) advantages, and many others, it is the cheapest in point of economy.

Architects and Builders who have used this Cement have declared that it ought not to be, but will be universally preferred.

Specimens may be seen, and a Pamphlet containing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on applying at the Office of the Patentees, 7, Mansion-house Chambers, Queenhithe, London ; of whom also may be had,

JOHN'S and CO.'S PATENT STUCCO PAINT expressly intended for Painting over Cement Work. It has that body in it required for Painting over Cement, and which most of the Paints now used for that purpose do not possess. It is the only Paint that can be used with confidence for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement ; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the Stucco fit to receive any colour, and the finish producing a pure stone-like effect, producible by no other Paint whatever. It is equally applicable to any material to be painted in any climate, even in the hottest and Marine situations.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, Carriage-roads, Footpaths, Yards, Stables, Cellars, Roofs, Tanks, Reservoirs, Sewers, Culverts, Arches, Bridges, &c. KINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 16, WHARF ROAD, CITY-ROAD.—Asphalte and Bitumen Pavements executed in the most substantial manner, at the above rate, or by the square foot, or by the ton, and warranted for any number of years. Bitumen for covering bridges and arches.

CAEN STONE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Nos. 2 and 3, Wharf Cottages, to the above Wharf, where a large Stock will be kept up for the execution of orders from their quarries at Allerton, Bolton, and Ketton, either in the rough or finished state, at the shortest notice. Apply to Mr. GEORGE LUARD, 25, South-wark-square, Borough, London.

Caen Stone constantly on hand.

The Wharf is situated on the River, at Lovell-place, adjoining Cox's Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other description of Stone Work, can be executed at the Pimlico Works, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the Mason's Yard, ready for fixing, or fixed, avoiding carriage and waste of stone.

Estimates and Drawings sent free of charge.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS

Estimates and Drawings sent free of charge.

MAGNUS'S ENAMELLED SLATE.—Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the Principal of the Nobility, this material is now in general use for Table Tops, Chimney-pieces, Hearths, Paving, Flooring, Shop-fronts, Palisading, Fonts, Tombs, Monuments, Gravestones, Flower-stands, Window-sills, and many other purposes, taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and many public buildings. It may be distinguished from marble by its superior brilliancy of polish, and it is more durable, and not liable to stain. It is also much cheaper, and can be procured of any size, and in any quantity, at a moment's notice. A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE COMPANY James Smith, Esq., of Deanston, [illegible] the Public that the EXPERIMENTAL MACHINE, that has been at work at Apperley, at the Company's office, 193 a, Piccadilly, from 10 A.M. to 5 P.M. Mr. [illegible] has been for some time engaged in improving the machine of Mr John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and will be in full operation [illegible] Persons interested in the Manufacture of Bricks, Tiles, &c., are invited to inspect the Machine. Mr. JOHN AINSLIE, Engineer and Secretary to the Company, London, 193 a, Piccadilly, March 1, 1847.

Patentees, Messrs. [illegible] M'Culloch, Limehouse ; [illegible] walk, Edinburgh ; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow ; Mr. ROBERT CHARLES, Mill-hill, Leeds ; Messrs. PENNY and PINCH, Penkridge, Staffordshire ; and Messrs. DRUMMOND and SONS, Dublin.

TO ARCHITECTS, BUILDERS, AND OTHERS.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, manufactured at Maw's Tile Works, Jackfield, Salop, and Patent Works, Broseley, Salop, and 70, Aldersgate-street, London. Also, an extensive assortment of Plain and Ornamental Tiles for Hearths, Halls, Churches, Conservatories, &c., suitable for Fireplaces, &c.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen at every extensive establishment in the Trade. Messrs. CLIFFORD, LLOYD, Marble Wharf, Pimlico, and Messrs. WATKINSON and Co., Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN BARR and Co., Palace-row, Worcester.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond-street Works, late Sir [illegible] Chantrey's, Eccleston-place, Belgrave

TO BUILDERS, PAINTERS, AND OTHERS.

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79, York Road, Lambeth, 2 doors from Cross Street.

Manufactory, Wood-st.

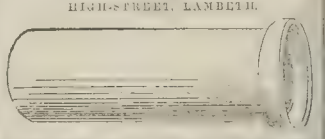
TO RAILWAY CONTRACTORS AND BUILDERS.

HENRY WILLIAMS, House and Decorative Painter and Writer, 12, Great Distaff-lane, Cheapside, London, begs to inform Railway Contractors that he undertakes to paint on the most reasonable terms, with the name of any station boards, &c. Persons in any part of England having Stations within a circuit of 100 miles of London, will be entirely relieved from all trouble, subject to certain conditions, viz., that such bonus will be mixed up with the first contract order, upon application through this advertisement.

In consequence of the great saving in time and carriage, he can guarantee that the execution of any work entrusted to him will be equal to any London work, and at the same time a considerable saving to the purchaser.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. the Commissioners of Her Majesty's Woods and Forests. To be had at the Manufactory, Pye-street, Lambeth, where a large stock of the various sizes and patterns are always on hand

TUBULAR DRAINS IN STONE WARE Manufactured by HENRY DOULTON AND Co. LAMBETH. HIGH-STREET, LAMBETH.

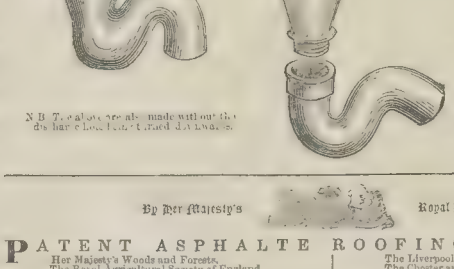


The Old Established Works for the Manufacture of Tubular Drains, Bonnet Hearth Tiles, Chimney Pots, &c., for upwards of Fifty years. The material which they are composed is impenetrable, impervious to moisture, and cannot corrode ; in addition to which they are

Recommended by the Commissioners of Woods and Forests, for the Drainage of Windsor Great Park, and by the Commissioners of Sewers for the City of London, for the Drainage of Bloomsbury and Finsbury.

Manufactured from 3 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch and 9 inch bore, in general use.

The Trade supplied. H. D. Manufacturers of Stoneware Pipes, &c.



N.B. The above are also made without the dip bar when required for Drains.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, account of their

CLEANLINESS AND CHEAPNESS.

By Her Majesty's Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
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The Chester and Holyhead,
The North Wales, and
And the Corporation of the City of Edinbro'.

PRICE ONE PENNY PER SQUARE FOOT

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.

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CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

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THE ROYAL EXCHANGE ASSURANCE,
THE COMMISSIONERS OF SEWERS FOR THE CITY OF LONDON,
THE COMMISSIONERS OF WINDSOR GREAT PARK.

And by the most eminent Architects of the Royal Yacht Squadron, and all the leading Clubs, at which it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing ; also used for under slates at the Royal Victoria and Albert Yacht Club-house, Hanover [illegible]

It is light, durable, and perfectly impervious to wet, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt for covering Partitions, Ceilings, Roofs, &c., to prevent the radiation of heat, and deaden sound. The TRADE supplied on the most liberal terms. Contracts entered into for Roofing Buildings of any extent, in any part of the Kingdom. Further particulars may be obtained at the Offices, LAMB'S BUILDINGS, BUNHILL ROW, LONDON

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament. A Liberal Discount allowed to the Trade.

The Builder.

No. CCXXXII.

SATURDAY, JULY 17, 1847.

THE Health of Towns bill is withdrawn, and the Wellington statue is to remain on the top of the arch at Hyde-park Corner, — that is, if the Government do not change their minds and eat their words again, which, seeing the number of times they have already done so in respect of the arch, would scarcely surprise us. Alas! for the consistency, wisdom, and inflexibility of our statesmen! Competent persons have pronounced against the present site of the testimonial, says Lord Morpeth, and we call upon the committee to redeem their pledge, and take down the statue. The public agree with the competent persons, again urges his lordship, and the statue is to come down. And then, when further attempts to hold their ground have been made by the most pertinacious of committees, his lordship writes to the Duke of Rutland:—

"My Lord Duke,—I have now the honour to acquaint you, that her Majesty's Government feel themselves *compelled to abide by their decision*, that the equestrian statue of the Duke of Wellington should be removed from the top of the arch, and they are about to submit an estimate to Parliament for the erection of a suitable pedestal, which it is intended to place in the Green-park within view of the Duke of Wellington's house. They will not, however, think it necessary to call upon the sub-committee to remove the statue till the pedestal is ready for its reception."

The pedestal is designed, preparations are talked of for lowering the ponderous mass: and yet, after all, the prime minister rises coolly in the House and says, *the Government do not intend to permit the removal of the statue;*— "Since last I addressed the House," were his lordship's words, according to the *Times*, "I have had a communication with the illustrious Duke with reference to the statue; and, in substance, his reply to my inquiry was,—that he viewed it as a question to be considered, not upon individual, but upon public grounds —that many persons were of opinion, that its removal from the arch would be looked upon as a mark of disapprobation on the part of the Crown; and that, though he had received too many evidences of royal favour to suppose there had been any such intention, as such would be the effect, upon public grounds, he deprecated the proposition to take the statue down from its present position. This statement has been communicated to her Majesty, and I have received the Queen's commands to say that the Government *do not intend to permit the removal of the statue*."

We feel ashamed while we write it, and there are some who ought to feel more ashamed while they read it.

The few preliminary proceedings which resulted in this ultimate decision, were simply these. Lord Brougham, in the House of Lords, moved for the production of the correspondence which had taken place on this subject, and took occasion to say, in the course of his speech, that the Duke would feel himself hurt beyond expression, insulted, and held up to ridicule if the statue were removed,—if they dared to remove it. In the other House, Lord G. Bentinck gave notice that he should move a humble address to the Queen, praying her Majesty not to revoke her grant of the arch as the site for the statue. Upon this, and with reference to the previous statement, Lord John Russell asked for time to obtain knowledge of the present feelings of the Duke (of which by the way, his lordship must have been fully aware), saying:—"I may state that her Majesty has expressed a wish that nothing should be done that could be painful to the feelings, or be considered at all disrespectful to the greatest and most celebrated of her subjects. If I find they are adverse to the statue being removed to the pedestal suggested for it, I should not propose any vote in supply for the purpose; and I am authorized to state, her Majesty would readily consent to the statue remaining in its present position."

And then, in due course, came the decision we have already quoted, involving more injury to the national taste and the national reputation for taste, than may at first sight appear to be the case.

No one attempts to say the conjunction is beautiful: the utmost that is heard from those who advocated the continuance of the statue in its present position is, that "it don't look so bad after all,"—and this of a statue on which thirty thousand pounds have been spent, and an equally costly triumphal arch! And even these know all the time, or they know nothing of art, that the arrangement is contrary to all principles, and that the effect could not be and is not satisfactory. When we asserted long ago, and proved, that the arch was destroyed by the statue, and the statue destroyed by being placed on the arch, the line of argument adopted was quoted throughout the country, and never controverted. We defy disproof.

The reason now given for keeping it on its present bad eminence, all others having failed, is quite preposterous. When the committee said, that to "overthrow the monument in the Duke of Wellington's very sight" would be a "most offensive and wanton affront," and continued,—"He, from the height of his glory may despise it; but it will be deeply felt throughout the whole British empire—it will be deeply felt by all his old companions in arms throughout Europe, and by all the governments of the nations which he had contributed to save;"—they talked absolute nonsense, and knew it to be such, but did so because they believed it would tell. How to explain the Duke's belief, however, that its removal would be looked upon by many as a mark of disapprobation on the part of the Crown is more difficult. Surely his grace cannot believe this? The Government and the country are alike anxious to provide for the statue a fitting pedestal,—the most fitting pedestal. The former foolishly permitted the appearance to be tried *in situ*, but with the express stipulation, that if not approved of, the statue should come down; and now, forsooth, they say virtually, whether the effect be bad or good we care not, if you remove the figure, you insult our distinguished commander. The artifice, not to say subterfuge, is really too transparent.*

We regret this decision in respect of the statue even more than the withdrawal of the Health Bill, much as the latter is to be deplored, and vehemently protest against it on the part of the vast majority of unprejudiced competent persons throughout the Kingdom. The discussion of the latter subject and the hold its importance is taking on the public mind, will themselves tend to make the necessity of legislation less urgent; moreover early in the next session an improved bill may be brought in and the object attained; whereas in the case of the arch, if the whole of the scaffolding be removed and the question once closed, there for many years to come the monstrous conjunction will remain, to disfigure the western entrance to the metropolis and vitiate the public taste,—at one and the same time our laughing-stock and our disgrace.

* The Government even proposed to make two Wellington memorials instead of one, by directing that the arch should be ornamented, after the manner in which triumphal arches were formerly adorned, in honour of the Duke, and dedicated to him!

## SKETCH OF THE PROFESSIONAL LIFE OF GEORGE DANCE, Architect, R.A.*

THERE are few architects since the time of Sir William Chambers who have more worthily achieved a high degree of professional reputation than Mr. George Dance; and on a recent occasion, when our excellent friend and late vice-president, Mr. Tite, favoured us with an instructive and interesting epitome of the lectures delivered at the Royal Academy, by Sir John Soane, it occurred to me that some account of the master mind, from which Sir John derived much of his professional knowledge, might prove an interesting subject for a paper.

In this labour of love I have enjoyed the advantage (through the kindness of my friend, Mr. Thomas Poynder) of an introduction to Mr. George Dance, of Peter House College, Cambridge, a grandson of the subject of our present memoir; and the biographical part of this paper has been supplied by that gentleman, —a gratifying proof that the abilities and reputation of one of England's most distinguished architects are appreciated and cherished by an immediate descendant, worthy of the name he so honourably bears.

To our indefatigable honorary secretary, Mr. Bailey, I am also greatly indebted for an examination, from the Soane collection, of the designs and working drawings of several of Mr. Dance's works, which will be alluded to in this paper.

George Dance, born March 20th, 1741, O. S., was the fifth son of George Dance, architect, and clerk of the works of the city of London.† Mr. Dance, sen., was a man of considerable eminence in his profession. He designed the Mansion House (a building, in my humble judgment, possessing many fine points, and by no means deserving the severe criticism it has been subjected to): Shoreditch church, Bethnal-green, Aldgate, and St. Luke's, Old-street, are also the works of Mr. Dance, sen.

When about seventeen, George Dance proceeded to Italy for the purpose of studying architecture, being placed by his father under the care of his elder brother, Nathaniel, then studying the works of the great masters of painting in that land of the fine arts.

Surrounded by the monuments of ancient and modern art which adorn the cities of Italy, and visiting successively Rome, Naples, Florence, and Parma, he devoted himself with such ardour to the cultivation of his profession, that in a short time he had become so far master of the science as to gain the prize in architecture,—a gold medal,—given by the Royal Academy of Fine Arts in Parma in the year 1763.

The subject proposed was a design for a public gallery for painting and sculpture, and it fortunately happens that Mr. Dance's letter to his father, giving an account of the competition and his success, is still preserved.

The letter is dated from Rome, June 7th, 1763, and is as follows:—

"The inclosed is a sketch for a public gallery for statues, pictures, &c., which subject was given last year by the Royal Academy of Parma for the concurrence in architecture. As I was willing to distinguish myself before I left Italy, I thought there could not be a better opportunity than that which offered itself at Parma. I therefore applied myself with all assiduity, and sent my drawings to Parma last April, where, together with many others from all parts of Italy, they were exposed in a public hall for some time, till the final judgment, which

* Read at the closing meeting of the Royal Institute of Architects.

† He was at that time styled *master*, and not, as at the present day, "*clerk* of the city works;" and the office appears to have been in those days rather differently conducted. The appointment was held by purchase; and the remuneration was not by salary, but according to the services performed; there was no staff of assistant clerks, and Mr. Dance, sen., had all the artificers to meet him on a stated day once a week, at the Mocrgate Coffee-house, to receive his orders and instructions.

was at length determined in my favour, and I have gained the premium, which is a gold medal of two ounces and a half weight. You will, perhaps, wonder I should rather concur at Parma than at Rome; to which I reply, that at Rome the judgment is so partial, and protection of cardinals, princes, &c., of such consequence, that in reality little honour is to be gained by it, likewise no person can concur who is not in Rome at the time of concurrence, consequently the number of those who concur must necessarily be less in Rome than in Parma, where all Italy, nay all Europe, may concur. I have not yet received the medal, which is to be sent me at the same time that the decision of the Academy is printed, which I shall send you as soon as it comes to Rome; as to the sketch on the other side of the paper, I beg you will excuse the incorrectness of it, as I had scarce time to finish it by this post: as it is only just to give you an idea of the general disposition, I had not time to put any more than two sections and the plan. The drawings I sent to Parma were five in number, viz., 1, The Great Plan; 2, The Section lengthwise through the great gallery and halls of entrance; 3, The Section through the said gallery breadthwise, and through the cortiles; 4, The Section through the rotunda; 5, The Façade. The plan was drawn upon four sheets of large imperial paper, and the sections and front were upon five sheets lengthwise of the same paper each.

All the columns within the gallery were of the Corinthian order, those of the cortiles Ionic, and those of the façades Doric. This work, my dear Sir, has been my occupation for these 8 months past, and I hope will, in some measure, plead my excuse for not writing; my mind has been in such agitation that I confess I have passed whole nights without sleeping; at length I am at ease, and never felt truer pleasure than I do at present, as I hope this will convince you that you have not misspent your favours on one who is entirely unworthy of them; this has hitherto been my greatest ambition, and will always be the bent of my wishes.—I am, honoured Sir, your most obliged and most obedient Son,

(Signed) George Dance."

The report which accompanied the medal bestowed a highly flattering eulogium on the successful competitor; among other favourable notices it contained the following remarks:—

"The beauty of all its forms, the grandeur and just proportions of the edifice, recal to mind and represent to the eye the magnificent monuments of the ancients, and that perfect taste which they put into their decorations. The author cannot be sufficiently praised for the study and happy choice he has made of these most commendable models. Every thing in his design appears suited to its place; it would be difficult to take away from the decorations, or to add to them, without impairing the effect; they are numerous without confusion, and suited to the subject."

The design without doubt indicates both talent and careful study, but I must confess I do not discover any of those marks of originality or genius in it which are so conspicuous in Mr. Dance's subsequent works; I regret that I can only produce to the meeting one other of Mr. Dance's architectural studies during his professional tour, but I am happy to say that this one is of rare excellence. A more careful or accurate study of that beautiful specimen of Roman architecture the circular temple at Tivoli, I have never seen, and I take occasion to recommend it particularly to the notice of the students of the institute, as an example of neatness and accuracy combined with freedom of drawing.

Mr. Dance evidently felt his subject both as an architect and an artist. The date of these drawings is 1761-2.

Mr. Dance was admitted a member of the Arcadian College at Rome, and of the academy of St. Luke in the same city, in 1764.

Having completed seven years of assiduous study in Italy, he returned to England, and in 1768, at the age of twenty-seven, succeeded his father in the appointment of clerk of the City works. One of the first buildings he was engaged upon was the small parish church of Allhallows, on London Wall, the design of which was approved by the trustees in May 1765.

This building is of very unpretending character, the plan is a parallelogram with a semi-circular apse at the east end, and a small vestibule and cupola at the west. The ceiling is vaulted and the church fortunately has no side galleries. It must be confessed that this is not one of Mr. Dance's happiest productions. He was accustomed to call it his first child; his second was a far better specimen and one of larger growth "the prison of Newgate." The date of the contract drawings for this building is June, 1769, and they are signed by the contractors, George Wyatt, John Devall, jun., John Read, and Joshua Hobson.

This building has always justly been considered as one of Mr. Dance's finest works; the architecture of the exterior is highly characteristic of the purposes of the structure; at the very first view the spectator is impressed with its grandeur, solidity, and security. The most successful portions are probably the entrance lodges designed to form important features in the façade: they are stamped with so strong a mark of gloomy grandeur and severity, as to create in us the belief that when designing them the architect must have had in his mind Dante's celebrated inscription.

"Lasciate ogni speranza voi ch'entrate."

The centre portion of the building, forming the governor's house, is not so successful in design as the other parts; the domestic air which is given to it as a residence does not harmonize with the more severe and solid portions of the prison. When first built, this centre part was terminated by a pediment; the present attic appears to have been substituted at the time of the reinstatements after the riots, in the year 1780; the entrance doorway in the original design was also more in character, and more important than the present one.

I need hardly dwell upon the interior arrangements of the prison; at the period in which it was designed, it was no doubt suited to what was then considered to be immediately requisite. At that day the system of classification, and the reformation of criminals had, unfortunately, not engaged public attention; the security of the prisoners appears to have been nearly the only object which was well considered.

The contract drawings for St. Luke's Hospital for Lunatics are dated 1782, and are signed by Joshua and William Hobson, as the contractors. This is a building well worthy the architect of Newgate, and although perhaps not so well known as that structure, is deserving of great commendation for the harmony and appropriateness of its design.

Giltspur-street prison appears to have been the next public work of importance designed by Mr. Dance; but this is by no means to be placed in comparison with the two buildings just alluded to; the repetition of three pediments in the same façade is unworthy the hand which has accomplished so much better works.

In his capacity of surveyor to that noble institution, St. Bartholomew's Hospital, the church of St. Bartholomew the Less came under Mr. Dance's superintendence, and in 1789, he nearly rebuilt that edifice; and although there is a certain degree of elegance and ingenuity exercised in the treatment of the octangular plan of this building, Mr. Dance would not be forgiven in these days, for departing so much as he then did from the original structure. We must, however, make some allowances for the taste and style prevalent at that time, when mediæval architecture was so little understood, and when our ancient churches had no staunch defenders in Camden or Ecclesiological societies. In the year 1793, I find that Mr. Dance designed a new laboratory and several additions to the hospital.

The East-India House, in Leadenhall-street, was rebuilt in 1796; and it appears that Mr. Dance submitted an elevation for that building.

In the same year Mr. Dance appears to have been engaged on that great work, the design for the improvement of the Port of London, which he afterwards, in 1802, submitted to a select committee of the House of Commons.

This design is one of great magnificence and practical utility; it consists of a double bridge, in the place of old London bridge, to admit of the passage of ships by the alternate elevation of a drawbridge on either of the two bridges, whilst an uninterrupted way over the other would be afforded at all times for carriages and foot passengers, without impeding the navigation, and without the necessity of such elevated arches as the height of ships' masts require. The plan embraced the embankment of the river both above and below bridge, the erection of quays and a line of warehouses extending from the Tower to the bridges, with dock entrances, and terraces on arches, the Custom House being placed in the centre. Besides these manifestly advantageous alterations, he proposed to throw open to the river the noble monument erected by the genius of Wren, making it the focus of an extensive amphitheatrical area on the north side of the Thames, and to erect a naval trophy in the centre of a similar space on the Southwark side. The bridges were to be perfectly level, consisting each of six arches of great span, independent of the centre or drawbridge.

This magnificent design is well given in a mezzo tint engraving, from a picture by Mr. Dance's early friend, William Daniell, and, of course, is well known to the body I am now addressing.

In these days of gigantic engineering, when mountains and rivers are passed under by tunnels, and straits passed over by tubular bridges, Mr. Dance's design may not at first strike the eye as being of that important character which I have claimed for it; but when it is examined in an architectural, as well as in an engineering point of view, I think it will be admitted that it is the conception of a master mind, and that its very magnificence and the necessary sacrifice of valuable ground were the principal reasons of its non-adoption.

A failure in this account, however, was not confined to the city architect, for among many bold and ingenious designs submitted to the House of Commons at that period, I find one by Messrs. Telford and Douglas, to replace old London-bridge by one of cast-iron of a single arch, 600 feet span, and 65 feet in height!

Mr. Dance appears to have been consulted on the subject of the approaches to this *pons triumphalis;* and I find a drawing of his, shewing that the inclined line of approach would have commenced in Bishopsgate-street, near the London Tavern, and terminated on the Southwark side by the Town-hall. It would have formed a most productive line for compensation claims, and a source of no little employment for juries and referees.

The other principal works upon which Mr. Dance was engaged for the corporation of London were the front to Guildhall, which (bearing in mind a very homely but apposite proverb) I will not detain the meeting by commenting upon. The council-chamber, however, is an extremely successful work. It has a pendentive dome springing from four semi-circular arches, and is altogether a very elegant apartment, and of pleasing proportions. Finsbury square was from Mr. Dance's design; and he also designed and carried through the improvements in Skinner-street and Picket-street, Alfred-place, Tottenham Court-road, and its terminal crescents.

I believe the last work on which Mr. Dance was engaged for the city was the fitting up of Guildhall, on the occasion of the grand entertainment to the Emperor of Russia and foreign potentates in 1814. I understand he entered on this work quite *con amore;* it was a grand occasion, on which he put forth all his energy; and the committee, having very properly placed the whole matter, both as to design and the means of executing it, into his hands, he was enabled to produce the most satisfactory result in a comparatively short space of time. A view of the hall, as fitted up for the occasion, was painted by Mr. William Daniell.

Besides his official appointments, Mr. Dance appears to have had an extensive private practice, being employed by several noblemen and gentlemen of fortune; among others, the Marquis of Camden, at Bayham Abbey, Lord Ashburton, at Seven Oaks, the Marquis of Lansdown, in alterations and additions at Bowood, and the library at Lansdown House, Berkeley-square; Lord Ashburnham, at Battle, Sussex, Sir Francis Baring, Stratton, Hampshire, and Sir George Beaumont, Coleorton, Leicestershire. The studies and working drawings for these several works are now in the Soane collection, and they will amply repay a careful examination. Those for Ashburnham-place are full of interest. The design for the principal front of this house presents a very curious mixture of Italian and Gothic architecture; some portions are similar to the Guildhall front, and several of the ornaments and enrichments remind us forcibly of similar features so generally employed afterwards by Sir John Soane. The staircase at Ashburnham-place forms a capital

## AWARDS OF OFFICIAL REFEREES.

WOOD BOND AND PLATES.

The district-surveyor of Greenwich laid an information against William Heath, of Charles-street, Horsleydown, for having placed wood bond and plates into the external walls of two dwelling houses in Blackheath-road, "in such lengths as to render the parts of the walls above wholly, or in great part, dependant upon the wood for support, contrary to Schedule D, part 2, of the Act, and also contrary to an award of the official referees, made upon a requisition from Oldfield and Baker, D.S. dated May, 1846."

At the hearing "it appeared, that the building in question contains four stories, and that there are two tiers of continuous wood bond, 4 inches by 3 inches, in the external walls in the second and third stories, the walls being 14 inches in thickness, without recesses, except at the staircase; and Mr. Badger, on the part of Mr. Heath, contended that bond timber thus laid in walls, did not render the walls in great part dependant upon the wood for support, and might be withdrawn without endangering the safety of the superincumbent structure, and therefore, was not contrary to the Metropolitan Buildings Act; and further, that it was not contrary to the award referred to by the district-surveyor in his said information."

The referees awarded: "That timber, laid continuously as bond or plates, or otherwise, in a 1½ brick or 14-inch wall, flush with either face of the wall, or so that it have not at least 4 inches of brick or stonework on each of its sides, does render the part of the wall above it in great part dependent upon the wood for support; and that the withdrawal of any such wood would endanger the safety of the superincumbent structure within the meaning of the Metropolitan Buildings Act. And inasmuch as the walls in question are of such thickness of 14 inches, and the bond timber and plates in question are laid continuously flush with the inside faces of the said walls, the parts of the walls above such bond and plates are in great part dependant upon the wood for support; and inasmuch, moreover, as such timber might not be withdrawn without endangering the safety of the superincumbent structure, the bond and plates in question in external walls, and in continuous lengths, are contrary, in this respect, to the Metropolitan Buildings Act; and we do hereby direct the said William Heath forthwith to remove from the said walls, and to replace with brickwork, all bond and plates of timber so laid contrary to the said Act, or so much thereof that there be in every pier of the said walls, a part equal in length upon the face of the wall to the thickness of the wall, wholly of brickwork, and without any timber therein from the foundations of such walls up to the underside of the plates under the roof, or in default of such removal, to pull down to the level of the bed of the lower tier of such bond and plates, all and every such walls as may have been so irregularly built as aforesaid."

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The Archæological Institute of Rome.—The anniversary of the foundation of Rome has been celebrated this year in an especial manner by the above society, which truly thought, that only under a really liberal government, the knowledge of antiquity can prosper. If, on the other hand, the number of excavations has decreased of late, the wish of making fully known what exists has greatly increased. The transactions of the Archæological Institute, up to 1846, are now completed; and the continuation will appear conjointly at Rome and Paris.—Cavaliere Canina laid before the society his work on the antiquities of *Veji*,—once the rival of Rome, whose ruins are not considerable, still sufficient for fixing the locality, and appreciating the importance of this old city. Dr. Braun made a report on the excavations on the western slope of the Palatine hill, executed by order of the emperor of Russia, and spoke of the discovery of a new square, adjoining the church of St. Theodoro, towards the forum, whose Travertino pavement lies in the same direction and on the same level with that near the Phocas column. The results of the excavations of Commandante Campane, near Cære, proved very important. Vases have been discovered, which nearly attain the beauty and elegant style of those of Vulci.

## THE BUILDERS' BENEVOLENT INSTITUTION.

On Monday, the 19th, as was briefly mentioned last week, a general meeting in promotion of the Builders' Benevolent Institution, will be held in the Freemasons' Tavern at one o'clock. The object is to establish a relief fund, to be applied for the service of subscribers' workmen, and to erect an asylum for the reception of decayed masters, their wives and widows. The advantages of the institution are to be entirely confined to those connected with the building trades, viz:—bricklayers, plasterers, slaters, plumbers, carpenters, joiners, masons, painters, glaziers, smiths, and paperhangers.

We have been blamed by some of our readers for not sooner urging the advantages of this proposed association; a little consideration, however, will surely convince them, that if we advocated projects submitted to us without full and satisfactory inquiry, the opinion of The Builder would soon be worth nothing. Now that we have made this inquiry, and find amongst those engaged in the formation of the society, Mr. Biers, Mr. Stephen Bird, Mr. George Bird (treasurer), Mr. William Cubitt, Mr. Nesham, and other respectable men, we are able, conscientiously, to call upon all persons connected with the building trades to give it their warmest support. Although, in affluence to-day, they may support it on purely philanthropic grounds, should to-morrow bring a reverse, they may find personally the advantage of their former good deeds. To Mr. Thomas Cozens, of Lisson Grove, the projector of the institution, considerable praise is due for much exertion in furtherance of it.

## COLLEGE FOR CIVIL ENGINEERS AT PUTNEY.

On Monday, the 12th, there was a numerous assemblage of visiters in the hall of the College to witness the annual distribution of prizes. The Duke of Buccleuch presided, and was supported by the Earl of Devon, and others. The Rev. Morgan Cowie, the principal, in the course of his report (to which we may, perhaps, refer again at greater length), alluded to the increased stability of the institution, and the importance of its objects to the great interests of the country, in providing for the development of the various enterprises which are daily being started—railways, harbours, navigation improvements, improvements in the mode of building, cleansing, ventilating, and watering of towns—operations which required enormous capital and skilful management, and the assistance of hundreds of heads and millions of hands. He observed also on the importance of science as a guide and auxiliary of the merely practical branches of engineering, ascribing the number of recent failures in bridges, &c., to the neglect of that portion of their art by a large number of engineers, who, he believed, did not know the laws that regulated the results they witnessed in the course of their professional experience, and who, therefore, were apt to generalise falsely in their opinions, and apply to particular instances their general rule, without discriminating sufficiently between the data. He considered it a matter for serious consideration by her Majesty's Government, whether or not engineers, to whom is now entrusted the lives and property of her subjects, should be allowed to exercise their valuable and important profession without some guarantee to the public of their competency.

Reports by Professor Davies (geometry), Dr. Lyon Playfair (chemistry), Professor Ansted (geology), Mr. Hodgkinson (geodesy), and others, were read, shewing satisfactory progress on the part of the students, and setting forth their own views as to the future.

Mr. Ranger, the professor of civil engineering and architecture, suggested in his report, that when Government inquiries into the causes of failures be made, the facts and particulars should be transmitted to the college for consideration. He alluded with great satisfaction to some essays "On Building Stones," which had been submitted by the students in competition.

The following is a list of the prizemen:—

*Mathematics:* Class 1, Porter and Simpson; Class 2, Coghlan and Oakes; Class 3, Campbell and Briscoe.—*Chemistry:* Class 1, Crump; Class 2, Thompson.—*Geology:* Porter.—*Geodesy:* Class 1, King; Class 2, Christie and Matheu; Class 3, Arvide; Class of Military Surveying, Heycock.—*Civil Engineering:* Class 1, King; Class 2, Ackland; Class 3, Cato and Kershaw.—*Architecture:* Class 1, Clarke; Class 2, Bennett; Class 3, Cato.—*Machinery:* Class 1, Batley and Cook—Drawings, Cook; Class 2, Coghlan—Drawings, Coghlan; Class 3, Campbell—Drawings, Campbell; Manipulation, Baldwin.—*Free-hand Drawing:* Christie.—*Linear Perspective:* Campbell.—*French:* Class 1, Porter; Class 2, Robertson.—*German:* Class 1, Calvert; Class 2, Whichello.—*Essay on Coal-Workings, &c.:* Codrington.—*Essay on Building Stones:* King.

Many others received honourable mention.

The workshops were then visited, and the drawings of the students inspected.

A long range of additional chambers and studies has been recently erected, under the direction of Mr. Little.

## ST. ALBAN'S ARCHITECTURAL SOCIETY.

On the 17th instant the second anniversary of the St. Alban's Architectural Society was held in the town-hall, the Earl of Verulam in the chair. The report of the council having been read, which stated that a general meeting of the Society will be held in Hertford on the 11th of August next, the Rev. C. B. Pearson read a paper on the late restoration of nine parish churches in the northern part of the county, detailing the manner in which the works had been carried on.

Dr. Bromet drew the attention of the meeting to the use of common varnish, for the refreshing of decaying frescoes, and of its assistance in deciphering obscure inscriptions. He also exhibited a fac-simile of an inscription in an unknown character recently discovered in the tomb of a knight-Templar, and dwelt strongly on the propriety of copying and so preserving all inscriptions, however ancient their character, or obsolete their language, alleging, that although now unintelligible, a key might one day be found which would unlock their whole mystery, and lay open to us knowledge hitherto unthought of.

Professor Donaldson read a paper on "Basilicas, the early Christian churches of the Roman empire."

Mr. Boutell read a paper written by Mr. Laing, jun., on the principles of Norman architecture, the author of the paper at the same time elucidating the subject by referring to a series of drawings which adorned the walls.

Mr. Chambers, in seconding a resolution, said,—"We did not pry into antiquity to be buried beneath its dust. No, we explored its traces, we investigated its remains that we might imbibe its spirit, that we might appropriate, and apply to the more useful and practical mind of the present day, all that we there found of graceful and noble, thus refining, adorning, and elevating an age, which, but for that, might be degraded into the sordid and self-seeking. There was in the mind of man a natural feeling of reverence for what was ancient. We looked with interest at an old tree, or an old stone, merely because we knew it had stood in its place for centuries. An old house was an object of increased interest, as it awakened thoughts of the domestic life of our ancestors; a building dedicated to civil purposes, to the administration of the laws, to the furtherance of the ends of justice, demanded a yet higher degree of regard; but one consecrated to sacred purposes, where man had met his fellow man, to worship together their common Creator, exacted our highest respect and sympathy."

## NEW ITALIAN OPERA HOUSE, COVENT GARDEN.

The production of "Anna Bolena" at the new house (a noble performance) is distinguished by some capital scenery by Grieve, worthy of note, particularly the interior of a gorgeous Tudor hall, which is excellently well painted. If the main arches were the obtusely pointed instead of semi-circular, we should be without an objection. The scenery in some of the recent *Divertissements*, and the artistical groupings, call for praise.

In respect of sound, in this building, Mr. Albano's arrangements have been most successful, every note is heard, pure and distinct.

## THE VICARS' CLOSE, AT WELLS.



### THE VICARS' CLOSE AT WELLS.

The annexed engraving is a restored representation of the exterior of the hall and staircase, and two of the dwelling-houses, at the southern end of the vicars' college or close, at Wells, in Somersetshire. This establishment originated in the year 1237 with Bishop Joceline de Welles, who first ordained the chantry priests attached to the choir of the cathedral, under the title of vicars choral. Bishop Ralph de Salopia, or Shrewsbury, in 1347 considerably enlarged the original establishment, and added several buildings, parts of which, including the two two-light windows, shewn in the engraving, over the entrance gateway, are still visible. Subsequent benefactions were bestowed and additions made, the principal of which were the erection by Bishop Beckington about the year 1450, of the Close hall-gate or chain gate, which crosses the public road, over which is a corridor or gallery communicating with the vicars' common hall, and terminating at the opposite end in a staircase which descends into the north transept of the cathedral. The buildings are thereby attached to the church, and the architectural features of this ingenious arrangement are alike exceedingly interesting and beautiful.

Beckington's three executors, Richard Swan, Hugh Sugar (illustrations of whose chantry in Wells Cathedral are given in Vol. IV. of The Builder, p. 102, and 114), and John Pope, *alias* Talbot, fulfilled the directions left behind him of applying the residue of his property "to pious uses," by entirely rebuilding, as is supposed, the vicars' dwellings. At the Reformation this establishment, though considerably reduced, escaped the fate of other religious foundations; and in the twenty-fourth of Elizabeth a charter was granted, constituting it a corporate and politic body, entitled, the Principals, Seniors, and Vicars Choral of the Choir of the Cathedral Church of St. Andrew at Wells, with the privilege of a common seal; restricting, however, their number to not less than fourteen, nor more than twenty. The vicars' dwellings, forty-two in number, are on the north side of the cathedral, and form two sides of a court, the north end of which is occupied by a chapel, with a library over, and at the south extremity communicating, as above stated, with the cathedral. They are most interesting examples of English domestic architecture of the fifteenth century. The houses have gardens in front, divided by low walls; and each garden has a porch at the entrance. On every chimney-shaft the several rebuses of Beckington's executors are successively introduced within a panel, under the arms of the see and those of Beckington, alternately.

The oriel shewn in the engraving, and one corresponding with it on the opposite side of the hall, are of later date than the other portions.

It is to be wished that the desire of rescuing from oblivion the traces of our forefathers' pious zeal and architectural skill, which happily characterizes the present time, and of which the signs are, we may hope, becoming increasingly evident, may manifest itself in the case of these unique and interesting buildings. Modern vandalism, it is deeply to be regretted, has well nigh obliterated their original features, and the little that remains to tell of the past is rapidly hastening to irrecoverable decay. May it not be too late, however, to hope that amid the interest now so much manifested in the preservation of the architectural mementos of the mediæval period, the vicars' college at Wells will not be forgotten.

F. T. D.

study, and the sketch for it, as well as many others, shew us how careful was Dance in studying the effects of all his buildings, with their several parts, as seen in *perspective*, thus avoiding those incongruities and difficulties in terminating the returns, which some of our first practitioners have occasionally been led into, in consequence of studying *only geometrically*.

Interior decoration appears to have been a favourite study with Mr. Dance; and amongst the collection are some very elaborate designs for the library at Lansdown House, with painted walls and ceilings, after the manner of the ancients, as shewn in the remains of their baths and in their buildings at Herculaneum and Pompeii. Coleorton, in Leicestershire, appears to have been one of Mr. Dance's most important works. The arrangement of the plan appears to be well conceived; but of the Gothic detail of the building I cannot speak in terms of praise. The owner of this seat was the talented and accomplished Sir George Beaumont, well known as a patron of the fine arts, and a man of high reputation for taste and judgment; and so highly did he esteem and appreciate the services of Mr. Dance as his architect, that upon the completion of the building he caused an inscription to be placed over the portal as follows:—

This house
was erected on the site of the old house,
by Sir George Beaumont, Bart., and
Dame Margaret, his wife.
The first stone was laid on the
21st day of August, 1804;
It was inhabited for the first time on Friday, the
12th day of August, 1808.
The architect
was GEORGE DANCE, Esq., R.A.,
who has manifested as much friendship by his attention to the execution of the work as he has shewn good sense, taste, and genius in the design.

In a private communication, Sir George Beaumont, alluding to Coleorton, says,—"I verily believe that the hall will become a model for future architects; it is interesting and perfectly original, and has been admired not for its costliness, but for its simplicity and its proportions."

Another of Mr. Dance's most successful works may perhaps be instanced in the façade of the Shakespeare Gallery (the present British Institution), in Pall Mall, executed for his friend, Mr. Alderman Boydell, in the year 1789. In the great essentials of harmony, character, originality, and refinement, it has always struck me as being *pre-eminent*, and the pilaster capital, one of the happiest and most original efforts that has been produced upon the few varieties we have from the invention of Callimachus. The successful application of the *ammonite* here introduced for the volute is surely a lesson to us that we need not confine our ideas for enrichments to Nature's *Flora*, but that in her shells and aquatic productions there is a rich and wide expanse for the student to avail himself of, and to apply in the enrichments of his art. It has often surprised me that after the admirable application of the *Echinus* by the ancients as a moulding, we have not followed up the idea by adopting the forms of other shells of equally beautiful outline.

The plan of the gallery is also happily conceived, and the introduction of the staircase into the middle of the gallery *itself*, an arrangement by which every inch of the surface of the walls is retained for the pictures, is most successful.

The hall of the Royal College of Surgeons, in Lincoln's-inn-fields, was one of the last works Mr. Dance executed in London, and I believe that Mr. Lewis was associated with him in it. The success and increase of this institution has nearly caused the obliteration of Dance's work, and a great architect of the present day has used poor Dance much in the same way as was done of old to Bramante and the successive architects to St Peter's basilica. There is enough, however, left to shew the purity and simplicity of Dance's design.

From Mr. Dance's intimacy with Lord Camden, who was at that time Recorder of Bath, Mr. Dance was engaged by Mr. Palmer as the architect for the new theatre. This elegant building has been greatly admired, and our much esteemed brother member Mr. Bellamy, on a recent visit to Bath, favoured me with the following remarks, from which perhaps it may be inferred that its merits have been somewhat overstated. Mr. Bellamy says,—"From the slightness of the projections and the absence of dressings to the windows, the elevation is rather insipid, and but for the masks and lyres would possess no characteristic expression of its purpose, a quality in which Dance must be considered to have been in many instances eminently successful."

I think our friend has been hardly indulgent enough in his criticisms upon the *exterior*, which although somewhat tame in design, is not devoid of character or elegance. Of the *interior*, however, he says, that it is well proportioned and more studied than the exterior; and, I think, when the meeting will, by and by, have an opportunity of examining the charming studies for the ceiling, they will agree with me that Mr. Dance, in a most eminent degree, combined the qualities of the artist with the architect.

I have now completed a very hasty, and I fear, a very imperfect notice of the principal works executed by Mr. Dance, and it was his fate, like many other great artists before him, to have some of his finest designs put on one side and forgotten. The rejection of his scheme for the improvement of the port of London, I have already alluded to, and I find among his papers, a vast design for laying out the Marquis of Camden's estate at Camden Town. Spacious streets eighty feet in width, with a crescent, and a vast eliptical area surrounded by dwelling-houses, and termed the *Colosseum*, would almost lead us to the belief that our architect, strongly impressed with the magnificence of the then flourishing city of Bath, was disposed to plant a rival in the suburbs of the metropolis.

For the following concluding remarks I am indebted to Mr. Dance's grandson, the present Mr. George Dance.

On the establishment of the Royal Academy of Arts, in 1768, he was constituted one of the original forty academicians, by George III., in which distinguished body he held the office of auditor. For his services in this capacity, the Royal Academy presented him with a piece of plate, in testimony of their respect and esteem. He was also professor of architecture in the academy, and occasionally exhibited at Somerset House.

A member of the Royal Society, as well as of the Antiquarian and Archæological Societies, and of the architect's club in St. James's-street, he associated much with the most distinguished men of science and letters of his days. In his professional capacity he enjoyed the patronage of those most able to appreciate his talents, and to afford scope for their employment.

A residence in Italy and France had made him a thorough proficient in the language of both countries, and had enabled him to cultivate with success his naturally great talent for music; he played fluely on the violin, violincello, and flute, and composed several pieces which are much admired.

He published two volumes of portraits of eminent persons, many of them academicians, which were engraved by William Daniell, and several collections of miscellaneous sketches full of imagination and humour were made and are still cherished by many of his friends. Few men have been gifted with a purer or more refined taste in poetry, painting, sculpture, and all that relates to the fine arts.

His general knowledge was extensive, an accurate mathematician, and mature scholar in many departments of science, he was enabled to bring all the powers of his well-stored mind to bear on the subject immediately before him. A large circle of friends esteemed and admired a man whose learning, good humour, and all companionable excellence in private life could not fail to render him universally beloved. He was the zealous and ready friend of merit in whatever province it might appear.

It may truly be said, that the country was adorned, and architecture improved by the science, taste, beauty, and grandeur, which characterised his works.

Nature had been liberal to him in person as well as in mind, his features were regular and expressive, and his eyes remarkably full of force and lustre.

A portrait of him was painted for his son, Sir Charles Dance, by Sir Thomas Lawrence, another by Jackson for Sir George Beaumont, from which a fine engraving was taken, and a third by Hilton, which was also engraved.

A bust by Rossi, considered to be a good likeness, is in the possession of Thomas Poynder, Esq.

He died at his house in Gower-street, January 14th, 1825, aged eighty-four. The Royal Academy, of which he was the last surviving original member, paid him the honour of following his remains to their resting place in St. Paul's Cathedral, where they were deposited in what is called artists' corner, near to those of Sir Christopher Wren, and Mr. Dance's late friend Rennie, an appropriate situation for one allied in genius to both these illustrious ornaments of their country.

SAMUEL ANGELL.

## ON ARCHITECTURAL STYLE.*

THE proper study of that which is comprehended in the idea STYLE might be easily made to involve almost the entire subject-matter of the province of Architectural Design. The present inquiry, therefore, cannot pretend to overtake more than a general view of a few prominent points, with the purpose of leading to more particular consideration of details in individual study.

And it may be remarked, that, at the very threshold of an inquiry into that which is called Style in Architecture, there is forced upon us the discrimination, out from among the adjuncts which are commonly identified with it to its obscuration and loss, of that nevertheless clearly distinct and separate entity to which a little School in the present day profess that it would be well to confine more particularly the term Architecture. The subject STYLE is a subject of ART alone. The conception of the idea of it involves the segregation of THE FINE-ART ARCHITECTURE,—the distinction between it and its mere adjuncts,—the comprehension of the perfect separateness of Art from that to which Art must refuse all relationship. When we think of Style, we see a thing that has no commutability with the superintendence of workmen; Poetry is not more utterly distinct from the correction of the press. We perceive the Fine-Art Architecture as an integer of thought, no longer confounded with the calculation of cost, or the contriving of builder's work according to the Act;—as Handel stands perfectly apart from the organ-blower, or Raffaelle from the grinder of colours. Style is a thing purely of ART.

And if we have thus at the outset a valuable idea for aiding a discrimination which many thinkers seem to find it hard to make,—for clearing away that which is an unfortunate obscurity with us,—it is not by any means an unhappy opening for our investigation to take the opportunity of so defining that which is the fundamental essence of our subject. It must be a very important step gained, when the Architect attains to the proper comprehension of his capacity of Artist as abstracted from all other capacities,—an important step in self-advancement in that Design-power which no one can affect to despise; and to teach the learner the clear distinctness of the pure Art from the mere means and modes of its embodiment, and the adjuncts, whether necessary or fortuitous, of its practical every day history, is to give him the best first lesson in its true philosophy.

Not that it is other than eminently necessary, however, for the due appreciation of our subject that the distinction I speak of should be carefully drawn. The discernment of the philosophy of Style can never be hoped for till the eye can look steadily at that pure Art in which Style has its being. The contriving of plans, and the drawing up of Specifications, and the superintendence of works, with all other things which are very excellent in their way, and very indispensable in their value, but which have no connection with the subject, we must quite set aside for the time, and abstract the perfectly separate *Fine-Art* to stand alone in the mere nature of itself, before we can hope to secure that nicety of judgment which so delicate a subject of thought demands.

Having thus defined Art,—that which lies in the design of beauty for the production of pleasure,—it may be said of it in a general

* Read at a meeting of the "Architectural Association," Southampton-street, on the 7th inst.

sense, that the essence of its pleasurableness works not in one way but in infinite variety. One mind comes to relish one particular manner of its action so as to hold this to be above all others as the best; but as perhaps every possible variety is to be found with its peculiar admirers, and as we know fashion and custom to hold so important a sway in biassing the taste, we may safely lay down the proposition that Art works in infinite variety of system with equal excellence in all. This is the foundation of style. In Music, in Painting, in Poetry, in Architecture, there are a thousand ways to pleasure—a thousand *Styles*—all equally delightful and beautiful and true.

We may again say in a general sense, that there is a manner of viewing THE BEAUTIFUL whereby it has its essence in the action of two antagonistic principles of likeness and unlikeness—amplifying themselves into uniformity and variety, correspondence and contrast, simplicity and intricacy. The tones of Music do not form melody unless they are combined in a certain *correspondence;* while at the same time if the correspondence were perfect monotony there would be no Music in no *variety*. There must be the action of a principle of *diversity;* while at the same time there must be the action of a principle of *relation* (as in the regulation of the intervals, the diatonic scale, the rules of melody);—a likeness conjoined with an unlikeness;—a variety governed by a uniformity. And Design in all Art lies in the conception of a certain variety—a certain novelty—a certain departure from monotony—which is pleasing, by the government of a strict relation—correspondence—likeness — uniformity — which constitutes STYLE. There are an infinity of styles: consistency of style is that conformity of the parts of a whole by which it is stamped as being connatural and of a homogeneous spirit: peculiarity of style is that peculiarity of spirit which one work of The Beautiful displays in difference from another: the essence of Style lying simply in the essence (whatever this may be) of character and expression and sentiment,—a varied essence developed in varied manifestation.

The exact demarcation of the good and the bad in Style may be a matter extremely difficult of decision; it may even be practically a point quite exceeding those limits in perplexity beyond which the judgment can scarcely pretend to rely upon the precision of its own powers; but that there are still unalterable boundaries, and uncompromising rules in the very nature of things—in the elements of that which is the Beautiful, it is well to keep always in view. That it is beyond our reach weighs nothing against the still certain existence of a universal government of the right and the wrong, for ever fixed in its nature and sure in its action. And however the full depth of these first essences may seem a perfectly vain object of research, yet can we undoubtedly, and with ease and certainty, attain to many very useful principles: while we may be equally assured that the eduction of such, by the generalization of evidence, and the weighing of the abstract, is the only philosophical means of obtaining that knowledge which is above empiricism, and that skill which is superior to mere experiment.

There is an empirical knowledge of Style, among architects and critics at the present day, which is very far superior to what can be claimed to have been possessed in any former time,—at least in so far that we comprehend in present practice more variety of style than our forefathers of any age can show. The labours of the Antiquary have gathered and systematized the remains of the past, with a care and nicety peculiar to our days; and the present practice of architecture lying entirely in the use of the systems of design thus collected from antiquity, there are demanded of our architects attainments in respect of style—in knowledge of certain system of its variety—which hitherto were never required to be displayed. And although our rule of style, instead of being philosophically educed principles of unity of character, is but the mere rote-precedent of copyism—an almost imaginationless reproduction by the authority of old works,—criticism being not reference to philosophy, but to antiquity—not any weighing in the scale of Truth and Beauty, but a balancing against the mere formulæ which we gather out of the ruins of the past,—Art being not the work of fancy under the control of intellectual taste, but the mere transcription of the bygone controlled by scarcely any superior principle to simple revival,—education being not any investigation of what the beautiful is, but a learning of what the practice of the ancients was,—although in all this we must own the charge that, in disregarding the pursuit of the abstractedly true and preferring the mere digging up of ruins, our age is pursuing a road very wide of the mark of what intellect pronounces ART to be, yet the study of character which this mode of practice forces nevertheless upon the mind, the education in style which indirectly it must more and more produce, ought to be a source of pleasure to us, and confidence. For the more that accuracy of style by precedent is insisted upon (since this is the shape which the progression takes), the more must we naturally come to perceive the true facts of style which the precedents contain—the true system on which Design proceeded when precedent-rule had no being, when naturally-working imagination was the manner of design and abstract judgment the test of criticism. And the more perceiving these facts, the more must we come gradually to inquire into their reason. And this, although an indirect road, may certainly, we will confess, be a good one.

But, imperfect as the criticism of precedent must always be, we have also additionally to observe, that the system of its arrangement in present practice is not by any means complete enough, or its legislation sufficiently precise, to attain the appreciation of its fulness of merit, or to equal the nicety of design with which its original authors worked. Although there is evinced by many a one among our modern architects now, a very praiseworthy appreciation (in a degree) of the truth of style to which the more naturally thinking ancients in their liberty of thought attained, yet there is very much in their works, both the classic and mediæval remains, to which our discrimination of Style does certainly not extend; we have learnt to detect much of their excellence,—but there are still further excellencies—more delicate and refined and deep, which the best of us may well suspect to lie beyond our present reach, and to which undoubtedly we very frequently indeed can detect each other doing violence.

PRECEDENT is thus far a thing to be valued, that it is a voice from an age which, in so far that it was untrammelled by precedent-rule itself, was a better age than this; and the authority of Precedent is thus far a thing to be relied upon, that the intellect of man in those days being freer (in our peculiar province) than now—freer and more under the action of the true principles of judgment which lie in Nature and Reason alone,—although there were failings and faults as there will always be, and although there were peculiar imperfections springing from the peculiar imperfections of the times, Design proceeded more *in the natural way*,—and, following Nature in exact adherence to fact (no sham, no concealment), and obeying Reason in having no standard of criticism, but abstract rationality of means and end, purpose and expression (no misappropriations, no misapplications, no subversions,—no Nelson columns, no stone proportions in iron, no "architecture applied to machinery"), the human mind produced of necessity works rightly principled, by the natural action of that mechanism of man's thought which can effect wrong only when some counteraction is laid upon it, to dislocate its agencies and perplex its operation. And thus are the precedents of uncopied design (when really uncopied)—the works of the Greeks, partly those of the Romans, partly those of the earlier dark ages, and generally those of the later, with fragments and episodes in the works of the times of the more immediate past,—thus are these precedents of uncopied design, although perhaps to be always, as the world grows wiser, in some respect or another capable of improvement, certainly to be allowed a sort of claim of authority, as being the production of a right operation of mental mechanism, and therefore (generally) *right*.

But (as I observed) following precedent for our standard of Style as it is the custom at present to do, the present extent to which the system is laid down, and the present manner in which it is carried out fall short, very materially, of the fulness of the spirit of ancient works. And indeed we may affirm it as indubitable, that the greatest attainments possible in the eduction of system merely from examples, must always leave the deeper and more delicate distinctions, in which lies so great a share of the charm of authentic works, undiscriminated and unavailable in reproduction. Even when we have attained to the discernment of the faults, so as to be able to avoid the bad, we may still fall short of the full spirit of the good, and fail to overtake many of the beauties. And it is so with our precedent-critics,—their knowledge of Style is only partial—general more than particular—extending only to the broader distinctions and chief lineaments, while the government of Style carries its authority with equal force down to minute details of unity and relation, and delicate discriminations of sentiment and character which are quite beyond their vision. It was so when Classic copyism was in vogue, it is no less so now, when this has chiefly given way to Mediæval copyism,—our reproductions of ancient Design lack very much of the spirit to which ancient works owe their essential value: and it is but a necessary result of the simple fact of copyism,—in so far that the ancient mind worked *naturally*, and followed those abstract principles of Design which are innate in the unadulterated imagination, while the modern mind has but the far more difficult and uncertain guide of imitation,—in so far that the ancient works are designed by the spirit of Design, and the modern by quite another.

The study of examples of design for the eduction of the principles of Style is one of the very first importance to the student. The perception of the grand distinctions which primarily separate what we are accustomed to call peculiarly the various styles of Architecture may soon be mastered; and the discernment of the chief subdivisions of those styles produced by different periods, and the idiosyncracies of different nations, is an attainment which it is not difficult to reach; but the knowledge of Style is not therefore an easy acquisition, or the acquirement of its spirit a simple object of research;—for these are but the greater distinctions, which appear on the surface, but the elements of whose system in its truth and fulness lie deeper, in the more delicate and more difficultly discriminable differences which, although the lesser principles, are frequently the more important directors of beauty in Style. The more you search and compare and test the authentic works of antiquity, the more will you detect in them minute but essential illustrations of variety of spirit, and the more will you find exemplifications of accurate aptness and adjustment in style to which their modern imitator is a stranger—delicate tuning in a design for which the modern hand seems scarcely light enough, for which the modern ear seems scarcely to possess the nice distinguishment. And the perception of this is learning STYLE, and acquiring therein one of the vital powers of the Architect.

And lastly, as the great value of this employment of Precedent and this study of its system is, that the result may be the overthrow of the spirit of Precedent itself in its present government, to the evil consequences of which our inferiority to the ancients in our very imitations of them, and our still greater inferiority in that strange disavowal of all power of originality which appears to be so established with us as an axiom of thought, are truthfully to be referred;—and as the hope is a rational one that even our present precedent-government itself, by its increasing strictness, will ultimately terminate in its introduction of the better spirit of true Design to supplant itself;—it may not be amiss to counsel the student thus studying the precedents of antiquity, to study them with the special purpose among the rest of rising superior to their government—rising to the level assumed by their authors in their production, and displayed, by the very fact of their producing them, to be within the reach of the right thinking mind,—to study them, in short, all the while as mere examples of what *has been produced*, not canons of what *is is to be reproduced*—as works of genius which he ought to equal as equally the possessor of the power with their producers, or rather ought to *excel* as excelling them in the advancing progress of the world. ROBERT KERR.

ultimately sold for 10*l.*, have fallen into good hands. They have been 'skilfully restored by our townsman, Mr. Stokes, and erected in the chancel of St. Stephen's Church, Snenton,' for the use of the choir. They were replaced at St. Mary's by the flimsy deal pews that now fill the chancel.——The contracts for building the new church at the Bank Top, Darlington, have been entered into, and we believe the works will be proceeded with without delay. The contractors for the stonework are Messrs. Anderson, of Richmond; for the woodwork, Mr. Robert Elwin, of Darlington; and for the plumber's work, Mr. William Russell, of the same place.——The erection of the new church of All Saints, Monkwearmouth, is about to be promoted by the profits expected from a local 'bazaar of useful and ornamental needlework,' connected with which commendable project we observe the signature of 'Emma Kennicott, secretary,' appended to a business-like advertisement of time, place, &c.——There is a report, says the *Albion*, that her Majesty will visit Ireland this month and preside at the ceremony of laying the foundation-stone of the Queen's College, Belfast; but the condition of Ireland and her Majesty's arrangements render this very unlikely.

## NOTES ON FOREIGN AFFAIRS.

The public works department at Paris has just published a statement relative to the works executed in monuments and public edifices during 1846, from which it appears that the credits opened were 9,942,931f. 80c.; the sum disbursed was less by 4,878,209f. 45c. The works of the Abbey of St. Denis are very far from being terminated. The Palace of the Institute will be finished in 1847. The Sainte Chapelle will require new credits. The projected works in the Chamber of Peers will only be finished in 1849 or 1850. The Ecole des Mines will require new credits. At the Ecole Royale des Beaux Arts only the masonry of the amphitheatre of anatomy has been done. The extensive works at the Bibliothèque Ste. Geneviève will be terminated in 1850. The repairs of the palace of the Chamber of Deputies will be concluded this year. Various other Government offices and other works are in progress towards completion between this time and 1850.——The inauguration of the statue of Frederick the Great at Breslau, took place on the 27th ultimo, in presence of the King and Prince of Prussia.——A Frankfort letter in the *Cologne Gazette* of the 6th repeats a rumour already in circulation, of the Emperor of Russia having offered to lend fifteen or even twenty millions of roubles to the King of Prussia, to enable him to promote the completion of the railway to the Baltic.——The foundation of the first German Catholic church ever built in Prussia has been laid at Leignitz, in Silesia.——The picturesque village of Lichtenberg, says a letter from Glarms, was devastated, by the bursting of an avalanche on 18th or 19th ultimo.——The Municipality of Hanover has just contracted a loan of 300,000 thalers (1,200,000f.) for building a new theatre which, it is said, is to surpass in magnificence most of those that exist in Germany.——A few days ago the first stone of the works of one of the gigantic steam-engines destined to drain the lake of Haarlem was laid.——The tower and steeple of the church of Nogent-le-Bernard (Sarthe) fell in some days ago with a horrible noise, and in their fall destroyed almost all the edifice. No one was injured. The church bell, though it fell upwards of 100 feet, sustained no damage.——We learn from Constantinople, that the palace being built by the Viceroy of Egypt, at Beycos, will be of the finest stone that can be procured, and adorned with 150 marble columns.

Sale of Property by Auction.—Caution.—In the case of Robinson *v.* Wall, the printed conditions of sale having stated that the property would be sold *without reserve*, which means that "no person will be employed to bid in behalf of the vendor for the purpose of keeping up the price," whereas an arrangement existed which would have prevented a sale under a certain amount; the Lord Chancellor has decided that the purchaser can not be called on to complete.

## BUILDERS' TENDERS.

We continue to receive many statements of lamentable differences between tenders for work delivered by builders. One correspondent, who signs himself "A Surveyor," attributes the mistakes in many instances to errors in moneying alone.

We give below a few recently delivered tenders:—

*London Orphan Asylum.*—Tenders for alterations to the chapel, sundry repairs, and painting, whitewashing, &c. Mr. Arthur Ashpitel, Architect.

| | |
|---|---|
| Jay | £861 0 |
| Trego | 800 0 |
| Lawrence | 780 0 |
| Holland | 746 0 |
| Treharne | 642 15 |
| Barber | 587 17 |

The quantities were taken out by Mr. Meakin.

For repairs to be done at No. 26, Frith-street, Soho, Mr. C. Foster, architect.

| | |
|---|---|
| Simes and Son | £338 0 |
| Woodcock and Son | 320 0 |
| Bodger | 165 0 |
| Lloyd | 147 0 |
| Brake | 146 0 |
| Bugg | 140 0 |

*Holborn and Finsbury Commission.*—Bunhill-row, St. Luke's: length 1,370 feet.

| | |
|---|---|
| Batterbury | £1,250 0 |
| Yeoman | 1,034 0 |
| Ward | 955 0 |
| Jay | 917 0 |
| Dethick | 911 0 |
| Hill | 873 0 |
| H. Johnson | 774 0 |

Cross-street and Wilderness-row: length 850 feet.

| | |
|---|---|
| Thos. Ward | £722 0 |
| Yeoman | 697 0 |
| Jay | 644 0 |
| Dethick | 635 0 |
| Batterbury | 628 0 |
| Hill | 627 0 |
| H. Johnson | 574 0 |

## LODGINGS FOR THE WORKING CLASSES IN GLASGOW.

"The Glasgow Association for establishing Lodging-houses for the Working Classes," has opened its experimental establishment. According to a Glasgow paper, the house, which has been fitted up for this purpose under the direction of Mr. James Wylson, architect, comprises four stories, thus affording facilities for accommodating separately the three classes of inmates, who in such places must be provided for, namely, single males, single females, and married couples, leaving the ground story to be appropriated to the dieting department. It has accordingly been thus arranged,—the three upper floors as dormitories according to this classification, and the ground floor as a day-room, divided by low partitions into corresponding compartments for the use of the lodgers during the day, and in which they may take their meals. For economy of space, the dormitories have been fitted up with two tiers of berths, after the manner of passengers' cabins on ship-board, excepting that the upper and lower berths are entered from opposite sides; thus, though rendering more standing room necessary, accomplishing the complete separation which is essential in houses of this description. Each berth is furnished with a seat, and is inclosed by a door, in order to secure the clothes and other property of the occupants; and each dormitory is provided with a water-closet, also a lavatory containing several wash-hand boxes, so that a small number may wash at one time. The kitchen and bar are combined, and are situated at one end of the ground story, separated only by a counter from the seated portion forming the day-room. Here are provided the means of furnishing plain wholesome meals; and advantage is taken of the draught in the furnace, which heats the coppers, for ventilating the dormitories above; this is effected by means of an upright shaft of tin tubing, which communicates with each floor, and leads into this furnace, so as to become mainly the source of its supply of air, while it is the medium by which the vitiated atmosphere of the several floors is drawn off downwards. In the present case the downward mode of ventilation happened to be the most available. Arrangements are being made for fitting up, in the rear of the premises, one bath for male and another for female lodgers.

## THE VALUE OF DESIGN.

At the distribution of prizes in the Glasgow School of Design, on the 1st instant (Sheriff Alison in the chair), Sheriff Bell said, in the course of an excellent speech, that "a sum of no less than 5,000*l.* is annually paid by persons engaged in various pursuits in Glasgow to parties in France for designs; so that (he continued) there is not only a wide field of competition around us, but there is the fairest prospect of success in a worldly or mercantile point of view to the man or woman who devotes the requisite time and study to the acquisition of the arts of design. There is no fear of such persons failing to assume a respectable position in society and obtaining a decent income. This, of itself, is a consideration of very great importance to the pupils. Next session it is proposed to arrange a room in which visitors who cannot attend regularly as pupils shall be permitted to study at certain hours of the day. I have no doubt that calico printers and others would find it profitable to devote some hours a week to study; and the arrangement proposed will not interfere with those students who come daily, while its effect will be to open up something like a small British Museum of useful art in Glasgow, which may ultimately be of great consequence. I think we may, without the indulgence of vanity or enthusiasm, look forward to the time when there will be a distribution of prizes in greater number, and still more useful than such as we are now enabled to award. It is now upwards of four hundred years since a most remarkable competition in the arts of design took place in the city of Florence, when the magistrates of that city determined to have for their baptistery a splendidly sculptured gate, and with this view announced prizes in all the principal cities of Italy. Artists came forward from all parts of the country with their designs for competition, and at length the number was reduced to three. Again the princes and magistrates assembled from great distances, and there was a feeling prevalent that amongst the works exhibited would be found something that would deserve to last for ages. Ghiberti and Brunelleschi, encouraged by this, produced their immortal works. Brunelleschi, an old man, behaving with the philosophy of one who had already won his laurels, and knowing that Ghiberti was a young man of only twenty-three years, resigned the competition, and declared that he himself voted for Ghiberti. A pannel from this work of Ghiberti's is now on the walls, executed by one of our own pupils. Ghiberti devoted forty years of his life to these gates; his labours have been the admiration of all the world, and Michael Angelo declared them worthy to be the gates of Paradise.

The Lord Provost said that Sheriff Bell had told them—what might well impress every one with the value of a school of design—that Glasgow merchants expended annually in France no less than 5,000*l.* per annum for their various establishments. He trusted that they would not much longer have to go there for designs to adorn their houses or their streets; but that out of the classes raised in this school, as well as from similar institutions throughout the kingdom, designs might yet be furnished worthy of our country. He was happy to see that her Majesty's Government were turning their attention to the encouragement of native art. He had noticed from the public prints, that a countryman of their own was to be employed in decorating the New Houses of Parliament, and who had recently obtained one of the prizes awarded by the Government. He meant Mr. Noel Paton, a gentleman who, like many of the pupils of the present institution, had been engaged in the mechanical arts. He begged to move a vote of thanks to Mr. Mc Manus and the other masters, for their meritorious exertions during the past year.

## New Books.

*An Inquiry into the Difference of Style observable in ancient Glass Paintings, with Hints on Glass Painting.* By an AMATEUR. Oxford. Parker. 1847.

THIS work cannot fail to have a considerable effect on the beautiful art of which it treats, and should be carefully studied by all who are in any way interested in its progress or application. The antiquary, the artist, the glass painter, and the general reader, must alike admit the value of this book, which has made clear and consecutive what before was scattered and confused, and is evidently the result of many years of personal examination, study, and comparison. It is only occasionally that we feel called on to speak in such unqualified terms of approval as we do in this case.

It consists of two handsome volumes, the second of which is devoted wholly to illustrations. The first volume comprises, after matter introductory, with many valuable notes, fine sections discriminating the styles, for the classification of which the author adopts Mr. Rickman's architectural nomenclature; viz., early English, the decorated, perpendicular, cinque cento, and the intermediate. These constitute the first chapter. The second chapter is divided into three heads, on the "Employment of painted glass as a means of decoration," "On the true principles of glass painting," and "On the selection of a style." In various appendices are given a translation of parts of the *Diversarum Artium* of Theophilus (an excellent translation of which in full, by Mr. Hendrie, we recently mentioned), and various illustrative extracts from other old writers.

The following observations on the means by which the age of particular specimens of the art can be ascertained, are from the introduction, and will be found interesting:—

"In few branches of antiquarian research will a knowledge of minute details, and the consideration of internal evidence, be found more important than in this. It is seldom that the age of a glass painting is determined by the direct testimony of a date affixed to it, or of written documents; nor can a safe conclusion always be drawn from the situation which it occupies. It might at first be supposed that the glass would not be older than the window in which it is found, especially when the principal divisions of the picture or pattern coincide with the apertures of the window; but the inference from this circumstance cannot be relied upon, since instances are known in which windows have been constructed for the reception of glass older than themselves. It is therefore only from the internal evidence afforded by the work itself, that the date of a glass painting can in general be ascertained; and this evidence is not, as in a Gothic building, presented by a few prominent features, the contour of a moulding, for instance, or the form of a window, but by a variety of minute particulars, no one of which is perhaps adequate of itself to decide the question.

Some of these tests are peculiar to glass paintings, such as those afforded by the nature and texture of the material, its colour, and the mode of painting it. Some, again, it has in common with other objects; such as the character of the drawing, the form of the letters, the architectural details, the costume of the figures, the heraldic decorations, &c. All these features are not equally trustworthy; those derived from the general practice of the day, as regards the manufacture of the glass, and mode of painting it, are more to be relied on than those afforded by the nature of the particular subjects represented.

Each period of medieval glass painting has its distinctive style of execution, but artists were at all times prone to copy the designs of their predecessors. This may serve to account for the occasional representation in a glass painting, of the armour, costume, and architectural features of a period anterior to that of the work itself.

I shall now endeavour to shew more particularly the value of certain tests of date.

Mere *general arrangement* affords scarcely any criterion of date. The "*medallion window*" is perhaps confined to the Early English period; and designs extending themselves into more than one lower light of a window, can hardly be said to be earlier than the Decorated. But with these exceptions, almost every late arrangement is to be found more or less developed in the earlier styles.

The *general appearance* or *effect* of a glass painting is a feature deserving the utmost attention; but taken alone, it affords only a sure proof that the work belongs to some general period, without conveying a more definite idea of its date. The general effect of a glass painting depends indeed almost entirely on the quality and texture of the glass employed in it. Hence it varies according to the progressive changes in the manufacture of that material.

These, as might be expected, were so slow and gradual, as to be hardly perceptible; and glass, apparently of the same quality, was therefore employed during long periods of time. Owing to this circumstance, it becomes impossible to pronounce with certainty whether, for instance, an early glass painting, judging only from its general effect, is of the Early English, or early part of the Decorated period; whether another is late Decorated, or early Perpendicular; or whether to a third should be assigned a less general date than the space of time between the beginning of the fifteenth century, and the end of the reign of Henry VI., &c.

The execution of a glass painting according to any particular mode, the first invention of which is capable of being ascertained, raises a conclusive inference that the work cannot be earlier than a certain time; but seldom affords any other criterion of its date. So the representation in a glass painting of different ornaments, costumes, armour, and architectural details; the symbols of the alliance of families, or of individuals holding particular offices, serve in like manner to limit the antiquity of the work; without, however, at least in the generality of cases, setting any precise bounds to its lateness. Thus, for instance, the existence of the *yellow stain* in a glass painting, is a proof that it is not earlier than the fourteenth century. In like manner, a glass painting which exhibits *stippled shading*, or ruby glass having some of its coloured surface purposely abraded, may be pronounced not to be earlier than the fifteenth. Again, the use of *enamel colours* marks a glass painting as having been executed after the middle of the sixteenth century, while the trifling circumstance that the glass has been originally cut with *a diamond*, will denote that another work is not earlier than the seventeenth century. The representation in a glass painting of Decorated windows with flowing tracery, is an evidence that the picture was not painted until after the introduction of this feature in architecture. And the appearance of a shield bearing the private arms of a bishop impaled with those of his see, will in general raise a presumption that the work was executed during his prelacy."

We again cordially recommend to our readers this very interesting "Inquiry into the difference of style observable in ancient glass paintings," and give praise to Mr. Parker, the publisher, for the beautiful manner in which it is produced.

## Correspondence.

CARDIFF COUNTY HALL COMPETITION.

SIR,—Your columns have had repeated remarks and suggestions for the improvement of architectural competition, but how can it be expected that such can be the case when some architects (not all) are the first cause of it themselves, as for instance, at this present time. An advertisement appeared in your columns inviting architects to submit designs for a new county hall, &c., at Cardiff, Glamorganshire, when from 30 to 40 sent in designs, and only about six approached the building wanted. Now the fact turns out that an architect was employed to draw out an advertisement for the town council, he himself, in conjunction with others, having sent in designs embracing all the accommodation, &c., required (differing from the vague advertisement he had drawn out). I would suggest that the different architects who have sent in designs should apply immediately for their designs and for a fresh competition, and to be furnished with the detailed particulars, to be drawn up by some responsible and respectable person.

I remain, Sir, &c.,

ONE OF THE COMPETITORS WHO HAS NOT SEEN THE SITE.

BATTERSEA PARK BUILDING SOCIETY.

SIR,—Had your correspondent "A Builder" applied to us, we would have afforded him every information in our power. Ere this, he has been informed that the tender of Mr. Burtenshan has been accepted by the directors at their last meeting, July 8th.

The fact of the tenders being called by public advertisement, rendered caution on our part imperative, especially as the lower tenders were very much below our estimate 3,600*l.*, and the directors had reserved to themselves the right of accepting any tender. The directors meet but once a month, consequently a great deal of delay was necessary, in order that they should sanction our proceedings.

We furnish below the names of the parties tendering, and the amount of their tenders.

We are, Sir, your obedient servants,

THOMPSON AND MORGAN.

July 15th, 1847.

| | |
|---|---|
| Costworth | £4,217 |
| Cooper and Davis | 4,200 |
| Knible | 4,140 |
| Underhill | 4,027 |
| Todd | 3,949 |
| Mackrel | 3,721 |
| Burtenshan | 3,500 |
| Pilbeam | 3,479 |
| Sandon | 3,280 |
| Share | 2,880 |

PLASTERING ON CLAY WALLS.

Sir,—Referring to my journal of July, 1816, I find the following note:—"Almost all the houses between Maçon and Lyons are of earth or pisé, built in chests about 6 feet long, 3 feet high, and 2 feet thick, a layer of mortar 3 inches thick between each course, and also at the ends of the blocks. The roofs project at the *ends*, as well as at the sides, which has a very good effect. The tiles are double; this was, probably, the origin of the beautiful ornament on the monument of Lysicrates at Athens, and which is supposed to have been placed upon all temples."

The "Young Architect" will find the projecting roof on both sides lends the best protection for his cob walls. My recollection is, that these were only white-washed, but my notes are silent. Let me advise the plastering to be as thin as may be. Your correspondent will find a full account of the working of pisé, by my friend Mr. Cresy, in a little work just published by Ridgway, "Cottages of Agricultural Labourers."*—I am, Sir, &c.,

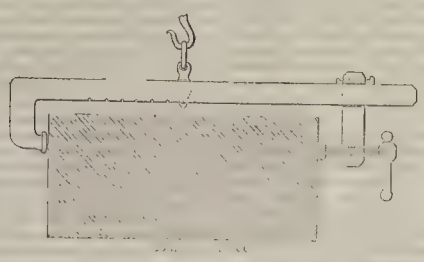
York, July, 1847. AN OLD ARCHITECT.

## Miscellanea.

A MODERN MIRACLE!—Shakspeare read "sermons in stones," but we doubt whether he ever dreamt of deriving a *rope* from the same source. And yet, if a "sermon," why not a "long yarn?" Modern ingenuity has not found it a thing impossible. A rope, nearly three miles long, now lies on the verge of the borough of Gateshead, which was the other day a stone in the bowels of the earth Smelted, the stone yielded iron. The iron was converted into wire. The wire was brought to the wire-rope manufactory of R. S. Newall & Co., at the Teams, near Gateshead, and there twisted into a line 4,660 yards long! It is, we believe, the stoutest rope of the kind that was ever made. It weighs 20 tons 5 hundredweights, and will cost the purchasers upwards of 1,134*l.* It is intended for the incline on the Edinburgh and Glasgow Railway, near the latter city. A rope of hemp, of equal strength, would weigh 33¼ tons, and cost about 300*l.* more. It would also entail greater expense while in operation (owing to its greater weight) and would sooner wear out. Ropes of hemp, however, for some purposes, are superior to ropes of iron. The rope now lying at Messrs. Newall's is one of the greatest curiosities we have seen for some time. We were reminded whilst looking upon it of the boast of one of Shakspeare's fairy friends, that he could "put a girdle round the earth in forty minutes." Poor *Puck*, we thought, would have been in a sad pucker, if these twenty tons of iron rope had been handed over to him for a beginning! —*Gateshead Observer.*

* A useful *brochure*, "published with the hope that it may aid in promoting the comfort and the prosperity of the invaluable labourers of our country."—ED.

## A STONE-LIFTER.



### A STONE-LIFTER.

Sir,—Being engaged in the construction of bridges, &c., on the Great Grimsby and Sheffield Junction Railway, and the engineers objecting to lewis-holes in the face of the coping, Mr. Joshua Oliver, clerk of the works, suggested a plan to obviate the difficulty. The annexed sketch is a representation of the apparatus, which is nothing more than a bar of iron, 3½ inches wide and ½ an inch thick, with a sliding piece and screw; but should it be used for rough stones, the screw may be dispensed with by adding a key to the top of the sliding piece, as shewn by the dotted lines.

Thinking it might be useful to other parties, I obtained the sanction of the inventor to forward it for your valuable and most useful paper, hoping you will not deem it unworthy of a corner.—I am, Sir, &c.,

An Old Subscriber.

Morton Gainsbro'.

### DEE BRIDGE.

Sir,—I perfectly agree with your remarks respecting the fallen bridge over the Dee at Chester, but though I have given close attention to all the reports, evidence, opinions, &c., as they have successively appeared, I think there is one peculiarity in the structure of this bridge, the effects of which have not been duly estimated, nor, as it appears to me, clearly understood.

I allude to the curvature of the rails over the bridge. I am aware that General Pasley stated, "though he knew of no other iron-girder bridge passing on a curve, yet the curve was so slight that it was scarcely worth mentioning," &c. Also that Mr. Stephenson, in his report, has estimated that the lateral strain from this cause would only be about 750 lbs. But these adverse opinions have not shaken my belief that the curvature of the line had considerable effect in producing the fall of the bridge, and I think nothing can shew more plainly the folly of pinning your faith on great names than this accident, and the subsequent investigations.

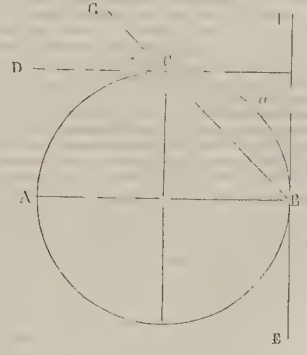
It is a matter of first importance to arrive at just conclusions in a question like this, as improved experience can only thus be obtained, and this is the only beneficial result that can arise from such a calamity. I trust, therefore, you will excuse a little prolixity in my endeavouring to make clear this point.

The curve in question had a radius of two miles.

In the following diagram, let ABC be a circle of four miles in diameter, and the portion B*a*C a quadrant of that circle, and consequently a curve with a radius of two miles. Let EB be the direction of any moving mass. Draw a straight line from B to C and produce it towards G. Produce EB also towards F, and draw CD perpendicular to EF.

Suppose a mass with uniform motion, and having an impinging force of 200 tons moving from E towards F. To arrest this motion at B, or turn it at right angles in the direction BA, it will be requisite to have a power at B capable of sustaining an impinging force of 200 tons. But if instead of arresting the motion at B, it is only required to divert it in the direction BC, half this force will be sufficient; for it is an established law, "that every change of motion must be proportional to the impressed force, and the converse;" and it is obvious, from an inspection of the figure, that a deflection in the direction BC would be just in the mean between its true course and one at right angles, to direct it to which the full impinging force would have to be sustained.

The same power would be required at the point C, if the mass be supposed to be moving from B towards G, and it is required to be deflected at C, in the direction CD, for the angle of deflection is the same as at B. It appears, therefore, that to divert a moving mass from one direction to another direction at right angles, its full impinging force must be sustained.




This is precisely what is accomplished by a railway curve, and as it is an axiom that like effects are produced by like causes, it follows, that though the mass moving from E towards F, be deflected at B along the curved line B *a* C, the same power has to be exerted, for just the same effect is produced on the mass, as if it had been deflected at B, in the direction of BC, and at C in the direction CF. There would, however, be this difference, instead of the deflecting power being required at only two points, B and C, it would be required to be distributed along the whole length of the curve.

By this theory therefore, if the length and curvature of the line and the impinging force of the moving mass be known, it is easy to determine the lateral pressure upon each lineal foot of curvature. In applying it to the case in question, I assume that the weight of the engine and tender is correctly stated at 33 tons and the velocity at 30 miles per hour. The radius of the curve being two miles, the length of a quadrant curve would be about three miles, and though it might be difficult to determine the exact amount of impinging force, an approximate amount may easily be arrived at; impinging force being proportional to the velocity and gravity of the moving mass.

Thirty miles per hour is equal to 44 feet per second of time, and 33 tons moving at the rate of 44 feet per second, would be equivalent to 44 times 33 tons moving at the rate of 1 foot per second. This again would be equivalent to 12 times this amount of gravity or weight moving 1 inch per second, and this again to 4 times this amount moving one-fourth of an inch per second. 33 tons × 44 × 12 × 4 = 69,696 tons. But the impinging force of a body in motion let the motion be ever so slight, is greater than an equal body at rest; therefore the impinging force of 33 tons moving at the rate of 44 feet per second, is greater than 69,696 tons. We cannot consequently over estimate it, if we take it in round numbers at 70,000 tons.

It has been before shewn, that to divert the motion of the mass from the direction of one straight line to the direction of another straight line at right angles to it, its whole impinging force will have to be sustained. A quadrant curve of three miles in length, therefore, with a weight of 33 tons moving at 30 miles an hour, would have to sustain a lateral pressure of 70,000 tons distributed over its entire length. This would amount to 4⅛ tons per lineal foot nearly, and as the bite or hold of the flange of a driving wheel 5 ft. in diameter would be about 1 foot, there would be a constant and continuous pressure of 4½ tons. This is for the engine and tender alone. Every attached carriage would be under the same influence, and exert a pressure in proportion to its weight.

The weight of the attached train was about equal to that of the engine and tender, the lateral pressure would therefore be equal, and this will give an aggregate continuous pressure of about 9 tons.

This calculation is without allowing any thing for the pressure arising from the action of centrifugal force; which, as it would disturb the centre of gravity and throw it outwards, would increase the lateral pressure, though from the great radius of the curvature, in only a small degree. The action of centrifugal force, however, would have this important effect: it would throw the whole of the lateral pressure arising from the tendency of bodies in motion to persevere in a straight line, and which we estimate, as before shewn, at 9 tons, upon the outside line or rail of the curve, and consequently upon the outside girder of the bridge.

I take Mr. Kennedy's estimate of 70 tons on the centre as the correct breaking weight, for it is about the mean of the different estimates; and supposing the estimate of the permanent load on the girder, as furnished by your correspondent on the spot, to be also correct, it is equivalent to 28½ tons placed on the centre. This added to 33 tons, the weight of the engine and tender, and to 9 tons, my estimate of lateral pressure, will give 70½ tons, which is half a ton over the breaking weight. Again, Mr. Kennedy's estimate of 70 tons is on the assumption that the girder was in its proper vertical position, which, from the observation of your correspondent, that some of them yet remaining are as much as 1½ inch from this position, is very doubtful. In fact, the constant action of this great lateral pressure would have a tendency to disturb the vertical position of the girders, by straining and lengthening the tie-rods; and, in reply to Mr. Stephenson's argument, that greater weights moving with greater velocity had passed over this bridge with safety, I would observe, that this was when the entire structure was in its integrity, and before it had been weakened by constant straining.

In the case of the three engines, the weight would be about 100 tons, and the lateral pressure arising from the cause I have been endeavouring to explain, twenty-seven tons if they moved with the same velocity; but if the velocity was greater, the lateral pressure would be proportionably greater, and might possibly amount to forty tons. This great lateral pressure acting simultaneously with the vertical pressure would resolve, and manifest itself in the line of least resistance, and both a deflection of the girder and a great strain upon the transverse tie-rods would ensue, and it is not improbable that the tie-rods would occasionally be stretched, and thus allow the girder to deviate from its true vertical position, and thus become weaker in proportion as the deviation increased.

That the curvature of the line had to do with the deflection of the girder is further made evident from the fact, which was clearly proved in the evidence, that with every increase of velocity in the passing train there was a corresponding increase in the deflection

of the girder. If the line had been straight, the very contrary would have been the case. Every school-boy knows that he can with safety slide over a piece of ice he dare not stand upon; and that a heavy ball may be rolled over a substance which it would break if placed on its centre. *Velocity decreases vertical pressure*, and a velocity may be conceived by which vertical pressure would be entirely destroyed. A ship in rapid motion draws less water than when at rest. How then is the increase in the deflection of the girder caused by an increased velocity to be accounted for, if the curvature of the rails only caused a lateral pressure of 750 lbs., as stated by Mr. Stephenson.

I come, therefore, to the conclusion that the curvature of the line over the bridge had a great deal to do with its ultimate failure, and I have heard of nothing in the course of the investigation which has shaken this opinion: if it be wrong, I should be glad if any of your numerous correspondents would set me right.

GETA.

Liverpool, July 1, 1847.

## THE GAS MOVEMENT.

### PREPARATIONS FOR A BETTER STATE OF THINGS.

Not a week passes without some additional progress towards a reduction of the anomalous state of prices to their destined level, as a prelude to the vastly increased diffusion of this noble element of modern comfort and convenience, amongst the domiciles of every class of the community, not only as a cheap and plentiful substitute for the light of day, but as a substitute for the ruder and more cumbrous sources of heat in its application to domestic purposes in general. And even the privileged because the common-good establishment at Manchester, by the profits of which so many magnificent public improvements have been already carried into effect, seems now determined not to be surpassed in the movement towards the diffusion of such a boon as cheap and good gas to every class even of those already otherwise so nobly benefited. From 24th ult., the prices at Manchester have been further reduced to 5s. from consumers of small quantities, and 4s. 6d. from consumers of large quantities; and doubtless as domestic consumption increases, further reductions will lead to further diffusion; and we rejoice to perceive that many of even the monopolist companies seem to have now resigned themselves to a movement onwards with the stream of such a more or less rapid or gradual, but at all events certain, reduction. The Devonport Gas and Coke Company, for instance, in announcing a reduction of price from 6s. to 5s. per 1,000 cubic feet, and recommending the more general adoption of gas for domestic purposes,—towards which, by the way, it has organized a system likely to be efficient, namely, the supply and fitting up of every requisite in private dwellings, for heat, no less than for light, at their own expense, and for a mere annual charge of 7½ per cent. on the net cost of the fittings,—go on to observe, that as the demand for gas will be greatly increased as it is brought within the reach of all for general use, so in proportion to the increase of consumption will it be in the power of the directors [in their inclination, and for their increased advantage, it ought to have been] from time to time to lower the price of their gas, and thus to render its use still further economical to the public."——Following a little further in the wake, but still all actuated by the one grand movement downwards in price—but upwards, we will venture to say, in prosperity—other companies are ever and anon displaying an inclination, however futile, because insufficient, to benefit both the public and themselves. At Dorchester, for instance, a recent announcement of a further reduction to 6s. 8d. per 1,000 cubic feet was lately made, and it now appears that while the company there is "probably in a more flourishing state than most others," their gas is not only beginning to be used in the churches and chapels, hotels and public houses, shops and warehouses, but that it is penetrating into drawing-rooms and parlours, bedrooms, passages, and kitchens, cellars and stables.——At Penrith, the company have reduced their prices at one sweep, as well they might even for their own sake, from 10s. down to 7s. 6d.; and it is to be hoped that the result will shortly induce them to repeat so bold a step with confidence, increasing with the increase of demand upon their mains.——The company at Wells were to reduce their price to 8s. on 25th ultimo; and they have now the confidence to which however they are scarcely yet entitled, to hope "that persons who have not hitherto used this light for household purposes will find it the cheapest as well as the cleanest and safest light that can be used."——Gas works, we observe, are about to be erected at Alton, Hants, and at Needham-Market, tenders having been called for.

The Southampton gas consumers' bill, whose threatened success had already frightened the old company into less unreasonable charges and more civil conduct, has been meanwhile adversely disposed of by the Commons committee; the existing company, however, being put under terms to submit to a Parliamentary obligation, not to exceed six shillings as a maximum charge to private consumers, and also to conform to the reduced scale for public lights according to the model rate. So far, therefore, even in the midst of the temporary defeat of wholesome competition, the old company have no great reason to triumph in the compulsory adoption of the check suggested by THE BUILDER, though as yet but leniently applied. "The adventurous promoters," however, as the *Hampshire Independent* remarks, "have done a service to the town, which the committee has taken care to exhibit accompanied by a martyrdom; warning all against the danger to themselves—whatever may be the good to others—of attempting to promote beneficial competition. The danger of the precedent here laid down is obvious. This is not an age when men choose to become martyrs for the public good. Yet martyrs they must necessarily be, if the very success which they have experienced, in reducing the price and improving the quality of what has become a necessary in any town or city, shall be admitted as a ground for refusing them permission to enter on the actual competition, when the mere dread thereof has forced the monopolists to compromise their own interests, and to consult those of the public."

The days of the age of martyrdom, however, at least of such martyrdom as this, are numbered. After a struggle of fifteen years, Mr. Hume has at length succeeded in purging committees on private as on railway bills from local members, and so the promoters of this and other consumers' companies will be encouraged in future attempts to establish, in all directions, a new and more popular and economical order of things. As regards the local company in question, indeed, it appears accordingly, that they are by no means disposed to abandon their project; but that, on the contrary, they design to recommit their bill, as doubtless many others will do, in the forthcoming Parliament, to the judgment of disinterested members, selected because they are unconnected with the locality on whose best interests they are to be called on to adjudicate. Even in the past session, however, in cases such as that of the Wakefield rival companies, although they agreed to a compromise, they were very significantly informed, that "the satisfaction of the parties immediately concerned would not alone be accepted as a ground for legislative acquiescence; and that in all such cases the public interests, as well as of the parties, should be duly protected.

## BUILDING IN ALGIERS.

The extent to which building is going on in Algiers, is scarcely understood in England. This country is associated in our minds with little but barbarism, Christian slaves, and bombardments; and we are scarcely prepared to hear of a cathedral, churches (some for Protestants), abattoirs, schools, covered markets, banks, custom-houses, &c., on which many thousands of pounds sterling have been expended by the French. Yet such is the case, and the erection of private houses keeps pace with the constant increase of the population. In the mixed or Arabian districts of the three provinces, no less than 842 private houses have been built, the value of which is estimated at 176,000*l.*; besides 38 industrial establishments, estimated at nearly 9,000*l.* more.

## THE ARCHÆOLOGICAL INSTITUTE.

Last week we mentioned the arrangements which had been made for the meeting of the British Archæological Association at Warwick. The meeting of the Institute at Norwich will follow it immediately, commencing on Thursday the 29th inst. and terminating on the 4th of August. The Bishop of Norwich will act as general president, and Mr. Hallam, the Dean of Ely, and Lord Northampton, as presidents of sections. We hope to give full reports of the proceedings of both societies.

The new number of the *Archæological Journal* of the Institute* contains much interesting matter. The first paper, "Architectural Notes in the Neighbourhood of Cheltenham," embraces a number of curious parish churches, illustrated by 18 wood-cuts and etchings. St. Mary's Church, Nun-Monkton, Yorkshire, the subject of another paper, with 11 excellent illustrations, belongs to the end of the 12th century, and was begun in the transition Norman style and finished in the pure Early English: "The west front is of very singular design, and particularly elegant. It is remarkable for the curious and very ingenious combination of a tower and high pitched roof in one design. If the tower were removed, the front would present a gable with a pitch of sixty degrees, thus forming an equilateral triangle on the side walls. On the point of this gable is placed the parapet of the tower, the west side of the tower itself forming part of the gable, and the other three sides being included in the church."

## NOTES IN THE PROVINCES.

Besides the burning of a number of buildings at Greenwich by lightning during the late midnight storm, considerable damage has been done in various other quarters. Around Kennington, several buildings were much injured, and the district church of St. Mark, facing the common, was considerably damaged, and the building shaken so as to stop the motion of the clock.——A plan and estimate for building the new barracks at Gosport for the Portsmouth division of Royal Marines, have, by direction of the Admiralty, been drawn out and submitted by Captain James, the officer of Royal Engineers in charge of naval architectural works.——The restorations of the Abbey Church at Romsey, are at length so far completed that the re-opening will take place on the 21st instant.——On Tuesday week the new church of St. James, erected at Beal Hey, Shaw, Crompton, was consecrated.——Trevethan new church, Monmouthshire, was consecrated on Thursday week.——The town-hall committee, says the *Birmingham Journal*, have instructed Mr. Edge, their architect, to sell and remove the old materials on property near the town hall; to prepare an estimate of the expense of completing the town hall according to the original design; and to apply to the owners of quarries in Anglesea as to a supply of stone. This had been done, because it took twelve months before any stone could be prepared for the purpose.——The mastership of the Manchester School of Design has been conferred upon Mr. A. D. Cooper, son of Mr. A. Cooper, R.A.——On Thursday week, the corner-stone of the extension, of south wing of the Manchester Royal Infirmary, was laid.—— Another omen of the *fall* of markets, and of those who have hitherto so successfully screwed them up to famine prices, and refused to sell of their superabundance even at these, has just occurred at Liverpool, in the fall of another heavily stored granary from the immense pressure within.——Upwards of 10,000*l.* worth of the land laid out for villas at Eastham, says the *Liverpool Albion*, was brought to the hammer on Tuesday week, and fetched high prices, ranging from 4s. 6d. to 6s. 9d. a yard, principally for terrace lots.——Some of the land bought at Birkenhead at 4d., has sold at 4*l.* 4s. per yard.——The bricklayers and labourers of Derby have struck for an advance of 2s. each per week, or 24s. for the former and 15s. for the latter.——The old oak stalls, which formerly belonged to St. Mary's Church, says a Nottingham paper, though they were smashed down in the most wanton manner, and actually offered for sale at all the curiosity shops, and

* No. 14, for June. Published at the Office of the Association 12, Haymarket; Murray; Longman, &c

THE SCHOOL OF DESIGN.—The report of the committee on the School of Design, to which we directed attention in a recent number, has not greatly pleased the council. If we understand rightly, another committee has been appointed by them to confer with the Board of Trade; and Mr. Hamilton, until now an active member of the council, has resigned. We shall give next week, from the "Appendix to the Report," a letter from Dr. Cooke Taylor to Mr. Shaw Lefevre, on the nature and objects of schools of design, which merits consideration.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of the Sheffield Athenæum and Mechanics' Institute; a dwelling-house and offices at Cuckfield; a pair of semi-detached villas in Twickenham-park; altering and repairing a residence at Mitcham, Surrey; rebuilding schoolmaster's house at Reston, Coldingham; erecting school-room at Tipton; new farm onstead at Chirnside, Berwickshire; vicarage house at Polluxhill, Beds; fever-house at Melton Mowbray; several works of new battery at Portsmouth; sundry works at Portland breakwater, comprising earth-works, railways, and machine houses on inclined plane from quarries; erecting buildings required by Needham Market Gas Company; erecting gas works at Alton, Hants; extending sewers 1,150 feet in Tower Hamlets; supplying 2,000 feet run of Carline nose stone kerb, or Aberdeen, Cornish, or Devon granite berb, 12,000 feet superficial of 3-inch York paving, and 170 yards superficial of 6-inch granite crossings, all for the parish of Westham, Essex; also for maintaining permanent way and works of Maryport and Carlisle railway for three years, in three contracts or one; supplying a contractor with 100 tons second-hand, flat bottomed, temporary rails at Dumfries or a seaport near it; for a supply of 20 to 50 tons bar-iron, a supply of bars, rods, and sheets, of Stafford iron, zinc in sheets, gas-fittings, plate and other glass, &c., for the South Coast railway; and for 1,500 tons of malleable iron rails and — tons of cast-iron chairs for the Blackwall railway.

CESSPOOL DEPOSITS.—A correspondent, J. G. J., desires to know whether lime when applied to soil in a cesspool causes it to deposit or sink, and how it should be applied, and of what sort; as he cannot afford to have the pool emptied for some time, though it is to all appearance full. We suspect our correspondent inadvertently identifies with mechanical subsidence chemical precipitation, and these with condensation of substance. The addition of a considerable quantity of lime to a full cesspool might cause both a chemical precipitation and a mechanical subsidence of certain ingredients of the mass, although a chemical precipitation does not necessarily imply a mechanical subsidence; but even though both results should be accomplished, still it does not follow that the cesspool would be or appear to be the less full, but the contrary; for while the more solid or condensed portion would occupy the bottom, the more fluid would still not only fill up the remainder as before, but be probably further forced into overflow from the additional bulk of lime thrown in. Had our correspondent's object been the mere neutralization of the malarious odours or fixation of the volatile gases, his purpose might have been accomplished by stirring in, or intermixing, chloride of lime or quick-lime; but in a close and covered cesspool, we suspect that the curing of an overfullness by a condensation of matter thus produced, even were it proper or practicable to any considerable extent, would occasion as much trouble and annoyance as the emptying of the pool at once.

LIGHTING BY ELECTRICITY.—Mr. Staite's new patent electrical lamp is said to go farther than heretofore in rendering electrical light available for practical purposes, as so long desired. From a small battery power a comparatively large and steady as well as sustained light, is said to be thus produced. The inventor contemplates the application of his invention to several purposes, amongst which are telegraphing by flashes through coloured media and the instantaneous display of night signals of the usual colours for danger, caution, &c., at the required distances from the stations. Hermetically sealed, of course, under a glass, as long since suggested, this light would also be a great boon to miners.

PEEL ON RAILWAYS.—At the opening of the Trent Valley Railway, on the 26th ult., Sir Robert Peel said, in the course of an excellent speech:—"This day we are met to celebrate the completion of a work as part of a system which is probably destined to effect a greater social revolution than any invention since the art of printing was discovered. Without wishing to over estimate the effects which railways will have, or to say one word not dictated by prudence, I believe that they will be for our good, and that they will promote the moral and social welfare, and advance the political security of the kingdom. Within a few months our persons will be carried along this railway, our bodies with the fleetness of the wind, and our thoughts, by the agency of the telegraph, with the fleetness of lightning. Gentlemen, let us hope that these combined influences will be for our good, by drawing closer family affections and facilitating the intercourse of life, while they tend to promote civilisation and the advancement of knowledge. As regards our political security, I believe that we shall not have cause to regret their construction. In a country like this it is impossible to do more than support a limited army; and, in the event of war, which may God in his mercy avert, we might be exposed to the most fearful consequences, for it is difficult yet to say what effect steam navigation may have on maritime warfare. Of this, however, I am sure, that railways would enable us to concentrate our limited forces on any point that might be required, and I have no doubt, then, that the spirit of Englishmen would enable them to combat successfully against any enemy, even if numerically superior, by being conveyed by this new element of transport without fatigue, and well provided with necessaries. Gentlemen, it is only by drawing closer the great metropolis of the empire with the great towns, each of which may be said to form a metropolis of their districts, and getting a cheap conveyance, if we are exposed to the rivalry of other countries, that we shall be enabled successfully to compete with them; but I have no fear but by means of railways, and increased facilities of intercourse, that we shall continue successfully to compete with them, and add to the prosperity of agriculture and manufactures. I also hope that the result of bringing closer the sister country to us by railways will be to increase its prosperity, and unite us in bonds of mutual good feeling, and strengthen in us all the loyalty and affection to our gracious sovereign."

THE NEW CHURCH OF ST. CUTHBERT, BEDFORD.—This edifice was consecrated on Thursday in last week. It is Anglo-Norman and cruciform. The nave and chancel, from east to west, are about 90 feet; the transepts, from north to south, about 65 feet. There are three entrances, the principal one being at the west end. At the intersection of the transepts, nave, and chancel, the tower is supported on massive pillars with carved capitals. The arches are carved with moulded chevron and billet moulding. The roof is framed, open, and boarded diagonally, stained dark oak, with moulded cornice at the foot of the rafters. The principal rafters form a circular rib, and are supported on columns, standing on carved corbels. The organ stands on a slight elevation at the south-west end of the nave, and the font on the opposite side; the pulpit is on the south side, at the juncture of the chancel with the nave and the transepts; and the reading desk, which, like the sittings, is open, stands on the north side, to correspond. On the right of the reader is the desk from which the clerk leads the responses. The organ-case, pulpit, communion-table with chairs, reading-desk, clerk's desk, and all the sittings, are of English oak, grown in Chicheley Park, and are all carved in the style of the building. The flooring of the nave and transepts is of plain stone from the Stagsden Quarries, but the chancel and the step at the communion rails are laid in figured encaustic tiling, by Minton, of the Potteries. The rising of the steps at the communion rails presents a continuation of the encaustic tiling. There are triple lights at the east and west, and also at the north and south ends. The east window is entirely glazed with stained glass. The whole of the stained glass is by Baillie, of London. The architect of the building was Mr. Woodroffe, of Bedford. The masonry was executed by Mr. Brown, also of Bedford; the carpenter and joiner's work by Mr. Craddock; and the carving by Mr. Pinkerton, at the Eccleston works, London.

ARCHITECTS' PROVISIONAL CHARGES.—In the Exchequer, last week, Messrs. Finden and Green, architects and surveyors, brought an action to recover from Alderman Johnson and Mr. Marriott, as members of the managing committee of the City of London Commercial Club, 102*l.*, a balance claimed for drawing specifications and plans, and for the superintendence of building work executed for the purposes of the club. In 1838 the club in question was projected by Mr. Finden. It was opened in 1840, and was carried on until the close of 1842, when it was given up. The services for which the plaintiffs claimed compensation were performed between the month of June, 1839, and the end of that year. On giving up the club the defendants and other members of it subscribed a sum of money, sufficient to pay 10s. in the pound to the creditors to whom the establishment was then indebted; that composition the plaintiffs refused, but they received on account 100*l.* in two payments, leaving the balance alleged to be due. The defendants paid 10*l.* into court, and denied their liability beyond that sum. It appeared that before any portion of the work was executed, the plaintiffs, on Dec. 12, 1838, addressed a letter to the committee of management of the club, and stated that they would not make any charge or claim for any professional services done by them previously to the club being established and in operation, and it was contended that the defendants were not liable, as all the work for which the plaintiffs claimed was done "previous to the establishment of the club," and that as the plaintiffs were themselves members of the club, they could not maintain an action against other members of it, who should be considered as co-partners. These being the main facts of the case, the Lord Chief Baron left it to the jury to say whether the letter of Dec. 12 was to be taken as the agreement under which the work was done. If they thought it was, the action could not be maintained. The jury, after a short consultation, returned a verdict for the defendants.

EXHIBITION OF WORKS OF ART FOR THE NEW PALACE.—On Tuesday, Lord Brougham presented a petition from certain artists, contributors to the exhibition of works of art now exhibiting in Westminster-hall. They complained, as we are informed, of the manner in which the prizes had been awarded, after only three days' view of a number of pictures which required a careful examination and a sifting inquiry into their respective merits, and they further urged, that, prior to an adjudication, the pictures ought to have been exhibited to the criticism of the public. The petitioners suggested that the artists of France, Germany, and Italy should have been called in as assessors before the commissioners had adjudicated, and they prayed that such a course should be taken before any person should be finally employed to decorate the walls of the new palace.

A SANITARY ASSOCIATION has been formed in Westminster for the diffusion of information on the subject of health and all its requisites, by means of public meetings, lectures, and otherwise, and for other cognate and laudable purposes, such as soliciting the co-operation amongst others of architects, engineers, surveyors, &c., towards the removal of those agents which injure the public health. Member's subscription, 1*l.* per annum, and upwards, or for life 5*l.* and upwards. Lord Ashley is the patron, and Lord R. Grosvenor the president.

UNIVERSITY COLLEGE PRIZES.—The name of the student who obtained the second prize in fine art, at the University College, is Thomas Watts, a pupil of Mr. Eales. The third certificate of the first year's fine art class was awarded to John George Hall.

PROPOSED CHURCH AT BROMPTON, KENT.—Mr. S. W. Daukes, of Cheltenham, is the successful competitor for the proposed new church at Brompton, Chatham, Kent. We understand there were sixteen competitors.

The destruction of a footpath and narrowing of a road at Gainsborough by the erection of a bridge tunnel on the Great Northern Line, has been producing considerable excitement there. A strenuous opposition has declared itself, and the works have been stopped.

## TO CORRESPONDENTS.

"*Westminster Hall*."—William the Conqueror is supposed to have built much at Westminster, but William Rufus is usually regarded as the founder of Westminster Hall about 1097. Matthew Paris says at Christmas [illegible] William Rufus having returned from Normandy, held his first court in the *new hall* at Westminster.

"*The Temple Church*."—We [illegible] replying to "H. C. L." with the [illegible] a general account of the church. Consideration leads us to think, however, that it is already well known to the majority of our readers. The mixture of round and pointed work, in the circular portion of the church, is not unusual in works of the same date, a period of transition. It was dedicated in 1185.

"*Regular Subscriber*."—Apply to Weale, 59, High Holborn.

"*C[illegible] Compo*."—A subscriber wishes to know the best mode of colouring a front which has been *painted*, so that the colour may stand.

"*J. G. H.*"—We are unable to promise insertion of the drawing at this moment.

"*J. K.*" [illegible] the architectural question. We would avoid [illegible].

"*[illegible]*" Kensington.—The matter is before us, and shall not be lost sight of. The freeholder may not think it desirable.

"*Constant Reader*" (Newcastle).—145, Strand.

"*C. J. G.*"—We forwarded a letter to the address named, some time ago.

"*Clerks of Works*."—A correspondent complains that persons advertising for clerks and calling upon candidates for testimonials, give no reply to the unsuccessful. The number of applicants, usually, would make the labour of replying a great one.

"*E. P.*"—We have not time to calculate strengths.

"*Constant Subscriber*."—M. Daly's *Revue Générale* is a monthly publication. We shall speak of it in detail before long.

"*X. X. X.*"—Do not incur expenses "to prevent a sneer."

"*H. W.*"—We don't understand in what the "design" consists.

"*[illegible] R[illegible]*."—We shall give an analysis of the Sewers' Act next week, and he can then judge for himself.

"*J. S.*" (Blackfriars).—Our correspondent is wrongly informed as to the amount of shrinkage.

"*C. D.*"—Write to the architect (on the spot) or the incumbent.

"*W. R. C.*"—We will inquire.

"*Fire-proof Buildings*."—An architect asks for a list of the principal in the [illegible]. We have not time to make it, but some of our readers may.

"*[illegible] Water Works*."—A correspondent complains that the company insist on an inch service being laid on, but will only drive a ½ ferule to attach it to.

"*R[illegible] T[illegible]*" next week.

"*G. P.*" ditto.

"*P.*" ditto.

*Received*.—"W. W.," "C." "J. B." (Soho); "J. S.," "Rusticus," "Layman," "H. J. M.," "Young Architect," "J. W."

"*Books, Prices, and Addresses*."—We have not time to point out books or find addresses.

## ADVERTISEMENTS.

LAST WEEK.

**ROYAL ACADEMY of ARTS, Trafalgar-** [illegible].—The Exhibition of the Royal Academy is now open. Admission (from Eight [illegible] till Seven), One Shilling; Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Sec.

CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C. CHUBB and SON having just erected a** Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to [illegible] DETECTOR LOCKS [illegible] St. Paul's [illegible], London.

TO ARCHITECTS AND SURVEYORS.

**C. CHUBB and SON having ascertained** that some builders are in the habit of substituting inferior [illegible] for strong rooms, when "CHUBB'S MAKE" [illegible] call the attention of Architects [illegible] C. CHUBB and SON they [illegible] respectfully request that Architects will specify "Iron doors [illegible]," [illegible] of the work, a certificate from C. CHUBB and SON that they are of their manufacture.

PRO BONO PUBLICO.

**CAUTION. To Purchasers of Locks, fire-**[illegible] JOHN LEADBEATER, many years [illegible] LEADBEATER [illegible] respectfully to [illegible] IMPROVED DETECTOR LOCKS [illegible], STRONG [illegible] IRON FIRE-PROOF DOORS, SAFES, [illegible] principles of security against FIRE and THIEVES, without the [illegible] expensive machinery," which is employed by some inexperienced makers, but [illegible] their house in London. LEADBEATER offers ONE HUNDRED POUNDS reward to any [illegible]. Some thousands of Leadbeater's strong-room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' [illegible] possible [illegible] with any other house in London. [illegible] made to order. A pair of extra strong wrought-iron fire-proof folding [illegible] banker's strong [illegible] DETECTOR LOCKS IN ENGLAND [illegible] always [illegible] LEADBEATER'S MANUFACTORY, 127, ALDERSGATE-STREET, LONDON.

**FIRE BRICKS.—WARD & HART,** Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas [illegible], Founders, Stoppers, and all large buyers, supplied [illegible] at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying [illegible] Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every [illegible].

**PUMPS.—The attention of Architects,** Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' [illegible] Excavation, Brick [illegible] Wrought and Cast Iron [illegible] Machinery [illegible] Lift Pumps for [illegible] kept for hire. Estimates given to Drawings if required.—M. A. RICHARDS, [illegible] street, Commercial road, Lambeth.

LITHOGRAPHY. IMPORTANT TO CONTRACTORS AND BUILDERS.

**M. COON having discovered a new method** of Lithographing Designs and Plans of every description, [illegible] Architects and Contractors [illegible] Estimates for any [illegible] given on inspection of a plan, &c. All orders, whether in town or country, promptly attended to.—Lithographic Printing Office, [illegible] Cheapside.

TO BUILDERS AND CARPENTERS.

**A Considerable saving will be effected in the** purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

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Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

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Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3 3s. 3 ft. 6 in., £3 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

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Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

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Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

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Black Registers, from 6½d. per in. and upwards.
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**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth pieces, Plates, Furnace bars, Top and Fall Pieces, Stoppers, Chimney bars, Inside, Outside, and Ash pit Doors and Frames, Boilers and Frames, Lamps, &c., &c., all of the best description, at very moderate prices. CAST IRON UPSETS.

**HOT WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and green-houses, manufactories, and warehouses, kilns, rooms for drying [illegible], &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction [illegible] for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

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Late HENDRY and GLOVER,

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Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

**ALFRED ROSLING begs to inform the** Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension. Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

**SIR W. BURNETT'S PATENT for pre-**venting the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dock yards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 53, King William-Street, London-bridge.

WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others that their establishment (for seasoning, sawing and planing wood), known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual prices, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the grains, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material of essential importance for floor boards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

**TO ARCHITECTS, Ship Joiners, Cabinet** Makers, &c., requiring FINE WOOD.—SELLING OFF, at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany-yard, in Little Windmill-street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers, also upwards of 20,000 feet wainscot planks, running from 1½ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

**GREASE! GREASE! GREASE!—** JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices: —White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

**HEAL AND SON have just completed the erection of Machinery for the purifying of** feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam: thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way and by expanding the feathers the bulk is greatly increased, and consequently the Bed is rendered much softer.

Old Beds re-dressed by this process are perfectly freed from all impurities. The following are the prices of New Feathers:—

| | | | | | |
|---|---|---|---|---|---|
| Mixed, per lb. | 1s. 0d. | Foreign Grey Goose | 1s. 8d. | Best Irish White Goose | 2s. 6d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 2s. 0d. | Best Dantzic White Goose | 3s. 0d. |

HEAL and SON'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster bridge, London.

**THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the** following useful purposes:—

| | | |
|---|---|---|
| Foot Pavements. | Dog kennels. | Covering of Railroad and other Arches. |
| Kitchen Floors, particularly where it is required to keep damps from rising. | Barn Floors. | The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Granaries. | |
| Carriage Drives. | Tun-room Floors. | |
| Coach-houses and Stabling. | Malt-house Floors. | |
| | Piggeries, &c. &c. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being (as is too well known) the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY. Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER. From the construction of the "basil" or "measure," a certain quantity of water only can be discharged each time the closet is made use of;—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of: it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING. The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required. The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

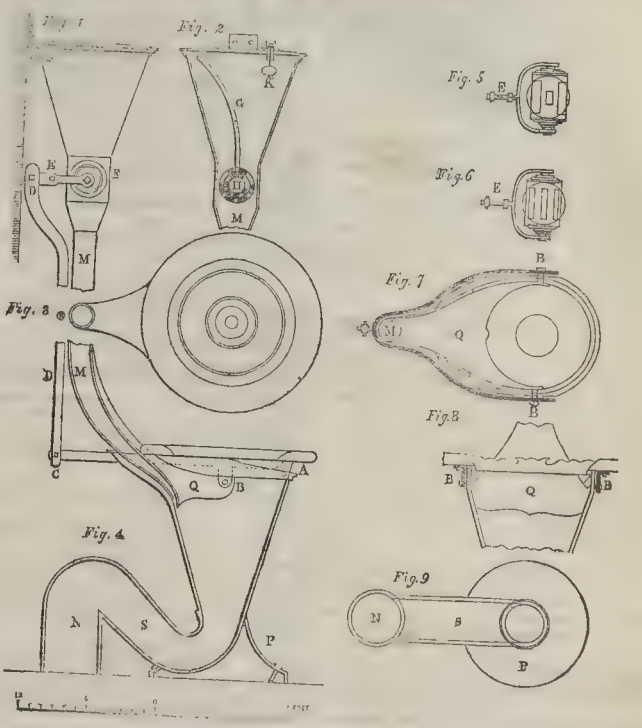
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE.—The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the hard wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all accretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self-acting, or to render them so an endless number of valves and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being insufficient to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




## DESCRIPTION OF DIAGRAMS.

Fig 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.

Fig 2.—Section of the measure and cock, shewing its position when open for the water to come in.

Fig 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.

Fig. 4. Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever O under seat, and lower end of action-rod D, to let water in and cut it off.

Fig. 5. Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.

Fig 7. Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.

Fig 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.

Fig. 9.—Plan of foot P, of basin, and syphon.

## MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the bridle E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.*—(*Vide Report, page 70.*)

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. London, Mr Foden, Mr Smith of Deanston, and others. But the apparatus invented by Mr. Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

MR. JOS. E. DOWSON — J. QUICK, Engineer.

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

# DOWSON'S EARTHEN PIPES,

## GLAZED INSIDE,

## FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the depredations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable cutting was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains—LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

MESSRS. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.

# THE BUILDER.


TO BUILDERS.

**GROUND TO LET, at Kentish Town,** near the Birmingham Railway. Bricks may be had on the ground at very low price. Apply at No. 1[illegible], Gower place, Euston-square.

BUILDING LAND.—BRICKS AND MONEY ADVANCED.

**GROUND TO LET, for Third rate Villas,** in pairs and threes, at Islington, fronting the High road, for Ninety [illegible] years. Land tax Redeemed. Such a class of houses are very much required in this immediate locality.—Apply to Mr TURNER, No. [illegible] Devonshire cottages, Green-lanes, Stoke Newington green.

**TO LET, in the best part of Croydon,** Premises suitable for builders or a wheelwright's yard.—For particulars, apply to Messrs. FANSON and SON, 9, Laurence Pountney lane.

TO AUCTIONEERS, CARPENTERS, BUILDERS, &c. &c.

**TO LET, in the High-street, Egham, an** old-established business for more than seventy years, with every convenience for carrying on an extensive trade, with large workshops &c. The stock and fixtures to be taken at a valuation.—For particulars apply, on the premises, of Mrs. LOUISA ANDREWS, Egham, Surrey.

**TO BE LET on Lease, at a Ground Rent** of 30*l.* for a term of Ninety Years, No. 18, Norland-square, Notting hill, the carcase of which is completed.—For further particulars, apply to PHILIP FLOOD PAGE, Architect and Surveyor, 45, Hans-place, Sloane-street.

HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country.—For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford-row.

**TO BE LET, a most desirable frontage** for Building third-rate semi detached villas, situate opposite St. Paul's-terrace, near Ball's-pond turnpike. Money and Bricks advanced if required. For particulars inquire of Mr ROBT WEBB, 13, Spencer-terrace, Lower road, Islington; or of Mr. DAVIES, Solicitor, Charles-square, Hoxton.

**TO BE LET, a Brickfield, situate within 2¼** miles of London bridge, with about seven acres of earth, now in full work, and making three millions per year, with a very excellent ready-money trade, with all the necessary building offices. All, or part, of the implements may be taken, or not, to suit the purchaser.—Further particulars may be had at Mr W. C. KNIGHT, Newington Causeway, Southwark.

THE GROVE, HIGHGATE.

**TO BE LET, on Building Lease, Ground,** eligibly situated in Fitzroy-park, for the erection of Two or Three Villas, or a small terrace. The roads and drainage are already formed. The Plot commands an extensive prospect, and has a double frontage, one to the Grove and other the Park road.—For plans and particulars apply to Mr C. NORRIS, 1[illegible], Lancaster-place, Strand.

WHARF, &c., REGENT'S CANAL.

**TO BE LET, on Lease of Seven or Fourteen Years,** a valuable WHARF and PREMISES, situate at the corner of Wenlock-basin and the Regent's canal, containing a frontage of 2[illegible] feet next the basin, and a return frontage of 130 feet next the canal, with a House, consisting of four chambers, three rooms on the ground story, kitchen, scullery, office, cellars, gardens, stables, a powerful crane and well of water. For further particulars and terms, apply at the London Zinc Mills, Wenlock-road, City road.

TO BUILDERS, INDIA RUBBER MANUFACTURERS, and Others requiring Steam Power, extensive Premises, and a plentiful supply of Water.

**THE whole or part of those Premises** known as the [illegible] SAWING and PLANING MILLS, [illegible] TO BE LET. The Proprietor will either let part of the Premises, with from [illegible] to 12-Horse Power from the Engine, or will let the whole Premises with [illegible] the [illegible] Engine, and all the Sawing and Planing Machinery [illegible] or will remove any portion of such Machinery as may not be required. Apply to E. ROGERS, jun., Timber Merchant, Upper [illegible]-street, Paddington, or on the Premises, where the machinery may be seen at work.

TO CARPENTERS AND BUILDERS.

**TO BE SOLD, two desirable Carcases,** built under the new Act, in a desirable situation, with good gardens, and let at a moderate ground rent. For particulars inquire of Mr ESSEX'S, Bricklayer, No. 2[illegible], Britannia-row, Lower road, Islington.

## SALES BY AUCTION.

**MR. J. W. NEWHALL is instructed by** the Proprietors (Messrs. Gardner, Nichol, and Pettigrew), in consequence of the Dissolution of their Partnership, to submit to PUBLIC AUCTION, on the premises, [illegible]-street, [illegible], the remaining STOCK OF IRONMONGERY, NAILS, &c., which will be lotted to suit the Trade, Builders, Carpenters, Cabinet makers, Smiths, Bell-hangers, &c. Notice of the days of sale will be advertised in "The Builder" of the 24th of July, and catalogues will be forwarded, post free, on application to Mr J. W. NEWHALL, Auctioneer and Appraiser to Ironmongers, Smiths, &c., [illegible], Powis-street, Woolwich.

WALWORTH MANOR HOUSE, with coach-house, stabling, and large garden, well stocked with fruit-trees and shrubs, and an extensive plot very eligible for building upon.

**W. and C. PUGH are instructed to SELL** by AUCTION, at Garraway's, on TUESDAY, the 27th instant, at Twelve, in one lot, the valuable LEASEHOLD PROPERTY, pleasantly situate opposite Manor place, in Penton-place, Walworth, consisting of that respectable family residence, with all requisite offices, [illegible], and ground, in the whole 224 feet next the [illegible] and [illegible] the two lodges and [illegible] gardens. The mansion is fully adequate to a large establishment, and immediate possession may be had. The land, after attaching a very ample plot to the dwelling, [illegible] valuable site for building purposes, [illegible] situation is very attractive, and the term is thirty-[illegible] years, at a low ground rent [illegible]. May be viewed, and particulars [illegible] at the Elephant and Castle, Newington; at Garraway's; of Messrs. BRUNDRETT, RANDALL, SIMMONS and BROWN, 10, King's-bench-walk, Temple; and of W. and C. PUGH, 6, Blackman-street.

FREEHOLD BUILDING LAND at Oatlands Park, Weybridge, Surrey, about a quarter of a mile from Weybridge Station, on the South Western Railway.

**MR. WATERER will SELL by AUCTION** in Fourteen Lots on THURSDAY, 29th July inst., at One o'clock, at the Star and Hounds, Weybridge Common, Seven Acres of Valuable Freehold Land, situate in Oatlands Park, the late residence of H. R. H. the Duke of York, and which commands the most charming views of the surrounding country and the valley of the Thames. The Land lies only a few yards from the Weybridge Lodge gates and is divided into pieces averaging about half an acre. The situation is [illegible], and Villa residences are [illegible] being well let. Besides the advantage of being situate in one of the most lovely parks in the world, and only a few minutes' walk from the Weybridge Station: this land is rendered particularly eligible for building purposes, from its vicinity to the Thames, and by being within an easy distance of Windsor, Virginia Water, and Hampton Court. [illegible] in England [illegible] the South Western Railway to London Bridge, which is fast progressing, [illegible] property in this locality will become invaluable. Particulars and plans, to be had of THOS WONTNER, Esq., Solicitor, No. [illegible], Skinner-street, Snow Hill; the Auction Mart, London; of Mr. WATERER, Auctioneer and Estate Agent, Chertsey, Surrey; at the Weybridge and Walton Stations; and at the principal inns in the neighbourhood.

**CHAMBERS TO LET in Golden-square,** Regent-street.—They are quiet and roomy, and would be found very convenient by a solicitor or other professional gentleman.—May be viewed any day between the hours of Ten and Six on application to Mr PEYLER, 26, Golden square.

BEDFORD NEW TOWN, NEAR EUSTON-SQUARE.

**BUILDING PLOTS, TO BE LET in** this desirable locality. The sewers are made, vaults turned, and foundations taken out, thus affording great facility to builders and others. No charge for road and paving. Respectable parties will be treated with liberally. For plans and particulars, apply to Mr ALLEN, 2, Bedford-street, Upper Seymour-street, Euston-square.

**BOURNEMOUTH. — Building Frontage** TO LET, in Plots on long Lease, at a moderate rent, for Shops and Small Houses, situate on the Poole Road, in the best part of the above rapidly improving watering-place. Applications to be made on or before August 2nd, 1847, to Mr. NEIRINCKA, at the Office of the Bournemouth Park Estate, Bournemouth.

N. B. Bricks supplied to parties building on the property on peculiarly advantageous terms.

**ELIGIBLE Building Ground, with a frontage** of 130 feet, TO BE LET, at a low rent, desirably situated in Stockwell Park-road, near St. Michael's Church, Stockwell, Surrey, for the erection of four or five cottage residences. The road and a sewer have recently been made. A portion of the amount expended will, if required, after the houses are covered in, be advanced on mortgage as the works proceed. For further particulars apply to Messrs. COLLIER, HEDGES, and STEEL, Solicitors, 9, Carey-street, Lincoln's-Inn.

BUILDING GROUND IN THE CITY.

**A VALUABLE Plot of Ground in Devonshire-square,** having a frontage of 33 feet in the square, and a return frontage of 54 feet in Devonshire-street, with a yard behind in addition, 27 feet by 24 feet, suitable for two houses, also well adapted for an institution or public company, or any other purpose requiring space and light. The situation combines respectability, facility of access, and freedom from noise, and nearness to the Exchange: TO LET on a Building Lease, for particulars inquire at the office of Mr. RICHARD SUTER, Architect and Surveyor, 28, Fenchurch-street.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths if required. The worm and wheel motion for raising and lowering revolving iron shutters as secured by this Patent, is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and [illegible] years practical experience during which they [illegible] improvement enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs Geo and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water pipes, Hot-houses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

ECONOMY! ECONOMY!

**STEPHENS' DYES FOR STAINING WOOD, as a SUBSTITUTE for PAINT.** For Decorating Churches, Large Public Rooms and Theatres, as well as Private Dwellings.

When economy in expenditure of material and time is of importance, these Dyes will be found of the greatest advantage, as they give a rich colour to plain woods, while they reflect all the beauty of the natural graining, which is so superior to imitations by art, and, at the same time, avoid the disagreeable smell and deleterious consequences of paint.

The Dyes, or Stains, are prepared and sold by HENRY STEPHENS, 5[illegible], Stamford-street, Blackfriars road, London, in bottles of 6d. and 1s each, and at 1[illegible] per gallon. The Oak Colour may be obtained in powder at 8s. per lb., which dissolves in water to form the liquid, and 1lb. will make one gallon of stain. N B. The trade supplied.

Sold also at the Office of "The Builder," 2, York-street, Covent-garden, London.

**GLASS DOOR WANTED.—Any one** having one, or two such to dispose of in good style and condition, complete with frame, &c., may send particulars of size, style, and lowest price, to F. V., Messrs. Hodgson's Library, 9, Great Marylebone-street.

**CHEAP ORNAMENTAL GLASS.—I beg** to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker street, Portman-square.—Cash only.

**THOS. MILLINGTON, 87, Bishopsgate-street Without,** has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

**FOREIGN WINDOW GLASS, superior** to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 2d. per foot. Not less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS, equal** to the Ancient.

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|---|---|---|
| Ruby in Sheets, a splendid colour, per foot | 2s. | 3d. |
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| Blue | 1 | 0 |
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N B. Rough Plate supplied one-fourth, three-eighth, one-half, and three-quarter-inch thick.—Warehouse, 99, Hatton-garden, Holborn.

H. CHRISTIE, Agent.

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**EDWARDS and PELL, 15, Southampton-street, Strand,** Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms. Embossed Borders from 8d per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

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| | Thirds | 4 | 4 | 0 | |
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| | C.C. | 3 | 8 | 0 | |
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SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

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|---|---|---|---|---|
| Best | 12 Tables | 3 | 0 | 0 |
| Seconds | 15 " | 3 | 7 | 0 |
| Thirds | 18 " | 3 | 11 | 0 |
| Fourths | 18 " | 3 | 1 | 0 |
| CC | 18 " | 2 | 4 | 6 |
| CCC | 18 " | 1 | 15 | 0 |

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| 7 .. 5 " 7½ .. 5½ | 2 | " |
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| Horticultural | 13 oz. | 2½d. ⅌ ft. | |
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| " " | 32 | 8½ | " |

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| | | s. | d. | |
|---|---|---|---|---|
| 16 oz. per foot | | 0 | 6 | ⅌ ft. |
| 21 | " | 0 | 6 | " |
| 26 | " | 0 | 8 | " |
| 32 | " | 0 | 10 | " |

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|---|---|---|---|---|
| Tiles made of Sheet Glass | 8d. | 10d. | 1s. 0d. | 1s. 4d. each. |
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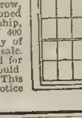
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**HERRING'S PATENT SAFETY WINDOW.**—No invention ever offered the advantages to builders and the public, it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sun-blind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

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MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.





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# The Builder,

A JOURNAL FOR

The Architect, Engineer, Operative & Artist.

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## ADVERTISEMENTS.


MONEY.—50,000*l.*—A Private Gentleman, who has 50,000*l.* at command, is willing to advance the same in separate sums, by way of Mortgage at 5*l.* per cent., or in immediate Temporary Loans, where the sum advanced would be secured by the deposit of title-deeds, leases, &c., or on unexceptionable personal bonds.—Address, by letter only, in the first instance, to J. A. B., Architect, office of "The Builder," 2, York-street, Covent-garden.

ARCHITECTURE.

WANTED, in the Office of a Firm in the city of Bath, a Young Gentleman, who, having completed his Articles, is desirous of further improvement. For particulars, address, free, to J. K., Colling's Library, Bath.

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WANTED a Situation, by a Young Man who can undertake the three branches,—plumbing, painting, and glazing. No objection to the country. Letters, prepaid, to A. Z., 4, Upper Cambridge-street, Agur Town, St. Pancras-road.

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WANTED in the Country a Respectable Young Man who is competent to copy Drawings neatly and correctly, to square dimensions, and assist in the general routine of Country Practice. Reference personally to ALFRED NEWMAN, Esq. No. 5, Mortimer-street, Cavendish-square, London.

TO ARCHITECTS AND BUILDERS.

WANTED, by a Young Man who is a good Draughtsman, has had some experience in a Builders and Architect's Office, and is acquainted with the practical part of building generally, wishes for a Situation. Salary moderate.—Address to A. N., office of "The Builder," 2, York-street, Covent Garden

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WANTED, a first-rate intelligent Person, one thoroughly accustomed to superintend Kentish Ragstone and good Carpenters' Works, to go into Essex. Applications, by letter only, stating qualifications, giving references and amount of salary expected, with every other particular, addressed to J. C. care of the porter, No. 1, Lincoln's-Inn Fields, London.

WANTED an by Experienced Person who has built a number of houses for himself and others, the Superintendence of Works in Town or Country, or Foreman in a Carpenter and Joiner's Shop, being thoroughly conversant in all its branches. First-rate references can be given. Address, X. Y. Z., Mr. F. W. Lankston, 38, Upper Seymour-street, Euston-square, where every particular may be obtained.

TO ARCHITECTS AND BUILDERS

WANTED, by a steady, active person, a Situation as Clerk of Works, or Foreman; is a good draughtsman, with a perfect knowledge of measuring, estimating, &c., and the routine of a builder's office; also ten years' practical experience in the management of workmen and buildings. Good references.—Address, A. B., Mr. Wigon's, High-street, Portland Town

WANTED, immediately, in a Surveyor's Office, a steady and respectable person of practical experience, to conduct the general business; he must be a good Draughtsman, capable of taking out quantities, measure work, and prepare specifications correctly; he must also write a good and ornamental hand, &c.—Address, post paid, stating references and salary required to A. B., 1, Falcon-square, near the New Post Office.

P.S. A middle-aged person would be preferred.

RAILWAY EMPLOYMENT.—Surveying, Levelling, Mapping, Draughting, &c., Practically Taught, and Employment given at a liberal weekly salary, on a line of railway now on hand in Middlesex. A rare opportunity to those who wish a lucrative profession. Early application is necessary to G. M. TODD, Civil Engineer, &c., corner of Shepperton cottages, New North-road.

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AN Articled Pupil wanted by a Surveyor in good practice. A moderate premium required.—Apply by letter, prepaid, to E. F., office of "The Builder," 2, York-street Covent-garden.

ARCHITECTURE.

AN Architect in good practice, in the City, has a vacancy in his office for a Young Gentleman who has been already similarly engaged, and who is desirous of improving himself in his profession. Address, A. Z., care of W. Heath, Esq., Solicitor, Nag's Head-court, Gracechurch-street.

TO ARCHITECTS.

A GENTLEMAN who has been regularly articled, and had some experience in the offices of eminent architects in London, is desirous of a Situation. Capable of making fair and working drawings, and conversant with the general routine of an architect's office, chiefly engaged lately in getting out plans for lunatic asylums. Satisfactory testimonials can be produced.—Address X. Y. Z., care of Mr. Appleton, Hanwell, Middlesex.

TO SURVEYORS AND VALUERS.

A YOUNG MAN of highly respectable connections, who has just completed his articleship to an architect and surveyor of considerable standing, would be glad to fill a Situation in an Office, wherein the Measurement and Valuation of Artificers Works constitute the principle part of the business transacted.—Address to R. X., Office of "The Builder."

A YOUNG MAN, a Carpenter and Joiner, of highly respectable connections, wishes for a Situation as Foreman on a Gentleman's Estate, thoroughly understands making out drawings, is a good scholar, can have an unexceptionable character in the practical branches, having worked some years on an estate in the country, has had five years' experience in London. Has no objection to go abroad.—Address, W. T., Reeve's Dining-Rooms, Davies-street, Berkeley-square.

TO ENGINEERS, SURVEYORS, ARCHITECTS, &c.

THE Advertiser, accustomed to Surveying, Levelling, and a first-rate Draughtsman, being at present disengaged, would be glad to fill up his time for a few hours daily or otherwise in copying drawings, &c., or in assisting with bills of quantities, abstracts, &c.—Address, prepaid, to A. B., 23, Vauxhall-road, Pimlico.

TO BUILDERS, &c

THE Advertiser, aged 31, is in want of a Situation as Clerk; and is thoroughly acquainted with the general routine of a builder's office, in measuring up works, estimating, book keeping, making up accounts, working drawings, &c.; and practically acquainted with the whole of the building branches. The advertiser flatters himself that he would be an acquisition where correctness, integrity, and trust is required. Salary moderate. Testimonials, if required.—Address to F. F., No. 8, Porteus-road, Paddington.

ARNEWAY'S CHARITY.—NOTICE IS HEREBY GIVEN, that the Trustees of this Charity are now enabled to LEND OUT the TRUST MONIES to "Poor Occupiers or Traders resident within the City and Liberty of Westminster, that is to say, within the Parishes of Saint Margaret and Saint John the Evangelist, Saint Anne, Soho, Saint Clement Danes, Saint George, Hanover-square, Saint James, Saint Martin-in-the-Fields, Saint Mary-le-Strand, and Saint Paul, Covent Garden." The amount of each loan is not to exceed 100*l.*, is to bear interest after the rate of 3*l.* per cent. per annum, and is to be secured by the bond of the borrower, with two sureties.—Printed forms of application, and all necessary information, may be obtained by applying personally between the hours of Ten and Three o'clock in the day, at the office of the Clerk and Solicitor to the Trustees, 13, Great Queen-street, Saint James's-park.—By Order,

EDWARD S STEPHENSON,
Clerk and Solicitor to the Trustees.


## COMPETITION.

TO ARCHITECTS.

THE Guardians of the Bridgnorth Union are desirous to receive PLANS and ESTIMATES for a New Union Workhouse, to accommodate 200 Paupers, and detached buildings for a Hospital and Vagrant Wards. The same to be furnished to the Guardians, free of charge, and to be sent to the Clerk of the Union on or before the 13th day of August next. The Architect whose plans may be selected will be employed to superintend the works at the usual commission of 5*l.* per cent.

Full particulars may be obtained by applying at the office of the Clerk.—By order of the Board.

ARNDELL F. SPARKES,
Bridgnorth, 17th July, 1847. Clerk to Guardians.

TO ARCHITECTS.—MIDDLESEX ADDITIONAL PAUPER LUNATIC ASYLUM.

THE Committee of Visitors who have been appointed to superintend the erection of an Additional Lunatic Asylum for 1,000 Patients in the County of Middlesex, invite PUBLIC COMPETITION for Plans and Estimates for such a building, and propose to present a Premium of 300*l.* to the party whose design they shall most approve, and further premiums of 200*l.* and 100*l.* to the party whose plans they shall deem second and third in excellence.—Particulars as to site with all needful information and instructions, as also the conditions on which the premiums will be offered, may be had at my office, at the Sessions House, Clerkenwell Green, on any day between the hours of Eleven and Four during the present month.

JOHN S. SKAIFE,
7th July, 1847. Clerk to the Committee.

TO ARCHITECTS.

BOROUGH OF SWANSEA, GLAMORGANSHIRE.

THE Town Council of Swansea are about erecting a New Court House and Offices as an addition to the present Town Hall, and are desirous of obtaining DESIGNS for the elevations only of such new building, as the internal arrangements have been determined upon, the amount to be expended on such new building and alterations, is not to exceed 1,500*l.* The Designs must be forwarded to the Town Clerk on or before the 4th of August next, and the carriage to and fro will be paid by the council.

Two premiums of twenty guineas and ten guineas will be severally paid for the two designs the council may select. Lithographic plans of the present and future buildings, and any further information may be obtained on application to Mr. C. B. MANSFIELD, the Town Clerk, or Mr. W. M. RICHARDS, Architect, Swansea.

Town Clerk's Office, Swansea, 20th July, 1847.

## CONTRACTS.

PORTLAND BREAKWATER.—To CONTRACTORS.

THE Lords Commissioners of the Admiralty are ready to receive TENDERS for sundry WORKS to be executed in the Island of Portland, comprising Earthworks, permanent Railways, and Machine Houses, for the inclined planes from the Quarries to the site of the proposed Breakwater.

Plans, sections, specifications, and conditions will be open to the inspection of intending contractors, at the office of Messrs. RENDEL and BEARDMORE, Civil Engineers, 8, Great George-street, Westminster, from Monday next, the 12th instant, till Saturday, the 31st instant, between the hours of 10 o'clock a.m. and 4 p.m.; and tenders must be delivered at the Admiralty on or before 12 o'clock noon on Tuesday, the 2nd August next, according to a form which will be furnished at RENDEL and BEARDMORE'S office.

The Lords Commissioners of the Admiralty do not engage to accept the lowest tender

Admiralty, 8th July, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.
Court of Sewers, Tower Hamlets.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on THURSDAY, the 29th day of July, at Twelve o'clock at noon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS sealed up from any persons or person willing to enter into contract for the works necessary in extending the Sewer in New-road, Saint George's, from Shorter-street to Cannon-street, being a length of 1,130 feet, or thereabouts. A plan and specification of the said works, with the forms of tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. The Contractor will be required to sign a provisional agreement to secure the due execution of the said contract, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners: no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon.—Dated this 16th day of July, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the lowest tender.

HIGHBURY NEW CHURCH.

THE Committee for erecting the above Church are desirous of receiving TENDERS for the necessary works. The Drawings and Specifications may be seen after the 31st inst., at the office of the Architect, Mr. T. ALLOM, 14, Hart-street, Bloomsbury, where the Bills of Quantities may be obtained. Tenders to be addressed to SAMUEL LEWIS, Esq., No. 13, Finsbury-place South, on or before the 14th of August next, by Three o'clock in the afternoon, after which no Tender will be received. The Committee do not bind themselves to accept the lowest Tender

TO BUILDERS.

THE Directors of the Gravesend and Milton Water Works Company are ready to receive PROPOSALS from any persons for the supply of the requisite materials and erection of an Engine house, Boiler house, Tower, and other Works on the premises of the Company in Milton next Gravesend, agreeably with the Drawings and Specifications thereof, which may be seen at the Committee Room on the premises of the Company in Milton next Gravesend aforesaid. Tenders sealed, addressed to the Directors, are to be left at our Office in Milton, next Gravesend, on or before Thursday, the 29th day of July instant. The Directors are not to be bound to accept the lowest Tender.

Milton, next Gravesend, SOUTHGATE and SON, Secrs.
16th July, 1847.

TO BUILDERS.

PARTIES disposed to CONTRACT for the erection of the proposed new Hospital at Cheltenham, may inspect the plans and specifications, also the conditions of the contract, by application to Mr. HARTLEY, at the Cheltenham General Hospital, from TUESDAY, the 20th day of July, to SATURDAY, August 21st, 1847, on or before which last named day Tenders must be delivered to Mr. HARTLEY, sealed and endorsed "Tenders for the Erection of the Cheltenham Hospital."

The Board of Governors do not engage to accept the lowest tender. The contractor will be required to complete the building within a given time, and to find securities for the due performance of his contract.

Cheltenham General Hospital, July 19th, 1847.

ROYAL ACADEMY OF ARTS, TRAFALGAR SQUARE.

LAST DAY.—The EXHIBITION of the ROYAL ACADEMY will FINALLY CLOSE this Evening at Seven o'clock precisely.

Admission from Eight o'clock till Seven, 1*s.* Catalogue, 1*s.*

JOHN PRESCOTT KNIGHT, R.A., Dep. Sec.

Exhibitors are requested to send for their Works on Wednesday next, the 28th, or Thursday, the 29th inst.

TO ARCHITECTS, &c.

MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, offers his services in Tinting Backgrounds, Landscapes, and Perspective Views, &c., &c. From the long experience he has had, he is aware of the points essentially to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield-street.

DRUCE'S, No. 2 WHARF late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c.&c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

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| Ruby in Sheets, a splendid colour, per foot | 2s. | 3d. |
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| Fourths .. 18 | " | 3 1 0 | 7 .. 5 .. 7½ .. 5 | 3 | " |
| CC .. 18 | " | 2 16 6 | 8 .. 6 .. 8½ .. 6 | 3½ | " |
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Metallic Sand on hand.

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**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously called Roman Cement, as none such exist. They would themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is free from corrosion against which all stucco with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following important properties, which only possessed:—

1 It rapidly attains the hardness of stone.

2 It does not under any circumstances, or in any climate, crack or throughout, but retains to the colour.

3 Its surface will take as high a polish as that of the finest marble. NEVER TURNS GREEN, SALT, and will receive paint in four days, which does not require any drying.

4 It resists all species of mineral stucco for walls, skirtings, architraves, mouldings, and any description of work in wood, of which purpose it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

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Architects and Builders who have used this Cement have declared that it proves to be the most perfect and durable Stucco ever tried.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 6, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHN'S and COS PATENT STONE COLOUR STUCCO PAINT, expressly adapted for Painting over Interior Walls of Houses that have been covered with Roman or other Stucco Cements, which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently crack. It also is excellent for painting over Cements, where JOHN'S and CO'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby bringing the whole of a most wealthy and durable finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

**EMERSON'S PATENT CEMENT** PAINT Arrangements are completed for the introduction of this VALUABLE and BEAUTIFUL PAINT for PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be required, with water.

The surface to which it is to be applied NEEDS NO PREPARATION, but to be clean and free from dust. It matters not whether the walls be wet or dry, for dampness being excluded, it will cling to any surface.—BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT, and may be made of any TINT OR COLOUR to suit the taste of the owner, its ground colour being that of a light creamy or stone colour.

T. ROMAN'S CEMENT is made applied the day after it is put on the walls, and one small coat will cover a moderate sized house. It is particularly adapted for COUNTRY HOUSES, VILLAS, &c., for its PERMANENCY and PLEASING EFFECT: also for LODGES, and ENTRANCES, as it does not attract dust, and can, at all times, be washed, as it will PRESERVE the walls as effectually as cement.

T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as made at Bath and elsewhere.

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**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them to builders and others, and desirability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, can scarcely cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to work up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of it.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and from all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting the object. In large shutters it is indispensable.

Some of the principal Banks, and Corpe's Shutters, have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement made by the Patentee to challenge comparison with any others. They will guarantee all shutters put up by them to keep in order, and if not they do not ask a penny for their services.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired) on the same principle as their Iron Shutters, with the same improved gearing, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, and IRON, for SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plate or Ornamental Bright and Enamel Mouldings, Gunmetal Plate and Sheet Plate Glass, and Improved Brass Fittings of all kinds, supplied at prices and terms equally low with those charged by any other house. Contracts taken in Town or Country.

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"The Builder," Nov. 7, 1846.

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The Builder.

No. CCXXXIII.

SATURDAY, JULY 24, 1847.

THE importance which we attach to all matters relating to the drainage of towns, and a consideration of the large powers taken by the new Act, obtained by the Westminster Commission of Sewers, lead us to give our readers the official analysis of this law in full, and to offer some few observations on the subject.

For a long series of years the Westminster Commission pursued a most mistaken course: ignorance (the ignorance of the time, if they please), is apparent in the greater part of their proceedings, and one error was acknowledged and superseded only to make room for another. Their measures for some years appear to have been positively obstructive of good. Impediments, wittingly or unwittingly, were thrown in the way of efficient drainage, and the most arbitrary measures were taken, to enforce compliance with the Wrong which they had set up as the Right. Men were fined heavily for endeavouring to rid themselves of the soil and hurtful impurities, and all were compelled, even where sewers existed, to form, on their premises, a fever and pest depôt, in the shape of a cesspool, and retain therein the elements of disease and death. The worst possible shape of sewers has been insisted on, and by this and the not merely uselessly, but injuriously large size required, the cost was made so enormous as to throw great obstacles in the way of forming new sewers, and in many cases to amount to a total prohibition of all drainage whatever. Thousands of pounds were thus wasted, as well as much good prevented.

Even till very lately, erroneous views reigned in Greek-street, and were defended "to the death:" grave charges were urged against the commission, and their dissolution at one particular moment, seemed more than probable.

Leaving this, however;—until recently, the commission seem never to have considered that they were a *sanatory* board; and when that knowledge did break upon them, they found, and always pleaded in reply to objectors, that their powers were too limited to enable them to act in that respect efficiently. Steps were ultimately taken to increase these powers, and the result is the Act in question, whereof the provisions may be thus stated:—

The commission is to endure for ten years, notwithstanding demise of the Crown, unless repealed.

The orders of the court remain in force until repealed, without any other entry than in the ordinary books registered by the clerk.

A presentment to repair shall not be necessary on each occasion.

The Act has clearly defined the right of the court to pay their officers—to pay expense of witnesses, expense of surveying, planning, and all expenses of working the commission.

The court may agree for the purchase of lands for works and sewers, and all persons under disabilities are empowered to convey, but the commissioners cannot compulsorily take land.

Several defaults may be included in one presentment, and be separately traversed.

All property connected with the commission is declared to be vested in the commissioners.

A summary remedy is given to compel officers of the court to deliver accounts, books, and property.

Possession may be summarily taken of property detained by officers.

Security may be taken from officers.

Fines and forfeitures are not to be estreated into the Exchequer, but are to be levied by the commissioners and applied to the purposes of the commission.

The court may compel parties to pay the expenses of putting in force the orders of the commissioners.

Actions and proceedings may be commenced by or against the clerk as representing the commissioners, but they and the clerk are to be reimbursed, and the clerk may be a witness.

The commissioners may exercise jurisdiction over all places named in the commission, whether the tide ebb or flow there or not; but the commissioners are not compellable to exercise jurisdiction at once if not thought necessary.

No house is hereafter to be built within the jurisdiction of the commissioners unless a sewer be first built as the court shall order; and the sewer is to communicate with such other sewer as the court shall order; but if there be a sewer already near enough, then, instead of a new sewer, a drain may be made into the existing sewer. The expense is to be borne by the owner; but the court may relieve him, in the case of a sewer only, where it may seem just to throw a portion of the cost on the district; and the court may impose a fine on parties contravening the Act.

The Act provides, that no individual shall be required to pay more than after the rate of 20s. per foot for the sewer, according to his frontages; and where a house is wholly unconnected with a public sewer, and at a distance of not less than 200 feet from any public road or other house, the party is not required to make such sewer or drain unless a jury shall present it.

In cases of houses already or hereafter to be built, if they are not properly drained, and if there be a proper sewer within 100 feet, the court may order such house to be drained, by the sewer being continued along the frontage thereof, and by making a drain into it. If there be a sewer already in front, then the court may order a drain to be made into the sewer; and the court may order the owner or occupier of the house in this case to pay a portion of the original cost of the sewer, if built within thirty-five years; and if after twenty-eight days' notice parties shall omit to do so, the court may do the work, and recover the expense by distress.

As to building new sewers, the court is empowered to build sewers where none existed, and to arch over sewers, and to have the contents of the sewers sold, and applied for manure, guarding against any nuisance to the public.

The cost of these new sewers, or the arching over, to be borne by the owners of property according to frontage. The court may charge the owners with the payment of the money by five yearly instalments.

The court may relieve owners from a portion of the expense where the immediate neighbourhood would not require so large a sewer as ought to be built with reference to the public wants.

The expense is to be recovered by distress from the owner or occupier.

Tenants may deduct sums they may have paid, i. e., if a tenant for seven years, he may deduct nine-tenths, and so on in proportion up to thirty-five years, when he may deduct one-fifth, beyond thirty-five years nothing. Tenants under renewable leases are to be considered tenants for the whole term they might acquire. Lessees on lives to be valued. No special contracts are to be affected.

A tenant from year to year is protected against paying more than the rent due from him, unless he refuse to disclose name and address of landlord.

The court must give notice of making new sewers where none existed before, for twenty-eight days where the estimate shall exceed 300*l*.

The court may borrow money for works, and charge all property to be benefited with the repayment. The money must be repaid within fourteen years by equal annual or shorter instalments with interest, and the exchequer bill loan commissioners are authorized to lend money.

The court may summon parties to show cause why private grounds are not properly drained. On refusal, a jury may be called out, and the party be ordered to build a sewer, with power to relieve him according to the benefit his building may confer on the district. The court may do the work and levy the expense on the party. Parties are to be exempt from this obligation if their property be at a distance of 200 feet from any public road or houses, unless a jury shall think it expedient to bring it under the operation of the Act.

The commissioners and officers, for view and for their works, may pass over lands, making compensation.

The court may abandon old sewers and make new ones.

The court may abate nuisance from stagnant pools, or any thing likely to prejudice the public health. The offenders are to be summoned; and if they do not remove the nuisance by building a proper sewer or otherwise, a jury may be called out, who may fine equal to the cost of getting rid of the nuisance and proper works. On default, the court may do the work, and levy the expense on the party failing. A portion of the expense of new works, where beneficial to it, may be thrown on the district.

Notice of making new drains into sewers must be given to the court; the building thereof to be regulated by the court. In default, the court may demolish any drain, and levy the expense.

If the court build the drain, 10*s.* only may be charged for the first 3 feet and the entry into the sewer.

All drains are to be under the survey of the court and its officers. The owners are to cleanse and repair them; and on failure, if complaint be made, notice may be given by the officer to parties to cleanse and repair. On failure, the court may order it to be done, and then fine the party if he refuse.

The court is empowered to raise or alter walls or banks of streams.

A special court may be summoned by six commissioners out of court in case of emergency.

No commissioner interested in a question is to vote.

The commissioners are protected against personal liability when acting *bonâ fide*.

The court may rate property without naming the owner, where he is unknown.

The earlier statutes of sewers are to remain in force except where repugnant to this Act.

It will be seen that the powers of the commission are now very great:—all drains, culverts, watercourses, cesspools, and other matters relating to drainage, are put under the control of the commission.

No house is to be built without the previous construction of a sewer, unless at the distance of not less than 200 feet from any public road or other house! Owners of houses already built, if within 100 feet of a proper sewer, may be compelled to continue the sewer; and the commissioners may themselves build sewers where none exist, and recover the cost from the owners of the property abutting thereon by distress, as well as levy fines.

The Act gives the commissioners a discretionary power,—they may, or may not, exercise jurisdiction,—and we would urge upon them the expediency and importance of acting with the greatest care, moderation, and judgment. They have now the means of doing much good, but they have also the power in their hands of producing great inconvenience and annoyance to individuals, and of raising such an outcry against the law as may tend materially to impede other sanatorial measures. We call upon them, then, to exercise their powers in so careful and tolerant a manner as to prove themselves worthy of the great trust reposed in them; while, at the same time, we would strongly urge on owners and builders, within the limits of the Act, the value of its provisions, and the necessity and general advantage of carrying them out efficiently.

The commissioners must do all in their power *to reduce the cost of drainage and improve the mode*,—the question both of size and material must again engage their attention, and receive the most serious and intelligent consideration.*

* The following communication has this interesting connection with this inquiry:—

"*City of Chester.*"—Small egg-shaped tubular sewer, and traps, composed of terra cotta or fire clay, have been recently introduced into this city. The sewers are 9 inches high, 6 inches wide at the widest part, and 2 inches thick, and is both effective and exceedingly economical, costing only 6*s.* per lineal yard; the traps are 3*s.* each. For the idea of the sewer we are indebted to the communications of Mr. Guthrie in a former number of this journal, but he suggested that it should be moulded in sections; but this was found, in practice, a most expensive and at last useless operation, the warping of the clay in the process of drying, that at first obtained, and the tubes moulded of the above size and lengths of two feet, were adopted in its stead. House-drains 9 inches diameter are also recommended of the same shape of tube and of Mr. Haskoly, in the reports of the Leeds Sewers Commission and similar material, one inch in thickness.

The tubes are fitted together without collars, and perfectly abut against each other; this enables the drain to be examined without destroying the tubes, which it is necessary to do under the old system, and it also allows the moisture in the earth above to purify and dry the tubes, similar to the system of drainage of land in agricultural districts. [We do not think this desirable, as a drain may be made of this material from its neat inside surface smooth, with correspondent altitude to those at present in use large for most of the smaller streets of provincial towns, and if a proper fall be given them, they will effectually cleanse themselves.

By the adoption of this system, the sanatory condition of many of our small provincial towns, and indeed some parts of our larger ones, may be speedily improved, and at a comparatively trifling expense, in comparison, we mean, with the costly plans constructed around us.

We cannot believe that the public in general are sincere in their

We append to our present remarks a report of the proceedings at the last meeting of the commissioners, as they bear chiefly on the matter in question.

A court was held on Friday, the 16th inst.; Capt. Bague in the chair. Relative to the "Act to explain and amend the laws of sewers relating to the city and liberty of Westminster, and part of Middlesex," of which we have been speaking, it was resolved, on the suggestion of the solicitor, that as it was now required by it that no houses should be built unless a sewer to carry off the drainage thereof be first constructed, advertisements should be inserted in the newspapers to inform all builders and owners of property of the heavy penalties to which they will be subject in neglecting the provisions of this Act.

Mr. Willoughby then rose to bring before the court, the motion of which notice had been given, viz., "That the court consider as to appointing a committee to consider of the best means of carrying into operation the provisions of the new Act, or as to the most convenient mode of making the proper arrangements towards the discharge of the enlarged functions now imposed on the court." In doing which he said, that as the Act had received the royal assent, it was their duty to take steps as to the best mode of carrying it into effect. The court had never before been invested with powers adequate and applicable to the wants of the community. He trusted they would do nothing hastily, but carry out the Act discreetly, cautiously, and wisely, with advantage to the public and credit to themselves. He thought the best course was to refer the whole question to a committee, and thereby have a well-considered scheme that might form the base for future discussion.

A commissioner having inquired if it was proposed to have an open committee or a select one, the mover said he had certainly not contemplated an open committee, believing it would be better to refer the question to some five or six members than to leave it to the whole court, where propositions might be brought forward on the moment without having received due consideration. At the same time he was favourable to the fullest discussion of the whole subject after the committee had made their report.

Mr. Le Breton objected to the course proposed, and hoped that all would be open, fair, and above-board; and in the mode in which the bill was carried, when there were no committees and no secret proceedings. It would be in the recollection of hon. gentlemen, that the bill was gone through, clause by clause, in open court, and opinions elicited, which opinions had since become the law of the land. He hoped they would carry it out in open court, without reference to committees, select or otherwise.

Mr. J. White was in favour of a special court being called, to take the whole question into consideration, but to let all be done fairly and openly, and before the public at large.—Mr. Baylis concurred in the opinion of Mr. White.—Mr. W. Donaldson was surprised at the objection to the appointment of a committee. He should support the motion.—Mr. Brown thought the whole affair might be best brought before the court by the appointment of a committee.—Mr. Cumberlege said, before the Act passed, the bill was discussed in open court. He therefore supported the motion for the proceedings being open.

A division being called for, the room was ordered to be cleared, when there appeared—

For the motion ..... 16
Against it ..... 16

The chairman, thus becoming the arbiter of the matter, gave his vote in favour of the proceedings by open court.

A communication was received from the Westminster Improvement Commissioners, as to the new mode of drainage from Vauxhall-road to New Victoria-street. The surveyor approved of the plan, and said the proposed work would form the base of the improvements of the entire city of Westminster. The surveyor was instructed to confer with Mr. Abraham, the architect to the Westminster Improvement Commissioners, on the subject.

A letter was read from Messrs. Elliott, the brewers, in which those gentlemen stated that it was their wish, as the King's Scholars' Pond sewer was now being partly arched over, that this desirable improvement should be continued from the Vauxhall-bridge road to Pimlico, and that they were willing to subscribe 450*l.*, or 15s. per foot, as their share of the expense. The court considered it a liberal offer, and acceded on their part to the terms specified. It was also ordered that advertisements for tenders for the performance of the work should be immediately issued, to be received at the next court.

## ON THE NATURE, OBJECTS, AND INSTRUCTION OF SCHOOLS OF DESIGN.

THE following is the letter to Mr. Shaw Lefevre, referred to in our last week's paper:—

"38, Arlington-street, Camden Town.

SIR,—In stating, at your request, my opinions on schools of design, I think it necessary to explain any terms which I may have occasion to use in a more special and limited sense than as they are ordinarily employed. The two most important of these are *industrial* and *artistic*. By *industry*, I do not mean simple labour, but any process by which raw materials are converted into objects of convenience or utility; and by *art*, such exertions of the inventive or combining powers as will produce objects calculated to suggest ideas of sublimity or beauty. These definitions, though a little vague, will be, I apprehend, sufficiently accurate for present purposes; and I may, therefore, take it as understood, that the primary object of industrial production is physical usefulness; and of artistic production, mental excitement.

In order to determine what an education in design should be, we must first endeavour to form some notion of what design itself is; until we have settled the end to be attained, it is worse than useless to discuss the means of attainment. The purpose of design is to superadd to the utility of industrial productions such artistic decoration as, without destroying their usefulness, will render them pleasing to that mental faculty, or rather that combination of mental faculties known by the name of taste. Design, then, in its nature is both industrial and artistic, and its industrial elements are the more numerous and more important of the two.

Before any consideration of art arises, the designer must know the *amount* of decoration that the materials with which he has to deal are capable of receiving, and the *kind* of decoration suited to the purposes to which the article produced is about to be applied. Design, taught without any reference to capability of materials and appropriateness of purpose, is even more ridiculous than the establishment of a manufactory for ruffles in a country where people are unacquainted with shirts.

Every artist receives an industrial education: the painter learns the art of mixing and combining colours so as to produce varieties of tints; the sculptor learns how to wield the hammer and chisel; but there is this difference between the artist and the designer, that the artist himself realizes his own conceptions, while the conceptions of the designer are only realized by the intervention of the manufacturer. Hence, though designers, such as Flaxman, have risen to be great artists, it is one of the rarest things in the world to find an artist producing a good and practicable design. Cartoons, of course, must be excepted, and perhaps arabesques; but these have, after all, very little relation to the works likely to be demanded from the designers suited to a large manufacturing country.

It does so happen that convenience and beauty are often very closely allied; and this alliance is pointed out by mathematical science. The curves of the conic section applied to vessels of capacity, for instance, give us at once the most graceful forms and the most capacious articles. In all architectural designs there is an absolute necessity for perfect horizontal level and perfect perpendicular elevation. People have found beauty in the leaning tower of Pisa; but I nearly found my death in the leaning wall of a cottage: and I doubt whether any beauty of oblique angles would afford consolation to ghosts. Some of the most effective patterns in silks, produced this year at Paris, were geometric combinations of straight lines. Some knowledge of mathematics is, therefore, essential to successful design; and it is even of more importance than the highest excellence of pictorial art, because stability is more of a primary consideration than mere ornament.

An artist, of course, has nothing to do with any such mechanical considerations as stability or convenience; but unless a designer works for mechanics, he had much better not work at all. We go to artists for pictures; but we go to designers for tea-pots; and the best figure-drawing in the world would console very few of us for having our breakfasts spoiled. The *ornamental* comes *after the useful*. Giving exclusive prominence to the ornamental leads only to the production of the useless, a species of production which, in my opinion, does not require or deserve national encouragement.

A designer, I grant, is neither a machine-maker nor a machine-worker, but he is a machine-user, and therefore he can never know his business well without some knowledge both of mechanical science, or, as I may call it, dynamics, and also of the practical working of machinery. But, to make this knowledge complete, there should be added to it the elements of statics, for questions of equilibrium very often arise in discussing the composition of forces. I may be told that these have no relation to art; but I beg it to be understood, that I am writing on the education of designers and not on the education of artists. Flower patterns are among the most common and popular forms of design, and a knowledge of botany is absolutely necessary to their effective production. I have seen groups produced by English designers in which the flowers of spring and autumn were absurdly blended, the natural characteristics of the plants utterly lost, and the harmonies of nature, which art may imitate but cannot mend, thereby effectually destroyed. The climbing of the convolvulus affords an admirable archetype for patterns, and has, therefore, been often copied in design; but one sticks on his convolvulus stem the flowers of the ranunculus, and another gives to the climbing plant the form of prehension which belongs only to the creeping or the pendant plant. The blunders of this kind are without number—

"Velut ægri somnia, vanæ
Finguntur species: ut nec pes, nec caput uni
Reddatur formæ."

For these *vanæ species* I would venture to propose the *species* and *genera* of natural science—that is, of NATURE herself, sciences being merely the classification of observed facts.

Some portion of zoology would be useful, for in many designs animal forms are introduced, and, what is not less important, animal substances supply many of the materials on which design is to be exercised.

But no science is of more importance to the designer than chemistry; and in no department of science is England more defective than in the chemistry of colour. I must, however, make an exception in favour of our porcelain manufacture, which has within the last few years outstripped the production of Dresden and Sevres. Now, a designer making a pattern without knowing the means by which the shades he introduces can be realised, is almost certain to go astray. All the designers for silk at Lyons are excellent chemists; they have for the most part been educated at the admirable school at La Martiniere, where a very extensive and practical industrial course precedes, and is made the basis of, artistic instruction. One of the best designers, in his particular department, in England, is Mr. Battam, the artist to the pottery and porcelain works of Messrs. Copeland and Garratt. He is not only well acquainted with the chemistry of colour, and the effects produced on his material by firing, but he has also studied the combinations best suited to produce the porce-

agitation of sanatory reform, unless they bestir themselves with energy and exertion in setting their respective towns "in order" by improved drainage as suggested at so cheap a rate; paving, flagging, and cleansing, and a cheap supply of water and gas. These are subjects of momentous importance to all of us, and the expense of which would soon be repaid by the reduction of the local taxation in *poor rates*, and the better health we should enjoy in the bosoms of our families. The Health of Towns Bill, having been withdrawn for this session, we trust on its introduction, in an amended form next session, that clauses will be re-introduced to repeal the window-tax and the tax on glass, as the lack of light and ventilation are some of the greatest curses our cottage population are labouring under. Instead of levying taxes that stop up the windows of our houses, which distract the light and air of heaven, we would tax those that failed to put a sufficient number in their houses, and who therefore neglected the laws of ventilation and health. The window-tax is a tax of such an odious and barbarous character, that it is totally unworthy of a country that boasts so much of its civilization. B. B.

lain base which is to receive his artistic decoration. In fact, he has discovered some new combinations, which greatly extend the range and application of the products of the fictile art.

Mr. Hammersley, the master of the Nottingham School of Design, may be mentioned as an example of the value of industrial education to an artist of design. He was originally a designer for the potteries; and as he resided on the spot, he had at once to apply his patterns to the products. It was on this practical and mechanical knowledge that he raised the superstructure of his art; and he has profited by experience; for on his appointment to Nottingham, he set himself to study the nature and principles of lace manufacture, without a knowledge of which it would be impossible for him to discover how art could be applied to the fabric.

In art proper, England is decidedly superior to France. No one could entertain a doubt on the subject who compared the last year's exhibition in Trafalgar-square, with the melancholy acres of painted canvas displayed about the same time at the Louvre. It is not improbable that our designers would come very near those of France *on paper;* but most assuredly the French would produce ten workable and working patterns for our one.

Even viewed artistically, there are some obvious and essential differences between a design and a painting. A painting is designed to suggest,—a pattern to produce direct impression; a painting may be allowed to gain upon you and grow upon you,—a pattern, unless it strikes at once, is an absolute failure. Design, therefore, is necessarily dramatic; and hence the histrionic character, which is the great defect in the French school of painting, is the great merit of their school of design.

So long as the school in Somerset-house is confined to artistic instruction, it is not a school of design, but a school of low art,—a place for training candidates for rejection by the Royal Academy. Artists ought to have a share, and a very important one, in the training of designers; but they neither can nor will give them the kind of instruction most essential to their success, and that is, a knowledge of the elements from which design must be framed, and of the means by which it is to be realized.

It is certainly of importance that taste should be cultivated in the designer, but not until the powers which combine to form taste have been developed and rightly directed. Give the designer the industrial portion of his education, and then let him have as much of the highest art as he has either capacity or opportunity for receiving. Design differs from high art not merely in degree, but *in kind;* for design includes *contrivance*, with which art has nothing whatever to do. A beautiful picture would be a very bad pattern, in ninety-nine cases out of the hundred.

A designer has to invent; and the power of inventing requires that the *mental faculties* should be developed by *general knowledge*. It needs not to dwell an instant longer on so palpable a truth.

A school of design then is a school of arts and manufactures; not a school of art, in the singular number, without any reference to manufactures, singular or plural. Design is properly a part of industrial education; but severed from industry, it is nothing more than

Extinctæ corpus inutile dextræ.

If it be desirable to have a school of design distinct from the school of arts and manufactures—which I do not deny—it should only be open to those who had completed their industrial courses, and manifested such a taste for design as might seem worthy of further development and cultivation. For such students, one room set apart in the general school would probably be found amply sufficient.

I have stated my opinions at greater length than I intended; they are the results of observation and experience in the factories and workshops, as well as the schools, of England and France. The schools of England err fundamentally; they are based on the supposition that design is a lower grade of art. I contend that design is a very different thing from any of what are called the fine arts; and I point out the important element of difference in the one comprehensive word *contrivance*. I grant that some knowledge of the fine arts is an element of design, and I am as anxious as any one can be to make that element as perfect as possible. But still, such knowledge is only one element out of many: I doubt whether it is an element which ought to predominate; and I am very certain that it cannot safely be allowed to exclude all the rest.

It would be absurd in me to recommend amendments and improvements, when my objections apply to an entire system. I want to see schools of arts and manufactures in which design shall form an essential part of the course of instruction. I desire to see these schools under the joint government of the Board of Trade, the Council of Education, and local authorities, except the central school, which ought to be placed directly under the Government, without the intervention of any irresponsible council or committee. Each school of design now existing in the country affords a nucleus for a school of arts and manufactures, without disturbing any body, or displacing any body. Retain all your paid staff; you will want every one of them: get rid of the *unpaid;* for no economic aphorism is more true than this, 'Whatever Government gets done for nothing, is generally very dear at the price.' Do not contemptuously neglect, or affect to despise, mechanical details and commercial considerations, in discussing the matter. St. Paul's advice had a wider scope than religion, when he said, 'Despise not the day of small things.' In devising schemes for the improvement of design, let not the artizan be forgotten in the artist—you may be assured that a good bricklayer has a greater national, and a greater market value, than a bad painter.

W. Cooke Taylor."

## THE CONSTRUCTIVE SCIENCES AT KING'S COLLEGE, LONDON.

In King's College, as at the London University, the classes for the study of the arts of construction and architecture, under Professor Hosking, are making satisfactory progress. The course of instruction now pursued there is this:—At the October commencement, the professor introduces the subject of construction generally to students of all years; and throughout the term so commenced the assistant professor, Mr. A. Moseley, teaches the simpler elements to those of the students who are in their second and third years, and concludes by an examination, the result of which enables the professor to judge what information the students have acquired during that term. In the terms from Christmas to Midsummer, Mr. Moseley confines himself to surveying and estimating, and Professor Hosking goes through the subject of the arts of construction in connection with civil engineering and architecture generally, to the same second and third years' men; and at the conclusion, that is, in the last week in June, examines the third year's men upon the whole subject, and awards a prize to that student who gives the best answers to the inquiries. Those students who return for the third year have thus the whole course twice over, and alone come up for final examination.

At the last examination, the prize was awarded to Mr. Nunn.

## TEA-GARDEN ARCHITECTURE.

A "Young Architect" has addressed a letter to us, setting forth how that he and other students, flighty rogues, were led, by a flowery description in a morning newspaper, of a beautiful gothic hall, erected as a refreshment-room in a popular place of resort a short distance from London, to travel there at certain cost in time and money. And further, how that when they reached the *locus in quo*, it turned out to be a "a flimsy, vulgar, unsubstantial affair, as little like the hall at Eltham, to which the said morning paper had gravely compared it, as the station of the Great Western Railway at Paddington is to St. Paul's." He continues, "I will briefly mention what I saw:—A large low structure, with a very flat roof, perforated with skylights; two large doors at either end; the roof supported by two rows of short slight wooden pillars; against these were affixed thin pieces of mirrors, at the end of which were boards cut into a curved shape, with mouldings and paintings on them; the windows in the walls were few, and those not Gothic; no louvre, no fine old gallery or screen; no oriels; nothing, in short, belonging to antiquity."

Although scarcely worth mentioning, and his statement satisfies us he must be a *very* "young architect" to expect any thing better, we notice his objection because we agree with him in this, that praise of such a structure, on such grounds, by a respectable journal, while it is an evidence of the want of architectural knowledge generally, is calculated to do injury, and should be reprobated. We propose peeping at one or two places of public resort, which make claim for architectural decorations, before long.

## THE STATUE OF HER MAJESTY,
BY GIBSON.

## THE NEW CROWN PIECE,
BY WYON.

These two novel works of art have been much praised by periodical critics; but they have not been fairly and properly reviewed, as regards their historical and national import. Let us briefly notice them with reference to their truthfulness, and to the effects they are calculated to make on the mind of the rising generation of artists, and of future historians and critics. If the *Statue* of *Victoria* was exhibited in any museum or gallery of Europe, without an inscription, or explanation, could any spectator fancy it to be a portraiture of the present amiable Queen of England. Was she ever seen, or is she likely to be seen, clothed in such amplitude of mantle,—with such sandals,—with such a tiara on the head, and such wreath and scroll in her hands? If not, what can justify the artist to chisel such things in marble, as part and parcel of the statue of a female, and affix the name, Victoria Regina, to the mass?

If the biographer or historian were to describe our most gracious Queen, as appearing at court, in the senate, or on horseback, in such costume, would the account be tolerated? Would it not seem like caricature? and would not the writer be reprobated and condemned, as faithless and false; as indicating an imaginary rather than a real personage? Besides, we know that the Greeks, in making their famed statues, busts, bassi-relievi, &c., copied and rendered permanent the portraitures of their emperors, senators, heroes, and females, not merely in personal features, but in costume and all other accessories. They did not clothe an Alexander, or a Pericles, in the dress of the Egyptians, but in that of the age in which they respectively lived. The Roman artists did the same, whence the best works of both nations are justly regarded as authorities, as historical data, for description and criticism. We are also in the habit of referring to the sculptures, the paintings, the medals, and coins of the middle ages, as guides and evidences for costume, implements, weapons, and other personal details; but if artists are tolerated and *encouraged* to produce statues and pictures of illustrious and eminent British personages of the nineteenth century, in the habits, &c., of the Egyptians, the Greeks, or the Romans, who lived centuries ago, we shall lose all identity of persons, time, and of authenticity.

The late Mr. West set a most praiseworthy example in historical pictures, as Chantrey did in sculpture, of an earnest and laudable endeavour to make art both historical and biographical, and thus calculated to represent the hero, the statesman, the philosopher, the poet, &c., in a dress which truly belonged to him, in a costume which seemed to mark the age and country in which either of those personages lived, and which would at once contra-distinguish him or her from another person of a distinct age and remote nation. These sentiments were often reiterated in my ears by the two eminent artists alluded to, and were, and are, so indelibly impressed on my mind that they can never be effaced,—nor can any fascination of art reconcile me to approve and admire a work that is opposed to the principle. In making these remarks on *Gibson's* fine and, as it may be called, classical statue, I do not wish to depreciate it as a work of high art, of great beauty, of eminent talent; but I must enter an unqualified protest against its being called and regarded as a portraiture of the illustrious, exemplary, and estimable living female monarch of Great Britain.

THE CROWN PIECE, by Mr. William Wyon, R.A., is a beautiful specimen of coin engraving, and creditable to the artist and to the country; but I cannot help regretting that it should be disfigured by a practice that "would be more honoured in the breach than the observance:" the inscription in the old abbreviated *Latin*. Have we a language of our own? is it copious, precise, expressive? or are we ashamed of it? Is not an *English* coin, as well as an English Act of Parliament, intended to be used by, and made for the English people? Or is the Latin language the vernacular idiom of the country? If not, why employ it in the laws and on coins of the realm, which ought to be known to, and duly valued and understood by every person, whether rich, or poor, learned, or illiterate? But custom, common-place prejudice, govern or hood-wink too many, even of the thinking portion of society. "The diffusion of knowledge" has done much towards dispelling these clouds, improving the general intellect, and it will ultimately, I hope soon, correct the errors and absurdities here complained of. As the poet Crabbe has properly said "the *dead* language ought to be *buried*." J. BRITTON.

July 22, 1847.

## EDUCATION FOR CIVIL ENGINEERS.

THE objects which the College of Civil Engineers at Putney has in view;—namely, "To provide for the rising generation a means of obtaining instruction in sound scientific principles, while at the same time they are acquiring that knowledge which practice alone can impart," is so important to the great interests of the country as to claim our attention in a considerable degree; and lead us, without pledging ourselves to the excellence of all the details of the plan adopted, to give publicity to the views of the directors, as set forth in the address of the Principal, referred to last week. No one can deny that, "it is a wise and patriotic endeavour to provide, for those who wish to make engineering their profession, means of acquiring that sound knowledge without which immense and valuable undertakings are exposed to be ruined by the rash schemes of ignorant pretenders, or the mismanagement of those who depend only upon mere blind technical rules, without power to adapt them to altered circumstances."

"To know how a bridge, which is to carry a certain load, should be constructed, is entirely within the province of the scientific man. He takes the data of the experience of the past, and knowing the laws that govern the resistance of matter, he can say with confidence, 'this design, if carefully and faithfully executed, will answer the purpose.' There is no room for difference of opinion. The laws of mechanics admit of no doubt. How is it then that we find architects and engineers contradicting one another on the plainest point? on questions the calculation of which is easy to any who know the elements of statistics? How is it, that in cases of failure occurring so frequently, the authorities appealed to express opinions so widely different? I firmly believe it to be because these authorities are only, in most cases, those of *practical* men, who know not the laws of the results which they have witnessed in the course of their professional experience; and not knowing these immutable laws, they are apt to generalize falsely, and apply to particular instances their general rule, without discriminating efficiently between the *data*.

I am alluding to cases which have occurred within the last twelve months, and which to professional men will readily suggest themselves, and I think it a matter for serious consideration on the part of her Majesty's Government, whether or no engineers to whom is now entrusted the lives, and limbs, and property of her Majesty's subjects, shall be allowed to exercise their valuable and important profession without some guarantee to the public, that those who undertake to do so have really had such education and preparation for their duties as shall enable them to perform them with advantage to the public, and a due regard to the welfare of the country. A time must come when an authorized board shall be appointed to examine persons who wish to exercise the profession, and then it *must* be a *sine quâ non*, that the candidates shall shew an intimate acquaintance with the properties of matter, and the natural laws of mechanics. Such a knowledge it is our constant object to give in this college, but inasmuch as we know that knowledge without practice is not ready and available, we also place this latter most important requisite within reach of the student.

The experience of past ages of the civil engineer and the contractor is also brought before the students; they visit railways and public works in course of construction, and then see the operations of which they read, and of which plans and explanations have been given; they see these operations being carried out. Our system is not to give theoretical instruction alone, but to give practical along with it. We manufacture machinery; we have constantly pattern-makers, fitters, vice-men, moulders, and smiths at work on the premises, executing works such as may be seen in the more extensive workshops of our chief engineers, and thereby we supply them with the knowledge that actual practice gives, while, at the same time, we also give, what could not be done in a large manufactory, constant instruction to each individual in the principles which guide these operations, and urge the students, by industrious application, to master both the practice and the principle, both the experimental facts and the theoretical truths; and thus we endeavour to remedy that wherein we conceive that engineering education has been hitherto defective.

Objections are made to the college sometimes on one ground, sometimes on another.

"You cannot make men engineers by mere theory," says one. No doubt of it; we do not pretend to do any such thing; we wish to give theory in addition to practice, not theory alone. We say, engineers ought to be men whose operations are conducted on certain principles. Those operations should not be merely tentative; we wish to supply the exact, positive, undeviating laws of mechanics; to give the student that confidence which science alone can give, that his unskilful attempts may not be the cause of death, or mutilation, to others. Engineers should be scientific men, as well as practical, and science is not acquired so easily as a scientific reputation is.

Again, when some of those who have been educated within our walls have gone forth into the world, they have been tried and found incompetent.

This is very possible; we are not so foolish as to think that mere residence in a college gives knowledge. I must particularly request our engineering friends to give me their attention when I allude to the matter. They should not judge the college by any of our students, unless these latter bring certificates of their competency from the college authorities. I, for my part, emphatically and distinctly disclaim any responsibility whatever for those who leave the college without certificates, countersigned by myself, and, on the other hand, I will venture to defy any engineer to convict a student of incompetency who has been so recommended. I am confident that during my direction of the college, none have received certificates without searching examination, and I am fully convinced that they have been competent to undertake such work as might fairly be intrusted to young men, with certainty of giving satisfaction to their employers."

## PARIS.

THE *Moniteur des Architectes* says that the church of Notre Dame has been furnished with lightning conductors, and expresses a hope that this precaution will be adopted generally throughout France.——A model of a design for a subterranean street between two leading railways is being exhibited at the *Palais Bourbon*.——Some curious discoveries have been made in lowering the Rue *François Miron*, including a number of tombs, some in plaster, belonging to the fifteenth and sixteenth centuries, and others in stone of much earlier date.——The cupola of the *Salle des Pas Perdus*, at the *Palais de Justice*, is giving way. It appears certain that the evil is great, and that very considerable works are necessary. It is attributed to the failure of the foundations in part. ——A complete renumbering of all the houses and buildings in Paris is to be immediately commenced, they say; it is to be done by means of plates of enamel, with white figures on a blue ground.

## RAILWAY JOTTINGS.

A PROJECT of law to expel railway directors from the French Chambers has been introduced by M. Cremieux, and referred to a committee.——A verdict of 800*l.* damages has been awarded by jury for injuries sustained by a Mr. Bromley and his wife on the Eastern Counties line, on 18th July last.——The jury in their late verdict against Fossey for the Wolverton collision, declared that two attendants were necessary at the siding, instead of one alone.——It is but fair to record, however, that the Wolverton accident is said to be the first that has occurred, on that part of what is now called the London and North-Western, for nineteen years, during which time 'the company,' namely, the London and North-Western, have carried 35,000,000 passengers along this line,—an enumeration, however, which looks a little like an attempt to throw dust into the public eye. The number of servants employed by the same company is said to be 6,418, exclusive of plate-layers.—— The *Sheffield Iris* describes an Itinerarium, or railway compass, to ensure more punctuality on railways, and thus, also, to aid materially in the prevention of accidents. It will at all times shew to the engineer the speed of the engine, the distance to the next station, and the exact position on the line, which will be useful at night, or in foggy weather. There is a chronometer, which will, of course, shew the railway time. It will also register on paper a description of the journey, that is, the time occupied at each station and during the journey, and the exact speed travelled during every mile. Several trips on the Manchester and Leeds have tested its utility.—The daily expenses of the Great Western in the present Parliament have been estimated at 4,500*l.* a day, or 30,000*l.* a week.——The repairs required for the Dorchester Tunnel, says the *Hampshire Advertiser*, turn out to be far more formidable than was at first acknowledged, and the report of Mr. M'Adam, as to the danger of the traffic being opened through it for a considerable time to come, has compelled a deference to the public safety. The repairs are proceeding, therefore, with due caution, and it will be a long period before the tunnel will be re-opened.——That part of the new bridge under the turnpike road leading from Dudley to Birmingham, near Dudley Castle, says the *Worcester Journal*, and under which the Oxford, Worcester, and Wolverhampton line will pass, has been repaired since it fell in, and the workmen are now employed in removing the earth from off the sides of the two ends of the bridge, on to the centre of the arch, for the purpose of causing it, by the additional weight, to spring into its place. Whether it will have the desired effect or not, remains to be seen; many persons considering it will not be safe, or to be relied on, till the whole bridge is pulled down and rebuilt.—— On Thursday week, a locomotive Post Office, with human and other machinery complete, was dispatched from Bristol, with the mails to Exeter.— On Thursday week, one of the arches of the viaduct now in course of construction at Dewsbury, on the Leeds and Dewsbury line, gave way and fell in, "owing," says the *Halifax Guardian*, "to some workmen, who were working in the night, having inadvertently put too great a weight of stone on one side of the arch, before the other side had got sufficiently backed up, which caused the centres to give way, and the whole mass of masonry to be precipitated to the ground." The contractors, Messrs. Crawshaw, however, are said to have "spared no expense in the erection of substantial scaffolding and other preparations necessary for securing the safety of so heavy a mass of masonry as this is."—— Messrs. Fell and Jopling, contractors for the portion of Furness railway between Dalton and Lindale, broke ground three weeks ago. In this contract there will be a tunnel 300 yards in length; fifty excavators are at work on it.——One of the main arches of the high level bridge at Newcastle, says the *Gateshead Observer*, is now complete, and has been exposed to a test of extravagant severity, doubly exceeding any trial to which it can by possibility be put by the ordinary traffic of the railway.——The fourteen hours time distance between London and Edinburgh, says the *Scottish Railway Gazette*, is now a great fact, as 'the thing has been done.'——

Another great fact is this, that the House of Commons has got an electric telegraph of its own for the more expeditious accomplishment of its often somewhat tardy procedure, so far at least as the transmission of communications between the committee rooms and the lobbies is concerned, by means of which, members attending committees are now enabled to learn instantaneously who is speaking in the house, and the time at which a division may be expected!——The Electric Telegraph Company's spacious design for central premises in Lothbury is now in progress of construction. Here, of course, it is intended that the wires from the various railway stations will concentrate, so as ultimately to identify, or represent, all the principal vital foci, or centres of life and action, within the circle of our island, if not also those adjoining, such as Ireland, Isle of Man, &c., and for international intelligence with the nearest continental points of approach in the channel. Mr. Bain's *punching* telegraph, already described in THE BUILDER, appears to be one chosen as best adapted to that diffusion of commercial and other intelligence, preparations for furnishing which, to the subscription-rooms of towns within the compass of the telegraphs either laid or laying down, have already been made, so that, according to the *Morning Herald*, the metropolis is to be at once put into communication with the following towns and cities, namely, Margate, Ramsgate, Deal, Dover, Folkestone, Canterbury, Maidstone, Tonbridge, Gosport, Southampton, Winchester, Dorchester, Bristol, Gloucester, Cheltenham, Peterborough, Yarmouth, Huntingdon, Hertford, Northampton, Coventry, Birmingham, Wolverhampton, Stafford, Chester, Liverpool, Manchester, Leicester, Derby, Nottingham, Lincoln, Chesterfield, Sheffield, Bradford, Wisbeach, Lowestoff, Cambridge, Chelmsford, Ipswich, Rotherham, Barnsby, Wakefield, Leeds, Halifax, Rochdale, Hull, York, Darlington, Newcastle, Berwick, Edinburgh, Glasgow, Scarborough, Bridlington, Stamford, Norwich, St. Ives, Ware, Colchester.

## THE WELLINGTON STATUE.

### AN AD INTERIM PROCEEDING.

SIR,—Since we have got the Duke himself at length upon the arch,—"dead man" to any thing like an *approval* of the conjunction itself though he had already declared himself to be,—a *lapsus vitæ*, by the way, which now very plainly *proves* that he positively *disapproved* of that conjunction, else why "*dead*" to all *approval*, and yet now *alive* to the mere *indignity* of a *removal*?—little more need be said on that *mauvais sujet*, the statue upon the arch; especially since you have yourself already stripped off the bedaubing of figurative gloss, or bronze, or whatever you may call it, under which not only the bare nakedness of every thing like right reason, but the positive deformity of every thing like right moral lay lurking till thus exposed.

With your permission, however, I would semi-seriously suggest, that since the committee who pledged themselves,—their honour, I suppose, which is therefore still in pawn,—that they would "take down the statue from the arch,"—*id est*, as now *translated* by the committee themselves—that *they* would "overthrow the monument in the Duke of Wellington's very sight," and,—still "out of their own mouths" speaking, if not "condemning,"—thus commit, as a committee, this "most offensive and wanton affront"—Yes, pledged *themselves to do all this*,—remorselessly, to drop the good old duke down from his high estate,—"from the height of his glory" (*sic scribitur*), and replace him on the ground;—since that most honourable and Duke-devoted committee, who pledged themselves to do all this dirty and yet dreadful work in the mere event of the public at large, or of competent judges, not approving of its present position, have been prevented by the still more Duke-devoted Government from committing this deliberate, designed, and deadly dishonour and affront to the "dead"-alive, I would indeed suggest, with all the seriousness which so grave a subject merits, that the pedestal designed for the brazen duke, and intended by the Woods and Forests to be erected in the park adjoining, just about the spot so significantly pointed at, from the beginning even until now, by the beau-ideal duke himself—as by far the most suitable site for his own 'mould of form',—be erected there as a pedestal still, as at first designed, notwithstanding the present unavailing but obvious longing both of Copenhagen and his master to move in that precise direction, from the truly 'bad eminence' from which they thus themselves appear to be so anxious to 'be off.' And so soon as the 'pedestal' is thus erected, that those trophies which the Government proposed to adapt to the arch, in the place of Copenhagen and his centauric prolongation, be, though designed for the arch, *in the meantime* mounted on the pedestal, there to await that magical 'presto' or *empressement* of the *Vox populi*, by means of which, will-be nill-he, some fine morning, the mutual transposition so devoutly to be wished, will of a sudden be realized, to the equally sudden relaxation be it hoped of the grinning jaws of "surrounding nations."

One decided advantage in the adoption of such a proposal would be this, that the one grand absurdity would be kept in countenance by the fitting companionship of a counterpart absurdity; so that either neither could shed ridicule on either, or, more properly though still figuratively speaking, both could *make* merry, one with the other, like some bizarre but good-humoured couple who *pro tem.* have exchanged their respective toggery for mere pastime, or for the fun of the thing itself.

In the hope that my suggestion will not be lost sight of,—I am, Sir, respectfully yours,

J. E. D.

## THE GARDENS IN THE GREEN PARK.

SIR,—In 1790 the crown was graciously pleased to appropriate under lease, with strong covenants, to all the houses in a line from Piccadilly to the palace, leading to the stable-yard, the entire ground on the left hand of the Queen's walk, for "an ornamental garden enclosed with iron rails," and said tenants "shall not suffer any alteration whatsoever in the height, pattern, construction, or colour of the iron rails, &c." "Shall not suffer to be erected or set up any wall, poles, or rails, or any other kind of fence."

Either from ignorance or wilfulness, these gardens have become a wilderness of unsightly forest trees, disfiguring the park, and obstructing from the inhabitants the charms which the view combines; encroachments were here and there attempted, and it is only lately that the Woods and Forests have removed the palings erected by the late Lord Durham and Sir F. Burdett. The covenants in the leases proceed thus,—"Nor sow, plant, or set, or cause to be planted on the premises, any tree, or plant, any shrub, bush, or other thing whatever that may in any way darken or prejudice the rights of, or obstruct the view or prospect from any house, or building adjoining, or near to the said premises, or use the same for any other use or purpose than that of an *ornamental garden*."

Why do not the Woods and Forests enforce the intention of the leases without obliging individuals to complain of their neighbours,—and not allow the park to be disfigured by scrubby trees, harbouring soot and cats, in lieu of flowers and flowering shrubs, and depriving the public of the "ornamental gardens."

I am, Sir, &c.,

P.

## CAST-IRON IN ENGINEERING WORKS.

THE following minute of the Railway Commissioners in reference to the report of the engineers on the late accident, by the breaking of the iron girder bridge, at Chester, was transmitted, a few days since, to the Lords of the Treasury.

"The commissioners of railways, after considering this report, are of opinion that it is their duty to call the attention of her Majesty's Government to the uncertainty which at present exists respecting the conditions to be complied with in employing iron, but more particularly cast-iron, in engineering works. Although the facts which have been collected and the principles which are acknowledged may have proved sufficient for the guidance of engineers in the application of iron to works which are not exposed to an action differing materially from a steady load, yet there appears to be great doubt whether the experimental data, and the theoretical principles at present known, are adequate to guide them in designing iron bridges when these are to be traversed by loads of extraordinary weight with great velocities. When exposed to the rapid motion of railway trains the structure should be capable of sustaining, without permanent injury to any part, the concussions which any irregularity may occasion, and the vibratory action which a rapidly alternating change of condition must produce. The commissioners have reason to believe that much difference of opinion exists among the most eminent engineers of the present day as to the proper form and dimensions to be given to railway girders of iron, to resist the combined action of the several forces to which they are subject during the transit of trains; and until the subject has been further investigated, they cannot be considered as having sufficient data for their secure guidance.

The inquiries which are necessary on this subject demand the combined attention of scientific men and practical engineers; and the commissioners believe that this object may be most effectually obtained by means of a commission appointed by the Government.

To the commissioners appointed every facility for experiments on an extensive scale should be afforded, and they should be requested to endeavour to arrive at such principles, and to form such rules, as may enable the engineer and the mechanic, in their respective spheres, to apply the metal with confidence. Another subject that might advantageously engage the attention of the commission is the action which takes place under varying circumstances in bridges formed by adding tension bars to cast-iron beams, as in the bridge over the Dee, at Chester."

## ST. STEPHEN'S CHURCH, ROCHESTER-ROW, WESTMINSTER.

OUR readers are already aware of Miss Burdett Coutts's intention to build and endow a church and schools in Rochester-row, Westminster, in honour of her father's memory, at a cost in the whole, of little less than 30,000*l.** Mr. Ferrey was appointed to carry out the noble intention, and on Tuesday last, the 20th, the esteemed founder, assisted by his lordship the Bishop of London, and a large number of distinguished persons, laid the first stone of the intended edifice.

In a cavity beneath the stone was placed a bottle, hermetically sealed, containing coins and the following inscription:—

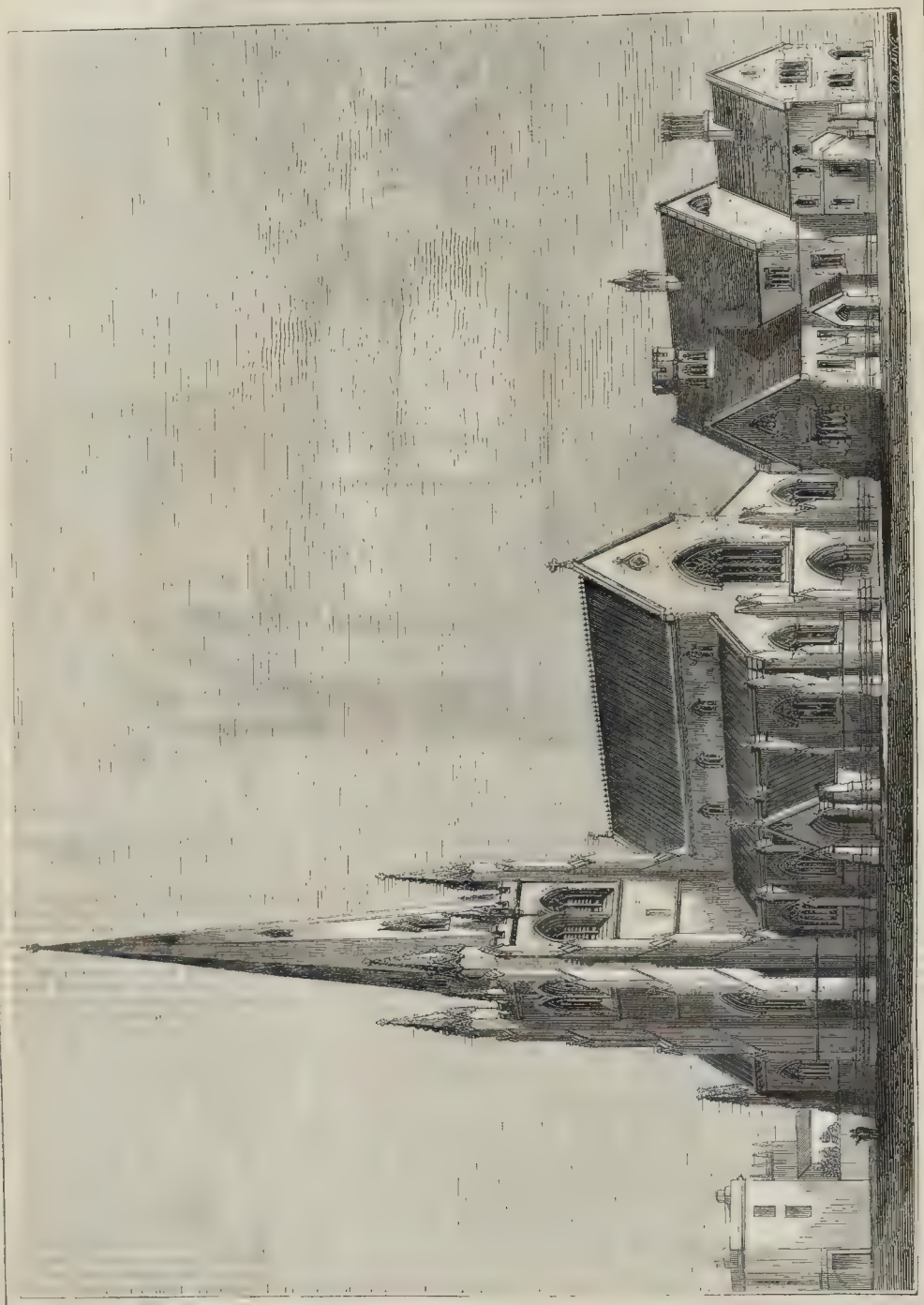
"Hujusce Ædis sacrosanctæ,
Deo, Creatori Sospittaori Sanctificatori,
in honorem B. Stephani protomartyri, dicatæ,
lapidem auspicalem posuit
Angela Georgina Burdett Coutts,
filia natu minima
Francesci Burdett, Baronetti,
hujus civitatis Westmonasteriensis
Suffragiis olim in Senatum per XXXI. annos
cooptati,
eadem illa, pietatis ergo in patrem,
et gratæ in Deum observantiæ,
quam nunc inchoavit ædem,
proprio sumptu exstructura,
ornatura, dotatura,
singulare in hoc seculo tantæ munificentiæ exemplar.
XIII Prid. Kal. Aug
A. D. MDCCCXLVII."

The Bishop of London in addressing the meeting said,—"The lady, to whose christian munificence we owe this good work, having been moved by filial piety to erect a memorial to the memory of her respected father, who represented for many years this city in Parliament, recollected at the same time that she had a Father in Heaven, whose glory she was bound to promote to the best of her means; and she has sought to combine these two objects of perpetuating the memory of her father in the flesh, and her duty to her Father in Heaven, by erecting this church. I need hardly remind you, that in the old times, this was a customary mode both to commemorate the memory of the dead, and to express gratitude to the Most High. I need hardly tell you this, for many an ancient parish church and noble cathedral has been endowed by the pious liberality of individuals; nor need I tell you

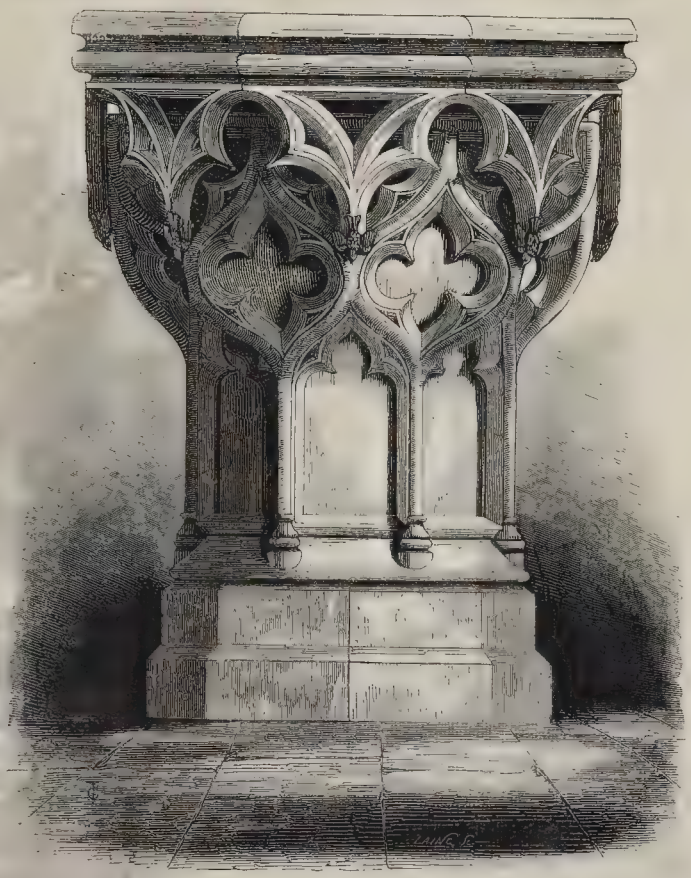
* See Vol. IV., p 261.

## ST. STEPHEN'S CHURCH, AND SCHOOLS, WESTMINSTER.

MR. B. FERREY, ARCHITECT.



## FONT IN THE CHURCH OF ST. JOHN, LUXEMBURG.



that, for many and many years past, examples of individual munificence have been exhibited so manifold that I dare hardly fix upon any one to compare with those of old times. The doors of this church will, without distinction, be thrown open to all who live in the district, who may thus come and drink of the water of life freely. All may enter who are inclined to do so, as far as the capacity of the building will admit, and the result will be that others, instigated by this liberality, will come forward and set another such example for the benefit of those who cannot find room within its walls. And here I cannot help speaking of a venerable body—the dean and chapter of Westminster—who have given the site for this church and these schools, and who have the warmest desire to further the great object of instruction to all within their reach."

The following inscription was engraved on the trowel:—

"To
MISS ANGELA GEORGINA BURDETT COUTTS,
The Founder
of the church of St. Stephen, Westminster,
THIS TROWEL
is presented, as a token of respect and gratitude, by
The Inhabitants of the District,
July 20, 1847.

'Mercy and Truth to them that devise good.'—*Prov.* xiv. 22.

LAUS DEO."

The accompanying engraving gives a representation of the church as it will appear when seen from the north-west. It is designed in the style of architecture prevalent in the fourteenth century, called "Decorated," and is to accommodate 1000 persons It will consist of a nave, 82 feet long by 21 feet wide; aisles, 82 feet by 13 feet; chancel, 47 feet by 21 feet; and a massive tower and spire at the east end of the north aisle. The base of the tower is 23 feet square, and the entire height 200 feet

The materials to be used will be Sneaton ragstone for the walls, and Anstone stone for the various dressings. The roofs will be constructed of British oak, and covered with lead; and the open seating throughout, together with the chancel stalls and screens, will be formed of wainscot. The tower is to contain a peal of bells.

The schools now erecting, as seen in the engraving, are constructed with the same materials as above described, and are capable of holding 230 boys and 170 girls. The master and mistress's house are close adjoining these buildings. They are designed in a suitable style to the church, and are being erected, at the cost of 3,400*l.*, by Messrs. Rigby, of Westminster, by whom the church also is to be built.

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THE NELSON COLUMN.—Animation appears to be returning here, and some people are bold enough to say now, that this monument (of many things), is positively to be completed without further delay.

### INTERESTING FONT IN ST. JOHN'S CHURCH, LUXEMBURG.

THE Font here represented, and which seems to be of the fourteenth century, is in St. John's Church at Luxemburg, but it originally was made for the now desecrated church of St. Ulric there. It is of one sole piece of stone, including the base, pedestal, and bowl. The base, pedestal, and rim of the bowl are octagonal; but the pedestal is of tapering form, and from this circumstance, and the beautiful arrangement of its Gothic tracery,—the upper portion of which is in very bold relief and certain parts of it completely pierced,—and from the conformability also of the tracery which envelops the bowl itself, a whole is produced with so unusually graceful a flow of lines, that I do not recollect ever to have seen its like. As to its precise dimensions, however, my notes only state that its present height above the pavement is 105 *centimetres*,—its extreme width at top being 85, each face of its base, 30, and each face of its rim, 35.

Other rare works of art in St. John's Church are a gilt-silver monstrance, or *ostensoir*, in form of a tower and spire of the fourteenth century, and an image of the Virgin Mary, painted of a brown colour, with reference, I presume, to the passage in the Song of Solomon, "I am black but comely," and which image is probably a copy of the celebrated statue of "Our Lady" at Loretto, that was taken away by the French in 1797.

The church of St. John was founded A.D. 1309, by the Emperor Henry VII., father of John, the blind king of Bohemia, and Duke of Luxemburg, killed at the battle of Crecy; and who-e remains were deposited in their twelfth sepulchre by the pious care of the present King of Prussia on the 26th of August (the 492nd anniversary of his death), A.D. 1838, at Castel, near Saarburg. But the greater parts of the present church, and of its late accompanying monastery, were rebuilt A.D 1624, by Charles II., King of Spain, as indicated by the following chronogram above its portal:

CaroLo regnante,
Montereo VICes reglas beLgIo gerente,
phILIppo arembergIo gVbernante,
hospItaLe sanCto Iohanni saCratVr.
W. BROMET, M.D.

## FOUNDATION OF THE BUILDERS' BENEVOLENT INSTITUTION.

On the 19th inst. a numerous meeting was held at the Freemasons' Tavern, for the purpose of establishing an Institution for the benefit of decayed members of the building trades. Mr. Biers took the chair, and was supported by Lord Robert Grosvenor, Sir Benjamin Hall, Colonel Wood, Mr. David Salomons, Mr. C. Cochrane, Mr. Stephen Bird, Mr. Geo. Bird, Mr. G. Spencer Smith, Mr. McGill, Mr. Higgs, and others. Lord Dudley Stuart appeared at the close of the meeting.

The chairman, in opening the meeting, and expressing the pleasure he felt in appearing in so good a cause, in which he was sure that none could be more zealous, although he regretted that no abler advocate was in his place, proceeded to observe that although almost every business-class in the metropolis had an institution on whose benevolent aid decayed but respectable members had it in their power to fall back, yet builders as a class were still without any thing of the kind;—the only exceptions being merely local, such as the City associations, on which the metropolitan building trades in general had no claim whatever. The Benevolent Institution whose foundation-stone it was now full time, therefore, to lay, was designed on a more extensive scale of operation; its object, indeed, being not merely confined to the relief of subscribers, not merely limited even to the masters employed in the metropolitan building trades in general, but for behoof of every one of their class in the empire able to establish a reputable character, whether he had ever been, in his better days, a subscriber, or not, to the institution. The number of persons, in the metropolis alone, dependent on the building business for their support was immense. The number of families dependent on the funds expended in metropolitan building, or on the earnings drawn therefrom, might be stated at nearly 30,000. The builder's life might be likened to that of a sailor, who begins with a fair wind, and has all plain sailing till the storms of adversity come on, over which he has no control. Although designed in the first place for decayed masters in the building business, the masters, in their endeavours to establish this useful institution, had not been thinking of themselves alone; they had not been forgetful of their workmen; for by one of the rules and regulations, any workman in the employment of a subscriber, meeting with an accident, might have relief from the fund, so that although he went to the hospital, while there, his wife and children, deprived of his earnings, would not be compelled, as hitherto, to part with not only their clothing furniture and utensils, but even the very tools with which alone their bread-winner could provide them all with food. A weekly contribution of 4s. to 5s., would prevent this cruel alternative, which, as most of those present well knew, necessity had compelled thousands on thousands to adopt. He felt and pleaded more for such as these than even for unfortunate masters. Hitherto he had been speaking of a relief fund; but the rules of the institution also provided for the establishment of almshouses. These, however, would form a subject for the future consideration of the subscribers, to whose views and decision it would be submitted when an adequate fund had been collected. It was proposed that 4,000*l.* or 5,000*l.* should be raised before any relief was granted. He could not help remarking, however, that even already deserving objects, unaware of the time requisite for setting such an institution as this afloat, were eagerly praying for aid. He had great pleasure in stating, that there were already nearly 200 subscribers, and on behalf of an institution placed on so extended a basis of general good to masters and workmen connected with the building trades at large, he felt assured that the public no less than the trades themselves would not be appealed to in vain.

An appeal on behalf of the institution was then read by the secretary, together with the rules and regulations; after which

Lord Robert Grosvenor, in moving the first resolution,—"That this meeting is of opinion that the Builders' Benevolent Institution is a charity that is both expedient and necessary, and merits the support of all classes, more especially those connected with the building trades,"—said, that though unwell he had felt too deep an interest in the establishment of such an institution to excuse himself from attendance on that account. He approved of the principles and the rules and regulations already so clearly explained to them. He had no conception that so many families and individuals were connected with the building interests of the metropolis. He was well aware that the class of workmen did as much as they in general could in earning a sustenance for themselves and families from day to day; and that therefore in unforeseen misfortune they were necessarily thrown on public resources. The class immediately above these too, though better able to fight their way in an emergency, had still as a class, much hardship and difficulty to cope with, and it certainly was the duty of their more fortunate fellow members and indeed of the higher classes in general, to assist the lower in misfortune. Of self-dependence, such as this institution more particularly inculcated, we were certainly bound to approve. He trusted, although the masters would look also to the benefit of those under them who were less able to be self-dependent, that this would never be lost sight of. He felt personally grateful to their chairman, who took so leading an interest in these matters; and congratulated him on the feeling way in which he had treated his subject. It was usual to hit upon some more or less delicate compliment towards the promoters of any commendable undertaking; but he feared the question he was now about to ask would scarcely come under the class of compliments. What had they been doing down to 1847? This young one was as yet in its swaddling clothes! Look at the almshouses of other trades. These almshouses must have had a builder. Who was he that he did not teach his brethren to go and do likewise? Now, at all events, they ought to be zealous and diligent in the promotion of their worthy object; and he trusted that at next year's general meeting they would have a good report of progress. He regarded this as laying the first stone of a noble building.

The resolution was seconded by Sir Benjamin Hall, who said: He had as great pleasure in being associated with them in so good a cause, as he had often had in acting with his noble friend, the mover, in reference to bills brought into the Commons, where they sat together. One great advantage in a metropolitan community consisted in the opportunity afforded to many who desired it, to meet together for the amelioriation of their fellow creatures. The great beauty of that community was its local self-governing and self-supporting system. When any class of the public came forward with that view they ought to be upheld. He should have much gratification in being a subscriber.

The resolution being then put to the vote, was carried unanimously.

Colonel Wood then moved the second resolution, approving of the laws; and said:—It might be presumptuous in him to propose such rules and regulations; but he could at least see that they were clear, comprehensive, and liberal. The 7th provided for the complete publication of accounts. The 19th constituted a managing committee of thirty, in which, with the change of one-third every year, assurance was given of the superintendence of a body of men fully and properly representing the trade; and though not too numerous, such a committee certainly constituted a liberal representation of the whole body, whose habits of business and occupation must render them peculiarly conversant with such duties; so that, if these rules were not perfect, they might, by the benefit of such experience, be brought to that perfection which the admirable objects in view demanded at their hands.

The resolution was seconded by Mr. Spencer Smith, and carried unanimously.

Mr. David Salomons, in moving the third resolution, which pledged the meeting to co-operation, said that he had great pleasure in taking a part in the establishment of a Builders' Benevolent Institution, the more especially as he had a *penchant* for building himself, although in his dabblings amongst bricks and mortar he had certainly derived more amusement than profit. He, too, confessed he was astonished that so enlightened a body as the building trades of the metropolis had only now taken the initiative in the establishment of such an institution for behoof of those whose interprize did not always prevent the experience of a hard fate. To aid in warding off such a fate deserved their most earnest exertions.

The motion was seconded by Mr. Stephen Bird, who expressed his regret that they had not begun sooner, since the object appeared to be so well supported, not only by the building trades in general, but by those noblemen and gentlemen who had favoured them with their presence and their good will and assistance.

The motion was put, and carried unanimously.

Mr. Cochrane was happy to perform his humble part in the proceedings by moving that a subscription list be opened. Without the sinews of war nothing could be done. Unless supported by liberal subscriptions great disappointment would be experienced in the present object. He had to congratulate the meeting on the advent of so many members of Parliament as had assembled with them on the present occasion. It was exceedingly fortunate for them that we were now on the eve of a general election, as both members of Parliament and those aspiring to be members of Parliament were in a most amiable mood, and influenced by most liberal feelings on such an occasion! The engagements of builders exposed them to all the vicissitudes of the open air, to the summer's heat and the winter's cold; and he had always found them a body of men whose hearts were open to those generous emotions which somehow alwa.s were generated by avocations conducted more or less in the open air.

Lord R. Grosvenor moved the fifth resolution for the commencement of a fund to provide an asylum, which was seconded by Mr. Higgs, who said that it was not the first time that he had advocated such an institution, but now he had every confidence in its success. Annual subscribers were the most important of all subscribers, as on them the main stay of steady income depended. He trusted therefore, that gentlemen would either now or very shortly come forward and free the institution at once from all anxiety on this score. The motion was put and also carried unanimously.

The chairman, in moving thanks to those gentlemen who had attended, observed, that his noble friend, Lord Grosvenor, had hinted that their infant was now born. He was sure that its parents had had some trouble with it. But now, in the presence of its godfathers and sponsors, he trusted it would prosper and do credit to them all, and more especially that in its advanced maturity it would be of great advantage to its *poor relations*.

The chairman then moved that the thanks of this meeting be given to the noblemen and gentlemen who have this day honoured the meeting with their presence and assistance; and further,

"That a vote of thanks is due and is hereby given to the public press, and particularly to the editor of THE BUILDER, for bringing this institution before the notice of the public."

A member of the meeting begged to ask the chairman whether it was intended that subscribers should have no preference over non-subscribers, or to what comparative extent relief would be given to non-subscribers; as he was afraid that unless some strict limit were fixed, the amount of subscriptions might be considerably curtailed.

The chairman in reply said, that the institution was designed to be established upon a broad and enlightened principle of general benevolence, which he felt certain would meet with as general a support. Of course, it was left to the discretion of the committee of subscribers what relief should be given and to whom; but it might so happen that a non-subscriber had stronger claims on their immediate attention than even a subscriber.

A non-professional subscriber further remarked, that although he was a subscriber, he would derive no benefit from the institution, but the very liberality of its basis might induce others as well as himself to subscribe. Lord Grosvenor remarked that he could appreciate the feeling which suggested the question, but of course the committee would have the power to postpone the administration of relief to non-subscribers, so long as applications from subscribers were before them. The chairman added, that the founders of the institution did not wish it to be said that they had merely selfish motives in subscribing, and that the power of granting relief should be left open to the merits of each case as far as possible. He should be exceedingly sorry if the benevolent design of such an institution were narrowed by any such limitation as that hinted at. It was proposed, however, that the gentleman who started the question, should allow himself to be put on the committee for the purpose of doing all justice to his suggestion. Mr. Ellis said that he only wished to draw attention for an instant, in conclusion, to the fact that the institution was founded on its broad principle of benevolence, in order that the public in general might be induced to take the greater interest in its success, and certainly if the extension of a helping hand to their fellow tradesmen in the provinces, or to non-subscribing members of their class, should check the flow of subscriptions from the building trades, the selfish limitation of its benefits to themselves would

as effectually check the more general flow of subscriptions from the public at large.

A vote of thanks to the chairman was then carried by acclamation, and the meeting separated after many of them had subscribed their names to the list, which had been previously read.

## PROTECTION OF STONE-WORK.

Sir,—With respect to the preservation of marble and other calcareous stone from Atmospheric Influence, I cannot but think that the process invented for that purpose by M. Kuhlmann, of Lille, as stated in your account of a recent meeting of the Royal Institute of Architects (and to whose museum I have presented specimens of its good effect), would be at once more serviceable, more easily employed, and of infinitely less cost, than the application of wax, as recommended at page 313 of your No. of the 3rd inst.

M. Kuhlmann's process is, simply to mix in an iron vessel, with a solution in ten gallons of water of half a hundred weight of the impure carbonate of soda, called barilla—a quarter of a hundred weight (and gradually more, if necessary), of any clean siliceous grit-sand (or scrapings of flint-made roads, well washed from extraneous matter), until this sand shall cease to be dissolved even by a strong heat applied for some few hours to the vessel.

The *rationale* of the process is this:—Calcareous stones, and many stones called siliceous stones, consist chiefly of lime combined with carbonic acid, *i. e.* carbonate of lime. In the employment of the above-described protective solution (which is a silicate of soda), a truly chemical double-elective attraction takes place—the soda going to the carbonic acid of the stone, while the silica going to the lime penetrates the stone to a depth (but without altering the *form* of its surface) proportionate to the siliceous strength of the solution and the length of time given to its application.

This application may be effected either by immersing dressed or sculptured blocks in the clear and hot siliceous solution, or by brushing them over with it cold, before, or subsequently to, their being set up.

M. Kuhlman's process also improves the colour of the stone, and produces a hardness which, after a few days exposure to the air, becomes so great as to resist any scratching, except that of a sharp instrument; and it is, therefore, peculiarly adapted for case-hardening all new delicately sculptured work in soft stone, if not also for preventing the farther decay of many of our now mouldering monuments.

W. Bromet.

## THE ELECTRIC FIRE AND THIEVES' ALARUM.

Mr. G. Petrie, the telegraphist at London and Blackwall Railway, proposes to us to facilitate the saving of buildings and property from destruction by fire, also to save *with certainty*, the lives of the inmates of dwelling-houses which may happen to take fire, and to prevent depredations by thieves, by means of electricity; causing the fire itself or the thieves themselves to *act necessarily* upon apparatus which shall convey *audible*, *visible*, and *sensible* alarm signals to the inmates or to watchmen. This scheme has not been put in practice although he has had it long in contemplation: we will let him state it in his own words:—

The audible signals may consist of bells, whistles, explosions, or any other signals which address themselves to the sense of hearing, and may be made to act with more and more vigour as the danger increases. The visible signals may be coloured glass, and lights in motion or at rest, red or yellow glass to signify fire, and blue or green glass to signify thieves. The sensible signals may consist of jets of cold water, so arranged as to commence pouring down on the pillows of all the beds, *a few seconds after* the *audible* fire signals have begun to sound, or they may consist of any other signals which will rouse the inmates of the house. In dangerous localities, an apparatus may be added whereby if thieves should succeed in effecting an entrance, the first step which they take on the threshold will discharge at them a charge of gunpowder, and if this warning should not be heeded by the thieves, a second step in advance will wound them in the legs with small shot, and a third step shoot them dead. A set of buildings may have one apparatus to serve the whole set, and the visible signals may be so arranged as to point out the particular house wherein the fire is just beginning to break out, or the house wherein the thieves have just entered, and in orchards, &c., the visible signals may be so arranged as to form a guide to the place where the signal originated, so that in all these cases no time need be lost in finding out the exact place where assistance is required. The alarums may operate not only in and about the house or set of houses where the danger exists, but also at any distant place wherever it may be desirable that some or all of these alarm signals should be perceived.

As to the mode:—The alarm signals may be made to operate either by the *breaking* or by the *completing* of the electric circuits, according to whichever plan may be most convenient for the particular apparatus employed, and in all cases the electric circuits may be *broken* or *completed* either by *springs*, or *by wires and vessels of mercury*. The electric circuits are broken or completed by fire in the following manner: either by means of the flame which runs up the walls, or else by means of the heated air which rises to the ceiling. The flame running up the wall, comes in contact with an inflammable cord, which runs horizontally along the wall, and the burning of this cord in any part, lets fall a weight which allows a spring to fly back and break or complete the electric circuit. The hot air which rises to the ceiling operates by causing the expansion of mercury or air or any other elastic or non-elastic fluid which is contained in tubes and other vessels—or by causing the expansion of metallic rods or sheets, or any other suitable solid substances—or by the depression of mercury by the expansion of enclosed air.

For the thieves' alarum, the electric circuits are broken or completed by the opening of doors, windows, shutters, boxes, drawers, cupboards, closets, &c., and also by the withdrawal of fastenings, and also by footsteps on staircases or on the thresholds of doors, windows, and other inlets, and also by any person getting over the boundary wall of an orchard or any other place.

The insulated electric circuits are arranged so that any one or more of the doors, windows, boxes, drawers, closets, &c., in a house can be instantly placed under the safeguard of the alarum, without the others being so placed, or by the turning of one handle, situate in the bedroom of the master of the house, the whole house and every thing in it may be instantly placed under the safeguard of the alarum.

Many modifications of the apparatus are described, but enough has been said to shew the nature of the proposal.*

Old Paintings in Eton College Chapel.—It was mentioned in The Builder the week before last, that on the removal of the wainscoting from the walls of Eton College Chapel, in consequence of the repairs now going on there, some ancient paintings had been brought to light. According to the *Daily News*, "these paintings, which appear to have been executed by Florentine artists between 1440 and 1480, and which are in a very fair state of preservation, represent a variety of miracles, alleged, by the Romish church, to have been performed by the Virgin Mary. It appears that when the choir was enlarged, under the superintendence of Sir Christopher Wren, these frescoes (?), some of which were not considered very appropriate ornaments at that time for a place of worship, were hidden from view behind the oaken panelling. Hence their preservation up to this period. It is the intention of the provost and fellows of Eton to cause as many of these works of art to be preserved as will not interfere with the alterations and embellishments now in progress. It has been suggested that the old oak panelling should be replaced, and that doors should be made to open in front of the paintings, so that they might at any time be inspected."

* "At the pleasure of the inmates of the house the apparatus may be made to ventilate the rooms at any particular temperature, and if the electric fire-circuits are broken or completed by the expansion of metallic rods instead of by the expansion of fluids inclosed in vessels, then the apparatus may be so arranged as during a thunder-storm to protect the inmates of the house against the effects of lightning, by causing any lightning which may happen to come into any of the rooms to fly to the ceiling, and from thence to run quietly into the earth."

## BRITISH ARCHÆOLOGICAL ASSOCIATION.

The British Archæological Association opened their congress at Warwick on Monday last, and have had a very agreeable and successful meeting. Much has been seen and much done, and we shall, next week, give a detailed notice of such of the proceedings as more particularly interest our readers. Lord Brooke presided at the opening meeting, and has been assisted by Sir Charles Douglas, M.P., Sir Samuel Meyrick, Sir Wm. Betham, Sir Henry Dillon, Mr. Pettigrew, Mr. Crofton Croker, and many others.

## NOTES IN THE PROVINCES.

Is Earl Fitz-William aware, says the *Leicester Mercury*, commenting on his lordship's complaint of the twopenny exhibition of St. Paul's, that in his own city of Peterborough, 6d. is demanded as a fee from every person on going into the minster except during divine service? St. Paul's is certainly a 'dirt cheap' exhibition when compared with that.——In Lincoln cathedral, a nave window designed from one in Chartres cathedral, is now being put up by Sir Charles Anderson.——The new dispensary in course of erection at Reading was much damaged by lightning on Saturday last. The upper portion of the building, comprising 'the entire huge coping' was overthrown, and several of the front projecting parts also demolished. A contemporary says, that 'no lives were fortunately sacrificed beyond' the narrow escape of an old lady in bed, who remained obdurate with a heavy stone suspended, like the sword of Damocles, above her head.——The Rev. T. Twisden, rector of Charleton, has offered the sum of 500*l.* towards the rebuilding of his church in a more convenient and central site.——The contracts for laying down the Newport Water-pipes from Carisbrooke, erecting a reservoir, tank, &c., being sent in on Wednesday and the successful contractor then ascertained, it is expected that the works will be forthwith proceeded with.——The projected improvements in the parish church of Chippenham were commenced on Monday week.——On Tuesday week before last the new church of Trevethin, near Pontypool, erected at a cost of 2,600*l.*, collected in voluntary contributions, was consecrated. It is in the perpendicular style, with five stained-glass windows, one of them the gift of the architect, Mr. Wyatt, and the others that of Mr. J. Harley, of Wainwern.——The Liverpool Guardian Gas Company have complained to the council of "the acts committed on behalf of the corporation in the present session of Parliament." They attribute the defeat of their bill to the conduct of the counsel who acted in London for the corporation, and protested against the want of good faith to the inhabitants displayed in such acts. It is said that the Dale-street Company have recently put themselves in communication with Mr. Cox, the engineer of the Guardian Company, and given him the opportunity of trying experiments here, at their expense, in the production of gas at the cheap price he has declared it to be in his power to produce it at.——The *Albion* states that in no less than eighty cases brought before a stipendiary magistrate of Liverpool on Friday and Saturday week, for letting cellars to Irish immigrants, the said cellars being only about 6 feet in height from floor to ceiling, and the ceilings being about a foot or a foot and a half above the level of the street, a fine of 1*l.* 4s. 6d. was inflicted in every case, and a determination made to levy a similar fine for every day the cellars should continue to be occupied after that first conviction.——The mayor of Wigan has issued a proclamation, announcing that parties who neglect to keep their houses in a cleanly condition, will be brought up and fined under the bye-laws.——An association, says the *Albion*, something between a tontine and a joint-stock building association, has been formed by influential persons at Birkenhead, for the purchase of all the unsold land in the park there, and the erection thereon of thirty to fifty villas and terrace-houses.——Heather Church, says the *Leicester Journal*, is to be re-opened on 27th instant, after being renovated and enlarged under the direction of Mr. H. J. Stevens, of Derby. The whole nave has been allotted to free-sittings.

## New Books.

*The Learned Societies and Printing Clubs of the United Kingdom.* By the Rev. A. Hume, LL.D. Longman & Co. 1847.

The purpose of this work is to give an account of the origin, history, objects and constitution of the various "learned societies," as they are politely termed, of England, Scotland, and Ireland, together with an account of the existing printing clubs. It is for the most part very correctly done, and will be found very useful for reference, especially by dwellers in the provinces.

In the introduction, the author makes a suggestion which deserves consideration, namely, the establishment of a central institution for the learned societies. "Did we possess a union, were it only of presidents and secretaries, for common objects, it could communicate, in forty-eight hours, with fifteen or sixteen thousand men, whose opinion would be entitled to a degree of substantial respect that it has never yet enjoyed."

## Correspondence.

### ARRANGEMENT OF RAILWAYS.

Sir,—As I perceive that you are fully alive to the necessity of *improvement* in the construction and management of our railways, allow me to say, one point which I think is very much neglected and which is the fruitful source of accidents, is the want of communications at the stations from the platforms on each side of the line, either by *bridges over* or by *tunnels under* it. The comparatively small expense at which this precaution could in most cases be carried out, renders it the more surprising that such a want should continue to exist.

A simple wooden bridge, with a flight of steps on both sides, would be all that is required for the purpose at most small country stations; of course in large towns a more substantial erection would be needed.

Another point in which I think railway companies have erred in the construction of *trunk lines*, where the traffic is likely to increase considerably, is their not having formed them of sufficient width to admit of a *third* line of rails being laid down. As a case in point, observe the railways which come to London bridge. They have been *widened twice*, and will, in all probability, be widened a third time. It is the natural consequence, which railway directors would readily see, if they would but look an inch before their noses, that as railways are continually being *extended by branches*, the traffic on the trunk line must necessarily increase, and it behoves them to make provision for it.

A third line also gives a great advantage in this way, that should one line require repairing, there would always be two in working order.

If thought well, one line might be set apart for luggage trains, and the other two for passenger trains; or, one line for express trains, and the other two for ordinary trains. The same short-sightedness is evident, also, with respect to railway terminuses and stations, which are *always* being altered and enlarged, and are in consequence always untidy and unfinished.

I would particularly urge upon the London and York Railway, now in course of formation, to take counsel by experience, and to form their road of a sufficient width for a third line of rails.—Yours, &c.

A Railway Traveller.

### STONE LIFTERS.

Sir,—The lewis, sketched in your last number, is not a new form for the purpose. One on much the same principle was used, among other places, at the buildings of Orlingbury Church, Northants, in 1841. Mr. John Johnstone, the clerk of the works at that place, was the adapter. The one given by you has the disadvantage of the long bar bending inwards, through constant use; but the one which he used had not that objection. It had two long bars, one over another (passing through mortices in the cross pieces, having pin-holes at different distances to adjust to any thickness of stone), whereby, when at work, the lower one was subject to tension, and the upper one to pressure, doing away with the tendency in the bars to camber. It was used chiefly for raising ashlar. I merely write this for the benefit of your readers, and not to deprive Mr. Oliver of any credit which may attach to him for his application.

I am, Sir, &c.,

R.

Anne-street, Birmingham, July 19, 1847.

### SHORT TIME ON SATURDAYS.

Sir,—Through the medium of your useful and widely-circulated paper, may I call the attention of the building trade to the peaceful movement now in progress amongst the carpenters and joiners of London, which is to obtain the privilege of leaving their work at four o'clock on Saturdays. I am encouraged to do this from the favourable notice you have taken of it in a former number of your Builder.

For some time past, an opinion has been gradually gaining ground, that many of the conflicting claims which arise between employers and their workmen might be satisfactorily arranged, if a good understanding existed between them: by this means the great inconvenience and loss sustained by the former, and the large amount of suffering endured by the latter, which are the inevitable results of strikes, would be avoided, and the position of both parties be materially improved.

With these views firmly impressed on the minds of the carpenters and joiners of the metropolis, they memorialized their employers; the most influential of whom, I am happy to say, have met their wishes in a corresponding good spirit. Mr. Thos. Cubitt, Mr. Wm. Cubitt, Mr. Baker, Mr. Kelk, Mr. Jackson, Mr. Piper, Messrs. Armstrong and Smith, Mr. Freak, Mr. Myers, Mr. Fitz-Patrick, Mr. Lee, and Mr. Seth Smith have already given the privilege.

To these gentlemen the trade must feel themselves gratefully obliged. This noble display of good feeling and disinterestedness will be productive of increased satisfaction, comfort, and good-will, on the side of their workmen; and serve as laudable example, worthy of imitation by other employers.

There can be no doubt but that the privilege in question will become general before long: that it may be so is the wish of

A Carpenter.

### THE GEOMETRICAL SYSTEM OF THE MEDIÆVAL ARCHITECTS.*

Sir,—Having had my attention directed to an article "On the Geometrical System, applied by the Mediæval Architects to the Proportions of their Ecclesiastical Structures," by my very zealous friend, R. D. Chandrell, architect, inserted in pages 300—302 of your valuable journal, The Builder, wherein I am introduced as having explained to him certain ideas that probably influenced the architects of the middle ages, and a diagram is given explanatory of those ideas, I consider it but just, not only to myself, but to the public, to take this early opportunity of stating, that I intend shortly respectfully to solicit your permission to shew, by means of your journal, that neither the ideas which I am stated to entertain, nor the diagram given by Mr. Chantrell, are what constitute my supposed working principles of ecclesiastical architecture; but only disjointed scraps patched together, to shew that my mode of proceeding "cannot therefore be considered an universal system."

—I am, Sir, &c. John Browne.

21, Blake-street, York, July 19, 1847.

Vandalism at Baalbeck.—From a private letter just received from a traveller, we receive the unwelcome intelligence that the magnificent Temple of the Sun at Baalbeck has been destroyed by order of the viceroy, for the sake of its fine stones, which are to be employed in erecting barracks for the cavalry and a forage magazine. Solyman Pasha so far saved the splendid gateway, as to cause the stones to be replaced in their original form in the construction of the entrance to the barracks. We lament to record such vandalism in the nineteenth century and in the land of the Pharaohs.—*Literary Gazette.*

* Mr. W. P. Griffith's work on this subject, to which we referred a few weeks since, is now before us, entitled "Ancient Gothic Churches, their Proportions and Chromatics. Published by the author, 9, St. John's-square, 1847." We shall take an early opportunity to examine it.

## Miscellanea.

Britton Testimonial Club Dinners.—One of the most noticeable of these dinners was given last week by Mr. Gould, F.S.A., the treasurer, whereat Lieutenant Waghorn made a remarkable speech in respect of communication with India; and undertook to say that within seven years, the time for the transmission of letters would be shortened to fifteen days. He described the steam-apparatus which is now punching a passage through the Alps. Mr. Pettigrew gave some interesting particulars concerning the "mummy wheat," now to be found all over England; and Mr. Britton himself made a capital speech on the state of antiquarian knowledge. Mr. Crofton Croker, Mr. Cubitt, Mr. Cunningham, Mr. Graham, Mr. Grissell, Mr. Gwilt, Dr. Roots, Mr. Wansey, Mr. Young, and others also spoke. At a following dinner, given by Mr. Gibbon, at Winchmore Hill, Captain Smyth, Director of the Society of Antiquaries, referred to his rescuing a sculptured marble from the hands of bricklayers at Alexandria, who were about to use it in forming a drain, and which has proved a curious link in tracing the history of Greek art. It is now at Stowe.

Ventilating Bricks.—Sir,—I would suggest that bricks may be made of the common size, but of somewhat better material, pierced through (their thickness) with holes one quarter of an inch *square*, and as much apart. It is not intended that the whole area of the brick should be pierced in the manner described, but only one half of it. By the ordinary mode of ventilating through openings in walls, there is nothing to prevent the cold air blowing directly into the room, but by these bricks it may be *driven downwards* before it can enter the inside of an apartment intended to be ventilated. The superior temperature of the air inside a room, will, in most cases, give it a sufficient ascending power to overcome the pressure of the colder air outside; and this effect will be increased in proportion to the length of the column of air passing through the *tube-like* perforations of the bricks, which may be placed one over the other, so as to produce a column of air of any height that may be found to give the best practical effect in producing thorough ventilation without a perceptible draught.—H. Liddell, Hall.

A Mammoth Monstrosity.—Conceive a huge structure, originally erected as a place of worship, converted into four strata of tenements, for the occupation of twenty families. Let there be no access to those tenements but by a covered passage-way, leading into a yard, or dry well, open to the sky, and overlooked by windows on every side. In this yard, so surrounded by tenements, and having no opening to the street but by the covered passage-way already mentioned, let all the privies of the twenty families be placed. Would not such a contrivance give birth to a monstrous nuisance? Inevitably it would. And yet, in this age of sanatory reform, a device of this kind has not only been contrived, but it is well-nigh executed, and may be seen within a stone's throw of a newspaper-office which shall be nameless.—*Gateshead Observer.*

Modern Vandalism.—The *Art-Union Journal* for July, gives a striking instance of the indifference of some moderns to that very art of wood-carving which in this country we are seeking to revive. The splendid altar-piece of St. Gudule's, at Brussels, designed by Rubens, has been sold to an Englishman to save the expense of regilding, and has passed through a London auctioneer's sale-room!

Dover Refuge Harbour.—We learn, from the *Canterbury Journal* that the Messrs Francis Freeman and Lee, of London, have taken the contract for carrying out the breakwater connected with this undertaking to the amount of 200,000*l.*, and that so soon as the necessary preliminaries—such as the signing of the contracts, &c.—are completed, this great national work will be immediately commenced.

The Decorative Art Society met at dinner on the evening of the 21st instant, as a mark of respect to Mr. Edward Cooper, one of their vice-presidents, who is about to leave England for some years. The chair was taken by Mr. L. Dennys, who addressed the company on the merits and prospects of the society, and other topics, with much taste and good feeling.

PROJECTED WORKS.—Tenders have been called for by advertisement for the erection of a church at Highbury; a vicarage-house at Polluxhill; a school-room at Tipton; and one at Southwell; for rebuilding greater part of schoolmaster's house at Reston Coldingham; erecting and supplying materials for an engine-house, boiler-house, tower, and other works at the Milton next Gravesend Water-works; erecting a fever hospital at West Derby Union workhouse, Lancashire (extension of time); an hospital at Cheltenham; a fever-house at Melton Mowbray Union Workhouse; also for the enlargement of the Dublin Consumers Gas Works, comprising retort-house, and coal store additions, with wrought-iron roofs and cupola, large cast-iron tank with telescopic gas holders, columns, bridges, chains, weights, &c, all to be put up and completed at Dublin; for the execution of an outer harbour and entrance lock, and the enlargement of an inner basin for Forth and Clyde Canal Company; and for the erection of a new union workhouse for 200 paupers at Bridgnorth, including hospital and vagrant wards, with plans for the whole.

THE EXHIBITION IN WESTMINSTER HALL.—Government, it is said, has just concluded the purchase of Mr. Cross's fine picture of "Richard Cœur de Lion," for the sum of five hundred guineas, and Mr. Pickersgill's "Burial of Harold" for the like amount. Mr. Watts's "King Alfred Repelling the Danes" has been also purchased for 200*l.*, the artist not having asked more, in consideration of his having obtained a 500*l.* premium. The sea-fight, in which Nelson is seen boarding the San Josef, by Mr. Knell, has, we hear, been likewise purchased by Government. These are, of course, intended for the decoration of the new palace at Westminster. Mr. Armitage's "Battle of Meanee" has, we learn, been purchased by the Queen for her own collection. A long list of subjects, which the commissioners intend to offer as matters of future competition for the decoration of particular rooms in the new houses, will shortly be announced.—*Athenæum*. The exhibition is now open to the public without charge on all days but Saturday.

COMPETITION.—Premiums of twenty guineas and ten guineas are offered for two selected designs for elevations according to plans already provided, for a court-house and offices at the town-hall, Swansea.—Plans, with estimates, are also wanted for the Bridgnorth Union Workhouse, for 200 paupers and for detached hospital and vagrant wards.

## TENDERS

For the erection of new buildings, Camberwell Workhouse. Mr. Plum, architect.

| | |
|---|---|
| Mathews | £2,982 |
| Howard | 2,965 |
| Willis | 2,884 |
| Cooper and Davies | 2,860 |
| Burtenshaw | 2,825 |
| Haynes and Co. | 2,803 |
| Harding | 2,798 |
| Cox | 2,750 |
| Patrick | 2,688 |
| Thompson | 2,686 |

New buildings, Hackney Union.

| | |
|---|---|
| Vote | £6,955 |
| Patrick | 6,340 |
| Ashby | 5,740 |
| Hawke | 5,550 |
| Jay | 5,355 |
| Hilton | 5,195 |
| Bair | 4,866 |
| Crook | 4,595 |
| Norris | 4,547 |

The quantities were furnished.

The above are the amounts, after allowing the value of the sound old materials in the present buildings, which are to be used in the new buildings; this, says a correspondent, may be cited as the principal reason for the great difference between the highest and lowest amounts: by no means, however, a sufficient one.

For two houses and workshop upon the estate of the Mercers' Company in Upper St. Martin's-lane. The quantities were furnished, and the tenders opened in the presence of the parties.

| | |
|---|---|
| I'Anson | £2,986 |
| Burstall | 2,968 |
| Winsland and Holland | 2,896 |
| Curtis | 2,644 |
| Cooper (accepted) | 2,488 |

## TO CORRESPONDENTS.

"*J. P.*" (Manchester).—We should suggest two or three advertisements.

"*J. S.*"—The letter has not reached us.

"*J. H. D.*" next week.

"*G. G.*" (Borough.—Thanks.

"*J. L.*"—An opinion without seeing the work would be useless. We fear the defect could not be remedied.

"*A. G. Green*"—next week.

*Received.*—"J. W.," "J. G. W.," "Messrs. R.," "C. G.," "E. R.," "W. B.," "C. H." (Islington), "T. I. M.," "Archi," "Competitor who *has* seen the site," "T. A. H.," "H. W."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

MODEL PUBLIC BATHS, Goulston-Square, WHITECHAPEL. The Baths for Men and Boys will be open for use on and after the MONDAY, July 26, from 6 in the Morning till 10 at Night. Charges, First Class (two towels, Cold Bath, 3d.; Warm Bath, 6d. Second Class (one towel), Cold Bath, 1d.; Warm Bath, 3d. Every Bath is in a private room.

The Committee earnestly solicit Donations, to enable them to complete the Baths and Wash-house. Donations received at the Baths, the Committee room, and the Bank of England, and by most all the London Bankers.

Committee Room, 3, Crosby Square. By Order, JOHN SMITH, Clerk

WANTED, to Purchase a Light Stone-truck, 4½ feet wheels; must be in good condition.—Address stating lowest price, to 37, Gloucester-street, Queen-square.

TO BLIND MANUFACTURERS, BUILDERS, AND OTHERS.

TO BE DISPOSED OF, cheap, several Transparent Paintings by a first-rate artist, suitable for drawing-room, staircase, or other windows; several panelled landscape paintings, suitable for decorating a concert, ball, assembly or other rooms; also a quantity of straining frames suitable for a blind manufacturer.—Apply to J. MILLS, 40, Great Russell-street, Bloomsbury.

PATENT BELLS.

C. & T. MEARS are now enabled to supply Bells made of the new alloy, called "Union Metal," in any quantity and variety. They particularly call the attention of the trade to the house and clock bells of this material, as being so superior in the quality of tone. The bells may be seen at the Foundry, or sample orders sent.—Bell Foundry, Whitechapel.

GREASE! GREASE! GREASE!—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 12s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

ZINC WORK.

MESSRS. F. and J. HARLAND beg to call the attention of Builders and others, to the following list of prices, for cash:—

| | | |
|---|---|---|
| 2-inch Pipe | per foot | 4d. |
| 3-inch Gutter | per foot | 4½d. |
| 4-inch ditto | | 5d. |

Including fixing.

Flats Covered and Cisterns Lined from 4d. to 6d. per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Alms-houses.

N.B. Orders by Post punctually attended to.

LEAD WORKS, HAMMERSMITH.

F. CLARK and SON, Lead, Glass, Oil, and Colour Merchants, beg to inform Plumbers, Builders, and others, that they may be supplied with goods of best quality at following prices for cash, delivered free to any waggon office, wharf, or railway station in London.

| | £ s. | |
|---|---|---|
| Sheet Lead and Pipe, at | 18 10 | per Ton. |
| Genuine White Lead | 36 0 | ditto. |
| Reds ditto | 24 0 | ditto. |
| Ochres ditto | 22 0 | ditto. |
| Pan Closet, complete, white basin | | 32s. |
| Sunk ivory, or porcelain handle, ditto, complete, blue basin, &c | | 42 |
| 2½ Lift Pump, on plank | | 80 |
| 3 ditto ditto | | 90 |
| Crate Crown Glass, 16 T. nett | | 38 |

All Goods warranted of best manufacture. Old Lead bought, sold, or exchanged.

Credit given on receipt of satisfactory references.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GRIEVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

NB. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN & BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES which are to be seen at work at Alperton, and at the Company's office, 193 a, Piccadilly, from 10 A.M. to 3 P.M. Mr Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 a, Piccadilly, March 7, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 35, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENEY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin

THE HOPE FRIENDLY SOCIETY of PAINTERS, GLAZIERS, &c., now held at the WHITE HORSE, Castle-street East, Oxford Market.

The Members of the above Society beg respectfully to inform the Trade in general, that they have REMOVED from the Coach and Horses, Great Marlborough-street, to the above premises, where employers, on application, may be supplied with men.

THE WORKING MAN MAINTAINED IN HIS TRUE POSITION BY THE

NATIONAL FRIENDLY SOCIETY.

TRUSTEES.

Lake J. Hansard, Esq., Southampton-street, Bloomsbury.
Henry C. Holland, Esq., Duke-street, Bloomsbury.
Edward Lomax, Esq., C. E., Leonard Villa, St. John's Wood.

CONSULTING SURGEON.

T. Bartlett, Esq., 36, Chancery-lane.

This Society enables the industrious classes to avoid the degradation of pauperism.

A man, aged 21, may secure

£50. at his death, to his wife or children, by paying 1s. 7d. monthly.

Or, £10. a year when he is 55, as a provision in old age, by paying 2s. 8d. monthly.

Or, 10s. 6d. weekly, when disabled, from disease or accident, with the highest medical aid and medicines, by paying 1s. 9½d. monthly. In similar proportion for other ages.

Thirty Medical Attendants are appointed for the Metropolis.

Periodical Divisions of Surplus Funds, among the Members, and many other advantages.

Prospectuses, giving full particulars, gratis, and Rules, at the Chief Office, 21, Red Lion-square, Holborn.

By order of the Board,
W. J. REYNOLDS, Secretary.

*** Prospectuses sent by post on receipt of a penny stamp.


SEWERS, MIDDLESEX—HOLBORN AND FINSBURY DIVISIONS.

NOTICE IS HEREBY GIVEN, that a Court of Sewers for Holborn and Finsbury Divisions, in the County of Middlesex, will be holden at the Sewers Office, No. 7, Hatton Garden, on FRIDAY, the 30th day of July, 1847, at Two o'clock in the afternoon precisely.

JOSEPH UNWIN, Summoner and Cryer.

Sewers' Office, for Holborn and Finsbury Divisions, &c.
No. 7, Hatton Garden.
TO BUILDERS AND OTHERS,

Interested in buildings, or in ground for building upon, within the District of Holborn and Finsbury Divisions, the Parish of St. Leonard, Shoreditch, and the Liberty of Norton Falgate, in the County of Middlesex, and the borders and confines of the same.

THE Commissioners of Sewers for the above Limits, DO HEREBY GIVE NOTICE, that previous to making any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, application must be made by petition, the form of which may be had at their office; to which must be attached, a plan of the intended line of sewer, and which must be constructed conformably with their regulations.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated to too great a depth, the Commissioners have directed that, upon application being made at their office, previous to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give Notice, that whenever the lowest floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings: and further, that no buildings or erections of any kind will be permitted to be made upon or over any sewer

All communications made with any public sewer, without previous application, as aforesaid, will be stopped out; and the parties making the same will subject themselves to a fine.—By the Court,

STABLE and LUSH, Clerks.

*** The public is also informed, that all rates imposed by the said Commissioners are to be paid by the tenant, and allowed by the landlord out of the rent, except where the tenant, by special covenant or agreement, is bound to defray the same.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of her present Majesty, chapter 79 local and personal, intituled, "An Act to explain and amend the laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," provision is made for the more effectually draining houses and property; and with a view thereto it is enacted, that where houses built before or after the passing of the said Act (2nd July, 1847), shall not be drained to the satisfaction of the Commissioners of Sewers, and if there shall be a sewer within 100 feet of any front of the building or of any inclosure about the same, it shall be lawful for the Commissioners to order the owners or occupiers, at their expense, to drain such house, by continuing the sewer along their frontage, and by making a drain to lead thereto; and if there be already a sewer in front, adapted to the drainage, then, that a covered drain into it shall be made, as the Commissioners shall direct, and that the parties shall contribute to the expense of the original construction of the sewer, if built within thirty-five years before the passing of the said Act. And by the said Act it is declared that no drains shall be made without first giving notice to the Commissioners, who are to regulate the construction thereof. And it is by the said Act further provided, that all drains and water-courses, as well within as without houses and other property, shall be cleansed and repaired by and at the cost of the owners or occupiers. The Commissioners are by the Act fully empowered to punish by fines and penalties any persons who may contravene the Act; and it is particularly required that all persons will proceed to comply with these regulations.

Any officer of the Commissioners will be in attendance at the office, No. 1, Greek-street, Soho, from 9 in the morning until 4 in the afternoon, every day (Sunday excepted), when every information will be given to parties to assist them in complying with the provisions of the Act.—By order of the Court,

LEWIS C. HERTSLET, Clerk.

TO BUILDERS, OWNERS OF HOUSES AND PROPERTY, AND OTHERS.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that, by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of her present Majesty, chap. 79 (local and personal), intituled, "An Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," it is enacted (sec. 4), that after the passing of that Act (2 July, 1847), it shall not be lawful to build any house (and the word "house" is thereby declared to comprise every species of building) within the limits of any local division or district formed, or thereafter formed, within the limits of the said Commission, unless a sewer to carry off the drainage thereof be first constructed to the satisfaction of the Commissioners of Sewers, of such material, of such size, at such level, and with such fall, as they shall direct, which sewer shall lead to and communicate with such other sewer as the Commissioners shall direct; provided that, if there shall be already a sewer sufficiently near, in the judgment of the Commissioners, to any such premises, then a drain shall be made to lead from such house into such existing sewer; and it is thereby declared that the expense of building such sewer or drain shall in all cases be borne by the owner of such house, unless the Commissioners shall think that a portion of the expense of the sewer (but in no case a drain) should be borne by the level in which such sewer shall be situate: And further it is by the said Act enacted, that if any person shall proceed to build any house in contravention of the said provisions, the Commissioners are authorized to punish him, and any person employed by him, by fine, amercement, or otherwise, as in the said act is directed: but it is thereby provided that no person shall be required to expend a greater sum for such works than after the rate of 20s. per foot according to the extent of his frontage, and that any house wholly unconnected with any public sewer, and at a distance of not less than 200 feet from any public road or other house, shall not be liable to make such sewer or drain, unless such sewer or drain shall be required by the presentment of a jury: And further take notice, that the said Commissioners of Sewers hereby strictly require all persons to comply with the provisions of the said Act, and with the view persons interested are requested to attend at the Office of the Commissioners, No. 1, Greek-street, Soho, between the hours of nine in the morning and four in the afternoon, where a map and plan of the sewers under the jurisdiction of the Commissioners may be seen, and the form of sewers and drains required, ascertained, and a form of the written request required may be obtained, and all further information and assistance given: And further take notice, that parties are requested forty-eight hours at least before they shall so attend at the said office to send, by post or otherwise, to the Surveyor of the Commissioners at the said office, a description of the house or erection intended to be built, with the mode in which it is proposed to join any sewer, or provide for the drainage of such premises.

By order of the Court.

LEWIS C. HERTSLET, Clerk.


SOVEREIGN LIFE ASSURANCE COMPANY, No. 5, St. James-street, London.

TRUSTEES.

Sir A. Brydges Henniker, Bart. | Henry Pownall, Esq.
B. Bond Cabbell, Esq., M.P. | Claude Edward Scott, Esq.

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ASSURANCES on the lives of persons in every station of life and every part of the world, granted on a plan which combines the utmost amount of benefit to the families of the assured AT DEATH, with every attainable advantage DURING LIFE, which the system of Life Assurance is capable of affording

ANNUITIES, ENDOWMENTS, ADVANCES, and LOANS, on liberal terms.

Prospectuses, Forms of Proposal, and every information, may be had on application, either personally or by letter, at the Company's Offices.

# THE PATENT TORRENT WATER CLOSET,

AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shown the absolute necessity for the universal adoption of Water Closets in lieu of Cesspools, as essential to the health, comfort and economy of all [illegible].

An efficient and economical apparatus was, however, still wanting, the present defective and complicated construction [illegible] the source of constant annoyance [illegible] the [illegible] and middle class, and totally in[illegible] [illegible] for the tenements of the poor.

[illegible] TORRENT Water Closet has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered [illegible].

2. [illegible] ECONOMY and REGULARITY in the [illegible] WATER.—From the construction of the head [illegible] a certain quantity of water only can be discharged [illegible] is made use of [illegible]. When the person [illegible] the seat, a cock is acted upon which closes the [illegible] water, and when the person leaves the seat the [illegible] and the result is that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER. This is produced by having a pipe of large area to convey the water from the [illegible] to the basin, instead of the small pipe now [illegible]; it must therefore be evident that the water will [illegible] with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING. The rush or torrent of water [illegible] completely [illegible] the [illegible].

5. NO CISTERN [illegible] required. The closet is so constructed, that [illegible] the system for Water Companies to [illegible] the pressure.

6. NO SEPARATE CISTERN is required. Should the [illegible] a pipe for the [illegible] Water [illegible] is all that is required, cistern valves being [illegible].

7. NO SEPARATE TRAP is required. A syphon trap is formed with the [illegible] and its construction is such as to [illegible] the [illegible].

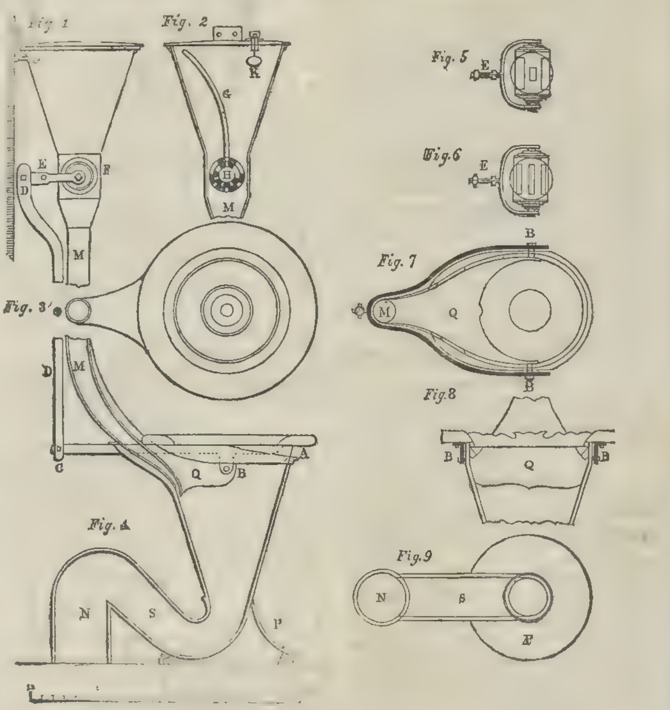
8. SELF-ACTING. This is absolutely essential for [illegible] Water Closet in the lower class of [illegible] be apprehended.

9. ECONOMY. The cost is small compared with the ordinary [illegible] apparatus.

10. [illegible] EXPENSE OF FIXING, and the small space in which it can be placed, are the LEAST POSSIBLE. The [illegible] earthenware, with a strong basin [illegible] fixed [illegible] means of screws; and it is quite unnecessary [illegible] means of screws; and it is quite unnecessary to [illegible] as there is no fear of any derangement [illegible] clean, and [illegible] and thus economy of space is [illegible].

11. [illegible] COLONIES [illegible] valuable invention, and [illegible] that are at present found in such situations.

12. RAILWAY STATIONS [illegible] for the present [illegible] are required [illegible] the force of water [illegible] all these objections, it is [illegible] obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig. 1. The [illegible] or head, shewing entrance of supply-pipe at top [illegible].
Fig. 2. [illegible] measure and cock shewing its position [illegible].
Fig. 3. Plan of top of seat, torrent pipe M, and action-rod D.
Fig. 4.—Section from back to front of seat, basin, bottom of torrent pipe M, spreader Q, and elbow lever C under seat, and lower end of action-rod D [illegible] water in and cut it off.
Fig. 5. Top of cock, shewing openings to let in water and the bridle lever, by which it is moved.
Fig. 6. Bottom of cock, shewing openings to let out water, and bridle lever.
Fig. 7. Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.
Fig. 8. Section from side to side of seat, and top of basin, with front of lower part of spreader.
Fig. 9.—Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and [illegible] the [illegible] of the lever C and the rod D directing the bridle lever E, which opens the cock F;—the [illegible] water [illegible] passing through the cock, as shewn at H, and as the [illegible] the water [illegible] stops the [illegible] K, and [illegible] any [illegible].

On [illegible] the front A rises by the weight of the lever C and the rod D, which, with the [illegible] of water, and [illegible] it at bottom for letting it out [illegible] into the torrent pipe M from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water [illegible] with N, before it. The smallest part of the syphon is within sight, so that any thing [illegible] introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water Closet is far more economical than the cesspool; but in [illegible] Water Closets [illegible] it is not intended to [illegible] apparatus [illegible] superior houses, with its [illegible] and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr. Austin appears [illegible] all the requisites for general adoption. It cannot be put out of order and is so [illegible] it requires no cistern, it acts as a flushing apparatus [illegible] momentary rush of water, whereby the drains are effectually cleared, and [illegible]."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 15th January, 1847.

DEAR SIR,—It affords me great pleasure [illegible] to the many advantages [illegible] Austin's Patent Torrent Water Closet. 1st. As [illegible] every description of dwelling [illegible]. 3rd. Its efficiency with a small quantity of water, compared with any apparatus [illegible] for any number of closets; 4th. Its great [illegible] place [illegible] part of the apparatus, [illegible] of the first cost and the amount in fixing.

Your [illegible] I am frequently applied to by builders and others, to suggest the best and simplest means of having [illegible] supplies of water to houses and various establishments, and I am often told, if it were not for the expense and [illegible] we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I [illegible] that the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

Mr. Jos. E. Dowson.

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

## DOWSON'S EARTHEN PIPES,

GLAZED INSIDE,

### FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These [illegible] for the conveyance of WATER as they are entirely free from corrosion. And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

[illegible] DRAINS [illegible] drains have been [illegible] from the largeness of their size they are never flushed, [illegible] saturation soon become destroyed, [illegible] always wet, but also by the depredations of rats which are enabled with ease to come from the sewers through the [illegible] and undermine [illegible] the drains and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had [illegible] was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of [illegible] LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS" [illegible] and most poisonous exhalations [illegible] they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

Messrs. DOWSON beg also to intimate that they are the manufacturers of Cundy's much approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.

# THE BUILDER.


TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. H. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 5d. | 6d. | 20d. |
|---|---|---|---|---|
| 6d. | 7d. | 8d. | 1s. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 6 | |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with oven and Back Boiler.
Wrought Bars and Bright Fittings.
2 ft., £3 3s. 3 ft. 6 in., £3 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-setting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars.

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 6s. | £4 10s. | £5 15s. | £4 | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 8½d., and 9d. do.

Manufacturer of WOLFANSONS PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE, Kitchen range, and Stove-grate Manufactory, 78, Gt. Suffolk-st. Walworth.

**JOHN GRICE** most respectfully solicits the favourable attention of Architects, Builders, and Carpenters, to his Stock of Bell and Bright Stoves, Kitchen Ranges, &c., &c.

Bell Kitchen Ranges, from 2 ft. upwards.
Bright ditto, with Bell and Bright Bars, 6 in. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright,—

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| £4 | £4 10s. | £5 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

IMPORTANT TO ARCHITECTS, BUILDERS, and GENTLEMEN fitting up their own Houses

**PRETYMAN and HOBSON,** being about to relinquish the Stove Trade, have a large and well-selected assortment of drawing and dining room, library, and other Stoves, of the most recherché patterns, which they have determined to sell at a great reduction from the cost prices. Stove and Range Manufactory, 37, Cornhill, opposite the Royal Exchange.

IRON WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth pieces; Plates, Furnace bars, Top and Fall Pieces, Stoppers, Chimney doors, Iron to Middle, and Ash pit, Doors and Frames, Boilers and Furnaces, Hearths complete, all of the best description, at very moderate prices. CAST-IRON UPSETS.

**WARMING** by means of the circulation of WARM AIR. BURRIDGE and HEALA beg respectfully to call the attention of Architects, Builders, and the Public generally, to their Improved Hot-air Apparatus for warming Churches, Houses, &c., with a new apparatus of the most scientific principles, which they can warrant to heat an church or house to any degree of temperature required, in the most economical manner. BURRIDGE and HEALY, 109, Fleet-street.

IRONFOUNDRY.

163, Drury-lane, and Charles-street, London.

JOSEPH GLOVER,
Late HENDRY and GLOVER,

**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Range, Stove Pipes, Hends, Slides, &c.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, South-**wark Bridge-road and the Grove, Southwark. At the above Works, the Public are solicited to inspect the numerous Roofs, and by the Patent process of Galvanizing Iron, as first introduced into this Country, with many improvements in its application to Roofs, Building, &c. for every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

CHUBB'S IRON DOORS AND FIRE PROOF SAFES.

**C. CHUBB and SON having just erected a** Steam Engine and extensive Machinery to meet the increasing demand for their Manufactures, they beg to inform Architects and Builders that they are now enabled to produce Wrought Iron Doors for strong rooms and other purposes and Fireproof Safes at a great reduction in price, and of very superior quality. All their Iron Doors and Safes are fitted with CHUBB and SONS' DETECTOR LOCKS.

57 and 28, Fleet-street, and 4, St. Paul's Churchyard, London.

TO ARCHITECTS AND SURVEYORS.

**C. CHUBB and SON having ascertained** that some builders are in the habit of substituting inferior and inveriron Iron doors for strong rooms, when "CHUBB'S MAKE" are ordered, they call the attention of Architects to the subject. In all specifications where it is intended to have the article manufactured by C. CHUBB and SON, they respectfully request that Architects will specify "Iron doors manufactured by C CHUBB and SON, of St. Paul's Church-yard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the doors are of their manufacture.

PRO BONO PUBLICO.

**CAUTION. To Purchasers of Locks, fire-**proof Doors, Safes, &c. JOHN LEADBEATER, many years manufacturer for Chubb, LEADBEATER, Patentee, begs to inform Architects, Surveyors, Builders, &c. that he can supply them with IMPROVED DETECTOR LOCKS for universal purposes, STRONG WROUGHT IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c. on the most improved principles of security from FIRE and THIEVES, without the aid of "expensive machinery," which is employed by some inexperienced makers, but not essential for, at prices 25 per cent under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved Detector Locks or latches. Some of these Detector's strong room doors and safes have now been in use SINGLE and DOUBLE for fifteen years, and in every case during which he has adapted every possible test of robbery and security, enables him to challenge competition with any house in London. A large assortment on sale and built under Apartments of extra strength wrought-iron fire proof folding doors with ventilating gates, well adapted for a banker's strong room. Cheques shewn at his manufactory. Strong wrought iron doors for party walls with wrought-iron or rabbetted frames, and sashes. He is the SOLE DETECTOR LOCKS IN ENGLAND, 6 feet by 3 feet 2 in. by 3 wide and upwards, 2 in. thick, always on sale at LEADBEATER'S MANUFACTORY, 125, ALDERSGATE-STREET, LONDON.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON and WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their

CLEANLINESS AND CHEAPNESS.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth, SINGLE and DOUBLE PUMPS up to twelve inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

**PUMPS.—The attention of Architects,** Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brickfields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 9 inch kept for Hire. Estimates given to Drawings if required.—M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth

**PAVING, 2s. 9d. PER SQUARE YARD.**

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, PO LONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

**KENTISH RAG STONE.—FOR SALE,** Cheap, about Thirty Tons of the above stone, very suitable for low and ornamental grounds, or building purposes generally. For terms apply to Mr. PALMER, Builder, 32, Bathbone-street, Close, West Smithfield.

CAEN SUPERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their Quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

**SAMUEL CUNDY** begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone work, &c., are executed at the cheapest possible rate, and packed for the country ready for transit direct, and has ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Of mosaic pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS

Estimates given for building generally.

**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has been introduced into Buckingham Palace, the dining-room at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges than marble. The choicer productions, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, hearths, tea tables, baths, wash stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate work in general executed on exceedingly moderate terms. Welsh slate slabs of the finest descriptions of all ever ready for the trade supplied with whole cargoes, self faced, or planed on one or both sides direct from the quarries. A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

**THE INDURATED and IMPERVIOUS STONE COMPANY.**—Provisionally Registered — Capital 200,000l., in 20,000 shares of 10l. each. Deposit 1s. per share, payable on allotment. First call 9s. per share, to be paid on completion of registration. Future calls not to exceed 2s. per share, with two months' previous notice. Offices, East Temple Chambers, 1, Whitefriars-street, Fleet-street.

Bankers—Messrs. Strahan, Sir J. D. Paul and Co., Strand.
Solicitors—Messrs. Yonge and Hancock, 2, Tokenhouse-yard.
Superintendents of Works—M. Charles le Goux; Mr. William Hutchison.
Secretary—Mr. George Bell.

The object of the Company is to carry out several most valuable inventions, secured by Royal Letters Patent, consisting of—

1. A process for indurating naturally soft stone, rendering it as compact, polished marble, and impervious to air, water, and moisture, and not affected by heat or frost.

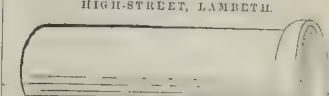
2. A system of sawing, ripping, and rubbing of stone, and an economical mode of polishing marble and granite.

In addition to these inventions, the Company will become proprietors of indurated and impervious stone works in France, where the invention has been in operation for upwards of three years, and where, during same period, in front of the Hotel on the Place Royale, at Caen, a pavement has been laid down of this material, and although subjected to constant traffic, manifests no perceptible difference either in wear or colour.

Both inventions are capable of application in an incalculable degree, and it is the scope to that such arrangements can be made by means of agencies and otherwise, as will enable the Company to carry out the inventions most extensively without requiring of the Shareholders more than one half of their subscriptions.

Operations will be commenced immediately upon allotment and complete registration, and it is intended to allot shares and deliver scrip to respectable parties upon personal application at the office, upon payment of the required deposit, and signature of the subscribers' agreement. Applications may also be made in writing, in the usual form, by distant residents, enclosing their deposit, addressed to the Secretary, at the Offices, or to the Solicitors of the Company.

**TUBULAR DRAINS IN STONE WARE,** Manufactured by HENRY DOULTON and Co. (SUCCESSORS), HIGH-STREET, LAMBETH.



The only Efficient Mode of Drainage is by Tubular Drains; from their form they are every facility for a perfect free passage. The material of which they are composed is not subject to imperfections by moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore in perfect lengths, with Socket Joints. Specimens and Price Lists of Drains and Bends, and other Bends and Junctions, on application.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES 2 feet lengths, in various bores, from 2 in. 9 inches, and up to 9 in. the Right Hon. and Hon. Commissioners of Sewers for the City of Westminster, and the Board of Works for the District of Lambeth. A stock of all sizes kept on hand, and orders executed with dispatch.

TO PAINTERS AND BUILDERS

**PATENT COMBING FLUID** for OAK GRAINING. Warranted to stand, and used by the Inventor, many years Foreman and Grainer to one of the Royal Houses in London. The above grains on the plan of any oak, even unexamined with a grain, and produces the most perfect imitation of real oak on all kinds of wood and iron. Public Buildings, Churches, and Chapels, and Private Residences can be executed for sixty yards of work.

Combs, Pitches, and all other Graining Tools, and all parts of the Kingdom, on receipt of a post-office order for 1l. 10s. per gallon.

RAWSON HITCHINGS, 2, Chapel-street, Somerset-place, London.

Contracts for Oak and other Graining on moderate terms for ready money.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly discovered Liquid Composition, which Messrs. G. and Th. Wallis have the satisfaction of introducing to the Trade, possesses the important qualities of effectually stopping Knots in Wood-work, and preventing their exuding through and discolouring the painted surface.

When subjected to even the hottest sun, time spent in encountering the disagreeable task of knotting will be found to be of little use. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold by the Proprietors, Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Lone Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NIVELLES, LONDON.

The property of this Paint, peculiar for its preservation from oxidation, wood from decay, and iron from damp, it is their practice to test with the hottest acids, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Roofs, Houses, Fencing, Iron and Wood for Shipping. Decided preservation from dry rot, and wood that has been painted with it, and subsequently burnt, it preserves vegetation on stucco, buildings, and is to be had in any shade or tint.

**PROTOXIDE PAINT** is sold ground in oil, and, compared with white lead, its property of covering is equal to double the quantity of white lead, and in consequence of which it will resist a greater weight of pressure than any other paint. It works well under the brush, and dries with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Roofs, Houses, Fencing, Iron and Wood for Shipping. Decided preservation from dry rot, and wood that has been painted with it, and subsequently burnt, it preserves vegetation on stucco, buildings, and is to be had in any shade or tint.

**STEPHENS'S PROCESS** for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is much improved by the process. The application has a sameness of appearance, when executed with the continual variety which different woods present in their natural grain. To those who admire mahogany for its rich shade, and the natural beauty of its grain, which would take a month or six weeks to paint in the usual manner, might be given in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and at 10s. per gallon. The sole colour may be obtained in powder at 4s. per pound, which dissolves it in water to form the liquid, and one pound will make one gallon of stain.—N.B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

**THE** Architectural Carving Company beg to inform the public, that Specimens of their CARVING IN WOOD AND STONE, may be seen at No. 3, Middlesex Terrace, late Sir F. Chantrey's foundry, Eccleston Place, Pimlico.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only, 70, York Road, Lambeth; and 26, Cross Street, Blackfriar's Road.

TO RAILWAY CONTRACTORS AND BUILDERS

**HENRY WILLIAMS,** House and Decorative Painter and Writer, 12, Great Russell-street, Chancery-lane, having all the necessary plant and materials for the work, together with the whole of the upper floors of the house and name of any one principal Railway Station, within 150 miles from London, will be executed strictly according to Contract in all conditions, viz., that such bonus will be mixed up with the first contract order, upon application for same at present moment.

In reference to the proposed bonus, H. W. guarantees that the ground-work, in depth of tone and beauty of colouring, will totally eclipse all former Engagements.

TO BUILDERS AND OTHERS.—FREEHOLD AT KENTISH TOWN.
FRONTAGE ON THE ROAD TO HIGHGATE, 82 FEET.

**FOR SALE, the Freehold Premises,** known as THE VICARAGE HOUSE, at Kentish Town, St. PANCRAS, MIDDLESEX, with large garden in the rear, extremely eligible for building purposes. For particulars, apply to Messrs. SCADDING and SON, Solicitors, 3, Gordon-street, Gordon-square; or to Mr. BIRD, Surveyor, Southampton terrace, Kentish Town.

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TO BUILDERS.

**GROUND TO LET, at Kentish Town,** near the Birmingham Railway. Bricks may be had on the ground at very low prices.—Apply at No. 15, Gower-place, Euston-square.

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BUILDING LAND.—BRICKS AND MONEY ADVANCED.

**GROUND TO LET, for Third-rate Villas,** in pairs and threes, at Islington, fronting the High road, for Ninety nine Years, Land tax Redeemed. Such a class of houses are very much required in this immediate locality. Apply to Mr TURNER, No. 5, Devonshire-cottages, Green-lanes, Stoke Newington-green.

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TO BUILDERS.

**ELIGIBLE PLOTS of BUILDING** in and around London, TO BE LET upon very favourable terms and liberal advances. A list of such can be had free, upon application, or by post by inclosing a stamp.—BECKWITH and SALMON, Estate and Land Agents, 25 Bucklersbury.

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**REGENT-STREET. Extensive Premises** TO LET, within a few doors of Regent-street, consisting of several ranges of Workshops, Large Yard, and Residence, suitable for a Coach-maker, Cabinet-maker, Builder, or any business requiring great space. Inquire of Messrs. DRUCE and Co., Bazaar, Baker-street.

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TO AUCTIONEERS, CARPENTERS, BUILDERS, &c. &c.

**TO LET, in the High-street, Egham, an** old-established business for more than seventy years, with every convenience for carrying on an extensive trade, with large workshops, &c. The stock and fixtures to be taken at a valuation. For particulars apply, on the premises, of Mrs. LOUISA ANDREWS, Egham, Surrey.

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HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country.—For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford-row.

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BUILDING GROUND.

**TO BE LET, direct from the Freeholder,** the most eligible Building Ground in the neighbourhood of London, being in the outer circle of the Regent's-park, and close by the site on which a new church is about to be built, for a long term, at a moderate rent. For further particulars, apply to Mr LITTLE, 36, Northumberland-street, New road.

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WHARF, &c., REGENT'S CANAL.

**TO BE LET, on Lease of Seven or Fourteen Years,** a valuable WHARF and PREMISES, situate at the corner of Wenlock-basin and the Regent's-canal, containing a frontage of 230 feet next the basin, and a return frontage of 130 feet next the canal, with a House, consisting of four chambers, three rooms on the ground story, kitchen, scullery, office, cellars, gardens, stables, a powerful crane, and well of water. For further particulars, and terms, apply at the London Zinc Mills, Wenlock-road, City-road.

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ALBION WHARF, SURREY, Foot of Blackfriars Bridge.—To Iron, Coal, Stone, and Timber Merchants, Wharfingers, Carriers, and Others.

**A LARGE PORTION of the above Eligible Premises** TO BE LET, on very reasonable terms, comprising ample River Frontage and Quay, powerful Landing Cranes, Warehouses, Counting-houses, with Fire-proof Room and Iron Safes, Stabling, &c. Apply on the Premises, and to Messrs. HOLMER, Solicitors, 26, Bridge-street, Southwark.
N.B. This Wharf is [illegible] tides.

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TO BUILDERS, INDIA RUBBER MANUFACTURERS, and Others requiring Steam-Power, extensive Premises, and a plentiful supply of Water.

**THE whole or part of those Premises** known as the SURREY SAWING and PLANING MILLS, Church street, Kennington, TO BE LET. The Proprietor will either let part of the Premises, with from 8 to 12-Horse Power from the Engine, or will let the whole Premises, with use of the 20-Horse Condensing Engine and all the Sawing and Planing Machinery now standing, or will remove any portion of such Machinery as may not be required. Apply to E. ROGERS, jun., Timber Merchant, Upper Lisson-street, Paddington, or on the Premises, where the machinery may be seen at work.

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ST. SAVIOUR'S, SOUTHWARK.—ELIGIBLE PREMISES in Counter-street, leading to the Borough Market, TO BE LET BY TENDER on Building Leases.

**THE Wardens of the Parish of St. Saviour,** will meet in the Vestry-room on TUESDAY, the 7th day of September next, at Five o'clock in the afternoon precisely, TO LET BY TENDER for a term of Sixty-one Years, from Michaelmas next, the following premises, namely:—Firstly. A piece or parcel of ground on the West side of Counter street, whereon are now standing a house No. 17, formerly in the possession of Mr. Palmer, and the public house adjoining called The Grapes, now in the occupation of Mr Debenham. The exact dimensions of this piece of ground are accurately defined in the plan thereof prepared by Mr Rose, and the party taking the same must be bound by such plan as is purposed to give up a small portion of the site of the two houses to the premises secondly mentioned. The party taking this piece of ground, will have, at his own cost, to pull down and remove the present buildings, and after appropriating so much of the site thereof as is not intended to be comprised in this letting, to erect within nine months from the 29th September next, on the remaining ground a public-house, of the class and elevation mentioned in and according to the plans and specifications already prepared by Mr Rose, and will have to pay and bear his proportion of the party walls, and he will be entitled to the building materials and be at liberty to use such of them in the rebuilding as shall be approved of by Mr. Rose.

Secondly,—A piece or parcel of ground in Counter-street aforesaid adjoining on the north side to the above-mentioned premises, whereon are now standing a house No. 19, Counter street, now in the occupation of Mr Elliott: the exact dimensions of this last piece of ground are also accurately detailed in the plan thereof drawn by Mr ROSE. The party taking this ground will have at his own cost to pull down and remove the present building and on the site thereof and the small portion of the ground from the other premises, erect, within nine months from the 29th September next, a messuage or tenement of the class or elevation mentioned in and according to the plans and specifications already prepared by Mr ROSE; and he will also have to bear or pay his proportion of the party walls, and he will be entitled to the building materials and to use such of them in the rebuilding as may be approved of by Mr ROSE. The houses will have to be built under the direction and to the satisfaction of Mr ROSE, and his charges, and also those of the District Surveyor will have to be borne by the parties taking the premises. Upon the houses being completed pursuant to the plans and agreements to be entered into the Wardens will grant the parties leases for sixty-one years from Michaelmas, at the rent which shall be named in the Tenders that shall be accepted, such leases to contain the usual covenants as are generally inserted in leases of parish premises (and which are set forth in the drafts thereof prepared by the Vestry Clerk) and the leases and plans therein are to be prepared at the cost of the party taking the same.

Persons desirous of taking the above Premises, or either of them, must send in their Tenders (sealed up) to the Wardens at the Vestry-room on the 7th of September, before Five o'clock in the afternoon, and must also be in personal attendance at that time, and if their Tender be accepted they will have to sign an agreement for the building for the rebuilding of the Premises and the acceptance of the Lease. The Plans and Specifications, and also the Drafts of the Agreements and Leases can be seen, and further particulars obtained at the Offices of Mr Rose, Architect, 100, Great Guildford-street, or of Messrs. Sturmy and Simpson, No. 8, Wellington-street, London Bridge. The Wardens do not bind themselves to accept the highest Tender, and they reserve to themselves the right of requiring satisfactory securities to the extent of 100*l.* for the performance of the Tender, if they shall deem it necessary. Dated the 12th day of July, 1847.—By order of the Wardens.

HERBERT STURMY, Vestry Clerk.
8, Wellington-street, London Bridge.

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IRON COLUMNS.

**TO BE SOLD, a Quantity of Cast-Iron** Columns and Cross-heads, from 9 to 10 feet long. May be seen at Mr. PROCTOR'S, 16, Wharf, Paddington. Enquire of Messrs. DRUCE and Co., Baker-street.

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TO BUILDERS AND OTHERS.

**TO BE SOLD, several new Sash Frames** and Sashes, fitted at 7d. per foot, superficial, or glazed, with weight and lines at 11d per foot, 1½ inch Sashes, made and glazed at 7d. per foot; 2 inch, 9d. per foot; greenhouse lights made and glazed at 6d. per foot. Greenhouses, shops, and shop fronts fitted up in a superior manner. Estimates made for all kinds of work in the building line by N. RICHARDS, 30, Camomile-street, City, London, and Hoxton-square, Middlesex.

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FREEHOLD GROUND, 42 acres, in plots, on the High Road, Peckham, only two and a half miles from London Bridge, TO BE LET OR SOLD.

**MR. SINGLE is Letting valuable Building** Frontages on the High Road to New Cross, the Asylum Road, &c., for one hundred years, at moderate ground-rents. The houses required are a kind calculated to enable the Builder to secure a highly remunerative rental, and also a large sum for the outlay, if he either mortgage or sell. The arched Sewers, Roads, and Thoroughfares and the high respectability and healthfulness of the situation, it being almost contiguous to a fine open country, one of the most beautifully undulated and picturesque parts throughout England, are unequalled on any estate of the like extent throughout London. Two High Roads, one from the West End, the other from the City, together with two old and populous neighbourhoods, form the four boundaries of the Estate. Ground for about 200 private houses has been let in about twelve months, about 50 of which are already built, and a rare chance is open for a plot for a Public House. There are only a few Freehold Plots on a detached part of the Estate which will be sold.

Apply to Mr SINGLE, Auctioneer and Estate Agent, 34, Coleman-street, City.

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JOBBING CARPENTER'S BUSINESS.—WEST END.

**MR. PETER BROAD is instructed to** dispose of a Lucrative Business of the above description, which has been Established Twenty-five Years; permanently employs four or five hands, independently of occasional large jobs, and presents an excellent opening for the introduction of the bricklaying business. The situation is one which will always command an excellent run of business. Apply to Mr PETER BROAD, Auctioneer, 29, Tavistock street, Covent Garden.

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## SALES BY AUCTION.

TO PAPER-HANGERS, BUILDERS, DECORATORS, and Private Families, by Mr DEACON, at his Rooms, 2, Berner's-street, Oxford street, on Tuesday next, 27th instant.

**MODERN PAPER-HANGINGS, about** [illegible] pieces, consisting of handsome satins, flocks, chintzes, &c., for the drawing and dining room, chambers, &c., painted marbles, oak, granite and others, for staircase, domestic rooms, &c.—On view MONDAY, July 26th, at 2, Berners-street, Oxford street.

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TO MASONS, PAVIORS, ROADMAKERS, AND OTHERS.
Woolwich Yard, 19th July, 1847.

**NOTICE IS HEREBY GIVEN, that** there will be offered for SALE by AUCTION, by Mr. GEORGE HUDSON, in the presence of Commodore Superintendent Sir Gordon Bremer, K.C.B. K.C.H., in the Pay Office at the above yard, on THURSDAY, the 29th inst., at Twelve o'clock precisely, about 800 tons of PAVING STONES, in lots of twenty tons each. The purchasers to take away the lots within one month of the day of sale.

The sale will commence precisely at the hour specified.

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**MR. J. W. NEWHALL will SELL by** AUCTION, on the Premises, 38, King-street, Snowhill, by order of the Proprietors, Messrs. Gardner, Nichol, and Petticrew, on TUESDAY, the 10th August, and following days, an extensive assortment of Ironmongery, lotted to suit the trades of Builders, Carpenters, Cabinet makers, Smiths, Bellhangers, &c. Also the Fixtures of the usual description. Catalogues to be obtained on the Premises, and of Mr J. W. NEWHALL, Auctioneer and Appraiser to Ironmongers, Smiths, &c., 86, Powis street, Woolwich.

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IN BANKRUPTCY.—TO STONE MASONS AND OTHERS.

**MESSRS. BROMLEY and SON will** SELL by AUCTION, on FRIDAY, July 30th, 1847, at Twelve o'clock, on the premises, No. 21, Tottenham Court New road, St Pancras, by order of the assignees of Mr ROBERT WILLS, Statuary and Mason, a Bankrupt, the genuine Stock in Trade, comprising a large quantity of MARBLE of different descriptions, tablets, monuments, figures, head and foot stones, York and Portland Paving, utensils in trade, and a few lots of furniture. May be viewed on THURSDAY and morning of sale. Catalogues had on the Premises, of Messrs. NORTON and SON, Solicitors to the fiat, 1, New street, Bishopsgate-street; and of the Auctioneers, 17, Commercial-road, St. George East.

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WALTHAM ABBEY.—TO BUILDERS, CARPENTERS, AND OTHERS.

**MR. C. PRYOR is directed by the executrix** of the late Mr Chas. Dowsett, Carpenter and Undertaker, to SELL by PUBLIC AUCTION, on the premises, Waltham Abbey, on WEDNESDAY, the 4th August, and following day, at Eleven, unless previously disposed of by private treaty) the GOODWILL, with the LEASE of the PREMISES, held for twelve years unexpired, at 9*l.* 1*s.* per annum, presenting a favourable opportunity to secure this established business with a good connection, which has been successfully carried on by the late owner for some years. The stock comprises twenty eight oak timber trees, one feet ash plank, fir timber, 20 deals, 1,500 feet elm board, 4 dozen ash felloes, 20 dozen tiling and plastering laths, deal boards, and new and second-hand oak and fir materials; an assortment of coffin furniture, ironmongery, &c. Likewise the utensils in trade and the neat household furniture. Catalogues to be had three days prior to the sale on the premises, and at the Auctioneer's Offices, 24, Mark-lane, and at Waltham Abbey.

N.B. The Lease, Goodwill, and Stock may be treated for by private contract; but if not so disposed of, will be sold by Auction in lots as above-mentioned.

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VALUABLE FREEHOLD DWELLING-HOUSE, No. 8, Green-park buildings, Bath, and an undivided moiety, or half part of a valuable Freehold Estate, situate at Smalacombe, in the parish of Lifton, Devonshire.

**TO BE SOLD BY AUCTION, pursuant** to an order of the High Court of Chancery, made in a cause "Lyddon v. Woolcock," and four other causes, with the approbation of JAMES WILLIAM FARRER, Esq., one of the masters of the said Court, in the month of August next (of which due notice will be given), a Freehold Dwelling House, No. 8, Green-park-buildings, in the City of Bath, which will be sold at the Castle and Bull Hotel, Bath. Also an undivided moiety or half part of a Freehold Estate, situate at Smalacombe, in the parish of Lifton, in the county of Devon, comprising a house and garden farm buildings and land, containing altogether about 186 acres, 3 rods, 32 poles, which will be sold at the White Hart Hotel, Launceston, in the county of Cornwall, which said estates form a portion of the property of Mrs. Julia Lyddon, late of Boston, in the parish of Bramham, in the county of York deceased. Particulars are in course of preparation, and may shortly be had gratis, at the Master's Chambers, Southampton buildings, Chancery-lane, London; of Messrs. RICHARDSON, SMITH, and SADLER, Solicitors, 28, Golden-square, London; of Messrs. PITTENDREIGH and STEVENSON, Solicitors, South square, Gray's-inn; Messrs. BISCHOFF and COXE, Solicitors, Coleman street; of Messrs. SANDYS and PEARSON, Solicitors, Gray's-inn-square; Messrs. JONES, TRINDER, TUDWAY, and EYRE, Solicitors, John street, Bedford-row; Mr. JOHN MOSS, Solicitor, Derby; Mr. THOMAS WILLIAM TOTTIE, Solicitor, Leeds; Messrs. PASSINGHAM and SIMMONS, Solicitors, Truro, Cornwall; and at the Castle and Bull Hotel, Bath, aforesaid; and the White Hart Hotel, Launceston, aforesaid.

RICHARDSON, SMITH, and SADLER,
28, Golden-square.

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MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

**PERSONS requiring LOANS by way of** MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £15,000, or so much as the property will bear, by applying to Mr BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

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PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

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**ALFRED ROSLING begs to inform the** Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship. Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground street, Blackfriars.

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**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

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SAW MILLS, GILLINGHAM-STREET, PIMLICO.

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Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

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TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor boards, matched boards, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In slotting, or groving and tonguing a board although curved, the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

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**SIR W. BURNETT'S PATENT for preventing** the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dock yards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and cotton, so when prepared expressly for the purpose.

Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purpose of trade.

Hydraulic Apparatus and Tanks at the principal stations, Millwall, Poplar Square [illegible] the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 64, King William Street, London-bridge.

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WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood), situate at the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the [illegible], prevents further shrinkage no matter how warm the temperature in which it is placed, strengthens the fibre, thus giving great rigidity and toughness to the material, all of essential importance for floor boards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

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**TO ARCHITECTS, Ship Joiners, Cabinet** Makers, &c., requiring FINE WOOD.—SELLING OFF, at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany-yard, in Little Windmill-street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 20,000 feet wainscot planks, running from 1¼ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

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**H. MORRELL'S FINE PREPARED** DRAWING PENCILS. Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.

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LONDON: Printed by CHARLES WYMAN, of 16, Castelnau Villas, in the Parish of Barnes, in the County of Surrey, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the County of Middlesex, and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York street, Covent Garden, in the Parish of Saint Paul, Covent-Garden, in the same County.—Saturday, July 24, 1847.

# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 234. JULY 31, 1847. Price ..... 3d. Stamped ..... 4d.


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### ADVERTISEMENTS.


SURVEYOR OF PAVEMENTS WANTED.

**WANTED, by the Trustees for Repairing,** Lighting, &c., Grosvenor-place and the squares, and streets adjacent, as Surveyor of Pavements and Roads, an Active, Respectable Man, who thoroughly understands paving and road-making, and making plans and sections of roads, who can give satisfactory references as to his integrity and capacity, and who will devote his time exclusively to the duties of the situation. Any person desirous of obtaining the appointment may apply by letter addressed to me, at the Office of the Trustees, 18, Lower Belgrave-place, on or before WEDNESDAY, the Fourth day of August next. Further particulars may be obtained of me between the hours of Ten and Four

JOHN BOODLE, Jun., Clerk to the Trustees.

24th July, 1847.

**WANTED,** a Practical Person as Clerk of Works, to superintend the erection of a church in London.—Address, A. A. A., Office of "The Builder," 2, York-street, Covent-garden.

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**WANTED, to Purchase, a short Lease of** a Four or Five-roomed House, in or near Brompton.—Letters, with particulars, addressed, pre-paid, to Mr W. B., No. 13, St. Mark's-terrace, Brompton.

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TO CARPENTERS AND JOINERS.

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**WANTED, by a Builder, a Foreman who** is thoroughly competent to superintend the erection of a large building. He must be well acquainted with bricklayers', masons", and carpenters' work, and of active habits. None need apply who has not filled a similar situation, and can have an unexceptionable character as to abilities, &c.—Apply by letter to N. T., Mr. Southam, Saw Mills, Grosvenor Basin, Pimlico.

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A YOUNG MAN, who thoroughly understands Painting, Glazing, Paperhanging, Gilding, &c. &c., in all their branches, is desirous of an engagement with a nobleman or gentleman whose estate would afford permanent employment. He is also well experienced in the use of stains for the imitation of oak and other woods, and in the cleaning and reviving of old oak carvings, furniture, &c., &c. Address, pre-paid, N. M. E., at Mr Wild's, Bookseller, 44, Marshall-street Golden-square.

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THE Advertiser is open to an Engagement as clerk, or general superintendent of works, or the management of an estate. He can produce unexceptionable security, where any particular trust may be required. Address C. D., 22, Mount-street Grosvenor-square London.

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TO TIMBER MERCHANTS, SAW-MILLS, PROPRIETORS, &c.

THE Advertiser, who is thoroughly acquainted with the timber-trade in all its branches, wishes for a situation as out-door, or collecting clerk, either for three days or the whole week, is competent and willing to take the management of a business, either in town or country; is in the prime of life, respectable connexion, and can be very highly recommended Address B. F., Post Office, Ranelagh-terrace, Pimlico.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Denston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 123 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Anslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Pall-Mall-place station, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 123 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 133, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin

WHITTINGTON FUND, INVESTMENT, AND BUILDING ASSOCIATION.—Persons joining this society are not subject to any arrears or back payments, the shares being data from the time the last subscription is paid. The subscriptions are divided into classes, varying from 5s. a month upwards.

The THIRD SUBSCRIPTION MEETING will take place at the Crown and Anchor Tavern, Strand, on TUESDAY evening next, the 3rd of August, between the hours of Seven and Nine o'clock. July 29th, 1847.

ARNEWAY'S CHARITY.—NOTICE IS HEREBY GIVEN, that the Trustees of this Charity are now enabled to LEND OUT the TRUST MONIES to "Poor Occupiers of Trades assessed within the City and Liberty of Westminster, that is to say, within the Parishes of Saint Margaret and Saint John the Evangelist, Saint Anne, Soho, Saint Clement Danes, Saint Bennet, Hithercourt, Saint Paul, Saint Martin-in-the-Fields, Saint Mary-le-Strand, and Saint Paul, Covent Garden." The amount of such loan is not to exceed 10*l.*, to be kept interest-free for the period of twenty months, and to be secured by the bond of the borrower, with two sureties.—Printed forms of application, and full instructions, may be obtained by applying personally between the hours of Ten and Three o'clock in the day, at the office of the Clerk and solicitor to the Trustees, 12, Great Queen-street, Saint James's-park. By Order,

EDWARD S. STEPHENSON,
Clerk and Solicitor to the Trustees.


### COMPETITION.

TO ARCHITECTS.

THE Guardians of the Bridgnorth Union are desirous to receive PLANS and ESTIMATES for a New Union Workhouse to accommodate 280 Paupers, and detached buildings for a Hospital and Vagrant Wards. The same to be furnished to the Guardians, free of charge, and to be sent to the Clerk of the Union on or before the 14th day of August next. The Architect whose plans may be selected will be required to superintend the works at the usual commission of 5*l.* per cent.

Full particulars may be obtained by applying at the office of the Clerk—By order of the Board.

ARNDELL F. SPARKES,
Bridgnorth, 17th July, 1847. Clerk to Guardians.

### CONTRACTS.

HIGHBURY NEW CHURCH.

THE Committee for erecting the above Church are desirous of receiving TENDERS for the necessary works. The Drawings and Specifications may be seen after the 31st inst., at the office of the Architect, Mr. T. ALLOM, 14, Hart-street, Bloomsbury, where the Bills of Quantities may be obtained. Tenders to be addressed to SAMUEL LEWIS, Esq., No. 19, Finsbury-place South, not on or before the 14th of August next, by Three o'clock in the afternoon, after which no Tender will be received. The Committee do not bind themselves to accept the lowest Tender.

1, Canning-place, July 29th, 1847.

TO CONTRACTORS.

NOTICE IS HEREBY GIVEN, that the Guardians of the poor of the parish of Kensington are desirous of receiving TENDERS for making and building a new sewer on the piece of ground adjoining Wright's lane, Kensington, on which the new workhouse is now in course of erection. The sewer will extend along the north and west sides, a length of 1,074 feet. The drawings, specification, and conditions, may be seen at the office of Messrs. Allom and Crosse, Architects, 14, Hart-street, Bloomsbury, after the 2nd day of August next. The tenders to be delivered at the Clerk's Office, 1, Canning-place, Kensington, on or before THURSDAY, the 12th proximo, by Twelve o'clock at noon, after which time no tender will be received. The Guardians do not bind themselves to accept the lowest tender.

S. CORNELL, Clerk to the Guardians.

BRIDGWATER UNION.—TO BUILDERS.

THE Board of Guardians of this Union is desirous of receiving TENDERS for the Erection of a Hospital and Casual Wards, for the sick and infirm Paupers of their Union Workhouse. The Plans and Specifications for the same may be seen at my office, and any information required may be obtained of Mr. EDWIN DOWN, of Bridgwater, Architect to the Board, of whom Blank Forms of Tenders may be obtained. Sealed Tenders, in the usual manner, must be delivered to me on or before WEDNESDAY, the 11th day of August next. Good and ample securities for the completion of the Works will be required, and the contractors must be prepared with the same at the time of delivering their tenders. The Board does not pledge itself to accept the lowest tender.

By order of the Board,

ROBERT UNDERDOWN, Clerk.

Bridgwater, July 22nd, 1847.

TO BUILDERS. COUNTY PAUPER LUNATIC ASYLUM AT LITTLEMORE, NEAR OXFORD.

BUILDERS desirous of Contracting for the Building of certain additional WINGS to and otherwise enlarging the ASYLUM, according to the Plans and Specification of Messrs. Plowman and Lusk, of Oxford, which have been approved by the Secretary of State, are invited to transmit to the undersigned on or before the 23rd day of August next, Tenders of their terms for executing the Works.

The Plans and Specification may be seen, and Copies of them taken, at the County Hall, Oxford, on and after the 2nd of August; and any further particulars may be obtained on application to the Architects.

Each Tender must be accompanied by the names of two responsible persons, who would join the contractor in the usual bond for the performance of his contract; and it will be deemed obligatory upon the visitors to accept the tender which may be lowest in amount.

The contract and bond will be prepared by the clerk of the visitors, and a copy delivered to the contractor, free of charge to him, and drafts of those documents, in the form in which the contractor and his sureties will be required to execute them, may be seen with the plans.

JOHN M. DAVENPORT,
Clerk of the Visitors.

County Hall, Oxford, July 20th, 1847.


TO Carpenters, Undertakers, and others, this is an excellent opportunity for a young beginner in the line, as a good living may be obtained; the lease may be had for only 6*l.*; fixtures by appraisement or otherwise, the present proprietor is in possession about fifteen years, and under circumstances he will be explained, will resign his business that requires his whole attention; the house contains four bedchambers, and that at sacrifice, the house contains four good bed rooms, large workshop, dry cellarage, parlour, kitchen, and yard, situate in a main road leading to Victoria Park.—For particulars, apply to Messrs. JONES and SON, No. 72, "White-horse"-street, Commercial road, East, Stepney.

PLASTER of PARIS of the very best quality. Manufactured and Sold by WRIGHT and Co., Somerset Wharf, Upper Ground-street, Blackfriars.

TO BUILDERS, CONTRACTORS, &c.

GREY STONE LIME of the best quality will be delivered alongside any wharf in London at 7s. per yard [illegible] Apply to CHARLES FORMBY, [illegible] Halling, near Rochester.

LIME AND CEMENT WHARFS. — Grey-stone [illegible] and Plasterers' [illegible] Bricks [illegible] Fire-bricks [illegible] and other Building Materials, may be obtained on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland [illegible] Ground Lime for Concrete.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH-STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT. THOS. JNO. CROGGON, [illegible] Laurence Pountney Hill, Cannon-street, London. [illegible] Wharf, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.
N.B. Plaster of Paris and Bricks at reasonable prices.

PORTLAND CEMENT is the only Cement for external purposes which [illegible] painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.
Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.
Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
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TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

JAMES WESTON having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL WALL, POPLAR [illegible] works, who may rely on the articles being of the best manufacture, and prompt attention to all orders forwarded to him.
Manufacturer of Lias and Mastic Cements. St. [illegible] Wharf, Earl-street, Blackfriars.

GREAVES'S LIAS LIME and CEMENT. RUTTY and VEREY, 2, South Wharf, Paddington.
LIAS LIME, as Mortar, is especially adapted for sewers, dock walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.
As CONCRETE it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one part of lime to eight of gravel.
LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for [illegible] casting.
Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. [illegible] that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound [illegible] with which it may [illegible] tion of the strongest acids. They feel it a duty to direct attention to the following [illegible]
1. It [illegible]
2. [illegible] internal [illegible] its hardness is uniform throughout its entire thickness.
3. Its surface [illegible] may be made equal to that of the finest marble. NEVER THROWS OUT ANY SALT and will receive paint in four days, without peeling, when put upon dry work.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on [illegible] estate, &c.
For the above purposes, it possesses great advantages over woods, being more economical and durable, resisting fire, damp, and vermin.
For the floors of walls and fire-proof warehouses [illegible] durability [illegible] at the same time [illegible] more economical. The most satisfactory references [illegible] Plaster of Paris and Cement Manufacturers, [illegible] LANE.
Agent for Liverpool and Manchester, Mr. R. PART, [illegible] place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MECHANICS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, [illegible] peel off. It will form a complete Stone casing to any Building [illegible] It will keep fresh and good in the cask, in any Climate, for any number of years. [illegible] expert. It is the only Cement that can be used with confidence by the [illegible] or Glass. It will carry a larger Proportion of Sand than any other Cement. [illegible] Roofs laid or pointed with this Cement will remain undamaged by the severest [illegible] The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named [illegible] valuable advantages. [illegible]
Architects and Builders who have used this Cement have declared [illegible]
[illegible] application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, [illegible] Queen-street, Cheapside, London: of whom also may be had,
JOHN'S and CO.'S PATENT STONE COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of [illegible] Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the [illegible] finish producing a pure stone-like effect, produceable by no other [illegible]

EMERSON'S PATENT CEMENT PAINT.—Arrangements are completed for the introduction of [illegible] PAINT. It is PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied [illegible] with a common paint brush, thinning [illegible] with water.
The [illegible] to be applied NEEDS NO PREPARATION [illegible] It matters not whether the walls [illegible] BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT, and [illegible] TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of [illegible] stone colour.
To ROMAN CEMENT it may be applied the day after it is put on the walls, and one small cask will cover a moderate sized house.
It is particularly calculated for COUNTRY HOUSES, VILLAS, [illegible] ELEGANCY and PLEASING EFFECT, also for LODGES and ENTRANCES [illegible] and PRESERVE the walls as effectively as any cement.
T. J. CROGGON [illegible] THIS PAINT instead of Coal Tar and Lime for PATENT ASPHALTE FELT ROOFS, as more efficient and economical.
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19s. 0d. .. .. 2 cwt.
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THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. [illegible] Old Bond-street. Works, late Sir F. Chantrey's [illegible] Eccleston-place, Pimlico.

TO ARCHITECTS, FOUNDERS, BUILDERS, AND OTHERS.

MESSRS. PHILIP and WYNNE, Modellers and Carvers in Wood and Stone, 3 [illegible] Oxford-street, London, [illegible] Architects, Founders, Builders, and others [illegible] they have been engaged for some years at the New Houses of Parliament, and having commenced Business earnestly solicit their support.
Ornamental Patterns made for all kinds of Metal Casting and Architectural Carving in Wood and Stone. References can be given to the highest talent of the [illegible]

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THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, [illegible] Mills, immediately adjoining the Commercial and East Country Docks [illegible] the fibre [illegible] rial, all of essential importance for floorboards, doors, shutters, and similar work. [illegible] TANQUERAY, Secretary, at the temporary offices of the Company, 25, New [illegible]
N.B. It [illegible] two years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width [illegible] the new process.

TO ARCHITECTS, Ship Joiners, Cabinet Makers, &c., requiring FINE WOOD.—SELLING OFF at reduced prices [illegible] Partnership, at the Mahogany yard in Little Windmill-street, Haymarket [illegible] MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 20,000 feet wainscot planks, running from 1½ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

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ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.
Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

ALFRED ROSLING begs to inform the Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

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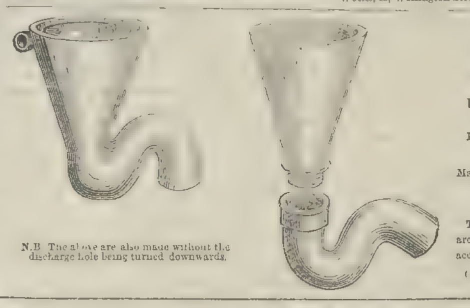
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This process has long been in extensive use in her Majesty's Dock-yards. Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.
Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.
Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.
When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.
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BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff price £1.—Works, 15, Wellington Street North, Strand.



N.B. The above are also made without the discharge hole being turned downwards.

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Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their
CLEANLINESS AND CHEAPNESS.

By Her Majesty's Royal Letters Patent.

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And the Corporation of the City of Edinbro'.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT," of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
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CHEAP AND DURABLE ROOFING.

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THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

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HER MAJESTY'S WOODS AND FORESTS,
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HONOURABLE EAST INDIA COMPANY,
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ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

It is a non-conductor [illegible] warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully [illegible] DIRECT to the FACTORY [illegible] the genuine article, and in [illegible] They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain [illegible] is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

The Builder.

No. CCXXXIV.

SATURDAY, JULY 31, 1847.

THE advantages which must result from the annual meetings of the Archæological Societies in the provinces are numerous; and amongst them we would not omit the profitable relaxation they offer to the dwellers in the great city, always busy and excited, leading them to pleasant and instructive rambles over our own beautiful England, which bring health with increase of knowledge, and a truer estimate of our own weaknesses and deficiencies by an extended communication with our fellow men. The taste for antiquarian pursuits spread throughout the country, the feeling in favour of ancient monuments which is necessarily induced, and the protection thus assured to the remaining relics of our forefathers' skill, are not more important in our minds, highly as we regard them, than the advantage we have here alluded to.

Innocent enjoyment alone is not an unimportant provision; when it is at the same time instructive and profitable, its value can scarcely be over-rated.

The meeting of the British Archæological Association at Warwick, last week, was full of interest. No one who spent the week there will easily forget its events. We shall not pretend to give in regular series a report of the proceedings, but confine ourselves to notes on such of the places visited as have points of value to our readers, and the heads of those papers which serve to elucidate them. Of the magnificent hospitality with which the society were received in various noble houses, and the *soirées* in the County Hall, we shall not attempt to speak; but we must find room for some remarks made by Mr. Pettigrew, Vice-President, on the value and objects of the Association, in an able address at the opening meeting, whereat Lord Brooke, M.P., presided. Mr. Pettigrew said:—

"The organization we have effected must, in the course of time, yield to us the most ample information; but the expense attendant upon illustrating our numerous communications in the manner to which they are entitled, and without which much of the interest attached to them is lost, is a serious matter to an association with a very limited income.

We have a common interest in urging the claims of this association to our friends, as an increase in the number of our associates will enable us to receive a volume of a value beyond that of our subscription, as the journal is our own property, not that of any bookseller, and our friends are devoted to the utmost extent to render it worthy of patronage, and properly to elucidate the objects of which it treats. In looking over the two volumes of the Journal of the Association, it is impossible not to be impressed with the importance of our avocations, and to feel in the liveliest manner how much real service we are doing to the antiquarian world. I confess that I never do so without experiencing considerable pain in the reflection upon that which has been lost. How many important discoveries have been made without even a line to record them or to give anything like a permanency to their existence. Thanks to the founders of the British Archæological Association, that cannot now be the case—future antiquaries must consult our labours, where they will find the most perfect record of the discovery of antiquities to be met with. Our pages are not filled with elaborate essays upon speculative matters or conjectural remarks; they form the DIARY of the antiquary. Our correspondents are in every county of England, may they extend beyond it—the communications are sent to us at the time of their occurrence, when facts are capable of being verified, and when the truth of opinions founded upon them admit of being tested. These are the true materials for the historian—it is from this mine that we shall arrive at conclusions affecting historical truth, the end and purpose of antiquarian research. Of what value is a Roman vase or patera—plain and insignificant, perhaps, in its appearance—but that by the peculiarity of its construction, by the nature of its material, we can at once detect the place whence it sprung, the age in which it was brought forth, and the condition of the arts, and the state of civilization of the period to which it belongs. How important in the history of men to mark these memorials—to compare them with others either of an earlier or later period, and thus to elucidate those to which they appertain. A classification of antiquities can only be effected by the accumulation of antiquities beyond those which we have at present obtained."

Mr. Pettigrew went on to say,—"I am quite aware that I have given to you a very imperfect representation of our labours for the year as it relates to the discovery of objects of antiquarian interest; but this does not constitute all the purposes for which we are associated. We are not only brought together 'to investigate, preserve, and illustrate all ancient monuments of the history, manners, customs, and arts of our forefathers;' but we are combined, also, to oppose and to prevent, as far as in our power, all injuries with which our ancient national monuments may from time to time be threatened, and as far as our experience has hitherto extended, we have no reason to be dissatisfied with the results. Among the numerous works now going on in the formation of railways, it has happened that various monuments of interest have been threatened with destruction, and it is but due to the engineers engaged on those works to say, that our representations have always been attended to, and that there has not been manifested any indifference to the interest of the subjects brought under their notice. We have, perhaps, more difficulty in rescuing the ancient distemper paintings which so much abound in our churches from the very convenient destroyer known by the designation of *whitewash*, and I regret to say, that in a late instance in the Isle of Wight some most interesting mural paintings of this description were absolutely obscured, and irretrievably lost to us, even while our correspondents were engaged in making drawings from them for our inspection. We are not so unreasonable as to expect that in every instance in which those ancient paintings present themselves, they are to be carefully preserved, to the destruction, perhaps, of the soberness which should distinguish our places of worship; but we have a right to expect that the officers of the church, whether clerical or laymen, should allow us, at least, to make drawings from them, and thus possess what is next but to the specimens themselves, a record of their nature,—and thus preserve from oblivion the memory of the past."

### WARWICK CASTLE.

Warwick was well chosen for the meeting: it has several interesting buildings, is rich in historical associations, and surrounded by places worthy of a visit, to some of which we shall refer hereafter.

*The Castle* claimed early attention, and was of course carefully examined. Whether looked at for the valuable example it affords of an ancient castellated mansion, the manner in which it is now maintained, its absolute beauty as a residence, or on account of the gems of art there gathered together, it alike calls for admiration. Part of the castle, Cæsar's Tower, has been supposed to date from the Norman period: and another portion, a lofty polygonal building called Guy's Tower, belongs to the fourteenth century. The approach through the principal entrance gateway, itself a valuable remnant, by a roadway cut through the rock and flanked by magnificent trees and foliage, is very striking; and when the visitor gains the inner court, he sees before him large extent of the ancient castle, bold, massive, and picturesque, preserved with care, and conjoined with the elegance of an English nobleman's garden. Of the position of the castle, on a precipitous rock rising from the Avon, the view it commands, and its celebrated cedars, of monstrous size and great luxuriance, we have not space to speak. We can but pass hastily through the residence, which embraces a series of apartments 333 feet in length, and glance hastily at some few of its parts.

The members of the association were conducted over the building by Mr. John George Jackson, whose more minute account of the exterior remains we shall give hereafter.

The Great Hall is a fine apartment,* with a very good open roof, designed seventeen years ago by Mr. Poynter. Here we have Rubens's "Lions," the size of life, Jansen's "Shakspeare," and some other good pictures,—not mentioning curiosities, such as Cromwell's helmet, elk horns, 12 feet 9 inches long, and the coat of buff in which Lord Robert Brooke was shot in 1642. In the ante drawing-room are some fine Vandykes, "A Burgomaster," by Rembrandt, a fine portrait of Joanna, Queen of Naples, by Leonarda da Vinci, and a superb portrait or two by Rubens. The Cedar Drawing-room, the Gilt Drawing-room, and indeed nearly every room, display fine bronzes, enamels, and inlaid furniture. In the latter is the picture of Ignatius Loyola, by Rubens, often talked about. The Boudoir has some Holbeins, and a picture of an Armourer's Shop, by Teniers: and in the Billiard-room are some views of the castle, by Canaletto, who resided in the town for some time.†

Illustrative of the collection in Warwick Castle, Mr. W. H. Rogers read a paper at one of the meetings on the

### LIMOGES ENAMELS,

In which he stated that the material on enamelled works was introduced into England by Magister Johannes Lemovicensis, who came over in 1276 to construct the tomb of the Bishop of Rochester, and afterwards that of William de Valence, Earl of Pembroke. The lessons he taught were not forgotten, as might be perceived by the subsequent tombs of Edward the Third, Edward the Black Prince, and, at a still later period, that of the Earl of Warwick, in the Beauchamp Chapel, which evinced a beautiful knowledge of the progress in the bulbs of the herse, and in other compartments. Enamelled paintings in the sixteenth century were particularly made for the decoration of churches, and treated with the solemnity of devotion. But then the faith of the age was fast wearing away, and the luxury of a wealthy court began to regard as its own those services which the disinterested feelings of previous centuries had consecrated only to religion. The inventions of genius were now made subservient to the humour of Francis I., and among them the discovery of a mode of painting in enamel upon a solid opaque surface was not the least prized or encouraged; Leonardo di Vinci, whose superior drawing and deep knowledge of the mixture of colours gave him a striking pre-eminence, being called into France by its magnificent sovereign, and receiving from him abundant favours. Among his most important productions in pictures are the large portraits of Francis I. and Claude de France, in the

* 62 feet long, 40 feet broad, 26 feet high to the cornice, and 9 feet more to the ceiling.

† Mr. Cooke, of Warwick, who has published a very good guide to the castle and places of interest in the neighbourhood, exhibited at the last conversazione a view of one of the city gates, apparently by the same master.

Lonorne, and of Catherine de Medici and Andrea Donà, Doge of Venice, in the cabinet of Ralph Bernal, Esq., M.P. His drawing shows a deep study of the works of Raffaelle, and his colouring is generally of a greyish white upon a black or dark blue field. In this respect he was followed by enamel-painters for more than a century. Five specimens of his still grace the Warwick collection; a large circular dish, displaying on one side the Feast of the Gods, and at the back an ornamental border, having in the centre a head with "L. L." in gold, and a border of very unusual occurrence. In it are four medallions, with subjects painted in cameo vert and united by foliage; the remaining specimens of this artist are from pictures representing mythological subjects, with Italian verses beneath them, and round the blue enamelled frames, decorated with moresque patterns in gold.

Mr. George Isaacs followed on the same subject, and we may perhaps give some of his remarks on another occasion. Under this same head we must refer to *the collection made by Mr. Redfern*, of Warwick, a dealer in works of art. It contains some very fine things and great curiosities, not the least amongst which latter is the intelligent collector himself, who runs half over the world to pick up rare bits.

We now step to

### ST. MARY'S CHURCH AND THE BEAUCHAMP CHAPEL,

A structure visited, as a matter of course, by all who go to Warwick, and which afforded a subject for several papers on the occasion of which we are speaking. The body of St. Mary's church was rebuilt by Sir W. Beauchamp in 1395, on a much older foundation, portions of which remain in the shape of a crypt, but being burnt down as far as the choir in 1694, was reconstructed in a barbarous manner. The design of the tower was, until lately, attributed to Sir Christopher Wren, but this has been disproved.* Sir W. Wilson is now said to be the author of it. It is called 130 feet high to the battlements; 174 feet to the top of the pinnacles; 33 feet 4 inches square at the foot; 27 feet at summit; and cost 1,600*l.*†

The groined ceiling of the choir, where the pendentive ribs are perforated, is very curious. In the chapter-house, north of the choir, (omitting to mention many others,) is a seventeenth century monument to the well-known "Fulke Grevill, servant to Queene Elizabeth, concellor to King James, and *frend* to Sir Philip Sidney."

The Beauchamp Chapel, on the south side of the choir, is an excellent specimen of the last period of pointed architecture, the perpendicular, and has many points of rare interest, as well in the adjoining apartments as in the monuments it contains. It is further of great value because, fortunately, the agreement between the executors of Richard Beauchamp, Earl of Warwick, and the various artists who were employed in the finest part of the fabric, is preserved: it is dated 1453. We give some extracts from it, as set forth by Dugdale.‡

"*John Prudde* of *Westminster* glasier, 23 *Junii* 25 H. 6, covenanteth, &c. to glase all the windows in the new chappell in *Warwick*, with glasse beyond the seas, and with no glasse of *England*: and that in the finest wise, with the best, cleanest, and strongest glasse of beyond the sea that may be had in *England*, and of the finest colours of blew, yellow, red, purpure, sanguine and violet, and of all other colours that shall be most necessary, and best to make rich and embellish the matters, images and stories that shall be delivered and appointed by the said executors by patterns in paper, afterwards to be newly traced and pictured by another painter in rich colour at the charges of the said glasier. All which proportions the said *John Prudde* must make perfectly to fine, glase, eneylin it, and finely and strongly set it in the lead and souder, as well as any glasse is in *England*. Of white glasse, green glasse, black glasse, he shall put in as little as shall be needfull for the shewing and setting forth of the matters, images and storyes. And the said glasier shall take charge of the same glasse, wrought and to be brought, to *Warwick*, and set up there, in the windows of the said chappell; the executors paying to the said glasier for every foot of glasse *ii* s. and so for the whole *xci* li. *i* s. *x* d."

"*Richard Bird* and *John Haynes*, citizens and carpenters of *London*, *xii* Feb. 28 H. 6, do covenant to make and set up in the chapell where the earl is buried, or where the tombe standeth, a pair of desks of timber, poppies, seats, sills, planks, reredoses of timber, with patands of timber, and a crest of fine entail, with a bowtel roving on the crest. And also the carpenters do covenant to make and set up, finely, and workmanly, a parclose of timber about an organloft ordained to stand over the west dore of the said chapell, according to patterns: all these things to be made, set up, fastned, joyned, and ordered in as good sort as those in the quire of S. Maries Church in *Warwick*; the executors finding all manner of timber, and carriages; and giving and paying to the said carpenters, for the workmanship *xl* li.

*John Brentwood*, citizen and steyner of *London*, 12 *Feb.* 28 H. 6, doth covenant to paint fine and curiously to make at *Warwick*, on the west wall of the new chappell there, the dome of our Lord God *Jesus* and all manner of devises and imagery thereto belonging, of fair and sightly proportion, as the place shall serve for, with the finest colours, and fine gold: and the said Brentwood shall find all manner of stuffe thereto at his charge; the said executors paying therefore *xiii* li. *vi* s. *viii* d."

"*By the accompts of the before specified* Will. Berkswell, one of the executors to the said earl, (and then dean of this Coll. Church) I find that the structure of this chapell and monument was begun in 21 H. 6, but not totally finished till 3 E. 4, (which was full 21 years); and that the totall cost thereof, in the work of masons, quarriers, smyths, plummers, carpenters, and other inferior labourers, added to what those principall artists had, with whom the said executors so covenanted, as I have before expresst, amounted to no less than MMCCCCL xxxi *li.* iv *s.* vii *d.* ob. At which time were also the deanery and colledge (both standing at the east end of the churchyard) reedified by those executors, the charge whereof came to DCCCCLxxxviii *li.* xix s. ix d.

The internal dimensions of the chapel, as given in Britton's "Architectural Antiquities of Great Britain," which contains, a plan, section, and views of the building, are, length 58 feet, breadth 25 feet; and height, from the paving to the ridge of the groined vaulting, 32 feet.

Relative to this chapel, we must not omit to mention what occurred at a meeting of the association on Friday morning. After various papers had been read, some of which we shall give hereafter, Mr. G. Godwin, being requested by the chairman, Mr. Pettigrew, to make some observations on the Beauchamp Chapel, drew attention to the restorations then proceeding there, which, he said, were apparently carried on without professional assistance, and if pursued to the end, would entirely destroy the character of the building. Anxious as he was that such a building should be maintained, he would sooner see it a ruin than that the original work should be thus disguised. It seemed easy for a working mason to take the remains of a pinnacle, or a canopy, and copy it, but unless aided by the eye of an artist, the result, while it appeared like, would be a mere caricature. He was most anxious not to give offence: all he wished to suggest was, that the legal custodians of the building should place the masons under the direction of their architect. While speaking, he would further suggest, that the crypt of St. Mary's should be freed from some of the earth which now hides the bases of the Norman columns. A trifling outlay would render this a very interesting part of the church.

Mr. C. H. Bracebridge, of Atherstone Hall, said that instead of being offended, the county would feel greatly obliged to Mr. Godwin, who had only spoken too mildly as to the course pursued in the restoration. The sum of 50*l.* per annum had been granted under the trusteeship of Sir William Dugdale's heirs and the mayor of Warwick, for the support of the chapel, and he (Mr. Bracebridge), pledged himself to bring the remarks which had been made before these parties, and to obtain what was desired. The crypt was in different hands.*

In connection with the building, we now give a paper by Sir Samuel R. Meyrick

### ON THE ARMOUR OF ONE OF THE EARLS OF WARWICK, IN THE BEAUCHAMP CHAPEL.

It commenced by stating that this chivalrous nobleman died in France, on the 4th April, 1439, a little while after the marriage of his eldest daughter, Margaret, by his first wife, to Sir John Talbot, Lord Talbot, the celebrated hero of his day. He had made his will three years previously, while he was at Cuversham, in Oxfordshire, and as that document states, in the fifty-fifth year of his age. His executors were Lord Cromwell, Lord Tiptoft, John Throckmorton, Richard Cursor, Thomas Huggerford, Nicholas Rochy, his steward, and William Berkswell, priest, and dean of the Collegiate Church at Warwick. These, soon after his decease, in compliance with the injunction in his will, sent for his body to be interred in the town so named. "The whuch body," according to the inscription on the tomb, "with grete deliberacon and ful worshipful condiut bi see and by lond, was broght to Warrewik, the 4th day of October, the yer abouesaide (1439), and was leide with ful solenne exequies in a feir chest made of stone in this Chirche, afore the west dore of this Chapel, according to his last wille and testament, therein to rest till this Chapel by him devised in his lief were made." It was, therefore, placed in the Collegiate Church until the Beauchamp Chapel was ready; "the whuch Chapel, founded on the rooch and all the membres thereof, his executors dede fully make and appairaille by the auctorite of his seide last wille and testament, and therafter by the same auctorite they dide translate ful worshipfully the seide body into the vout aboue saide." It is not known who gave the design for the chapel and monument, but there is good reason for concluding that William Berkswell, above mentioned, was the architect, as he kept the accounts of the buildings, which are now in the possession of the bailiff and burgesses. For this purpose various agreements were entered into with different citizens, in order that the whole might be executed in the most tasteful and appropriate style; and before this chantry chapel was incommoded by any other monument than that of the founder, it must have been beautiful in the extreme. The earliest of them bears date 1443, and that for the effigy, 1450. The late clever draftsman, Charles Stothard, had informed Sir Samuel Meyrick that he had locked himself in while employed in making drawing of this effigy, that he turned it completely over, and found that it was made to divide in the middle. Three of his exquisite drawings were beautifully etched by himself for his work on "Monumental Effigies," and the fourth by Mr. Smith; so that the front, the back, and each of the sides are most satisfactorily represented. The whole of the armour is perfect except the lance-rest, the pallette for rondelle to guard the right arm pit, the pauldron being hollowed out to admit the free use of the sword arm, the sword belt, the dagger, and the spurs. At this period the basinet had been laid aside, so that there was no other protection for the head than simply the helmet, no longer put over the former, but which was occasionally laid aside for an open head-piece, called a salade, worn over a *mentoniere*, or covering for the throat and chin. The helmet is of the very rare kind

‡ "Antiquities of Warwickshire."

† The Monument with Dugdale are less.

‡ "Antiquities of Warwickshire Illustrated." By Sir W. Dugdale. Second Edition. 1730.

* After the meeting we understood that an individual offered at his own expense to clear out the crypt if permitted.

which, from the projection of the *ocularium*, has somewhat of resemblance to a bird's beak, and is confined to the reign of Henry VI.—The paper contained an elaborate detail of the ornamental portion of this monument. At the conclusion of the paper, in reference to the renowned Earl, Sir Samuel observes,—"In all his charters he styled himself *Ricardus de Beauchamp, comes de Warrewyk, et de Aumarle, Seignior l'Isle, et capitayne de Rouen.* I will merely add that, in what was at that time regarded as the greatest proof of religion, he was no less liberal, for he founded, beside the chantry chapel at Warwick, one at Guy's Cliffe, near that town, and a college at Elmley, in Worcestershire."

The tomb on which this armour lies is very beautiful: it has a series of niches upon it filled with figures of "latten," gilt, of admirable design and workmanship.

The next paper is one that was contributed by Mr. John Green Waller,

ON THE MONUMENTAL BRASS OF THOMAS, EARL OF BEAUCHAMP, AND LADY, IN WARWICK CHURCH.

It commenced by saying that, as Warwick contained, among its monumental antiquities, one of the finest effigies in the kingdom, so also it possessed an unique brass, in that to the memory of Thomas de Beauchamp, Earl of Warwick, and his lady, the daughter of — Ferrers. Previous to the partial destruction of the Church of St. Mary by fire, in 1694, the monument to the above mentioned consisted of an altar-tomb, with horizontal canopy, and enriched with many heraldic achievements. The brasses were inlaid upon the slab of the table-tomb, and formerly consisted of two figures under canopies, with some shields of arms. The present remains are the figures only, now fixed against the wall, and beneath them a modern inscription. The peculiarity which authorized him (Mr. W.) to pronounce the brass an unique specimen was, in its presenting an example of *pounced* or punctured work, probably in imitation of embroidery, and which formed a beautiful diaper to the heraldic bearings, and other parts of the figures. It was to this feature that he would particularly direct the attention of the members, and the inhabitants of Warwick, as the brass, in its present state, being so thickly covered with successive coatings of gilding, required minute inspection before ornamentation could be discovered. *Pounced* work,—in French, *pounsonnez*, or *poinçonné;* in Latin *ponsatum*,—was a kind of ornament formed by *puncturing*, or pricking a surface with a point, and had been chiefly used in making diaper patterns in goldsmiths' work. Thus, in old inventions, we frequently find it applied to articles of plate: in the will of Joan, Lady Bergaveny, dated 1434, was, "my round basin of silver *pounsid.*" It occurred also, in the inventory of Sir John Fastolfe's effects, and even in that of Cardinal Wolsey. Pounced work was also of very frequent occurrence in the back grounds of richly illuminated MSS. of the fourteenth century—a very fine example was in the Arundel collection, No. 82, in the British Museum. It was also said to be found in the gilding of some parts of the Coronation Chair. But the occurrence of this work in monumental remains is very rare, only two examples being known in this country, viz., the monument of Richard II. and his Queen, in Westminster Abbey, and the brass of Thomas de Beauchamp, Earl of Warwick, now under notice. Punctured work, indeed, might be found in several brasses, but it was of a different character, and not applied to the purpose of ornamentation. Mr. Way found an example at Baden Baden, in a monument to Frederic, Bishop of Utrecht, who died in 1517. He is represented in armour, over which was a cope decorated with pouncing. These were the only examples he (Mr. W.) was at present aware of. The value, then, of this brass, as a specimen of monumental art, was not exceeded by any in the kingdom, and in respect to the work alluded to, he believed there was not another in existence. He would now point out those parts of the figures which were decorated in the manner alluded to, and for better illustration had sent a plate of the monument published in the work of the association. On the figure of the knight—the heraldic charges on his emblazoned jupon,—the fesse and crosslets being gold, were diapered; the fesse was a particularly beautiful specimen. On the circular plates which protected the junctures of the elbow-pieces, or *couder*, the badge of the *ragged staff*—the same was to be observed on the pommel of the sword, and was continued, also, on the scabbard, alternately with a sprig of flower. The scabbard of the dagger was also diapered, and the bear at the earl's feet had its hairy skin represented in punctured lines. The figure of the countess bore the arms of Ferrers, seven mascles, on her gown, all of which were most elegantly diapered, and on her mantle she bore the arms of Beauchamp, worked in a similar manner, and an ornamental border of the same round both garments. It was unnecessary to give a further description of the monument, his (Mr. W.'s) object being merely to point it out as one deserving of the greatest attention; but before leaving the subject, he would advert to its present unsatisfactory condition, "It is now covered with gilding, as I have before stated, and to such a degree, that it is difficult to make out the lines of the figures, still less the *pounced* work just noticed. I would, therefore, direct the attention of the inhabitants of Warwick, and those especially interested in its monumental antiquities, to the fact of this excessive gilding concealing the most important portion of the figures, and strongly advise its immediate removal. That the brass was originally gilt is very probable, but it would have been very thinly laid on; at all events, it would be far preferable to have it entirely removed, than that it should remain, to the detriment of the monument."

At the same meeting whereat the foregoing communication was read, Mr. Thomas Wright, A.M., one of the secretaries, submitted the following

NOTES RELATING TO ARCHITECTURE AND BUILDING, FROM MEDIEVAL MANUSCRIPTS.

"It was my intention to collect together a few notes from medieval manuscripts, illustrative of the arts of building and architecture among our forefathers, chiefly with the object of shewing how necessary it is, that those who would thoroughly understand the state of art and science in past times should make an extensive study of the literature of the age. That study is now rendered far more easy than it was, by the number of publications of old writings which have issued from the press during the last few years, and by the numerous helps which are now within the reach of all. In writings of a miscellaneous kind we often find precious scraps of information, which explain at once circumstances that have without them elicited the vain conjectures of a succession of modern writers.

Circumstances have hindered me from putting my intention fully into effect, and I therefore confine myself to pointing out two rather curious passages from the writings of Alexander Neckam, one of our most popular early, scientific, and educational writers, who was born in 1157, and died in 1217.

In a vocabulary, compiled by this writer for the purpose of teaching Latin to young scholars, published under the title of *Summa Alexandri Neckam de Nominibus Utensilium* (of which there is an imperfect copy in the British Museum, MS. Cotton. Titus D. XX.), Neckam describes in orderly arrangement all the different articles which came under common observation, in order to give their Latin names, which are often explained by an interlinear gloss in Anglo-Norman. In one part he gives a brief account of the process of constructing an Anglo-Norman castle, which I think will be considered as possessing some curiosity." Mr. Wright then gave some extracts which may be thus translated. 'If a castle is to be properly constructed, let it be surrounded by a double foss, and let the site of the place be strong by nature, so that the motte (or mound) may have a convenient support upon the native rock, or in default of natural advantage let the assistance of art be called in, that the mass of the wall constructed of mortar and stones may rise to a lofty work.

Upon this, let there be raised a rough hedge, which must be well defended with quadrangular stakes and sharp thorn bushes. Afterwards let the vallum be separated by large spaces, and let the foundation of the wall be joined into the native rock. Let the high walls be supported externally by columns (*i. e.* buttresses). And let the surface of the wall be made fair with a trowel, and have the smoothness of mason's work. The embrasures of the battlements must be separated by equal distances. The battlements must defend the tower, placed on an elevated spot, nor must there be wanting scaffolding to sustain the stones to be thrown (at the enemy).'

Neckam goes on to describe how the castle is to be stored with provisions and arms, and how it is to be put in a posture of defence, in case of threatened attack.

We have no perfect castles of the period to which this description belongs, and I think that it contains information which may help to set at rest one or two disputed questions relating to military architecture.

In another and much larger work of Neckam's, a kind of encyclopediac treatise, *De Naturis Rerum*, of which there is a fine manuscript in the British Museum (MS. Reg. 12, G. xi., fol, 79, v°.), we have a chapter (cap. clxxij.) *De ædificiis.*

The reader gave a quotation from this work, which has been thus translated:—'Let the face of the area be levelled with the roller, and let the inequalities of the surface be overcome by frequent blows of the beetle, and then let the solidity of the foundation be tried by stakes driven into the bowels of the earth. The wall next rises up, constructed with mortar and stone, according to the law of the level and plummet. And let the exterior of the wall be made smooth and even with the mason's trowel. But it is to be known that no walls, even when constructed of wooden laths, make equidistant lines. For let it be, that wooden walls be so constructed proportionally that they are not of greater thickness at the bottom than at the top, still the surfaces will not be equidistant.

For it necessarily should be, that the higher the walls rise from the ground, the greater distance be found between them. For since every heavy body naturally tends to a centre, you must understand that the walls tend to the centre of the earth, and you will find that the walls make an angle together. Do not you see how the rays proceeding from the axle of a cart are at a greater or less distance from each other until they join the circle of the wheel? So are the walls raised up towards the convex of heaven. A ceiling is placed on them, which must be kept clear of moths and webs. What shall I say of the ornaments of the ceilings and the paintings of the walls, except that riches produce folly?'

We have here the process of building a house, as we had before that of building a castle, and it is equally interesting in its details. But by far the most remarkable circumstance connected with it is the reason given for making the walls lean outwardly, because, *since every heavy body tends to a centre*, they ought to represent the radii of the earth. This principle, *that every heavy body tends to a centre*, is spoken of as one known to every body. We have thus revealed to us the extraordinary fact, that the doctrine of gravitation was known to Englishmen of science full 500 years before it was discovered by Newton!"

Who has not heard of

KENILWORTH?

The genius of Scott has made it a shrine for pilgrims from all nations. All who have wept over the sorrows of sweet Amy Robsart and shuddered at the villanies of Varney walk round the massive structure, now 'reft of all its ancient glory, with feelings of awakened interest. Apart from this charm which has been thrown over it, and from the beauty of the ruin and its position, it has great value in an architectural and archæological point of view, and was of course visited by the association. Founded by Geoffrey de Clinton, a Norman adherent of Henry I., the keep erected by him, and called, like so many other structures of that period, Cæsar's Tower, still remains, and though

> "Where mighty towers
> Uprais'd their heads in conscious pride of strength,
> Are smould'ring walls and tottering battlements,—"

may, with trifling attention, be still preserved for future restoration. We give a view of it in our present number,* with part of what are called Leicester's Buildings, on the left, as a slight memento of the day for those who were there on this occasion, and because it must have interest in the eyes of most of our readers. The semi-circular openings of the original structure were converted into square-headed windows when Leicester re-constructed and enlarged the castle. The Great Hall, though floorless, remains very perfect; and

"Where once the high-served banquet rose,
No fragment of a roof remains,
To echo back their wassail strains,"

is in other respects very perfect and might be restored without difficulty. None of the internal fittings remain excepting parts of two chimney-pieces now in the gate-house, one of which, of marble, was originally gilt. It is inscribed *Vivit Post Funera Virtus*, and with the general Italian arrangement and mouldings has Gothic panelling.

Kenilworth church, close by, has a fine Norman doorway, of which we shall give an engraving before long.

From this interesting spot it is but a short journey to *Coventry*, concerning which we shall have much to say in our next. We must content ourselves in this, with giving the following extract from an excellent paper by Mr. Wright, on the religious dramas of the middle ages, for the performance of which this city was remarkable, and known as

THE COVENTRY MYSTERIES.

The writer is speaking of entries in old corporation accounts, shewing how these representations were got up, and he says,—

"The records of Coventry are particularly rich in entries of this description, and a very interesting selection from them was printed not many years ago by Mr. Sharp, in a dissertation on this class of performances, which is now a rare book. From this source I will draw a few illustrations of the subject to which I have ventured to call your attention. I may observe that the collective paraphernalia of acting, the stage, its actors, and the stage machinery, were commonly termed a *pageant*."

"The circumstances of each actor being mentioned in the books by the name of the character he performed, leads to entries of a description so singularly naive, that they sometimes far exceed what we can venture to include under the appellation of burlesque. A few are even calculated to shock our modern notions of propriety. To quote one or two of those that are less digestible, we have in our early account of the wages of the actors,—

Item, paide to the sprytt of God, xvj$^{d}$.
Item, payd to the ij. angelles, viij$^{d}$.
Item, payd to the demom, xvj$^{d}$.

On another occasion, when they were, perhaps, acting the last judgment, we have numerous entries of wages, such as,—

Item, payd to iij. white soules, xvij$^{d}$.
Item, payd to iij. blakke soules, ij$^{s}$.

It appears that the white souls represented those who were to be saved, and the black ones those who were devoted to a contrary fate. There are several entries of payments for new coats for the souls.

Item, to ij. sprytts, xvj$^{d}$.
Item, payd to ij. wormes of conscience, xvj$^{d}$.

Under what form the "worms of conscience" were represented, it is not easy to conjecture. In 1573, among the payments of actors' wages (who in this instance are mentioned by name), we find entered,—

Paid to Fawston for hanging Judas, iiij$^{d}$.

This man acted another part on the same occasion,—

p$^{d}$ to Fawston for coc-croying, iiij$^{d}$.

In 1578 we have the entry,—

p$^{d}$ for a new hoke to hang Judas, vj$^{d}$.

The performers in these singular exhibitions wore masks on their faces, and they seem often to have had heads made for the occasion. The renewal and reparation of their articles, and the theatrical dresses (of which there seems to have been a large variety), form no small item of expense in the loan accounts, and are amongst the most amusing entries in the books. Thus we have,—

Item, for mendynge the develles cote.

And again,—

Item, for makyng the sollys cottys, iij$^{s}$.
Item, payd for the sprets of Gods cote, ij$^{s}$.
Item, a hat for Pilate.
Item, for mending the devyls hede.

Among other, and very numerous, entries of this description, are,—

In 1477. Item, for mendyng the demons garment.
1467. Item, payd for a stage for the demon, iiij$^{d}$.
1480. Paid for mendyng of Pilat's hat, iiij$^{d}$.

From a few stage directions scattered here and there through the manuscript of 'Mysteries' now extant, it would appear that the stage machinery, by which a part of the effect was produced, must have been very elaborate; and the entries in the accounts, though they give us but indefinite ideas of the form and manner in which this machinery was worked, prove that it was often both ingenious and expensive. In one instance, the different charges connected with making an earthquake amount to a considerable sum. Some of the entries of expenses of this description are droll enough, such as,—

payd for mendying the wynde, ij$^{d}$.

The winds appear to have been worked by means of ropes,—

payd for a new roppe for the wynd, xviij$^{d}$.

We have again,—

payd for iiij. pere of angellys wyngys, ij$^{s}$. viij$^{d}$.

And,—

Item, payd for mendyng hellemowthe, ij$^{d}$.
Item, payd for makynge hell moth new, xxj$^{d}$.
Item, payd for kepyng up fyer at hell mothe, iiij$^{d}$.

And, in 1558,—

payd for settyng the world of fyer, v$^{d}$."

With which startling and, in our days, unusual catastrophe, we must conclude the present notice.*

* See p. 363, in present number.

## ON THE DUE CULTIVATION OF THE FACULTIES FOR THE ARTS.†

By what means should a due cultivation of the faculties for the arts be performed, is a question that has not yet been satisfactorily settled. There has been much labour bestowed by pupils in the exercise of their faculties for the arts, but to little purpose. Even painters, sculptors, architects, and designers, in general are most deficiently taught. Artists should have as sound an education in languages, mathematics, the different sciences, as anatomy, botany, chemistry, geology, geometry, perspective, &c. as other professional men. The divine, the physician, the lawyer, &c. are instructed in many matters connected with their callings, and soundly also: so that a true foundation is laid in their minds on which the whole of their knowledge is based. According to the same system should artists in painting, sculpture, and architecture be instructed. But as division of manual labour is carried out successfully to a great extent, it is considered that mental labour may be also; consequently, we have historical painters, portrait painters, landscape painters, animal painters, architectural painters, and flower painters: and such division of artistic labour is in accordance with our varied mental qualities. But should the historical painters be unable to paint landscapes, portraits, animals, architecture, flowers, &c.? most undoubtedly they should have the ability to paint all objects well: and so should all the other artists paint all that belong to their individual subjects with equal truth. This is verified by the works of the early Italian, Flemish, Dutch, Spanish, and German masters. And there is no reason why it should not be so in this country. All that we require is a sound artistic education, and an encouraging public. But the public is at present unable to appreciate works of high art, and until that is achieved we cannot expect that encouragement which the importance of the arts demand. We must therefore educate the public in all that appertains to the arts, and establish in their minds true principles on which they may form a correct judgment, in order to know how and what to encourage. The public mind would then be greatly improved in all intellectual matters, and the nation enriched and elevated. But the legislature must devote its energies towards this important subject, and establish a system which shall contain true principles for cultivating the faculties for the arts, that no mental power may be lost, which no nation can afford. That true principles are not established for cultivating the arts is evident enough, in the system as practised in teaching drawing, and though there is some improvement in the present mode, yet it is by no means what it ought to be. The whole system should be revised, and perfected upon a natural foundation: the faculties for the arts would then be legitimately exercised, and accuracy of form, colour, texture, and light and shadow acquired. Until each faculty is exercised upon such natural objects for which each was intended, it will be vain to expect the power of natural representation; but, on the contrary, nothing further will be obtained than inaccuracy throughout the whole execution. Moreover, the mind will be barren of invention, not having acquired original materials, and consequently will have no power to produce original forms or combine new arrangements, for that which the mind has not received it cannot produce. Great inventors have always been great observers of the works of Creation, and investigators of the Creator's laws; without this knowledge we must rest content with being insipid imitators and servile copyists of works of art. The mere imitation of works of art, and particularly at the commencement of artistic instruction, will not lay a foundation for invention, composition, action, expression, colour, light and shadow, or form. The most elementary instruction should be natural, and therefore certain truths should be brought forward for construction, that the faculties for the arts may receive in its first impress such forms as exist, when a true impression would be made and the mind delighted with receiving its own—natural knowledge and natural faculties being made for each other.

But not so is the work of art of one mind, however great it may be, the most fit and proper object for a different mind to study from. Works of art of a high order are always the result of intense observation and study. The work is great because it makes an appeal to the spectator, and speaks, as it were, upon the subject which it represents; but not so with inferior representations—such only astonish the ignorant and disgust the wise. The faculties for the arts must not be corrupted by false representations being placed before them for imitation. False calculations are not placed before children to instruct them in arithmetic; their school-books do not state that twice two make four and a-half; then why should drawing books represent objects falsely, and be received as most fit and proper works for imitation—surely there is something very rotten in this state of things. As a truth in arithmetic is valuable, so should a truth in art be considered equally so. Parents should not consider that their children are instructed when the foundation of that instruction is defective. Rules of art should be as perfect as the rules of arithmetic. In fact all tuition should be true, otherwise it cannot be instruction.

It is now admitted that the faculties for the arts are to be as legitimately exercised as those of language, calculation, &c. The Marquis of Lansdowne and Lord Brougham have asserted, that those mental powers must no

† Read at a meeting of the Architectural Association, Southampton street, July 21

longer be neglected, but cultivated as far as they are capable, and made by sound instruction as valuable to the person as their other educated faculties are. This is true philosophy, and though it comes somewhat late, yet better late than never. The rising generation will by such additional sound instruction be made a superior set of beings, as they will have several more highly important faculties cultivated than others in their early years have had, such mental powers being then considered of no importance, and not given by the Creator for specific purposes. It is now stated openly and broadly by those learned noblemen, that those faculties must be duly cultivated, that the human mind may be perfected according to its peculiar and individual nature. If this important point is kept in view and acted upon as it ought to be, we shall have the human race approaching originality, and not spoiled by being forced to receive what they cannot, or suffered to remain apathetic and inactive for the want of a due exercise. In fact, the whole mind should be as well exercised as the whole body. The right principles are resorted to for strengthening the body, but only partially so for strengthening the mind. No expense is spared, nor time, nor labour, for improving the physical condition of man and animals; but for perfecting the intellect, the right consideration has not been given.

And why should the different branches of the arts be slurred over as they so generally are in educational establishments? Are we to rest satisfied that form and colour are only worth an exercise of accomplishments, and that constructiveness is unworthy of a legitimate exercise in the different schools? Let any one who has a common understanding of those faculties, examine the drawings as they are called, that the pupils of both sexes bring home half-yearly, and they must conclude that so much paper, pencil, and colour had been destroyed; the mind injured, time wasted, and money thrown away. Such a loss of intellect is exceedingly discreditable to an intellectual nation. Our foreign neighbours do not act in this slovenly way in artistic instruction: but we do not like to adopt that which is good in our foreign neighbours' educational systems, because they emanate from despotism. Let us take the good from all, and leave the despotic qualities where we find them. It is evident enough that we are not right, or our manufactured goods would not be so defective in all artistic points as they are in form, and colour; and particularly as regards colour—the most frightful arrangements and contrasts are made. Indeed, they are too often so devoid of harmony, that on beholding such discordant and outrageous colours, we can hardly consider them as the productions of a civilized nation. That such unnatural and ignorant productions are the result of uncultivated minds in form and colour, there can be no doubt, and why those mental powers should be allowed to be so falsely exercised is this,—the producers of such unintellectual wares are ignorant of the principles on which such articles ought to be produced. They know not what are the proper and harmonious arrangements and contrasts, the apparent forms, light and shadow, texture, and the rules for producing them. Now, if the master manufacturers are not soundly informed upon these subjects, and therefore cannot pass a correct judgment upon their own goods, they must be left to the designer, who may have been incorrectly exercised in harmony of colour and truth of form. The master manufacturers ought to be masters of their art, and obtain sound artistic instruction, that they may know how their goods should be produced in true form and colour; they would then see that a true foundation should be laid in the minds of their designers, that they may produce such designs as would be in harmony with the minds of the purchasers, instead of their being disagreeable and painful, as they often are. That such bad art is being daily produced, the goods in our shops unfortunately show. To correct this evil, sound instruction can only effect the cure. Design which is invention will never be attained but upon a true foundation. Truth must be the beginning and the end, and geometrical construction must be the commencement of instruction in either branch of the arts, that the science of perspective may be well understood, for without such truths invention will never appear nor accuracy of form be attained. There is no greater folly than pretending to draw without this foundation, and though geometrical construction and perspective is the true foundation on which the drawing of all forms must be based, they must be taught in reference to real objects. All instruction should be given upon principles immediately derived from nature, when its application should be shown upon models or natural objects, and explained clearly in order to prove the truth of those principles. Without this knowledge, the student must expect to be always in confusion; and it is in consequence of the want of this valuable information that there are so many works of art that are false representations published, which is an evil of great magnitude, abusing the public mind by inducing it to believe in error instead of the truth, which to the uninitiated must work a serious injury, as all falsehoods will do wherever they are brought forward for public approval and encouragement. But the rising generation will not much longer be corrupted by false art, as they are to have their mental powers soundly exercised in artistic matters, and to a certain extent they will in time possess a certain judgment, and be enabled to distinguish accuracy from inaccuracy, which will oblige the producers of inaccurate art to become accurate, and no longer to abuse the public mind with their mischievous pretensions.*

* The remainder next week.

## THE GRANITE ROCKS OF EGYPT.†

The following facts in respect to the progress of discolouration on the rocks which are exposed to the current of the Nile at the cataracts, form an interesting sequel to the observations regarding the effects of time on the granite quarries of Syene.

From E'Sonan to the Island of Philæ, the bed of the Nile is encumbered with huge masses of granite, water-worn, and broken into separate piles of enormous boulders, which, shooting up from the level of the river of a conical form, look like giant *cairns* built up in the stream by some monster hands.

The surfaces of these rocks at their base, where they are washed by the river, are tinged of a dark brown colour, gradually increasing in intensity from the highest point reached by the inundation to the ordinary level of "low Nile." On examination, they are found to be covered with a very thin coating of a dark matter which adheres with the utmost tenacity to the rock. Humboldt and Darwin make mention of a similar appearance in other parts of the world; the latter gentleman having observed it near the city of Bahia at a point where a rivulet entered the sea. On this subject he remarks in his "Voyage of the Beagle," p. 12, "At the cataracts of the great rivers Orinoco, Nile, and Congo, the Syenitic rocks are coated by a black substance, appearing as if they had been polished with plumbago. The layer is of extreme thinness; and on analysis by Berzelius, it was found to consist of the oxides of manganese and iron. In the Orinoco, it occurs on the rocks periodically washed by the floods, and in those parts alone where the stream is rapid; or as the Indians say, 'The rocks are black where the waters are white.'" It cannot be doubted, that the cause of this discolouration is the contact of the water, and that probably it is produced by the adherence of certain of the particles with which the river is charged.

To the north-east of the Island of Philæ, there is a remarkable rock which forms a very prominent object in the landscape. It is a large isolated mass attached to the eastern bank of the river, and presenting a solid surface towards the island. This surface is sculptured with hieroglyphics, among which are several royal ovals or names of kings, on so large a scale as almost to be legible from Philæ. Several of these sculptures have been carefully defaced, and this in some instances has evidently been done for the purpose of substituting a new name in the place of the original characters—a circumstance which proves that these were looked upon as monuments of some consideration. I recognised the names of Thothmes III., generally considered to be the Pharaoh of the Exodus, of Psametik I., and of Psametik II.

† From a Journal by Dr. J. B. Mitchell, still unpublished, of a series of travels, with Lord Elgin, in the Turkish and other dominions, Egypt, Syria, Palestine, the isles of ancient Greece, &c

The surface of the rock where those names are cut partakes of the dark colour communicated by the waters of the Nile, but being situated at a pretty high level, the colour is not of the darkest hue, as the Nile reaches so far only during the height of the inundation. The *sculptured* surfaces, however, hardly partake at all in the discolouration, although they have been exposed to the operation of the same causes since they were chiselled; indeed, it is this remarkable difference in colour that makes the sculptures so conspicuous at a distance. In the case of the name of Thothmes III., no less than 3,340 years have elapsed since the date of its execution. If, then, no effect has been produced in upwards of 3,000 years, how many ages would be required to produce that degree of discolouration which amounts to an absolute black?

These and the former observations on the quarries of Syene, prove distinctly that whatever alteration may have taken place comparatively recently on the surface of the earth in other parts, no very material change has been produced in the valley of the Nile for countless ages. The facts regarding the formation of the Delta of the Nile and the "petrified forest" near Cairo, lead to the same irresistible conclusion. "In America, as in Europe," says Mr. Lyell in his "Travels in America," "the oldest monuments of human labour are as things of yesterday, in comparison with the effects of physical causes which were in operation after the existing continents had acquired the leading features of hill and valley, river and lake, which now belong to them."

## ARMY AND NAVY CLUB.

### DECISION OF THE COMMITTEE.

Our readers will remember that six architects were ultimately selected by the committee to submit designs for the new club-house.* One of the six, namely, Mr. Clarke, having been forced by an accident to decline competing, Mr. Salvin was named to supply his place, and accordingly sent in drawings. The committee after examining all the plans, selected one by Messrs. Parnell and Smith, concerning which a letter from Count D'Orsay appeared in our columns, and referred it to Mr. John Shaw, one of the official referees, to report upon it. The report was satisfactory, and Messrs. Parnell and Smith have been commissioned to proceed. The elevation is based upon that of a well-known palace by Sansovino.

The late Mr. D. Mushet.—A somewhat curious paper warfare, in the shape of advertisement and counter advertisement, has of late been unhappily waged between divers representatives of Mr. Mushet, whose lamented demise we recently noticed. Subscriptions have been repeatedly solicited by "A friend of the family," towards the support of Mrs. Mushet and two grandchildren, the late Mr. Mushet "having been too ardently devoted to science to pursue his own exclusive interest. . . Not doubting that his country would handsomely provide for those he left behind." Donations, owing to 'unhappy dissensions,' to be addressed to the widow direct, or to her youngest son. But as repeatedly have such solicitations been repudiated by the eldest son of the deceased, who declared them to be totally uncalled for and unnecessary, as well as derogatory to his father's name and memory. Latterly, too, the acting executors of Mr. Mushet, Messrs. Charles Frederic Cliffe and George Roberts, have also denounced, 'with pain,' the 'solicitation of contributions from the public in behalf of the alleged destitution of his widow and her grandchildren;' the advertisement in question being "calculated to deceive the public grossly, by levying contributions, as a testimony to Mr. Mushet's eminent services in metallurgy, upon the false supposition that he has left a portion of his family without due provision for their maintenance. That on the contrary, Mr. Mushet, in his will, has made an ample provision for all the members of his family, to whom he has bequeathed a handsome property; and that Mr. Upton, who, upon erroneous information, first inserted the advertisement, has withdrawn his sanction to its further appearance; while Mr. Bald never, at any time, authorized his name to be attached to it."

* See p. 279, ante.

VIEW OF THE KEEP, KENILWORTH CASTLE.*



THE LATEST EXCAVATIONS AT SALONA, —DALMATIA.—[MAY, 1847.]

A NEW POMPEII.

THE systematic excavations of *Salona* cannot, as *some* say, be quite compared with those of Pompeii; still they are among the finest things attempted of late. This however, like so many other things, is not owing to any society, but to one man, Professor Abbate Carrara of Spalatro. Salona was, during Roman dominion, the capital of Dalmatia, and Constantine Porphyrogenitus estimates its extent at half that of Constantinople. Up to the end of the fifth century, art and civilization flourished on this part of the Dalmatian coast, which was, therefore, called *Dalmatia felix*. But in the year 639, Salona was taken by the Avari, and the palace of Diocletian converted into a shelter for fugitives. From that period up to the times of Charlemagne, all remained in confusion, as the barbarian Avares had destroyed all Roman cities. But even the art-period of that monarch was but of short duration. In the year 1672, Gian Giorgio Calergi made a survey of Salona, by order of the Venetian senate—which, however, like those made in 1821 and 1825, had no truth in them. The leading idea and the success of Professor Carrara's late labours, consist in ascertaining first, the extent and limits of the ancient city, to which other endeavours are made subservient. This he accomplished by commencing his labours *beyond* the actual traces of the wall [illegible] and the city, by which doing he discovered the old *gates*, and laid bare, [illegible] were, the line of circumvallation in its very nakedness; and *thus* rendered the making of the plan a simple surveying operation. Every other mode of procedure would have been fallacious, as only the discovery of the gates and portals could lead to the direction of the main streets. The plan is now ready,* and exhibits the form of a truncated cone, and the broader line towards the east, is a prolongation of the original city, with which it was connected by a great interior portal. The old city rose successively to a great elevation, and the north walls are much higher than those towards the south, which extend along the river and the sea.

It is in the north-east corner of the city, where the excavation of the city walls is the most conspicuous. There are the ruins of the old gate which led through the Via Gabiana to Andentium, which bears the character of the known solidity of Roman construction. On continuing to proceed in this direction, it is to be seen, that the city had for its protection, square towers of divers size, from 12 to 98 feet in height. On looking on these, one would wonder how one of these ancient war-engines (*aries*) could injure such a building, if we did not consider, that if any of the corner or key-stones were displaced, the whole would lose its solidity and come down; thence the importance laid in Scripture on the 'corner stone.' To these Roman towers some more recent (barbarian) masonry has been added. The old structure consists entirely of large square stone blocks, some of ten feet length. In the barbarian structures, only the facings are of hewn stone, the interior consisting of rough materials and mortar.

On the north side of the city, near the wall, an interesting bath has been excavated, shewing clearly, that the oriental bath of to-day is the same as that of ancient times. Like in the present Turkish bath, the *mughtas* in the centre had its tube for conducting the hot water; the floor is of polished marble, the columns supporting the roof of oriental alabaster, and the mosaic, in one of the side cabinets, is as perfect as if completed yesterday. Near the bath, the gate which served as a communication between the old and new city, has been excavated and laid bare. The pavement is impressed with parallel traces of wheels, like in Pompeii, but the stones are longer and more used. The aqueduct was laid above the portal.

On the north-west corner of the city, lie the amphitheatre, which forms an ellipse 126 feet long, and is well preserved. The entrance is paved with stones, of which some are 10 feet by 4, and by a lattice-work (made of stone), the wild animals could be conveniently viewed. The use of stone and iron, is (in most cases), based on the climate, and certainly, the solid, sturdy walls of the Romans, are the best antidote against the heat of summer. The issues and stairs give a pretty clear idea of what the theatre has been; but as the greatest portion of its walls formed also the city wall, this may explain why it possesses no especial architectural ornament.

On the west side of Salona, lie the ruins of a gigantic structure, whose use and destination, however, are hitherto unknown to Mr. Carrara and other antiquaries, who had seen them. It is a wall 580 feet long, a cyclopic work, consisting of regular, square stone slabs, each of from 8 feet to 10 feet long. It may be the foundation of some huge temple, which further research can only duly ascertain.

It is within the precincts of the Temple of

* See p. 90, in the present Number

* The present observations are taken as an abstract of the Memoir of Professor Carrara, to be laid before the meeting of Italian scientists, at Venice.

## WINDOW FROM LINLITHGOW CHURCH.



Diocletian, and quite close to the *Porta ænea*, that M. Carrara has established the Museum of Salona. The collection of domestic implements is rich and interesting. The melting of small metal pieces within the substance of glass, which was once thought to be a modern invention, is seen here to have been well known to the Romans. Many objects remind us forcibly of those preserved in the R. Museum of Naples. Of equal interest are the sculptures, amongst which the torsi of an Apollo and a *Venus victrix* are the most exquisite; other figures are of the kind to demand also here the establishment of a *camera obscena*, as there is one at Naples. As, in fine, this part of the ancient world has never been ransacked by antiquaries as were the sites of Athens, Rome, &c., the hope of Austrian antiquaries to have here something like another Pompeii, may not be altogether devoid of foundation.

We may conclude these remarks with some on *Spalatro*, derived from the latest researches on this interesting old Roman province. The general architectural aspect of this place is eminently Roman; and although it appertains to a later period, still it belongs to one where real art still flourished. Compared even with Rome, Athens, or Thebes, the sterling grandeur of the *Emperor's* times appears in all its integrity. The colonnade of Diocletian's Palace forms now the place of the cathedral. Of the rose-coloured granite columns of the peristyle not one is wanted; and to the left the Temple of Jupiter stands as intact as if just issued from the hands of the workmen. Up to the year 1829 the Temple of Jupiter was used as the cathedral of the archbishop. It was in a room adjoining the cathedral that Marc Antonio De Dominis discovered the colours of the rainbow long before Cantesius — a fact acknowledged by Newton. He subsequently came to England, where he was protected by James I. and Lord Bacon. Spalatro also will be now thoroughly examined and elucidated by the labours of Professor Carrara, to whose extensive memoir the antiquarian world may look forward with great interest.

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Timber. — A powerful cylinder, of Sir William Burnett's construction, hermetically closed, has been laid down adjoining the sawmills in Woolwich Dockyard, which will admit the largest description of timber for the purpose of having the moisture extracted, and the pores filled with chloride of zinc for preserving the wood from dry-rot.

### CURIOUS WINDOW IN LINLITHGOW CHURCH, SCOTLAND.

The accompanying engraving represents a curious window in St. Catherine's aisle, Linlithgow Church, from a sketch taken by the late Mr. G. M. Kemp, who designed the Scott monument. Mr. Kemp says, in a note to Mr. Britton, accompanying the sketch, "this is more than likely the work of Cochrane, an architect whom King James III. of Scotland created Earl of Mar, which so excited the envy and jealousy of the nobility, that they ensnared him, and hanged him over Lawden Bridge with a hair rope."*

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### A DISCOVERY IN WESTMINSTER ABBEY.

Sir,—It will no doubt interest your antiquarian readers to be informed that in making the alterations now in progress in Westminster Abbey Church, the supposed tomb of St. Edward has been discovered, at least such is the opinion of some of the abbey dignitaries. This tomb is situated exactly in the centre of the cross, it is rectangular, eight feet long,

* See Note 13 to Canto 5, in Scott's Marmion.

east and west, five feet wide, north and south, and two feet three inches deep. The bottom is formed of concrete, the sides and ends of rubbed stone, and it was originally covered with a slab six inches thick, but the covering disappeared ages ago, and the tomb has remained filled with rubbish.

Let no one, however, imagine that this is the original tomb of the Confessor. It is stated by the oldest authorities, quoted by Widmore, that St. Edward was buried beneath the high altar, that his remains were afterwards removed to a higher place, and then again to another still higher; while no doubt can possibly exist that his dust still reposes in the shrine prepared for it by King Henry the Third.

This crux will receive considerable elucidation from three facts: 1st. That the floor of the Confessor's church, as I ascertained some time ago, was much lower than the floor of the present church: 2nd. That the medieval architects most carefully preserved all consecrated remains of whatever kind: 3rd. That the present church is raised upon the debris of a former edifice, some of which are formed with fresh lime into concrete.

St. Edward was unquestionably interred near or probably beneath the relics contained in the high altar of his church, for such is usually the position of a founder's tomb, and it may be fairly inferred that the tomb just discovered was only the temporary resting-place of the bones of the Confessor, and of the relics which he had obtained in his visits to the continent.

The demolition of the Confessor's church, and the erection of the present noble edifice, were probably going on for years before divine service ceased to be celebrated at the altar of St. Peter; but when the new church had so far advanced, that the level of its floor was determined, and the destruction of the remaining portion of the old church became necessary, for the continuation of the works; it was then that the tomb in question was probably prepared as a receptacle for the bones of the saints, until their appropriate places in the new church were arranged. Nearly two hundred years after the death of the Confessor, his remains were removed by Henry the Third with extraordinary pomp, to the once magnificent shrine they now occupy. The old shrine was thus left vacant, and now, after the lapse of six centuries, it is presented to our view as the most appropriate spot that could be conceived for the mortal portion of the most illustrious men of modern times.

Now, Sir, Nelson put a stop to the wars of Europe by sea; the idea which fired his mind on rushing to battle, was "Victory, or Westminster Abbey!" but carelessness or indifference to the hero's aspirations decreed a public funeral in St. Paul's! Wellington put a stop to the wars of Europe by land—there will be no more wars—the playing at soldiers may be iniquitously continued for state purposes—but there will be no more wars, the machinist and the chemist would enter the field and mow down like grass in a few hours the finest army that ever stood before the sun, and render war an impossibility. Here, then, Sir, is my proposition; on the death of Wellington, I would inter his corpse in the vacant tomb of St. Edward, and I would translate the body of Nelson to his side in the same tomb. The sides of the mausoleum should be raised 12 inches from the floor, with slabs of glass, and top covered with two slabs of polished transparent glass six inches thick; but lest this mausoleum should be too dazzling, it might usually be concealed by a rich carpet. Thus enshrined in England's very heart of hearts, in the tomb of a saint and king, would superbly repose the ashes of those heroes who were at once the latest and the greatest benefactors of mankind.

I am, Sir, yours, &c.,

WILLIAM BARDWELL.

4, Great Queen-street, July 26.

## CLAY-BUILT WALLS.

HAVING read in two or three of your valuable papers, some questions and answers upon the plastering, &c., of clay walls; and in THE BUILDER of this day, your correspondent, "AN OLD ARCHITECT," having described the French method of building, I am induced to give your readers two methods, as adopted years ago in Suffolk and Essex. I well remember upwards of thirty years ago being employed by a very eccentric character to finish the walls of a barn, after several bricklayers who had worked upon them had refused to do so any longer, in consequence of the hardness of the work. I had to carry the walls up about ten feet in height from where they left off, and hard work indeed it was, having to stand upon the walls to raise the quoins, to bed and lay the clay lumps. These were composed of clay and chopped straw, well worked together, and dried after the Egyptian method, in the sun; the dimensions of each lump or brick was, to the best of my recollection, two feet long, one foot wide, and nine inches thick. The bed of mortar I used was about three-quarters of an inch thick. The walls when up were well protected by projecting gables and eaves, and limewashed only. The foundations on which they were laid, was of rubble work, but for cottages, barns, or any other building, I should recommend, on a proper footing, a brick foundation of the same thickness as the clay bricks intended to be laid upon it, carried up high enough to keep out rats, mice, &c. The clay walls built by me stood well on the outside without plastering; in the inside they were damaged by rats and mice. I do not consider them fit for barns, in consequence of the soft nature of the clay, but in order to prevent the plastering peeling off cottage walls, whether inside or out, I believe if a proper quantity of fine shingly stones, say through a quarter-inch diamonded sieve, be well mixed and beat up with the clay and straw, it will materially tend to harden the bricks, and as well prevent vermin so easily introducing themselves into the walls; and if they were roughed over on being taken soft from the mould, similar to a first coat of plastering on the two faces, the plastering, whether a thick coat or thin, externally or internally, would have a far better key to keep it on than by having a face of the clay only to be laid upon. The barn I have alluded to stood several years, would have stood many more, but was pulled down from the property changing owners. I have seen cottages in Essex which were built between thirty and forty years ago, of clay puddled, that is, used in a very soft state, between a case of boards. They were then plastered over, and are now standing, occupied, and in an apparently sound state. I might have added more upon the subject, but not wishing to trespass upon the columns of THE BUILDER,

I am, Sir, &c.,

A. J. GREEN, Bricklayer.

Sudbury, Suffolk, July 16th, 1847.

## THE TUBULAR BRIDGE OVER THE MENAI STRAIT.

THE interest with which this enormous undertaking (to be called the Britannia-bridge) is watched, leads us to give the following extracts from a note book, inserted in the *Manchester Examiner*:—

"If we suppose ourselves stationed in a boat in the middle of the Menai Strait, a few hundred yards distant from the new bridge on the south side, and suppose it finished, we shall see a wonder of the world of this kind; first, there is the middle pier rising out of the water founded on the Britannia rock, from which the bridge takes its name; this rock can be seen at low water; it is covered at high water. The breadth of this pier is 62 feet by 53 feet, and ¼ inch. The blocks of stone are 7 and 8 feet long, by 3 and 4 feet in breadth and deepness, and they rise stone upon stone, until the pier is 230 feet high.

At the distance of 460 feet on each side of this centre pier there rise, near to the water's edge, two other piers of the same gigantic breadth and height; while, on each side of these two piers, at the distance of 250 feet, there rise two walls. Continuing outwards, the wall on our right hand on the Carnarvon shore does not extend its ponderous bulk far back, for the land is high and bold, and the railway comes along its elevated brow, and at once lays hold of the bridge; but on our left hand, which is the Anglesea shore, the wall is the forehead and end of a mighty embankment, on which the railway is raised to the level of the bridge.

There, then, are the four spaces before us, across which, in the iron tubes, the railway is laid, viz.: two spaces on each side of the centre pier of 460 feet each (let the reader measure 460 feet on a street or on a road, and he will wonder at the vastness of this structure), and two more spaces of 250 feet respectively at each end. The tubes are eight in number, each of them 30 feet high on the exterior side, and 27 feet high in the interior; each is 14 feet wide, and they are laid in couples parallel to each other. Taking ourselves in our boat underneath the bridge, and looking up, glancing from the Carnarvon side of the strait, we see two tubes, rather, we should say, masses of iron, for they do not seem to be tubes, lying side by side from the wall already named across the space of 250 feet; they have each a hold upon the stone-work, several feet at each end, and they rest upon moveable rollers and balls made of gun-metal, the hardest known; those rollers and balls resting on beds of metal, and moving outwards or inwards as the massive tubes of iron expand with heat or contract with cold.

Next we see two others of the same height and width, viz., 30 feet high, and 14 feet wide, lying side by side across the next space of 460 feet, and resting on the masonry as the others. Thirdly, we see two more lying side by side across a space of 460 feet; and lastly, two crossing the space of 250 feet. In the whole, with the breadth of the piers and the landward buildings, the length of the bridge is *one-third of a mile*.

In height the three piers are, as already said, 230 feet, but they are 70 feet higher than the tubes; these are so massive, that their actual elevation above the water seems less than it really is; and so dead and inelegant to the eye, that it was necessary to raise the piers 70 feet above them, to give a shew of elegance to the structure. Measuring from low water mark to the bottom of the tubes, the height is 130 feet—the tubes being 30 feet on the side, and the piers 70 feet above their upper surface. As ornaments to the two walls which rise upon each shore, are four lions, two at each end of the bridge; the lions contain about 8,000 cubic feet of stone. They lie couched, and yet the height of each is 12 feet; the greatest breadth across the body is 9 feet; the length 25 feet; the breadth of each paw 2 feet 4 inches. As we are now so high as to see the lions in detail, we may look into the interior of the iron tubes. They are made of plates of iron, of various thicknesses, rivetted together; the iron increases in thickness as we proceed towards the centre. We now see that the roofs of the tubes are formed of cells, and also the floors; those cells are formed of iron plates set on edge, the cells of the roof being within a fraction of 1 foot 9 inches square; and those of the floor being 1 foot 9 inches wide, and 2 feet 3 inches deep—the rails on which the trains run are laid on those cells of the floor. The flat bottom, the two upright sides, and the flat roof of each tube are formed of plates, the thinnest of which is ¼ of an inch, and the thickest 12-16ths of an inch; but the number of them laid together, and the internal joinings, cannot be yet explained. The weight of each of the four long tubes will be about 1,300 tons; the weight of each of the four short ones about 600 tons—in the whole, there will be at least 7,600 tons of iron used. No contracting estimate of the expense of the iron part of the work has been made, as the work may cost more or less, according to circumstances. The masonry was contracted for by B. J. Nowell and Co., at 130,000*l*.; but, from alterations in the plans, it will cost (suppose no further alterations be made), 200,000*l*. They expect to finish the masonry by August, 1848,—it will contain one million and a half cubic feet of stone.

When I was there in May, fifty vessels of 60 or 70 tons each, were employed in conveying the stones to the works; the red sandstone, of which the inside courses are built, from Runcorn; the blue limestone, of which the outside courses are built, from the sea shores of Anglesea. The quarries on the Anglesea shores, opened for this work, extended over 20 miles. In the whole, there were 1,300 men employed, 600 of them at the bridge, the fortnightly wages of the latter amounted to 1,300*l*.; 3,000 cubic feet of timber had been used at that time for stages and scaffolding. Two steam-engines were at work on each shore, and a third was being erected on the Britannia rock, in the centre of the Strait, to hoist

the stones, grind mortar, saw timber, and perform other heavy work. On each shore there was a lime-kiln, the chips of the limestone falling from the irons of the hewers being burned into lime, and the chips of the red sandstone being ground to powder to make mortar with the lime. There were seventeen gauntries, with travelling crabs on each, for moving the blocks of stone; railways diverged and converged on which trucks ran along, and every heavy weight in the building of this wonderful structure was moved as if men were gods, who only willed that huge blocks should take motion and they took it.

The building of the iron tubes had not then begun, but the stages upon which they are to be built were erected, extending along the Carnarvon shore about a quarter of a mile. The plates of iron are in preparation at different places in England and Scotland, and they will be conveyed separately to Wales, and put together on these stages.

## NOTES IN THE PROVINCES.

The charges and expenses paid by her Majesty's Commissioners in the execution of the Acts of Parliament for building and promoting the building of additional churches in populous parishes from 25th March 1846, to 25th March 1847, (ordered by the late House of Commons to be printed a few days previous to its dissolution,) amounted to 3,773*l.* The secretary receives a salary of 700*l.* and the surveyor a similar stipend.——The carpenters at work on the Ipswich Museum, have proceeded to roof the buildings; the completion is expected about the end of September.——A subscription movement for the restoration of the South Chapel of St. Martin's church, Leicester, is making progress; extensive repairs are requisite both there and in other parts of the church; those of the chancel are now proceeding. A lightning conductor of the patent wire rope description manufactured by Messrs. Andrew Smith and Co., has been attached to the spire.——The chancel of Heather church, which was to be reopened on 27th inst., has been entirely rebuilt, and a north aisle added. The old apology for a steeple has been taken down, and replaced by a tower, with large ornamental pinnacles, which, from the peculiar whiteness of the Normanton stone, forms a striking object for some distance. The church consists of nave, with clerestory windows, north and south aisles, and spacious chancel. The aisles are fitted up with low pews, and the nave with open free sittings. Both the chancel roof and the nave are open to the rafters, which are stained a dark colour.——The works towards the rebuilding the parish church of Cranoe are now rapidly progressing, under Messrs. Thompson and Ruddle, of Peterborough, builders, whose contract amounts to 1,185*l.* The foundation-stone was to be laid some time this week, by the Earl of Cardigan. The funds, according to the *Leicester Journal*, are still very deficient.——The amount subscribed for public baths, &c. at Birmingham, according to the *Journal*, was about 6,000*l.* The buildings will be commenced as soon as the land purchased by the committee is transferred to the town council. The money will then be returned in full to the subscribers.——The governors of the new Free Grammar School to be erected at Walsall, in place of the less commodious one purchased by the South Staffordshire Railway Company, having selected six architects to submit competition drawings, lately decided on the plans of Mr. Edward Adams, as meriting the first premium offered, and those of Mr. Frederick Emerson, of Birmingham, the second.——The first stone of the rebuilding of the parish church of Llanwnda, near Carnarvon, was laid on 21st inst. The architect is Mr. G. Alexander, whose design for it is cruciform, with a circular chancel, a western bell turret, and accommodation for about 300 persons. The churchyard is also to be enlarged. The works have been let to Mr. W. G. Thomas, and Mr. L. Williams, both of Carnarvon.——On Friday last, the foundation-stone of large and important ironworks was laid at Saltney, near Chester. The structure is being erected by Messrs. Henry Wood and Co. Mrs. Wood laid the stone under the auspices of Mr. Welch, the architect.——A new machine for watering streets is in operation at Birkenhead. The novelty consists in its watering the whole width of the street at once—a recommendation when the machine has exclusive possession of the road.——The north area of the Custom-house, Liverpool, has been fixed upon as the site for the statue of Huskisson, which has been presented to the town by his widow.——The Runcorn docks were last week visited by a Russian trader of 500 tons (heavy goods) burthen, with a cargo of chump wood from Russia, to be prepared, by the newly-invented cylinders, for railway sleepers. The quantity of pig iron thickly deposited on the dock landings is said to be computed at not less than 5,000 tons, besides a great number of iron rails.——The first stone of the Church of England schools at Sudbury was laid the week before last.——The Leeds Water Works Bill received the royal assent, after a severe struggle. Important results, according to the *Intelligencer*, are anticipated from the great additional resources which Parliament has thus placed at the disposal of the company.——The contract for excavating the principal dock at Sunderland, building the sea wall, and completing the large basin, comprising an area of twenty-two acres of water, was let a few days ago to Messrs. Craven and Son, the contractors, from Staffordshire, for the sum of 135,000*l.* This undertaking is expected to be finished in the summer of 1849.——The Newcastle and Gateshead Sanatory Association appear to be actively at work in a good cause. They are making strenuous endeavours to enlist the working classes in the furtherance of that cause, and have been petitioning the authorities of both towns for the enforcement of the bye-laws of the Improvement Acts for the removal of nuisances, one of which in particular, a source of numerous cases of fever, they have themselves pointed out. The sentiments of the new candidates for the parliamentary suffrages on the subject of sanatory reform, are also to be elicited; and the association is endeavouring to obtain the free use to the poor of the warm water now running to waste from the condensers of steam engines, and to suggest the best means of abating the smoke nuisance.——A great sanatory fact is at present being exemplified in Glasgow. While fever rages around the prisons, these, containing about 600 inmates, have not one fever patient. This, as a contemporary remarks, is at once a reward to the friends of prison discipline, and an encouragement to those of sanatory advancement.——The profits of cleanliness are exemplified by the facts, that in Aberdeen the streets are swept every day, at an annual cost of 1,400*l.*, and the refuse brings in 2,000*l.* a year; and, that in Perth, where it costs 1,300*l.* per annum, it sells for 1,730*l.*

## THE PAINTINGS IN ETON COLLEGE CHAPEL.

The following particulars relative to the mural paintings recently discovered in Eton College Chapel, from one who has been employed in delineating them from the period when they were first restored to light, may be relied on.

A few fragments only were at first rendered visible, in taking down some of the modern tablets; but on removing the wainscot of Sir Christopher Wren, to make way for some handsome carved stalls, in accordance with the restoration now in progress, a complete series of paintings were made manifest, in a much better state of preservation than is usually found, and in a style of art very superior to any others of their kind hitherto seen in this country, at least of so early a date as that to which they bear evidence, viz., the middle of the fifteenth century, or from the time of the completion of the chapel, in the reign of Henry VI., to that of Richard III. They are not "frescoes," being painted in distemper on the bare walls, without plaster of any kind, though there are indications in many parts where the colour has been rubbed, of a sort of red priming underneath, used partially, apparently to keep the moisture from damaging them by penetrating the joints of the stonework.

The series commence from the western arch as you enter the main body of the chapel from the Ante-Chapel. They consist of two rows of subjects, at about 6 feet above the level of the floor, and were continued originally, no doubt, up to the lower line of the string-course under the side windows; but the upper subjects in general have had the superior parts completely destroyed. Enough, however, remains to shew that there have been originally sixteen complete pictures on each side, eight above and eight below, in honour of the Virgin Mary, to whom the chapel was dedicated; the subjects taken from the "Golden Legend of the Saints," and a work by Vincentius (a writer of the fourteenth century), entitled "Speculum Historiale," as cited in the black letter titular inscriptions under each. They are divided laterally into compartments by painted representations of statues, in canopied niches; the lower row representing female saints; those of the upper row, like the pictures themselves, are very much obliterated. Branching from the niches horizontally, is a species of frame-work, dividing the upper and lower compartments, and bearing the black letter inscriptions before mentioned; the whole forming an interesting example of the arrangement and execution of mural paintings of the fifteenth century, and of the ideas, as well as costume, of our ancestors of that period.

R. H. Essex.

13, York Buildings, New Road.

## DECORATIVE-ART SOCIETY.

### HERALDRY.

At a recent meeting of this society, a paper on heraldry was read by Mr. Partridge. Heraldry was explained to be an organization of emblems and devices which must have existed from the earliest establishment of order and civilization among the human race; and various passages, containing records of and allusions to its symbols were quoted from Biblical History, shewing that it had been the medium adopted for distinguishing friends from foes, nation from nation, and tribes and families from each other. The reader also quoted passages from Homer, Hesiod, and others, describing the shields of their heroes, adding, that the shields of Achilles, Æneas, and Hercules, had, in his opinion, been described with poetical license; but, nevertheless, supplied evidence of the custom of ornamenting shields in the richest manner of the arts of that period. He likewise considered as fabulous, the descriptions given by the Jewish Rabbi of the standards pitched by the tribes of Israel. Some references to the subject during the Roman era were followed by observations upon the great change made in the institutions of this country by William the Norman, who modelled his court as far as practicable after that of Normandy, and who therefore introduced three very remarkable officers, whose duties were strictly heraldic, viz., the great constable, whose authority in matters of war and chivalry, both in France and England during the Norman and Plantagenet reigns, was little less than that of the monarch;—the great marshal was an important dignitary, whose influence was at its zenith at the time of the Conquest, and the office still remains through all the changes of legislation and government, one of great power and influence;—the third office, being perhaps the most singular of any adopted by the Conqueror, was that of champion. Mr. Partridge traced the hereditary descent of the championship from Marmyon, who received his appointment, with the manor of Scrivelsby, from William, and quoted verses from an ancient poem, in which the changes in the families of Marmyon, Ludlow, to Dymoke, the present champion, are set forth. He then referred to Camden Guillim, Sir Henry Spelman, and other eminent authorities, shewing, that although many of our noble families can prove their descent from before the time of the Crusade, yet their arms or heraldic bearings had not then become hereditary. After the crusades, it was accounted honourable to display those signs which had been borne in the holy wars, and hence the descendants treasured them as their hereditary arms; and the opinion of Lord Chief Justice Coke was quoted, shewing that he considered this one of the strongest proofs of a noble and worthy origin.

Mr. Partridge then recited the "Roll of Carlaverock, a record in old Norman French, of the names and arms of the leaders who served under King Edward I. at the siege of Carlaverock Castle, Scotland, in 1300; and

explained that at that time, heraldry was embodied as a science as nearly as possible to its form at the present day. Tournaments were alluded to as an important means in sustaining the dignified bearing and accurate transmissions of armorial bearings down to the time of Elizabeth, when the establishments of the College of Heraldry, and the visitation made under its direction, created a broad distinctive line between the ancient families and those who have risen to greatness by the increase of civilization and wealth since that period. He next drew attention to those arms and mottoes which, from their relation to names, have been ordinarily considered and termed "punning-arms," but which, he said, had been practised in remote antiquity, when names had a symbolical source and meaning. He mentioned several names derived from important official duties, such as Usher, Butler, Stewart, &c., in which cases the previous family name had been disused, as also that of Godolphin, in accordance with the signification of which a white eagle is adopted as the crest by that family; and this was followed by notices of others of a similar nature. The reader then proceeded to shew, that the great poets of modern Europe have fully appreciated the value of heraldric distinctions, and said, that in the descriptions of their heroes they are usually as heraldically correct as they are poetically beautiful; and referred to, and quoted parts from, Tasso's "Jerusalem," Shakspeare, "Wars of the Roses," &c. Important allusions in many family mottoes, &c., were illustrated, and he then brought the subject to a general summary by maintaining, that the detractors of heraldric science are bound to admit one of these two things, either to prove that all the honours and distinctions which the sovereign of this or any European state can bestow on eminent men are trash, or else to admit that heraldry is one of the most important institutions of civilized Europe, as being the recognised medium by which the sovereign, the fountain of honour, bestows those honours on men who have deserved well of their country.

## RAILWAY JOTTINGS.

THE *Liverpool Albion*, amongst other suggestions embodied in an article similar to our recent one on railway accidents and their prevention, describes a plan for breaks, originated by Mr. D. Crawford, civil engineer, Birmingham. Mr. Crawford proposes to apply to any number of carriages breaks in connection, and set them altogether in motion by a mechanical force on the last carriage in the train. The engine-driver or the guard may in a moment work the same, as they see occasion. By means of springs, like buffer-springs, the retarding force is distributed equally on every wheel of every carriage. The breaks can also be partly used.——The *Chronicle* describes a somewhat similar invention, by Mr. Davies, coach builder in Wimpole-street, Cavendish-square, for the prevention of collisions, which has been already tested, it is said with success, on the London and North Western line. On this plan the four wheels of each carriage are firmly grasped by breaks acting at opposite parts of the circumference, so that they are really suspended within them, and the chance of damage to the action is obviated by each break destroying the strong vibration which the adjacent one would otherwise generate. The train, therefore, glides, to all intents and purposes a heavy sledge, the great weight of which occasions such an enormous reduction in the velocity, as to bring the momentum of the train within limits, should the time for preparation become greatly shortened, which might be reduced to the action of the buffers.——We have also to record another of the thousand and one suggestions of practical ingenuity for the safety of the public. For the prevention of the tendency of carriages in a train to 'double up' in collision, a correspondent of our own, 'A Young Surveyor,' proposes that a triangular, or dovetailed rod of strong oak, be made to slip in and out of a correspondent orifice in a triangular box, made also strong with iron straps, and even also with double iron dovetails, set into each of its three corners. That the triangular oaken rod or bar be affixed to the front of each carriage, while the correspondent box, into which it is to slip, is affixed to the rear of each other carriage, both being placed in such a way, as our correspondent is willing more particularly to detail, that, while the buffers are being brought into action during collision, or other resistance to the onward impetus of a train, the one will slip into the other, and in the conjunction all tendency of the carriages to jump or double up is thus to be effectually prevented.——So much for safety and facility in stopping trains. We have now to record a new invention or rather discovery for facility and safety in the motion of trains—a sort of grease or rather substitute for grease, invented, as might be anticipated, by one of those go-a-head Americans, who would grease the lightning itself if they could. The material in question consists of water and an anti-attritious composition, which will save nearly 90 per cent. in the cost of oil or grease, besides rendering the heating of axles impossible. The invention is patented, and has been tried, it appears, on an American line, with a train running at the rate of 20 to 30 miles an hour, with axles 'quite cool.'——Meantime, however, the feeling of insecurity which has been generated in the public mind, by the frequency of accidents and the inability of directors—as Mr. Hudson has it—to discover or invent any means for their prevention, has been so unequivocally manifested, that what *Punch* not long since jocularly recommended, has been in earnest set agoing,—namely, a 'Railway Casualty Compensation Company,' who, on prepayment of certain premiums, are to give so much (200*l.*) for a broken limb, so much (500*l.* to 3,000*l.*) for a broken back or 'fatal injury,' and so on: premiums also to be taken to ensure compensation for life, or till the 'silver cord' *be* broken.——The journey from London to Southampton,—78 miles,—is now performed on the South-Western daily, in 105 minutes, so that the average rate of speed, including stoppages, is a mile in 1·3 minutes.——The public opening of what is held to be the most difficult portion of one of the most difficult railways in the kingdom, viz., the 8¾ miles from Newton to Totnes, on the South Devon line, took place on Tuesday week. There is scarcely a furlong of straight road on the 8¾ miles between Newton and Totness. The section is, in fact, one series of curves.——Two bridges, connected with the Bodmin and Wadebridge line, at the junction with the Cragley, were swept away by a flood during a thunder storm on Friday week. It surely would be well to *calculate* on thunder storms and consequent floods in a climate such as ours; but unfortunately the *strength* of structures is much more frequently calculated according to the resistance of the screw applied by competition, and the directorial desire for cheap and hasty construction, than by any other considerations.——An additional test of 100 tons, says the *Gateshead Observer*, was lately added to the load previously sustained by the river arch now completed at the high level bridge across the Tyne. Not the slightest strain however was perceptible, it is said, at the junctions of the several segments composing the 'bow and string' cast-iron ribs, where any failure would most likely shew itself. Each of the six arches, of 125 feet span, to constitute this bridge, being self-supported, will require to be tested separately. The string which subtends the base of the bow or cast-iron ribs composing the arch, and acts internally, instead of external abutments, consists of a series of wrought-iron plates, linked together in the form of chains. The whole is to stand on stone piers, and provision will have to be made, of course, for any change that may take place in the iron from change of temperature.——On the Stockton and Darlington line, weekly tickets are granted, for 12s. each, enabling the holder to travel to and fro, between Darlington and Redcar, as often as required, instead of a payment of 6s. each trip, to and fro. As remarked by the *Gateshead Observer*, the directors deserve great credit and good dividends for their liberality. They also deserve to be imitated as exemplary patterns by other directors.——The foundation-stone of the bridge over the Nith, near Dumfries, on the Carlisle and Glasgow line, was laid on Friday week with Masonic honours and high holiday proceedings.——The permanent way of the Caledonian line is laid in many important parts, and the greatest activity continues to prevail along the whole line, much of which, it is expected, will be opened by the middle of October, and the greater portion in course of the present year. ——The London morning papers now travel to Edinburgh on the same day, and the Edinburgh papers, containing their news, return to Newcastle on the following day! The age of miracles has indeed returned. An honest 'philosopher' who would have prognosticated the advent of such a miracle five-and-twenty years ago would have run the risk of being 'precognosced' as a lunatic, if not incarcerated as such for life, or at least till the advent of our own more enlightened era. Doubtless we have equally honest and truthful, and equally discredited 'visionaries,' labouring, at this moment, to enlighten our own remaining darkness.——The Emperor of all the Russias has just adopted the project of a vast railway, which is to join his three capitals, Moscow, St. Petersburgh, and Warsaw. The terminus is to be the fortress of Warsaw. The precise plan is not yet decided on.

## TO CALCULATE THE TAPER OF SPIRES.

SIR,—Will you be so kind as to shew me a simple way to calculate the "taper," per foot, of pinnacles and spires, when the diameter of the base, the height, and the diameter of the top, are given?

I am, Sir, &c.,

J. H. D.

Say for example, base of spire 24 ft. 6 in. diameter; apex, 10 in.; height, 122 ft. 6 in.

*To calculate the taper per foot.*—Say, as the whole height is to the whole taper, so is one foot of height to the quantity of taper per foot.

The whole taper is equal to half the difference between the diameters of the base and top of the spire; that is

(24 ft. 6 in.—0 ft. 10 in.) ÷ 2 = 11 ft. 10 in. the whole taper; then it is,—

| | |
|---|---|
| Whole height .. 122 ft. 6 in. | = 1470 in. |
| Whole taper .. 11 ft. 10 in. | = 142 in. |
| One foot in height | = 12 in. |

Hence we have 1470 : 142 :: 12 : 1·159 inch, the taper for each foot in height.

## THE IRON TRADE.

NOTWITHSTANDING the assurance of the iron masters, or their authorities of the press, that no alteration of previous prices for the *worse*—as they have it—was sustained at the late quarterly meetings, it now appears that "in consequence of a number of the iron masters of Lanarkshire persisting in their resolution of reducing the wages of their workmen at the rate of 1s. per day, *because of a fall in the price of iron*," the operatives in some of the works have ceased working, and are now being supported from the funds of their association, which, we believe, says a Glasgow paper, is a strong and well-organised union. The men, it is said, are willing to submit to a slight reduction, say 3d. or 4d. a day, but seem resolved not to work on the terms proposed by the masters. The effect is, that furnaces are blown out in many of the mining districts—the men are at present going about idle, and the masters are taking measures for ejecting them out of their houses.——At the Wolverhampton police-office, on one of these late melting days of heat, five puddlers were brought up for absenting themselves from work without permission, whereby a loss to their employer, Mr. Baldwin, of 50*l.* had been incurred. The men pleaded "the excessive heat of the weather, which rendered it quite impossible for them to work." Mr. Barker, the worthy magistrate of police told them they had no right to suspend the work, which they had thus declared it to be impossible to go on with, unless the sanction of their employers had been obtained! Necessity has not seldom been transmuted into a virtue, but Mr. Barker has in this case the merit—not an original one certainly—of converting it into a vice. The five unfortunate puddlers, thus turned out of the frying-pan into the fire, were accordingly found guilty of not doing what it was impossible to do, and they were accordingly committed to hard labour for a month!——The heat seems to have somewhat puddled the brain of another unfortunate puddler at Wednesbury about the

same time; for he too was brought up at the 'public office,' on the somewhat odd charge of endeavouring to improve his employer's 'pig-iron,' or give to it some useful quality in which he probably thought it deficient, by throwing into a 'donkey' of it, a quantity of good tough bar-iron, whereby a loss of about 10*l.* *might have been* sustained by his employer in purse, whatever excellence or celebrity it might have given to his 'donkey' of 'pig.' The puddler, Elijah Green, was only summoned for summary punishment, but "*as* it came out that the bar-iron used was the property of Mr. Barker (the 'donkey' proprietor in this case, rather oddly, and not the Barker of the police bench in the other case), the magistrates considered the offence of a felonious character," and committed the prisoner for trial at the sessions. Are we to presume, then, that if the bar-iron had belonged to any one else but the proprietor of the pig itself, thus benefited in quality, the offence would *not* have been of a felonious character? Or was it supposed, till the truth 'came out,' that the puddler was green enough, or rich enough, or generous enough, —but why in such a case *guilty* enough,—to have put ten pounds' worth of good bar-iron, purchased by himself, into his master's pig-donkey?

## Correspondence.

THE NEW CROWN PIECE.

SIR,—With all due respect for Mr. Britton and the metre, if not the matter of his quotation from the poet Crabbe, I would submit the former is not altogether happy in his onslaught on the dead languages, which appears in your paper of Saturday last.

Assuredly something more than "custom or common-place prejudice" has conspired to render the Latin language eligible, even in these days of "the diffusion of knowledge," for architectural inscriptions, coins, and other such historical records. It may not be the "vernacular idiom of the country," but is is (what our vernacular can never hope to be) the language, more or less, of the learned in all countries; and they are, after all, the most likely people to care for the meaning of an inscription on a coin.

To one so conversant with English antiquities as your learned correspondent, the language of Bede, of Chaucer, or Spenser, may be an idiom patent as ours of 1847; but to my humble self, and "the million," whom we hear so much about, it is indeed a dead and a buried language; and I cannot but think that were the inscription on Mr. Wyon's coin "done into English," the chance of its going *far* down to posterity translateable is somewhat problematical.

Flatly opposite Mr. Britton's letter, you have incontinently placed your account of the laying of the foundation-stone of Miss Burdett Coutts's new church. Haply, Sir, when our "vernacular" shall be, as Bede's and Chaucer's almost already is, forgotten, some future Britton shall dig up the foundations of Mr. Ferrey's church, decipher and translate this odious Latin inscription, and publish to "the million" of that day, the piety of the benevolent foundress.—I am, Sir, &c,

WILLIAM YOUNG.

London, July 26, 1847.

THE BRITISH MUSEUM AND NATIONAL GALLERY, &c.—A return moved for by Mr. Hume, shows that 825,901 persons visited the British Museum in 1846, viz., 750,601 to the general collection, 66,784 to the reading-rooms, 4,126 to the sculpture galleries, and 4,390 to the print-rooms. The number of visiters to the National Gallery in the year 1846 amounted to 608, 40. The pictures purchased for the National Gallery since August 6, 1846, are three in number; viz., 1, Philip IV. of Spain hunting the wild boar, by Velasquez, from Lord Cowley's collection, for 2,200*l.*; 2, Annibale Caracci's Temptation of Anthony, from the Earl of Dartmouth's collection, for 787*l.* 10s.; and 3, Raffaelle's Vision of a Knight, from the collection of the Rev. T. Egerton, heir to Lady Sykes, for 1,050*l.* The number of visiters to the armouries at the Tower of London in 1846 amounted to 52,287 only.

## Miscellanea.

WATER COMPANIES.—Sir: What I complain of water companies is, they have no printed regulations for us to go by, and we are at all times at a loss to know what to insert in specifications in respect of this work; and is the supply of half an hour each day the water is turned on, three days a week, sufficient? I think if the directors were to read the lectures of Dr. Conolly, and the remarks contained in the *London Journal* on the public health, which says,—"to preserve health and avoid typhus fever, use as much water in the house as you possibly can," &c., and in another article it says "keep the skin well washed," &c., they would then perhaps alter their opinions and system. I think there appears something wanting on the part of the West Middlesex, as they are not much above the force of the artesian well, and there is a wide difference between their ferules or unions and those of the New River Company; one has it to the full scope of the pipe, and the other contends that the ferules shall be one-fourth less to prevent friction, and be at the same time sufficiently large. ARCHI.

FOREIGN.—Three pashas have put down their names as honorary members of the Mechanics' Institution recently established at Constantinople.——Mehemet Ali has refused to allow the European population of Alexandria to erect an equestrian statue as a tribute of respect to him, but a more useful monument in the form of public chambers for an exchange, theatre, and club-house, has been countenanced. The façades are to be ornamented with bas-reliefs in marble, of the barrage of the Nile, and the emblems of agriculture and commerce, intermingled with military trophies. A marble bust of the viceroy, and a marble tablet of the founders' names, are also to be erected. ——The municipal council of Copenhagen has resolved to establish baths for the use of the poor, on the model of those lately constructed in England.——A cargo of 20,000 Dutch bricks has been imported at Liverpool for home consumption.——A quantity of granite is also said to have arrived from China!

LIABILITY OF RAILWAY CONTRACTORS.—In the County Court at Newcastle on Tuesday week, a Mr. Fairbairn complained, by action, that whilst some workmen engaged by Messrs. Rush and Lawton, contractors, in the construction of the high level bridge there, were pulling down an adjoining house, they knocked off a part of the plaintiff's roof. That shortly afterwards, on said roof, snow had thawed into water, and the water had made plaintiff's house damp. That the damp thus produced had made plaintiff ill, and that during his illness he was obliged to employ a person to attend to his business, and also a medical man to attend to himself. That thereby he, the plaintiff, had sustained damages to the amount of 10*l.* 4s. 1½d., and was entitled to be reimbursed for these by the defendants. In defence against these successive results of a series of misfortunes comparable only perhaps to those which occurred in the celebrated house which Jack built, Mr. Brewis contended that under the Railway Clauses Consolidation Act, the action should have been brought against the railway company. His honour, however, the judge, thought otherwise; and the jury returned a verdict for the plaintiff to the full amount.

WESTMINSTER HALL.—The price given for Mr. Cross's picture of "Richard Cœur de Lion" is, we are informed, six hundred guineas,—not five hundred, as we stated last week; and that paid for Mr. Pickersgill's "Burial of Harold" is four hundred guineas, instead of five. These respective prices are so adjusted as to equalise the sum finally obtained by the respective artists for their several pictures; making it in each case nine hundred guineas, or pounds.—*Athenæum*. For the "Christ healing the Sick in the Temple"—a far inferior picture to Mr. Cross's "King Richard"—the governors of the British Institution gave three hundred guineas. It is now in the National Gallery, and, what is more, undeservedly there. But Mr. Cross must not think that he has already done enough. West died as full of confidence as years, and yet where is he now? Soane died thinking his treasury secure, and Wilkins his National Gallery; yet Barry has destroyed the one, and the trustees of the National Gallery have pretty well determined the fate of the other.—*Daily News*.

PROJECTED WORKS, &c.—Tenders have been called for by advertisment for the erection of a hospital and casual wards at the Bridgwater Union Workhouse; the enlargement by erection of new buildings, &c., of a pauper lunatic asylum, near Oxford; the taking down and rebuilding of a farm-house near Chelmsford; the formation of a sewer of 444 yards in length at Cambridge; the supply of 1,000 yards of good road materials at Bethnal-green; of 20 to 50 tons of fire bar-iron, a quantity of S.C. Staffordshire iron in bars, rods, and sheets, and of zinc in ingots and sheets, also a supply of gas fittings, and of glass in various forms, all for the London and South Coast railway; for a supply of 50,000 memel or oak sleepers for the Leeds and Bradford, also for the execution of a goods shed 40 feet by 28 feet at the Kirkstall station of same line; and for the execution of the whole works on 8¼ miles of the Glasgow, Airdrie, and Monklands junction, in one or two contracts.

SMITHFIELD MARKET.—We understand that the plan for improving Smithfield, which appeared in our pages a few weeks ago, is under the consideration of the Common Council. The author of it, there is no objection to stating, is Sir Archibald Duff, of Elgin.

### TO CORRESPONDENTS.

"*Cardiff County Hall.*"—Two correspondents complain that they have not yet heard the result of the competition. A third objects to a correspondent's letter on this subject last week, but we have not room for it.

"*County Surveyor of Sewers*"—We shall not be sparing of the topics mentioned by our correspondent: they are all fairly within our province; most of them indeed have been occasionally treated of.

"*Sir H. D*"—Is the evidence obtainable?

"*P. Z.*"—There is no "substantial substitute." If the cistern is not already constructed, one of slate will be found cheaper, as it needs no lining.

"*P.*"—Write to the agent.

"*A Builder*"—The asphalte felt may not be used for external covering within the limits of the Buildings Act.

"*H. B.*"—It would be in most cases very inconvenient to see all the parties who reply to advertisements. We should advise clerks of works to send copies of testimonials, and not the originals.

*Received*.—"A. Z.," "F. M.," "Mr. R.," "G. M.," "T. H.," "A. F.," "C. R. C."

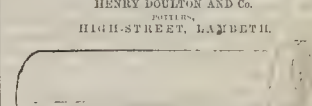
"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


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PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 17, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster, to be laid at the manufactory, 73, Princes-street, Lambeth. A stock of elbows, straights, and various shapes always on hand.

TUBULAR DRAINS IN STONE WARE, Manufactured by HENRY DOULTON AND Co. SOUTHEY, HIGH-STREET, LAMBETH.



The only Efficient Mode of Draining is by Tubular Drains; from their form they give every facility for a perfectly free passage. The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are now specified by the Metropolitan Commissioners of Sewers for the Metropolitan Districts.

LONDON and PROVINCIAL JOINT STOCK LIFE INSURANCE COMPANY.—The Directors invite the Public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and striking advantages offered by this office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE-FOURTHS of PROFITS divided. For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No. 28, Nicholas-lane, Lombard-street.

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Parties assuring within six months from their last birthday are allowed a diminution of half a year in the premium charged; and premiums may be made payable half-yearly or quarterly.

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The Tables, calculated from the National Returns, are especially favourable to young and middle-aged lives.

Assurances may be effected on an ascending scale, at a very reduced rate for the first seven years. Annuities granted.

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The usual commission allowed.

Office hours between Ten and Four. Communications to be addressed to the Secretary.

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**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public that I have now completed a NEW ENGINE, and am now in the facilities with which I can execute orders. I have also a large assortment of ornamental Glass, and can supply it at ONE SHILLING PER FOOT SUPERFICIAL. Sheets and Squares cut to any size. Large quantities and patterns from SIX INCHES PER FOOT RUN. Variety of the cheapest patterns always in stock. Embossing and Painting in the most moderate terms.—CHARLES LONG, No. 1, Regent's Bazaar, Portman-square, Cavendish-square.

**THOS. MILLINGTON, 87, Bishopsgate-street Without,** has a large Stock of Crown Glass on hand of the following sizes: 10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Wood or Glass

**FOREIGN WINDOW GLASS, superior** to English, 16 ounces to the foot, suitable for general purposes, in cases of 300 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 3d. per foot. Not less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS, equal to the Ancient.**

| | s. | d. |
|---|---|---|
| Ruby in Sheets, a splendid colour, per foot | 2 | 3d. |
| Green ..... | 1 | 3 |
| Blue ..... | 1 | 0 |
| Purple ..... | 1 | 0 |

Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**PLATE GLASS.**—Architects, Builders, and the Trade generally, are solicited to inspect the quality of PLATE GLASS manufactured by the UNION PLATE GLASS COMPANY.

N.B. Rough Plate supplied on fourth, three-eighths, one-half, and three-quarter-inch thick.—Warehouse, 99, Hatton-garden, Holborn.

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**EDWARDS and PELL, 15, Southampton-street,** Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8d. per foot run. Arabesque and Diaper patterns, still lifes, to suit the patterns with which they work, and for painting in oil. EDWARDS and Lead in Ventilators, on the most approved principle. PELL, the entire business will be carried on by them as heretofore, and three executed.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally that he is prepared to contract for the supply of Sheet Glass, cut to sizes, of the best quality, and at the lowest prices. Having a large stock on consignment at his Warehouse, he begs the favour of an inspection; he has also just received a few cases of very fine Flatted Glass, suitable for Shop-fronts.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the Thames Plate Glass Company, and St. Quintin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly directed to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superb purity of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for prices, orders, and all further particulars to be addressed to ALFRED GOSLETT, Agent, as above.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen Tables,** at the following low prices, for ready money:—

| | £. s. d. | | £. s. d. |
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| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ..... 4 4 0 | Squares of Small Crown Glass, at 2d. 1½d., 2d. and 2½d. per foot. | |
| | Fourths ..... 3 10 0 | | |
| | C.C. ..... 2 8 0 | | |
| | C.C.C. ..... 2 0 0 | | |

SHEET GLASS of all descriptions in quantity for Window Lead, Oil, Tarnish Colours, and Varnishes, at WILLIAM FREDERICK FLINTOFF'S Window Glass, Lead, Oil, and Colour Warehouse, 28, West Street, Finsbury, London.

WINDOW GLASS.

**JAMES PHILLIPS and Co., 116, Bishopsgate-street,** Without, beg to call the attention of the Trade to their reduced prices of Crown and Sheet Glass for cash only.

| CROWN GLASS. | CROWN SQUARES. |
|---|---|
| Best ..... 4 by 3 and 4½ by 3½ ... 11d. 2½ ft. | |
| Seconds ..... 3 ... 3 ... 9½ ... 3 ... 9½ ... 2½ ... 11 ... " | |
| Thirds ... 18 ... " ... 4 ... 2 ... " | |
| Fourths ... 18 ... " ... 4 ... 2 ... " | |
| Cs ... 18 ... " ... 4 ... 2 ... " | |
| Cs ..... 18 ... " ... 9 .. 7 .. 10 .. 8 .. 2½ ... " | |
| | Quarries 10 ..... 2½ " |
| | Squares cut to order, 3d. per foot. |

SHEET GLASS in Cases ... BEST HORTICULTURAL GLASS.

For Hothouses, Conservatories, &c., in sizes up to 40 in. long.

GLASS TILES AND SLATES.

| | Per 21 | Per 100 | Per 1000 | |
|---|---|---|---|---|
| Tiles, ... | 10d. | 1s. 6d. | 12s. 6d. | each. |
| Slates, ... | 10d. | 1s. 6d. | 12s. 6d. | " |

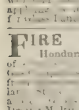
Estimates forwarded for Glazing.

116, BISHOPSGATE-STREET, WITHOUT.

**HERRING'S PATENT SAFETY** WIRE SPRINGS, are strongly recommended by the Profession to builders and the public; it will positively add 5 to 10 per cent. to the value of property, as these springs never require repair, and are guaranteed for seven years against all accidents and breakages. It is the cheapest and most perfect system of ventilation and sunblind; all simple, cheap, and effective.—Apply for licenses and to the Patentees, HERRING and Co., Patent Steam Bed Feather Factory, 32, Bankside, Southwark.

CHAS. WM. WATERLOW,

MANUFACTURER





of Sashes, &c., Parsons and Joiner, 6, Parliament-street, Finsbury-square.—Well-seasoned Deals in large or small quantities at lowest prices.—Upwards of 400 Patterns and a large variety of Sashes always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of the Trade.

DRUCE'S, No. 2 WHARF late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the neighbourhood of Chelsea, Pimlico, Knightsbridge, &c., will find it to their advantage to apply at the Counting-house of Druce's Wharf, as above. A wagon, horse and truck for hire. N.B. Depôt for Fire Bricks.

**FIRE BRICKS.—WARD & HART,** Hondurus Wharf, Bankside, Manufacturers and Exporters of Fire Bricks, Firing Tiles, Clay, &c. Builders, Contractors, and Shipowners supplied on the most reasonable terms. Patterns at a short notice. Patent Portland Cement, Roman Tiles, Lime, Sand, Gravel, Bricks, and Tiles, of every description.

**GREASE! GREASE! GREASE!**—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples and Testimonials to J. T. FITT, Swan Mead, Bermondsey New-road, London.

TO BUILDERS, PAINTERS, AND OTHERS

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only, 70, York Road, Lambeth; and at 28, Cross Street, Blackfriars Road.

(A) TO RAILWAY CONTRACTORS AND BUILDERS.

HENRY WILLIAMS Heraldic Painter and Writer, 12, Great Russell-street, Bloomsbury, London, begs to inform Railway Contractors and others that he has entered into partnership with the Writer of Inscription Tablets, &c., which are peculiarly adapted for Railway Stations.

**A PRIZE** may be obtained by one of those applications which approximate to certain conditions, viz: The name of any one principal Railway station will be executed, being the nearest to, and not exceeding 150 miles from London; and below, to be in that advanced state of completion which will admit of an early commencement in the process of the painting in copperas with the prize.

If W. commences at the extreme back, in depth of tone and beauty of colouring will fairly eclipse all former inventions. To insure the prize all applications must be tendered on or before FRIDAY, the 25th day of August next, to the letter A.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade possesses the important qualification of effectually stopping Knots in Wood, however hard and preventing the resinous matter exuding and discolouring the paint above it.

Many still-existing knots have been the cause of much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and much sought after.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Bridges, Steam Boats, and Waterpipes; Hothouses. For such uses, and for slapping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of covering is 75 per cent. that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious

ECONOMY! ECONOMY!

**STEPHENS' ODES FOR STAINING** WOOD, as a SUBSTITUTE for PAINT. For Decorating Churches, Halls, Public Rooms and Theatres, as well as Private Dwellings.

When economy in expenditure of material and time is of importance, the following will be found of the greatest advantage, as they give a rich colour to plain woods, while they reflect all the beauty of the natural grain, which is so superior to imitations by art, and, at the same time, avoid the disagreeable smell and deleterious consequences of paint.

The Odes, or Stains, are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars road, London, in bottles of 6d. and 1s. each, and at 10s. per gallon. The Oak Colour may be obtained in powder, and packed with directions for mixing, for one bottle of stain, and the Ash will make a gallon of stain.—N.B. The trade supplied!

Sold also at the Office of The Builder, 2, York street, Covent-garden, London.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS,** Southwark-bridge-road and the Orient Wharf, Millwall, Poplar, the Proprietor of which, having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in the application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles in stock. The Trade Supplied.

**PUMPS.**—The attention of Architects, Builders, Contractors, Bricknakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brickfields, Lighters, Barges, Boats, or Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 10-inch bore. Estimates given and Drawings if required. M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

**HOT WATER APPARATUS.**—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and halls, mansions, manufactories, forcing and grandhouses, cucumber frames, and various kinds of rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, and how long it is since they first commenced. An unprejudiced person looking at the Apparatus at work, may be seen in action upon the premises.—BENJAMIN FOWLER, 62, Devonshire-street, Pentonville.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY by applying at F. & W. WILLIAMSONS' Wholesale Warehouse, No. 38, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 2d. | 4d. | 6d. | 8d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 1s. | 1s. 6d. | 2s. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 32s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 | |
|---|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. | per gross. |

Elliptic Stoves, 2½ per inch. Registers, 6½d. 7d., 8d. per inch. Self-acting Kitchen Ranges, with Oven and Back Boiler.

Wrought Bars and Bright Fittings.

| 3 ft., £3. 3s. | 3 ft. 6 in., £3. 13s. 6d. | 4 ft., £4. |
|---|---|---|

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 6s. | £3 18s. | £3 16s. | £4. | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5 | £5 15s. | £6 7s. | £6 18s. | £7. |

Best Register Stoves, 6½d., 7d., 8d., and 9d. per inch.
Do. Elliptic do., 5d., 5½d., and 6d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE, Kitchen range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE** most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6½d. per in. and upwards.
Bright ditto with Black and Bright Bars, 3d. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| £3 3s. | £3 16s. | £4. 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, I ring in secret, 3s. per pull.

IMPORTANT TO ARCHITECTS, BUILDERS, and GENTLEMEN fitting up their own Houses.

**PRETYMAN and HOBSON,** being about to relinquish the Stove Trade, have a large and well-selected assortment of drawing and living room, library, and college Register Stoves, of the most recherché patterns, which they have determined to sell at a great reduction from the cost prices Stove and Range Manufactory, 27, Cornhill, opposite the Royal Exchange.

IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Hinges, Doors and Frames, Ash-pit Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

**BLAKE and PARKIN,** Meadow Steel Works, Sheffield, Manufacturers of improved Mill Saws, Circular Saws, Files, Patent Machine Plane Irons, Machine Groovers and Moulding Irons, Planes of all sorts. Blister, Shear, and Cast Steel, Railway Springs, &c.

IRONFOUNDRY.

105, Drury-lane, and 1 Charles-street, London.

JOSEPH GLOVER,
Late HENDRY and GLOVER,

**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements as will at a great reduction, will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, &c.

CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C. CHUBB and SON having just erected a** Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron Doors strong enough for stone or other purposes and Improved Safes at a great reduction in price, and of very superior quality. All their Doors and Safes are fitted with CHUBB'S and SON'S DETECTOR LOCKS.

57, St. Paul's Church-yard, London.

TO ARCHITECTS AND SURVEYORS.

**C. CHUBB and SON having ascertained** that some builders are in the habit of substituting inferior and insecure Iron doors for strong rooms, when "CHUBB'S DETECTOR" are ordered, they call the attention of Architects to the subject. In all specifications where it is intended to have the articles manufactured by C. CHUBB and SON, they respectfully request that the Doors will specify "Iron doors manufactured by C. CHUBB and SON, of St. Paul's Church-yard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the Doors are of their manufacture.

**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way.

Old Beds re-dressed by this process are perfectly freed from all impurities, and by expanding the feathers the bulk is greatly increased, and consequently the Bed is rendered much softer. The following are the prices of New Feathers:—

| | | | |
|---|---|---|---|
| Mixed, per lb. | 1s. 6d. | Foreign Grey Goose | 2s. 6d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 2s. 6d. |
| | | Best Irish White Goose | 2s. 6d. |
| | | Best Dantzic White Goose | 3s. 6d. |

HEAL and SONS LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application at their Establishment, 196, opposite the Chapel, Tottenham-court-road.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

**THE ASPHALTE of SEYSSEL** has been extensively used since March, 1838, for the following useful purposes:—

| | |
|---|---|
| Foot Pavements | Dog-kennels. |
| Kitchen Floors particularly where it is required to keep them from rising | Bath Floors. |
| Garden Walks and Terraces | Granaries. |
| Carriage Drives | Tan-room Floors. |
| Coach houses and Stabling | Mad house Floors. |
| Piggeries, &c. &c. | Covering of Railroad and other Arches. |
| | The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to the Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE, in the form in which that day's report is published, to be used.

Information may at any time be had of Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

J. FARRELLI, Secretary,
Seyssel Asphalte Company, Stangate, London.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being as is too well known the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

The "PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of, that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required. Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING. This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

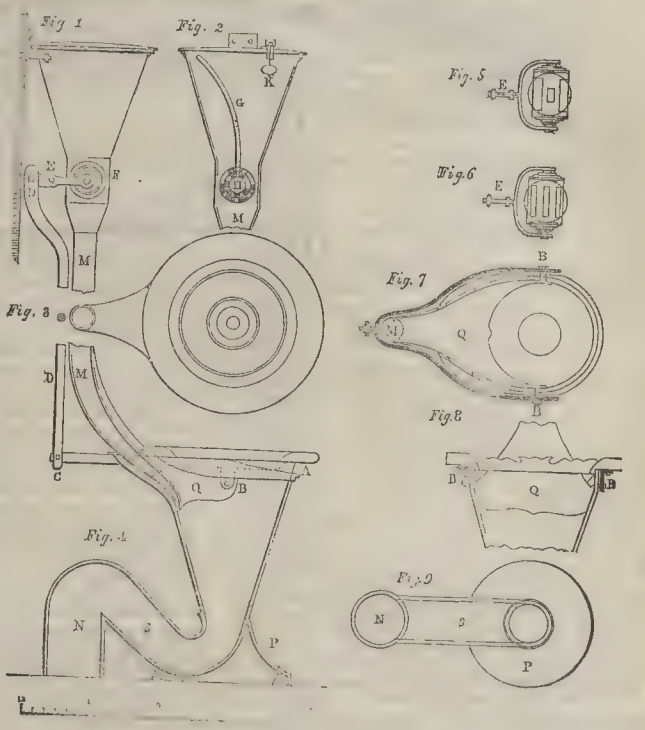
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE. The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of the parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self-acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




### DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.

Fig. 2.—Section of the measure and cock, shewing its position when open for the water to come in.

Fig. 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.

Fig. 4.—Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action rod D, to let water in and cut it off.

Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.

Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.

Fig. 8.—Section from side to side of seat, and top of basin, with front closer part of spreader.

Fig. 9.—Plan of foot P, of basin, and syphon.

### MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, fills and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page* 70.)

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr Austin appears to possess all the requisites for general adoption. It is said to be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time it is used, by providing a great momentary rush of water, whereby the drains are effectually cleansed and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages contained in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up, but we must wait till some less expensive method is introduced.

Mr Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

Mr. Jos. E. Dowson

J. QUICK, Engineer.

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

# DOWSON'S EARTHEN PIPES,

## GLAZED INSIDE,

## FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the depredations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resultine from the use of brick drains. LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

MESSRS. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.

TO BUILDERS.

**ELIGIBLE PLOTS OF BUILDING** in and around London, TO BE LET, upon [illegible] terms and liberal advances. A list of such can be had free [illegible] application, or by post, by inclosing two stamps. BECKWITH and SALMON, Estate and Land Agents, 25, Bucklersbury.

HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country. For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford-row.

BUILDING GROUND.

**TO BE LET, direct from the Freeholder,** the most eligible Building Ground in the [illegible] of London, being in the outer circle of the Regent's-park, and [illegible] by the site on which a new church is about to be built, for a long term, at a moderate rent. For further particulars, apply to Mr. LITTLE, 6, Northumberland street, New road.

BUILDING GROUND IN PLOTS.

**TO BE LET, direct from the Freeholder,** a most desirable Frontage of nearly 500 feet, with a depth of about 160 feet, in a highly respectable neighbourhood, three miles from Hyde park Corner, well suited for the erection of semi-detached Villas. Money will be advanced if required. Apply to Mr. E. N[illegible], Auctioneer, near Hammersmith Turnpike.

FREEHOLD BUILDING GROUND.

**TO BE LET UPON LEASES, for a** term of Ninety-nine Years, in Plots averaging from three-quarters of an acre to an acre each, adjoining the Ewell station on the London and Epsom Railroad, and having frontage to good roads. The places may be inspected, and full particulars obtained at Messrs. CLUTTON'S Offices, No. 8, Whitehall-place, London.

**TO BE LET, a Brickfield, situated within** 2½ miles of London Bridge, with about Seven Acres of Earth, now in full work, and making three millions a year, with a very excellent ready money trade, with all the necessary [illegible], offices, &c.

All or part of the Implements may be taken or not, to suit the Purchaser. Further particulars may be had at Mr. W. C. KNIGHT'S, Newington Causeway, Southwark.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c., suitable for a Builder.

**TO BE LET OR SOLD, in the vicinity** of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw-pits, Stabling, &c. Fixtures and Machinery for Sawing and Planing, to be taken at a valuation. To view, apply upon the Premises, No. 12, Dorset place, Dorset-square. For terms and particulars, of Mr. H. BIERS, 13, Carlton villas, Edgeware road. Written applications cannot be attended to.

TO BUILDERS, INDIA-RUBBER MANUFACTURERS, and Others requiring Steam-Power, extensive Premises, and a plentiful supply of Water.

**THE whole or part of those Premises** known as the SURREY SAWING and PLANING MILLS, Church street, Kennington, TO BE LET. The Proprietor will either let part of the Premises, with from 8 to 12-Horse Power from the Engine, or will let the whole Premises, with use of the 24-Horse Condensing Engine and all the Sawing and Planing Machinery now standing, or will remove any portion of such Machinery as may not be required. Apply to F. ROGERS, jun. Timber Merchant, Upper Lisson-street, Paddington, or on the Premises, where the machinery may be seen at work.

TO BUILDERS AND OTHERS.

**TO BE SOLD, several new Sash Frames** and Sashes, fitted at 7d. per foot, superficial, or glazed, with weight and lines at 11d. per foot; 1½ inch Sashes, made and glazed at [illegible] per foot; 2 inch, 9d. per foot; greenhouse lights made and glazed at [illegible] per foot [illegible] shops, and shop fronts fitted up in a superior manner. Estimates made for all kinds of work to the [illegible] by N. RICHARDS, [illegible], Camomile street, City, London, and Hoxton-square, Middlesex.

## SALES BY AUCTION.

DAY OF SALE ALTERED.—IN BANKRUPTCY. TO STONE MASONS AND OTHERS.

**MESSRS. BROMLEY and SON will** SELL by AUCTION, on TUESDAY, August 3rd, instead of FRIDAY, July 30th, at Twelve o'clock, on the Premises, No. 21, Tottenham Court New road, St. Pancras, by order of the Assignees of Mr. ROBERT WILLS, a Bankrupt, the genuine Stock in Trade, comprising a large quantity of MARBLE of different descriptions, Tablets, Monuments, Figures, Head and Foot Stones, York and Portland Paving, Utensils in Trade, and a few Lots of Furniture. —May be viewed on MONDAY and morning of sale. Catalogues had on the Premises; of Messrs. NORTON and SON, Solicitors to the Fiat, 1, New-street, Bishopsgate; and of the Auctioneers, 17, Commercial road, St. George's East.

FOLKESTONE, KENT, SIXTEEN LOTS OF FREEHOLD BUILDING-GROUND TO BE SOLD BY AUCTION BY

**MR. DAVID GODDEN, at the King's** Arms Inn, Folkestone, on the 18th of August next, at two o'clock in the afternoon, subject to such conditions as will be produced at the time of sale, sixteen very valuable plots of Freehold Building Ground, [illegible] situate between the [illegible] leading from Cheriton to Folkestone and from Folkestone to Ford Valley, adjoining the nursery gardens of Mr. Meekle, presenting delightful sites for the erection of Villa residences, which are now in great demand. Particulars may be obtained and plans seen at the offices of Messrs. BROCKMAN and WATTS, Solicitors, Folkestone; Mr. J. MESSENGER, Architect and Surveyor, Folkestone; and Mr. W. LAMBERT, Architect, 40, Coleman-street, London.

Folkestone, July 28, 1847.

BUILDING MATERIALS, BRITISH MUSEUM.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION, on the Premises, on FRIDAY, August 6th, at Twelve o'clock, by order of the Commissioners of her Majesty's Woods, Forests, Land Revenues, Works, and Buildings, to clear the site, the valuable Materials of Two large Houses, being Nos. [illegible] and [illegible], Great Russell-street, Bloomsbury, [illegible] lead in flats, gutters, cisterns, and pipes, slated and tiled roofs, sound timber in roofs, joists, girders, floor boards, [illegible] plate glass and other sashes and frames, marble chimney-pieces, stoves, ranges, iron railing, [illegible] stone paving, [illegible] pump, fixtures, &c.; also the excellent brickwork, and numerous other effects. May be viewed One Day prior to the Sale, and Catalogues had on the premises; at the Office of Woods, &c. Whitehall, and of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

VALUABLE FREEHOLD DWELLING-HOUSE, No. 8, Green-park-buildings, Bath, and an undivided moiety, or half part of a valuable Freehold Estate, situate at Smalacombe, in the parish of Lifton, Devonshire.

**TO BE SOLD BY AUCTION, pursuant** to an order of the High Court of Chancery, made in a cause "Lyddon v. Woolcock," and four other causes, with the approbation of JAMES WILLIAM FARRER, Esq., one of the masters of the said Court, in the month of August next (of which due notice will be given), a Freehold Dwelling House, No. 8, Green park-buildings, in the City of Bath, which will be sold at the Castle and Bull Hotel, Bath. Also an undivided moiety or half part of a Freehold Estate, situate at Smalacombe, in the parish of Lifton, in the county of Devon, comprising a house and garden farm buildings and land, containing altogether about 186 acres, 3 rods, 32 poles, which will be sold at the White Hart Hotel, Launceston, in the county of Cornwall, which said estates form a portion of the property of Mrs. Julia Lyddon, late of Boston, in the parish of Bramham, in the county of York, deceased. Particulars are in course of preparation, and may shortly be had gratis at the Master's Chambers, Southampton buildings, Chancery lane, London; of Messrs. RICHARDSON, SMITH, and SADLER, Solicitors, 28, Golden-square, London; of Messrs. PITTENDRIGH and STEVENSON, [illegible]-square, Gray's-inn; Messrs. BISCHOFF and COXE, Solicitors, Coleman-street; of Messrs. SANDYS and PEARSON, Solicitors, Gray's-inn-square; Messrs. JONES, TRINDER, TUDWAY, and EYRE, Solicitors, John-street, Bedford-row; Mr. JOHN MOSS, Solicitor, Derby; Mr. THOMAS WILLIAM TOTTIE, Solicitor, Leeds; Messrs. PASSINGHAM and SIMMONS, Solicitors, Truro, Cornwall; and at the Castle and Bull Hotel, Bath, aforesaid; and the White Hart Hotel, Launceston, aforesaid.

RICHARDSON, SMITH, and SADLER,
28, Golden-square.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE that their Office, Hatton-[illegible], is open daily between the hours of Ten and Four, where [illegible] can be obtained (gratis) by [illegible] for Building purposes, [illegible] recommend all such Persons to [illegible].

STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER AND PART OF MIDDLESEX, No. 1, Greek street, Soho-square.

**TO BUILDERS and Others interested in** [illegible] within the district under the jurisdiction of this Court, [illegible] parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry of [illegible] into any [illegible] or to their clerk at their [illegible] made in such manner and form as shall be directed by the said [illegible]

[illegible] to the lowest [illegible] notice that whenever the [illegible]

It is recommended to all persons about to purchase or take [illegible] premises have [illegible] at least three clear [illegible] to the commissioners; and all such [illegible] the order of their application, and [illegible] without leave of the [illegible], and the parties making the same [illegible] of the district [illegible]

By order of the Court,
LEWIS C. HERTSLET, Clerk.

**WANTED to Purchase, a light Stone** Truck, [illegible] Wheels, must be in good condition. Address, stating lowest price, to A. B., 27, Gloucester street, Queen square.

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**SAMUEL CUNDY begs to inform Archi**tects and others, that GOTHIC WINDOWS and every other branch of Stone-work, &c., are executed at the cheapest possible rate, [illegible] ARCHITECTS [illegible] CHURCHES, or [illegible] PROVINCES, executed [illegible] TOWN.

BUILDERS and MASONS can have every description of Stone [illegible] either in the rough block, or cut to sizes from the saw, or prepared [illegible] avoiding either waste [illegible].

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**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the [illegible] being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent RE**VOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths if required. The worm and wheel motion for raising and lowering revolving iron shutters, as secured by this Patent, is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up without a single complaint of their want of strength or security, and nine years' practical experience, during which they have adopted every real improvement, enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

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BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

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TO BUILDERS AND OTHERS.

**THE Guardians of the Watford Union are** willing to receive TENDERS for the Erection of an Infirmary at the Watford Union Workhouse, situate at Watford, Herts. The plans and specifications may be seen at the office of Mr. LAVENDER, Surveyor, Watford, after Wednesday, the 11th of August instant. Tenders to be sent to me on or before Tuesday, the 24th August, to be opened and determined on at the Board to be held the next day. The Guardians do not bind themselves to accept the lowest or any other tender.—By order of the Board.

Watford, 2nd Aug., 1847. RICH. FUGH, Jun., Clerk.

BRIDGWATER UNION.—TO BUILDERS.

**THE Board of Guardians of this Union is** desirous of receiving TENDERS for the Erection of a Hospital and Casual Wards, for the sick and infirm Paupers of their Union Workhouse. The Plans and Specifications for the same may be seen at my office, and any information required may be obtained of Mr. EDWIN DOWN, of Bridgwater, Architect to the Board, of whom also printed forms of Tender may be obtained. Sealed Tenders, indorsed, must be delivered to me on or before WEDNESDAY, the 11th day of August next. Good and ample securities for the complete fulfilment of the contract will be required, and the contractors must be prepared with the same at the time of delivering their tenders. The Board does not pledge itself to accept the lowest tender.

By order of the Board,
ROBERT UNDERDOWN, Clerk.

Bridgwater, July 22nd, 1847.

1, Canning place, July 29th, 1847.

TO CONTRACTORS.

**NOTICE IS HEREBY GIVEN,** that the Guardians of the poor of the parish of Kensington are desirous of receiving TENDERS for making and building a new sewer on the piece of ground adjoining Wright's Lane, Kensington, on which the new workhouse is now in course of erection. The sewer will extend along the north and west sides, a length of 1,074 feet. The drawings, specification, and conditions, may be seen at the office of Messrs. Allom and Crosse, Architects, 14, Hart-street, Bloomsbury, after the 2nd day of August next. The tenders to be delivered at the Clerk's Office, 1, Canning-place, Kensington, on or before THURSDAY, the 12th proximo, by Twelve o'clock at noon, after which time no tender will be received. The Guardians do not bind themselves to accept the lowest tender.

S. CORNELL, Clerk to the Guardians.

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Each tender must be accompanied by the names of two responsible persons, who would join the contractor in the usual bond for the performance of his contract; whilst it shall not be deemed obligatory upon the visitors to accept the tender which may be lowest in amount.

The contract and bond will be prepared by the clerk of the visitors, and a copy delivered to the contractor, free of charge to him; and drafts of these documents, in the form in which the contractor and his sureties will be required to execute them, may be seen with the plans.

JOHN M. DAVENPORT,
Clerk of the Visitors.

County Hall, Oxford, July 20th, 1847.

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| C.C. ..... 18 " | 2 | 4 | 8 " 5 " 8 " 5 | 2½ " |
| C.C.C. ..... 18 " | 2 | 0 | 9 " 5 " 9 " 5 | 2¾ " |
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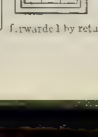
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The Builder.

No. CCXXXV.

SATURDAY, AUGUST 7, 1847.

NORFOLK, like Warwickshire, of which we spoke last week, is studded with structures, which interest not only the architectural antiquary but the practical architect, inasmuch as they afford numerous examples and hints for modern application. The Archæological Institute met in the capital of this county last week, and continued their labours there during a part of this; and we propose, as in the case of the "Association," to give some notes of the principal places visited, and the heads of such of the papers read as illustrate these places, or contain information likely to interest a large portion of our readers. We do not intend to chronicle the names of all the distinguished persons who attended, the profuse hospitality which was offered to them on various sides, or even the purely antiquarian matters which came before them for discussion. The question whether Norwich, or Caistor, be the *Venta Icenorum* of the Romans,* argued in favour of the former by Mr. Hudson Gurney, notices of ancient monastic mortuary rolls, ably as they were written by Mr. John Gough Nichols, histories of Saxon kings, and all matters of this kind, must be left to other hands, the architectural antiquities alone would afford us more matter than we have space to include.

*St. Andrew's Hall*, where the introductory meeting was held (the bishop of the diocese being in the chair), was originally the nave and aisles of a large perpendicular church, built at the commencement of the fifteenth century, and has an open timber roof. It belonged to a monastery of Dominican friars, of which there are some curious remains now used as the workhouse. The election, (when, by the way, Mr. Peto, one of the "craft," was returned at the head of the poll to represent the ancient city in Parliament,) afterwards closed this apartment against the Institute, and forced them to take refuge in the public library and the *Guildhall*.

The latter building was erected quite at the commencement of the fifteenth century (1407-13), and is chiefly remarkable externally as a specimen of flint work,—a mode of construction very prevalent in Norwich and the neighbourhood. The council chamber here retains the wood fittings of about the time of King Henry VIII. This, and the adjoining apartment, also contain some curious portraits of past officers.†

NORWICH CATHEDRAL

is a very interesting structure, rather more than 400 feet long, with a tower and spire 313 feet high. The greater part of it belongs, as will be seen hereafter, to the Norman period, and internally is in a good state of repair. Some years ago it had fallen into a deplorable condition, but since the advent of the present dean much has been done, as may be supposed when we say, that from twenty-five to thirty thousand pounds have been spent in the repair of it within these last fifteen years. The works are still in progress under the direction of Mr. Brown, the architect to the dean and chapter.*

Professor Willis gave a discourse on the cathedral in the public library, and illustrated it by a number of diagrams to shew the general arrangement, and enable him to point out the date of the different parts. We proceed to give the heads of his discourse from our own notes.

It had been his lot, he said, in the division of labour made by the institute, to illustrate the cathedral in each of the towns they had visited. All had been distinguished by some peculiarity; Canterbury, by the existence of important documentary evidence; and Winchester, by the curious conversion which had been made of Norman work into perpendicular. In Norwich, much the same alteration had been commenced, but was not carried out; its most valuable peculiarity, however, was as it related to the inquiry into the existence of Saxon architecture in England. Those who had difficulty in believing that there was none, could attribute the earlier parts of the other cathedrals to the Saxon time, Saxon buildings having originally occupied their site; but in Norwich, no doubt could be raised, as the see was removed from Thetford only in the time of William Rufus, and the cathedral then erected where no other building existed. The original structure then was purely Norman, yet many parts of it were as rude as that which was called Saxon in other places.

There had been very little alteration in the plan; it consists of nave, tower, transepts, and a very considerable chancel or presbytery, with aisles to each. The chancel terminates with an absis with an aisle around it, known always as the "procession path," and various chapels of peculiar form branching out of it. The Norman part of the cathedral is of two periods, he said, as was shewn by the bases of the columns and by the zigzag ornament around the arches of the later part of it. He could prove that the zigzag was not introduced till very late in the Norman style. The choir was usually supposed to be that portion of the building wholly east of the transepts; ritually speaking, the term distinguished simply that part where the monks sat to sing, and which in this case included the space under the central tower and a part of the nave. The more eastern portion was appropriated to the priests, and was called the presbytery. The episcopal throne was originally against the *end* of the eastern part, a peculiarity confined to Norwich, and was so high up, as to be upon the wall which divided the presbytery from the "processional walk;" its remains were visible. The rood loft, he considered, was originally at some distance down the nave. The aisles were formed into chapels; we had no conception how greatly these buildings were cut up and divided by screens and enclosures,—obstructions which perhaps had more effect in leading to the reformation than more important matters.

It was now time to speak of the written history of the cathedral. It was founded by Bishop Herbert de Losinga in 1096, who nearly completed it, together with the monastery and bishop's palace, concerning which he would speak hereafter. The next historical record was, that John of Oxford finished the church that Herbert began; and in his time, 1171, the church was burnt. The lecturer said it was amusing to see how the antiquaries of a few years ago amplified their authorities: Blomefield was of this class; he interpreted Latin statements his own way, and so asserted things for which he had no grounds. In 1272, the monks and citizens being on very bad terms, the latter rose, burnt the records, and sacked the monastery. Documents prove that the church was miraculously preserved, and the lady chapel burnt, but Blomefield by some accident states this *vice versa*. In 1278 the church was re-dedicated, and he ought here to speak of the gateways, but as Mr. Britton had promised them a paper on that subject, he would pass them by. To this gentleman (he would take occasion to say) he and all other antiquaries and architects were greatly indebted, and he was most happy to have the opportunity, there in his presence, of acknowledging it.

In 1299 considerable repairs were made to the tower, the spire of which, probably, was at that time of wood. He now came to a point which had not been thoroughly investigated, namely, the cause of the present appearance of the choir,—where the Norman work was seen only in the middle part of the walls,—the triforium. The upper part and lower part were both of later character. On the 15th of January, 1361-2, a furious hurricane did much mischief in various parts, damaging, according to Holinshed, many mighty buildings. On this occasion the steeple of the cathedral under notice was blown down, and in its fall materially damaged the presbytery. The ancient rolls, preserved in the treasury of the cathedral, shew that considerable outlay for repairs was made in 1364 and 1369; and it was then that the present clerestory was constructed under Bishop Percy. The vaulting was done subsequently, and so were the flying buttresses externally: these latter not being needed till the vaulting was put up, the thrust of which they were intended to withstand. The style of the clerestory was between decorated and perpendicular, and having a precise date, was a very valuable example.

The next event was a conflagration in 1463, when the spire being struck by lightning, set fire, probably, to the roof of the nave. It might be taken as a principle, that the mediæval ancients never repaired or altered buildings out of wantonness: when any accident happened, then they enlarged or rebuilt. The wood roof of the nave, in the present case, being destroyed, they put up a stone vault, and afterwards carried it on to the choir, the date of the vault, which may be called 1498. At this same time, the lower part of the choir was altered to the perpendicular style. The present spire was of later date. And here he would conclude his remarks on the cathedral until he met them within its walls.

He had now to speak of the monastic buildings surrounding the cathedral, and he pointed the attention of his audience to a plan of them which he had prepared. This was a matter to which he had given much attention at Canterbury, where his views had been borne out by an ancient plan afterwards discovered. Great confusion had been caused by the haste of the early antiquaries. Whittaker, one of the earliest in this department, had described Fountains Abbey, in Yorkshire, and laid it down as a type of all others. Succeeding writers had not investigated for themselves, and had perpetuated errors. We must pursue a

* Thus disposed of by a well known old distich:
"Castor was a city when Norwich was none,
And Norwich was built of Castor stone."

† "A tower, which had been added to the original building, fell down and destroyed the roof of the Council chamber, which was restored, and other repairs made, in 1534, to which period the present fittings may safely be referred. The wood-work is ornamented with the linen panel, and with small figures of a lion, grey-hound, and dragon, used as poppies. In the panels are the arms of Henry VIII., Norwich, the Mercers, St. George's Company, the Grocers, and Merchant Adventurers. The windows are filled with painted glass of different periods, with several shields of arms; amongst these occur, the Scriveners, the City of Norwich; those of Robert Browne, mayor in 1622; the rebus of Bishop Goldwell; a merchant's mark impaling the Grocers' Company; and the arms of Robert Dudley, Earl of Leicester, who was connected with this county."—*Notes of the Churches, &c. of Norwich; by a Member.*

* Mr. Brown built Lee Church, near Blackheath, and several others. Amongst them St. Mark's, at Lakenham, on the Southern side of Norwich, where the mouldings, walling, &c., are of moulded brick. The face of the walls is of flint-work with white brick quoins. Mr. Kerr, the clever author of the "Newleafe Discourses" has recently joined Mr. Brown in partnership.

different course: give up altogether what they have said, and take nothing for granted.

The cloisters at Norwich had been tolerably well preserved; they were the largest in England, and had a recorded history. Doors opened from them into the burial-place and adjoining offices. On the east side of the cloisters, and communicating with them, remain the foundations of a building, which had been called the Prior's Chapel, but which he would call the Chapter House. William of Worcester, who wrote in the time of Henry V., and had explained the uses of some of the doors in the cloisters, made this fact certain. He says, that in 1297, the cloister was begun, together with the Chapter House on the east side of it. The rest of the cloister was of later date. In 1409 other doors had been put in, leading to the lavatory and refectory: and in 1430, to the Guests' Hall.

There was formerly a curious building on the south side of the cloister, which was foolishly pulled down thirty years ago. It was fortunately figured by Mr. Repton in the *Archæologia*. This, the lecturer would call the Infirmary. The refectory was on the west side of the cloisters, also the guest's hall, next it. The dormitory was probably connected with the south transept. The monks often had nocturnal duties; when they rose in the morning too, they went first into the church, and then to the cloister to wash; the dormitories were therefore generally placed near the transept, to enable them to get to the church without going into the air. At Canterbury there was a covered way from the dormitory to the transept. Mr. Willis then reviewed the general arrangement of the Bishop's Palace, on the north side of the church, the great hall further north, destroyed in Cromwell's time, and other buildings adjoining, and concluded by inviting all who were willing, to accompany him over the cathedral, an invitation which was responded to by a large number of persons.

The general examination, which was then made, shewed much to interest. The great western window was pointed out as closely resembling the large window in Westminster Hall, and the size and beauty of the Norman triforium was dwelt on at some length. In the nave are two cylindrical columns, one opposite the other, with spiral mouldings around them from bottom to top: it was seen on examination, that the upright joints of the stones in these are oblique, to agree with the lines of the moulding.

In the upper part of the outer wall enclosing the "procession path" on the south side, a small chamber has been recently discovered, with a hagioscope or squint, commanding the high altar. It was, perhaps, the cell of a recluse,—a hermitage. On the north side of the presbytery there is another squint, serving with the one last-mentioned, to point out the exact position of the high altar originally.

In the chancel, a singular circumstance is observable. The original Norman piers and arches, according to Mr. Willis, range with those in the nave, but when the perpendicular work was added, it was arranged so as to make the line of the chancel incline slightly to the south: whether this was through accident or carelessness, or was done on principle, as the professor seemed to think, it is difficult to say.

The escape of the cathedral from destruction at various times appears almost miraculous. As late as 1650, it was gravely threatened, for we remember to have seen that in that year, a petition was presented by the people of Yarmouth to the Parliament, praying for "a part of the lead and other useful materials of that vast and *altogether useless* cathedral at Norwich, towards the building of a workhouse to employ our almost starved poor, and repairing our piers." Tolerably cool, it will be confessed.

We must not, however, give longer time to the cathedral at present, or we shall leave ourselves no space even to allude to the numerous churches which adorn Norwich. A walk round the base of the castle, a Norman keep sorely marred by a spic and span new casing, and battlements of most questionable design,* will shew you how numerous the churches are, thirty-six if we remember rightly, and give a notion of their general character. Some architectural notes of these and other ancient buildings, by Mr. Parker, were printed in the shape of a pamphlet for the members, and found very useful. The introductory remarks on the peculiarities which distinguish them, may be here quoted.

"Archæologists, not previously acquainted with East Anglia, may wish to have their attention called to those particular points which are most characteristic of this part of the country. The scarcity of stone gives at once a different character to the buildings from those of most other parts; the only building material of the country being flint, the walls are almost entirely constructed of it, and frequently faced with cut flints also, of which there are some very good examples in the city of Norwich. The dressings are usually of stone; and there are numerous and beautiful specimens of what is called 'flint and stone panelling,' in which the interstices of stone panelling are filled with cut flints, producing a very singular and striking effect. This kind of work is most common in the perpendicular style, but there are good examples of it in the decorated work also, as in the gates of the Close at Norwich. The end of the fourteenth century, the period of the transition from the decorated to the perpendicular styles, seems to be that in which architecture was most flourishing in Norfolk; and there are many fine examples of this transition, particularly Worstead and Ingham. In the small plain churches the dressings are frequently of brick, and sometimes the mullions also, so that many churches are built entirely of flint and brick, without any stone. Almost all the arches over doors and windows in plain buildings, and those of the city walls, are of brick: in the earlier buildings these bricks approximate in shape to the Roman tiles; in later specimens they are the common Flemish bricks. In poor churches the towers are commonly built round, and of flint entirely, to save the expense of quoins; these round towers are consequently of all periods, from the earliest known buildings to the present time. The fine screens and other woodwork form quite a leading characteristic of the Norfolk churches; many of these screens have beautiful paintings of the apostles and saints on the lower panels.

The roofs are generally open to the ridge, of high pitch, originally covered with thatch, and many still are so; they are not so rich as the Suffolk roofs, but there are many fine open timber roofs in Norfolk. St. Peter Mancroft in Norwich is a good example. In that church there is also a wooden baptistery of the fifteenth century, mutilated; in the church of Trunch there is a similar one perfect: these and the earlier one at Luton, in Bedfordshire, are the only examples known in England. Of the ecclesiastical embroidery of the middle ages, specimens in Norwich and the neighbourhood are more numerous than in most other places.

Norwich abounds with fragments of the domestic architecture of the fifteenth and sixteenth centuries.

Norfolk is also justly celebrated for beautiful examples of the moulded brick mansions of the time of Henry VII. and VIII., of which the ruins of East Barnham Hall afford a good specimen.

The churches of Norfolk abound with magnificent fonts of the perpendicular style, bearing a great general resemblance to each other. In this respect, and in some others, there is a remarkable coincidence between the east and the west of England; similar fonts are common in Somersetshire and Devonshire. The towers, when square, are generally lofty, and sometimes much enriched with panelling of flint and stone. A feature almost peculiar to this part of England is the small window or opening, filled with rich tracery, in the middle story, commonly called sound-holes, but perhaps more properly air-holes, as their object seems to be to give air to the ringing loft under the belfry."

To some few of the churches and buildings thus generally characterized, we shall refer more particularly hereafter; also to the ancient gates, on which a paper was read by Mr. Britton, and give notes of the excursions to Walsingham, Binham, Burgh Castle, Yarmouth (where the American minister, Bancroft, made a speech which will be remembered by those who heard him), and to Ely Cathedral. In the meanwhile we lay before our readers an engraving of the beautiful Early English Galilee porch at the west end of the latter building, from a drawing made by Mr. Caveler for the purpose.*

Ely Cathedral is truly a magnificent and instructive edifice; great works are going on there too, and further, a painful interest attaches to it as the scene of a fatal accident to an able architect.

* There is a full account of this curious structure, entitled "The History and Antiquities of Norwich Castle," by Samuel Woodward, part 1st, by Mr. Muskett, in the Market Place, Norwich. The castle is also described in the *Archæologia*, Vol. XII., by the late Mr. Willis, of Norwich.

## ON THE DUE CULTIVATION OF THE FACULTIES FOR THE ARTS.†

When cheap art is made as correct as that which is highly wrought, and, therefore, expensive, we shall then have the lower classes much better members of society. The boys who are educated in the national schools ought to be taught the elements of geometrical construction just as much as they are taught arithmetic. Then would labouring, apprenticed, and journeymen mechanics be much more valuable to their masters, and their own position would be much improved. I fear there is not one person in a thousand of this class who could construct a perpendicular, bisect and divide a line into a given number of parts, make an angle equal to another, construct a triangle, a square, a pentagon, &c.; and yet how often are they working upon such matters, without any knowledge of their foundation? Not even a tradesman should be ignorant of the principles of construction; for the more he is informed upon the goods in which he deals, the better purchaser and seller he must be. A few years ago I gave ten lectures on geometrical construction and perspective to the first class of about thirty-five boys of a national school, and, with the exception of four who were rather dull, they mastered the subject with very little difficulty; and the four dull ones were enabled in that time to draw chairs, tables, &c., perspectively, while the others advanced into more complicated objects, as the room with its windows, &c.; shewing that the faculties which the Creator has given for producing certain forms, colours, &c., only require to be legitimately exercised to be more available. It is only the more extraordinary when we know that such faculties are given, that they should be so grossly neglected as they are. The heads of education know that there is not a single thing made but by the faculties of form and constructiveness, and yet they have not provided for their due exercise, further than permitting them to be employed more often than not upon all sorts of nonsense, that they may be amused, but by no means informed. From the manufacture of a pin to the building of a palace, the painting of historical and landscape pictures, the sculpturing of statues, and engraving in its various branches, all are the results of the faculties of form, colour, constructiveness, &c., which should be sufficient to satisfy the educators that a due cultivation and sound exercise of these important faculties should most seriously occupy their minds in

* See page 374. Next week we shall give a fine view of the east end of the Cathedral, a charming specimen of early English work.

† See page 361, *ante*.

order to devise a system of instruction by which they might obtain that high state of activity and perfection to which they are continually appealed. If the organ of form is to be cultivated, it must be exercised in accordance with the rules of perspective upon natural forms, because natural forms and natural faculties are in harmony with each other, each being made for each. This must be admitted by every one, and simple enough it is; nevertheless, how often are natural forms made to give place to all sorts of artificial forms in artistic instruction. The physician and surgeon investigate the structure of man and animals, the botanist does the same in the botanical kingdom, the geologist is ever searching through the depths of the earth, the chymist analyses, in order to discover the different properties of the works of creation, the astronomer explores the heavens, &c. But the student in art has not such scientific instructors. The commencement of artistic instruction in the human figure, landscape, marine, and architecture, is made up from drawings and prints, which may be good, bad, or indifferent representations of the objects proposed for imitation; and though the objects themselves might not be the most proper or convenient to place before the pupils at the commencement of their instruction, yet the most accurate representations, either in models or drawings, should be selected for the lessons, that the pupils may not imbibe false forms, meritricious execution, whims, fancies, and conceits, which may be part and parcel of the mind of the instructor, and, therefore, as such, would be produced in his lessons as most fit and proper for imitation. Such lessons, however skilfully executed, would be sure to cause great mischief in the mind of the learner, for though they might contain much ingenuity, yet but little truth might be in them, when the peculiar turn of mind of the pupil would be diverted out of its own channel by being obliged to learn the artificialities of a very different turn of mind, causing great pain in his mental powers while subjected to such errors and confusion. Elementary instruction should be truth itself, that a true foundation be laid in the youthful mind, on which all that is noble may be based. From such a foundation every excellence may be expected, and that which is most important, the original mental arrangement will be preserved and perfected. Originality of thought in either department of the sister arts, the result of an unsophisticated and an inventive mind, is lauded by the great and good, and upheld as a model of perfection; so highly and so deservedly is original thinking and invention valued. Such great lights unfortunately but seldom appear; no doubt in numerous instances from the incongruous elements with which brilliant minds have been fed. The nature of the human mind should be well investigated, and when thoroughly understood, all instruction should be adapted to it accordingly. The subject in itself is simple enough, for truth is the watchword and guide; but if this polar star is lost sight of, it will be vain to steer for its place of destination, perfection-haven; she must then either resign herself to the fate of the elements, or run herself into the first harbour of refuge that presents itself. Let truth then be the cry, and all will be right. Nothing short of a radical cure of the evil wherever it may be should be received. A radical cure of a disease is prayed for by every sufferer; and so should a radical cure be required in all unsound instruction, for a greater evil there cannot be than the perversion of the human mind. It matters not what part of the human mind is turned out of its due course by wrong instructions. The evil is equally great, and should be eradicated without delay, that its contaminating influence may penetrate no further. The rising generation require a new beginning, one that is entirely free of the old worn-out, thread-bare, patch-work, having nature for its foundation, that the truth may be received, and stored up in the mind as the only materials that should be used in inventive art. The branch of art matters not, the principle is the same; for whether it be painting, sculpture, or architecture, the student's mind must be exercised in the boundless field of nature, whose inexhaustible store will always supply the student with the true materials that he may require for effecting his designs. An artist in historical or landscape painting succeeds in proportion as he collects his studies from nature. If he depends upon antique statues for the forms of his figures, and old pictures for arrangements of colour and light and shadow, he will ascend no higher in the scale of intellect than a mere copyist of other's art, instead of aspiring to the high calling of an inventor and designer. If a sculptor imbues his mind with the forms of Greek and Roman sculpture, because he fancies they are more beautiful than the human forms he has seen in nature, he must also rest satisfied with the name of a copyist. Michael Angelo Donatello, Beccafumi, and other great sculptors did not stoop to the works of others, but studied mankind as the fountain head from which the knowledge of human form flows. If the architect places himself before the Greek and Roman temples, and settles the matter in his own mind that they are perfection, and, therefore, copies those buildings to help him in his designs for Christian houses of prayer, palaces, mansions, dwelling-houses, club-houses, gin palaces, villas, cottages, &c.; he must expect to fail in design and invention. For however perfect were the Greek temples for the time and pagan purposes for which they were erected, they must of necessity be the most imperfect for Christian worship and for the convenience and domestic comforts of the people of 2,000 years afterwards. This point alone should satisfy architects, that as Greek architecture reflects the highest credit on its designers, they should do as the Greek architects did,—they studied how to produce what was required in their own days, and not what others required 2,000 years before them.

The exhibitions of modern pictures sufficiently shew by their great talent the truth of these remarks, as a great majority of the subjects have come under the artist's observations, and those which belong to far by-gone-days are the result of accurate study from similar objects in nature, made by correct thinking to represent the beings and things which are part and parcel of the subject. This is the true course for a student to pursue, if he wishes to become an artist in painting, sculpture, or architecture. Students must no longer deceive themselves in either of the sister arts: in the one of painting there is not much danger; but in sculpture and architecture there is much yet to be done. The students in these arts are very inadequately trained and most defectively taught. The painter is in the right path, and only requires to know how he may arrive at the end of it. When a more enlarged course of instruction is produced for his tuition, then works of high art will be the result at his hands: the major part of such a system of instruction must be embraced by the sculptors and architects also, if they aspire to works of high art. And though, as we have said before, that division of labour will be; nevertheless, the painter, the sculptor, and the architect should have a common understanding in each other's art, otherwise, to a certain extent, they must be defective in their own art. The sculptor should study the beings and objects as much as the painter, only with this difference —using his own tools, though he should not be sparing with the pencil, chalk, and brush, that he may collect action and expression the more readily, which is ever before him. He should never be without a sketch-book and pencil, that he may be always ready to collect such materials which will furnish him with ideas, and facilitate him in his execution. Also, he should have a correct understanding of architecture, that he may compose, arrange, and design more perfectly his own works to accord with the situation in which his sculpture is to be placed. The architect must act in the same manner; he must study from nature, if he expects to be a designer in architecture. Nature will supply him with the materials for his art.

It may be said that clouds, mountains, hills, woods, vallies, rivers, &c., will not furnish the architect with forms for his buildings: this is a point not to be settled so quickly. Nature is the fountain head of all knowledge, she furnishes the historical, the landscape, the marine, the flower and the architectural painter, with the materials for his art. Buildings and sculpture are made up of natural materials; so far those parts of nature must be studied by architects and sculptors. But the sculptor's art is to represent man and animals, foliage and flowers, as well as artificial forms, drapery, architecture, &c., all of which should be most accurately studied by him if he intends to produce faithful representations. He must as a designer become well acquainted with the nature of man. He should have a thorough understanding of the human mind in order to represent that action and expression which would embody the leading characteristics and peculiarities of mind of the beings who are to be handed down to posterity by sculptured art. Sculptors of late have not been sufficiently educated as artists. They have not been directed to nature to collect their materials for effecting their designs. They have been taught to imitate the antique, and to regard the Greek statues as perfection, until at last they are so strongly imbued with the Greek forms and attitudes, that they cannot help infusing the peculiar beauties of the Greek sculpture into their own works, turning English ladies and gentlemen into Greek gods and goddesses, losing the individuality and mind of the persons, and consequently the deep interest which the relatives, the friends, and the public would feel if they had faithful representations to regard.

The late highly talented sculptor, Mr. Flaxman, stated to me that he felt the defects of his education to be an insurmountable bar to his improvement as a designer. He considered the system of artistic instruction under which he studied to be very injurious to an artistic mind; it laid an artificial foundation, and therefore arrested invention; a loss which no artist ought to sustain. On all occasions he felt himself under Greek trammels, so much so, that when interesting groups of people presented themselves to him, he could not help giving while sketching them a Greek statue-like character; one he made like a Hercules, another like the Apollo, a third like an Antinous, a fourth like the Venus, and so on; each person resembling statues instead of living beings, giving the thousanth edition of pagan gods and goddesses, for the ever new and highly interesting action and expression of the people who were continually assembling in groups as business and accidental matters brought them together. This artificial quality of mind, which was inculcated in him at his early education he deplored greatly, and wished much to eradicate, but he could not accomplish it. As great as Mr. Flaxman was, he failed in the representation of natural action and expression, producing a fixed and stone-like appearance, instead of the motion of life, of flesh and blood. We will now say a few words on architecture.

Should an architect be an artist or not, or should an architect make himself acquainted with the different branches of the arts, in order to perfect himself as an architect? Will a study of the works of creation enlarge the architect's mind in architectural design and construction, or should an architect rest satisfied with his present amount of geometrical and building knowledge, and conclude that it is not necessary for his faculties for the arts of design to be legitimately exercised? Is this satisfactorily established? Do the results prove the truth of this point, or do the modern architectural designs express their object. For instance, do the modern buildings express in their architectural forms, divisions, and arrangements, the purpose for which they were erected? Does Buckingham Palace express by its architecture a palace for an English sovereign, or do the architectural forms, divisions, and arrangements signify English design, or Greek, Italian, and Roman? Do the different club houses express in their designs, the object for which they were designed—English refreshment houses of these days? Do the street houses express what they were built for? Do many of the modern mansions in the country inhabited by the upper classes, express English mansions of the present time? Does the Bank of England express in its architecture its particular purport? Do its empty niches remind us of the different governors and directors of that great monied establishment, and that the Greek, Roman, and Italian architecture with which it is composed express truly an English bank? Does the Royal Exchange express in its classic portico a London building of exchange? Do St. Martin's church, St. George's Bloomsbury, and the like, express, by their Roman architecture, and which was originally designed for Pagan worship, a Protestant place of worship? Does the National Gallery express its name? Even in this gallery of art, the designer appears not

to have had the power of filling his niches with statues representing the great artists which England has produced. In this point no excuse can be found, as the designer of the building should not have assented to empty niches, but he should have shewn the absurdity of such senseless emptiness, and the loss of his character as a consistent designer. Consistency of design should never be lost sight of in any branch of the arts; and why should not the architect be as consistent a designer as an historical painter? The historical painter would not represent a pagan temple for a Christian church, because it would falsify the time. The pagan temple might denote a time of 2,000 years ago, which would be a great error, and such an inconsistency should not be allowed either by designers or the public. But to become consistent after having been inconsistent for a length of time, is by no means easy; nevertheless we should endeavour to free ourselves from such errors and confusion, that we may lay a sound foundation for receiving true knowledge, from which consistency of design may be produced. The architects of ancient time,—the Israelites, the Egyptians, the Babylonians, the Greeks, and Romans, designed consistently. They designed their places of worship in accordance with their rites and ceremonies, obtaining by those means exactly what they required; for however true, or however false were their notions, they carried them out to their very letter in their sculpture and architectural divisions and arrangements. The Israelites executed the designs for the tabernacle and temple which God gave them. The other nations executed the designs which their pagan oracles gave them, and, therefore, they had their places of worship exactly adapted for their abominable and inhuman pagan sacrifices. The Christian architects of the middle ages designed in the same consistent manner. They knew what they wanted, and they designed in accordance with those wants when they were upon a true foundation, as well as when that foundation became disturbed with numerous errors,—the production of evil-minded and ignorant men,—as our cathedrals, abbeys, and churches sufficiently testify. The cruciform foundation of our churches shews that the Christian architects were true designers; for the faithful, when in prayer, would always be upon the cross, as our Saviour was, when he sacrificed himself for the salvation of mankind. This principle is a true one, and shews that the designer was a master of his art by making his subject appear in his architectural arrangements. And further, for upon this foundation of a cross-form they composed other leading features of the law and the gospel, such as three divisions of nave, choir, and chancel, to symbolise the Trinity; the number of columns, windows, arches, buttresses, &c., being so designed as to signify important points in the Word of God: so that when the architect makes his architectural and sculptured forms, divisions, and arrangements, speak, as it were, to the subject for which it was designed, he then shows himself to be a true designer, and therefore an artist, which he ought to be. His building then is a work of artistic invention—an illustration of his subject by the means of his art—making the most important points evident to all beholders who have been initiated in the architect's language: all works of art should be made to express what they are intended for, that intelligence may be seen, information conveyed, and the mind legitimately exercised. A designer is an artistic instructor; but if his design expresses that which is foreign to the subject, he is then a confounder—as in the case of St. Pancras or Marylebone Church, which remind the beholder of Greek and Roman Pagan temples, and consequently not of Christianity, which they should do. And moreover, they make the impression that Paganism is as interesting as Christianity, and that the Christian doctrine is incapable of architectural illustration—shewing great ignorance of the subject and of the power of his own art. Besides, a preference given for such forms which were designed for Pagan purposes to those which should be the designer's duty to produce upon a Christian foundation, is so great an absurdity, that one cannot reconcile it to be the act of a rational being. Let us see, then, in what position do architects stand with respect to rational design. During the last three centuries the religion of the state has been Protestant, and, therefore, our houses of prayer should have been designed in accordance with that reformation. That the Roman Catholic designers made their designs in accordance with their mode of worship, and based upon the law and the gospel and the early fathers' writings is evident to those who understand the true principles of design; and therefore, according to their belief, they acted upon true principles, making their churches express the leading features of the law and the gospel, and also the peculiar views of the early saints as well as the Roman Catholic saints. But because the churches of the middle ages were thus correctly designed, that is no reason why we should design Protestant churches like them. We should design our churches for Protestant worship, and for such as the altered state of the times of these days demand. Neither Roman Catholicism or Protestantism are the same now as when they were first established; and so we find the arrangements altered to suit the alterations which from time to time were made in the mode of worship. Though the law and the gospel remain the same, yet the application of them to these advanced times of intelligence must vary, and be made to assimilate with the demands of the present state of society. Then what has the architect to do but to conform to the improved state of society in which he lives, and to design to meet the wants of the living, and not for the dead? This is not done. The architect should make himself acquainted with the subject for which he has undertaken to design; for whether it be a church, a palace, a mansion, a town-house, a villa, &c., he should make himself well informed upon the wants of the parties who require the buildings, and then design accordingly; and not as he has done by endeavouring to make the buildings of two or three thousand years ago suit the widely altered civilized state of society of these days. Common sense, design, invention, composition, colour, &c, forbid such an inconsistent practice. Natural knowledge must be planted in the human mind if excellence is to be attained. In science it is every thing; in art it ought to be the same; and it must be made so sooner or later, or design and inventive art will cease to exist. Every member of the sister arts should not rest satisfied until they have made themselves artists in every sense of the word. And every manufacturer and mechanic, as well as traders, should have their mental powers well exercised in form, colour, and constructiveness, in order to have a full comprehension of all the objects and wares with which they are connected in their production, as well as in their purchasing and selling. After which, what is to be said of the labourers? They are human beings, and possess mental powers often to a great extent. Some provision should be made for a due exercise of their faculties for the mechanical arts, that they may be made more useful labourers in their calling. God is their Creator as well as our Creator, and their faculties should be turned to the best account. Let us hope that the legislature will see the necessity of establishing such a system of instruction, which will raise the lower classes from the degraded state in which they are to one of a higher and more intellectual condition, when we should see them devoting their leisure hours among the works of creation, instead of wasting it in brutalising their minds and diseasing their bodies in gin palaces and beer-shops.

G. R. Lewis.

## THE ANTIQUARIAN RAMBLE IN WARWICKSHIRE.

COVENTRY CHURCHES—FORD'S HOSPITAL—ST. MARY'S HALL—TAPESTRY—KINGSBURY.

We continue our remarks on the places visited by the British Archæological Association, and the papers in connection with them which were read. We left off last week in *Coventry*.

The appearance of this ancient city is rendered peculiar and striking by the three lofty and taper spires which belong to St. Michael's, the Trinity, and the Grey Friars' churches. They afford one among many other instances that the medieval architects, equally with ourselves, resorted to precedent, and that one building materially influenced those which came after it.

*St. Michael's* is a fine old church, of large size (sittings for 2,500), much requiring repair and restoration. Externally it is built of the old red sandstone, and every line of the lower part, especially where the smoke has effect, is obliterated by decay. This is the case with most of the buildings in Coventry, and it is greatly to be regretted that in some cases where restorations are attempted the same stone is used. Experience does not always teach. The length of St. Michael's is called 294 feet, and the width 127 feet. The height of the tower and spire, according to Dugdale, is 300 feet. The church is in five divisions internally, and has a five-sided absis. The body of the church was erected at the end of the fourteenth century. The spire, a fine work, was finished by two sisters in 1434, and great part of the church was afterwards rebuilt. The arches are flat and wide, and the details inferior to those of earlier works. There is much of the old wood work remaining. There is a gallery in the south aisle carried on wooden uprights, independent of the column.

At *Trinity Church* external restorations are going on under Mr. Hussey. On the west side of the arch here, at the junction with the transept, is a very extensive and curious wall-painting, which was discovered a few years ago. It represents our Saviour and the last judgment; and contains a large number of figures. If it has not been engraved, it should be commenced forthwith. The roof of the church is spangled with stars, and the moulding and bosses at the intersections are gilt. Trinity Church is remarkable for a large stone pulpit against the south-east pillar of the intersection with transept, with steps to it. The church is greatly disfigured by galleries, and an incongruous altar-piece, which ought to be removed.

*Ford's Hospital* is a beautiful example of timber building, with gablets, delicate tracery in the windows, and an inner court, and might serve as a model for a set of modern almshouses in a wood district, beyond the limits of the Buildings Act! The perfect maintenance of this gem is much to be desired.

At the *Bablake School* also, there is some wooden construction worth looking at. The chimney-piece in one of the rooms dated 1629 does not belong to the building, but was purchased at a sale, and brought there in recent times. Parts of the structure are much earlier than this date.

*St. Mary's Hall*, the meeting place of the corporation, and a very curious building, is, like other structures here, in a miserable state of decay. According to the person in charge of the hall, "It is not open, but we *shew* it." The interior of the hall is perpendicular, and has a good timber roof. There is some ancient furniture here, which has been engraved by Mr. Shaw. The old council chamber has some bits of good carving in the wood ceiling and on the walls. The kitchen appears to be earlier than the hall.

Previous to the visit, Mr. Fairholt had read a very interesting paper on

THE TAPESTRY IN ST. MARY'S HALL: MURAL DECORATIONS,

and the use of tapestry during the middle ages; from which, although we have not room to give it entire, we must make some extracts.

He said truly,—

"I need no excuse for bringing together a few notices of its use in our own country, as it will historically illustrate the tapestry with which I have more immediately to connect my remarks, will shew its early use among ourselves, the mode in which it was manufactured, and the way in which it was used as the means of teaching history, of recording the fanciful lays of the romancist, or the moral teachings of the soberer classes. By these means I shall be enabled to point out to your notice the peculiar place occupied by tapestry in the middle ages, the result of a peculiar phase of educational manners, which is strongly indicative of an age without general literature. The earliest notice of tapestry with which I am acquainted is in the Anglo-Saxon poem of Beowulf, in which we are told that in 'the great wine chambers,'

> 'There shone variegated with gold,
> The web on the walls,
> Many wonders to the sight
> Of each of the warriors,
> That would gaze as it became visible.'

In an age when few could read, and when nobles and warriors disdained that accomplishment as effeminate, the chieftain and his copartners at the board might be, in some degree, instructed by a glance at the walls of his dining-hall; more especially when these stories were brought more vividly to mind by the lays of the attendant minstrels. It thus, in a non-reading age, filled an important office, at the same time that its primary use, that of furnishing and warming the ill-erected stone stronghold of the chieftain, was accomplished."

Passing by his general remarks we follow him to that part of the subject where he remarked upon the practice of decorating churches with mural paintings, which was all but universal in the middle ages, and they are now frequently brought to light when the whitewash is removed. Public buildings and halls were similarly decorated even to the middle of the sixteenth century, as shewn by a series of such ornamentations recently discovered at Carpenters' Hall, &c. Of a different character to all these, and of more interest, in a national and historic point of view, was the tapestry of St. Mary's Hall, Coventry. It was one piece, occupying the upper wall beneath the window, where the dais, or place of honour, was for the principals of the guild.

"The tapestry was divided into six compartments. One was devoted to the figure of the Trinity, which had been cut out, and a figure of justice substituted: and which was made expressly for the situation it occupies, as appears by the border. This probably took place in the reign of Elizabeth. A figure of the Virgin occupies another compartment. Two others are filled with saints and angels; but the most important were the two lowest side compartments, representing Henry VI. and his Queen, Margaret of Anjou, attended by their court in attitudes of devotion. The loyalty of the Coventry men to the unfortunate Henry VI. was really due to that monarch, as he had given them great privileges. In 1451 he bestowed on that city a very particular mark of his affection, by erecting, with a considerable district around it, a county, by the name of the city and county of Coventry, and ordered that the bailiffs from that time should be sheriffs.

Queen Margaret was so attached to Coventry, and her residence there was so frequent, that the city was termed "Queen Margaret's Bower." When the Guilds of St. Catherine were joined to the Trinity, Our Lady, and St. John the Baptist, this accession of members and wealth induced them to build the Hall of St. Mary, for their joint meetings, about the beginning of Henry VI.th's reign. The tapestry was certainly not of the same antiquity; the costume, in the peculiar pattern upon the robes of the queen and others, shewed that it was executed in the reign of Henry VII. It was unfortunate that the corporation books would not furnish them with earlier entries than the beginning of the sixteenth century. The last reparation of the tapestry was in 1826, it was then taken down, recleaned, and repaired. The portion of tapestry at present remaining in St. Mary's Hall covered but a small space of the wall. It was evident that much more was there at one period, and there were two pieces now in London, which were said to have been brought from the hall, which there was very little reason to doubt. One was in the possession of Mr. Pratt, of Bond-street, the other, an imperfect fragment, in that of Mr. Baylis, of Fulham; they belonged to a city antiquary some forty years ago, named Charles Garnold, and were publicly sold at his sale as Plantagenet tapestry from St. Mary's Hall, Coventry.

The very common use of tapestry for "best rooms in England" may be inferred from Mrs. Quickley's exclamation when Falstaff desires her to put off her garment:—"By this heavenly ground I tread on, I must be fain to pawn both my plate and the tapestry of my dining-chambers." But Falstaff tells her, "A pretty slight drollery, or the story of the Prodigal, or a German hunting in water-work is worth a thousand of these fly-bitten tapestries." These water-works and "painted cloths" were coloured in distemper either on the walls or in cloth. Of the former, Mr. Knight, in his Pictorial Shakspeare, has given a curious example from Grove House, Woodford Common, Essex, which bears date 1617, and which was painted on the wall; while the Triumphs of Julius Cæsar, by Andrew Mantegna, at Hampton Court Palace, are similarly executed in water-colours, but upon cloth, and are good illustrations of the other variety in use. But there was yet another kind of hanging of an early origin, to which he (Mr. F.) must allude, and that was of leather. From the Crusaders came accounts of the Oriental practice of covering walls with prepared or ornamented skins, chiefly those of goats and sheep. These were rectangular, or stuck together. Such hangings, or leather tapestry, were manufactured much at Venice and Cordova, and were sometimes either gilt all over or ornamented with gilt devices, in which case they bore the name of D'or Basane. Of this class of hangings, a curious fragment which once decorated the house of Albert Durer, at Nuremberg, was now in the collection of the Government School of Design, at Somerset House."

Before mentioning other places of interest visited by the association, we will give a short memorandum of a paper read by Mr. Bracebridge, on

THE REMAINS OF KINGSBURY,

a seat of the kings of Mercia, on the river Tame.

On the south of the remains, running east and west above the ravine, was a length of 71 feet of very ancient wall of sand-stone, now about 20 feet high, and terminated at each end by an octagonal tower, the sides of which were 7 feet. The wall, which is in good preservation, and of very ancient construction, was about 10 feet thick, admitting a narrow passage from tower to tower in its centre, which appeared to have been extended from the base of the S.W. tower through the north to a sally-port, now closed up. The wall extended, with a small deviation of line, 51 feet beyond the gate, and was here probably intercepted by a tower; this, however, had disappeared, and no further remains of the ancient structure were to be discovered, except in the foundation of a large oblong building within the court, unattached to any ancient structure of that early period. Three sides of a court to the west, forming a mass of buildings covering an area of about 80 feet square, had disappeared, and the whole place was now occupied as a farm-house, but the structure was exceedingly solid, and the high-pitched roof excellent. Mr. B. described the church of Kingsbury to be a handsome structure, with a square tower, in the style of the early English period. It was separated from the hall by the ravine before alluded to. On the north side was an elegant edifice, elaborately finished in an early style also, and communicating with the nave and aisles of the church by two arches; this was the Bracebridge chapel.

We add notes of a paper read at the same meeting, by Mr. Dunkin, on

LESSNESS ABBEY,*

although not immediately connected with Warwickshire.

The writer observed, that Dr. Stukeley states he saw the north wall of the church nearly entire. His sketch represents the upper portion pierced with seven lofty lancet windows, despoiled of tracery, and the principal entrance near the western end, surmounted by a semi-circular arch of the earliest Norman period, whilst several smaller windows below are represented crowned only with a segment. But the doctor's usual accuracy here fails; for though, when some time since examining the ruins, with Stukeley's sketch in his hands, the writer found the upper part of the walls taken down to the string-course on which the cills of the windows rested, the lower part was still entire, several of the lower windows existing in the places indicated in the sketch. These are, however, of the early lancet form, and though the opening is of considerable width in the interior, it diminishes to a space of little more than 5 inches on the outside, scarcely ornamented with a single moulding. Part of a receding architrave still decorates the jambs of the western entrance, but the arch being gone, its character cannot be ascertained.

The whole area of the church, cloisters, and lodgings of the monks, is still, as in Stukeley's time, a market garden; but no tombstone now remains on the eastern side. From certain indications in the boundary wall, it would appear that the church was originally about 40 feet wide and 97 feet in length, and that the tower, a structure only about 17 feet square, abutted against the northern side of the church, between the nave and the chancel, of which it formed a component part. A doorway, apparently of the time of Edward I., still exists at the south-western course of the garden, and seems to have been the principal entrance into the abbey and opening into the cloisters beneath the refectory, a building that stood on the southern side of the quadrangle opposite the church; the kitchen adjoined; the dormitory surmounted the cloisters, and the rest of the building contained the chapter-house and the conventual offices. The convent garden still remains inclosed within its ancient boundary.

The farm-house, pulled down three years since, was the site of the residence of the founder, and rebuilt by the abbots. It was in accordance with the architecture of the period, and was in capital preservation—rubble below, timber stud-work above. In it was a noble hall, containing the old solid refectory-table and the dresser, and it bid fair to last for ages. At one end was a beautiful and grand staircase which led to the lodging rooms. To the left was the finely panelled parlour. Lesness Abbey was desecrated with nineteen other "meanly endowed" religious foundations by Cardinal Wolsey, to furnish funds for building two "seminaries of learning in Oxford and Ipswich. Of the former, no relic remains save a wretched drawing by Neale; of the latter only a tottering, uncouth, brick portal."

* Lesness Abbey stands about 2 miles to the westward of the new pier at Erith. It is in the parish of Erith, in the county of Kent. It was founded in 1178, by Richard de Lucy, chancellor to Henry II.

Weever, the author of "Funeral Monuments," was rector of "Lesness" in the reign of Queen Elizabeth.

## THE PROPOSED ALTERATIONS IN WESTMINSTER ABBEY.

We have before alluded to the dissatisfaction with which the proposed alterations in Westminster Abbey are viewed by a large number of persons, and we are anxious to obtain some further consideration of the matter before the works are proceeded with. The outlines of the proposed plan, so far as we have been able to ascertain them, are to remove the present wood-work of the choir, to substitute stalls of an ecclesiastical character, to leave the present stone screen which shuts off the choir from the nave, but to remove the organ which now surmounts it; to divide that instrument into two parts, one of which is to be placed over the stalls on each side of the choir, but to remove the present close screens which separate the choir from the transepts, and to substitute moveable open screens in their place, *and to admit the congregation* for whom increased accommodation is to be provided, *to the transepts*. The clergy and choir will continue to occupy their present places in the stalls, the congregation will fill the choir and transepts, and the nave will continue as hitherto, perfectly empty.

There are various objections to this plan. It is urged, that as sound proceeds in a straight line, and loses much in distinctness if it diverge at an angle, it is evident that the voice of the minor canon in the stalls, who chants the prayers, will fall very indistinctly on the ear of a person in the transepts, viz., in a part of the building at right angles to that which he occupies.

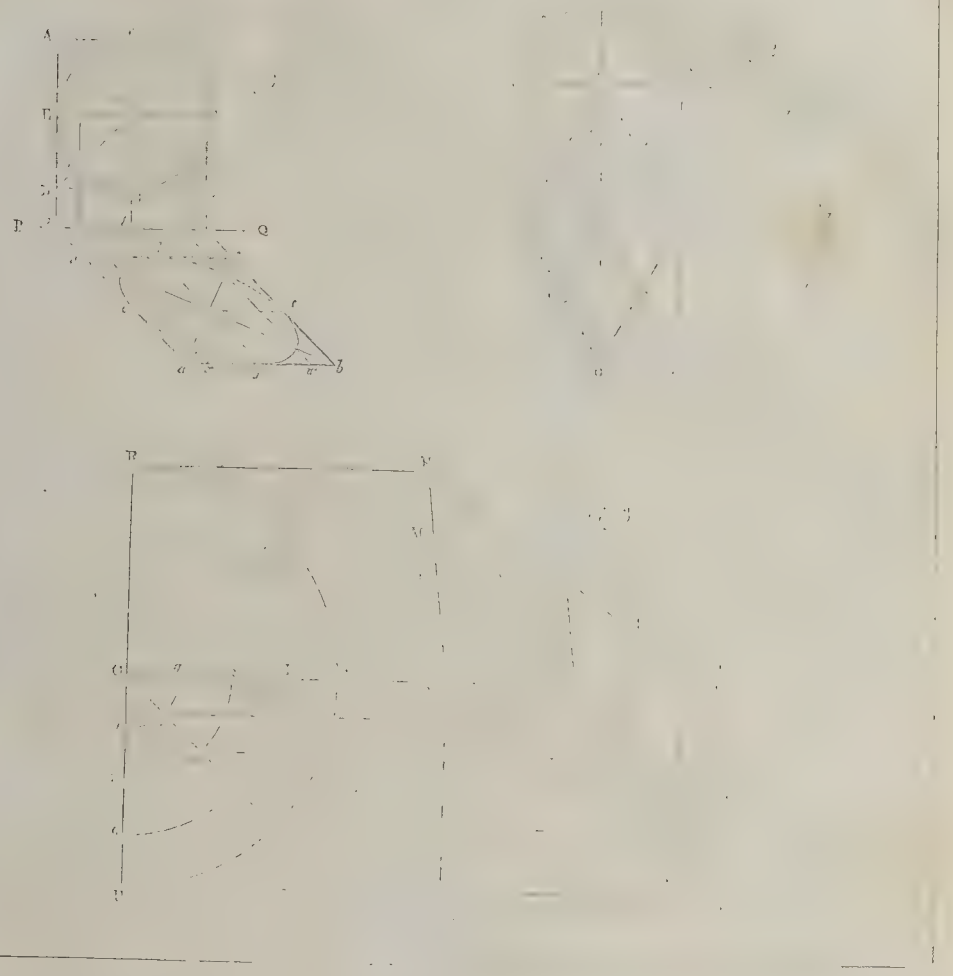
It seems that the experiment was tried at the consecration of the colonial bishops on St. Peter's day, and though those who were engaged were moved to the east of the choir, and exerted a power of voice much greater than is usually requisite, we understand that they were not distinctly heard in the transepts, especially in that on their own side. Another objection urged against the occupation of the transepts, is the vicinity of statues in all attitudes, of all persons, in all costumes, from a full-bottomed wig and peer's robes to an absence of all drapery, which will scarcely admit the devotional feelings which should influence a Christian congregation. At all events, the monuments will have to be removed before the force of public opinion. Accommodation,

THE GALILEE PORCH, ELY CATHEDRAL.*



* See page 370, in present number.

## GRADATION OF THE ELLIPSES.



however, must be given, and the question is how. We would answer, throw open the nave by removing the screen at the west end of the choir. Objections have been raised to this, but all of them may be removed; and next week we will refer to them with that object in view. It is to be hoped that the dean and chapter will pause yet a little.

### ON THE GRADATION OF ELLIPSES.

In architecture and some other branches of the constructive arts, it frequently happens that a number of concentric ellipses have to be delineated in the same plane, and in such a manner, that the space contained between any two contiguous boundaries shall not be of equal wideness all round, but foreshortened in one direction and elongated in the other. This is called the *gradation of ellipses*, and an easy and expeditious mode of effecting the gradation is a desideratum which the present paper is intended to supply.

If a circle and its circumscribing square be viewed obliquely in a given angle, the orthographic projection of the square will become a rhombus, and that of the circle an ellipsis; this is the first principle to be attended to in the theory which we are now about to explain, and since the principle is simple, the theory to which it is to be applied will be found to partake of a similar character.

Let ABCD in the annexed drawing, fig. 1, be the given square, and E G F H its inscribed circle, and let it be supposed that the rays are incident at an angle of forty-five degrees. Draw the diagonals A C and B D intersecting each other in ⊙ and the circumference of the circle in N, M, R, and S; and through the centre ⊙, and parallel to the sides of the square, draw the straight lines E F and G H meeting the vertical and horizontal sides in E, F and G, H; then will the projections of the four points in the sides of the square, with the four corresponding points in the circumference of the circle, be eight points in the circumference of the projected ellipsis; this at once points out the principle of construction for the projected figures.

Assume any point P in the plane of the figure, and through P draw the straight line PQ parallel to DC, the side of the square, and produce the vertical sides AD and BC to meet PQ in *r* and *v*, and through the points M, G, and N draw the vertical lines M*s*, G*t*, and N*u* to meet the same line PQ in *s*, *t*, and *u*. Then, at the several points *r*, *s*, *t*, *u*, and *v* make angles equal to forty-five degrees, so that the straight lines *ra*, *sx*, *tg*, *uw*, and *vb* may lie in the direction of the incident rays. On *ra* or any other of these parallels set off the distances *rd*, *re*, and *rn* respectively, equal to *r*D, *r*E, and *r*A, and through *d*, and *a* draw *dc*, and *ab* parallel to the directrix PQ and meeting *vb* in *c* and *b*; then is the rhombus *abcd* the projected representation of the square ABCD. Draw the diagonals *ac* and *bd*, and the parallel *of*; then will the several points of intersection at *e*, *m*, *h*, *o*, *f*, *n*, *g*, and *p*, be eight points in the circumference of the projected ellipsis, through which points the curve used may very easily be traced.

It may sometimes happen, but more especially in the projection of solid bodies, that the rhombus or parallelogram itself is given in which it is required to inscribe an ellipsis, or a series of concentric ellipses having the condition formerly alluded to; in this case the square and its inscribed circle by which we determined the points of projection are not given, but it is easy to perceive that by a reverse process, the square and the circle could very readily be found; it is, however, not necessary to do so, for by examining the preceding construction a method will instantly suggest itself of doing the same thing directly from the rhombus as it is given.

Let ACBD, fig. 2, be the given rhombus in which it is required to inscribe an ellipsis, by means of eight determinate points in its circumference. Draw the diagonals AB and CD, intersecting each other in the point ⊙, which is the centre of magnitude of the figure; then through ⊙, and parallel to the sides of the rhombus, draw the straight lines *ac* and *bd*, marking out the points *a*,*c* and *b*,*d*, which are four points in the circumference of the ellipsis, corresponding to *e*,*f* and *h*,*g* in the preceding construction.

Through A and B, the extremities of the diagonal AB, draw the perpendiculars A*e* and

B*i*, meeting *ei* the parallel through C in *e* and *i*, and making *ei* equal to the diagonal AB. On *ei* as a diameter describe the semicircle *egi*, and make the angles *eCf* and *iCh* respectively equal to 45 degrees, and through *f* and *h* draw the straight lines *fq* and *hr* parallel to A*e* and meeting AB in *q* and *r*; then are *q* and *r* two other points in the curve of the ellipses.

Again, through C and D, the extremities of the diagonal CD, draw the perpendiculars C*i* and D*n*, meeting the parallel *in* in the points *i* and *n* and making *in* equal to CD. Upon *in* describe the semicircle *ihn*, and make the angles *i*B*k* and *n*B*m* respectively equal to 45 degrees, and through *k* and *m* draw *kp* and *mo* parallel to C*i* or D*n*, meeting CD in *p* and *o*; then are *p* and *o* the other two determinate points in the curve of the ellipsis, so that the whole of the eight points are now determined the same as in the preceding case. Through the points thus found let the ellipsis be drawn, and it will be the figure required by the problem. And exactly in the same manner may the points for any number of ellipses be found, as in the case which follows.

Should it be required to describe a number of concentric ellipses upon the same diagonals or in the same parallelogram, the points of construction for each ellipsis are very easily determined, for we have only to divide the radius PQ, fig. 3, into as many parts, either equal or in a given proportion, as there are ellipses required, the points of division being at *amp*; then with the several radii QP, Q*a*, Q*m*, and Q*p*, describe the quadrants P*cs*, *adb*, *men* and *pfq*, which bisect by the straight line Q*c*, and from the points of bisection, *c*, *d*, *e* and *f*, let straight lines *cg*, *dl*, *ek* and *fi*, be drawn parallel to AG and meeting the diagonal BF in *g*, *l*, *k*, and *i*; then will these be points in the respective ellipses, and if the same distances be set off from F along FB, an equal number of points will be determined in the opposite direction. Let a similar operation be performed with the other diagonal and an equal number of points will, in like manner, be ascertained, so that any required number of ellipses may be described with the greatest imaginable ease and facility.

It may now be useful to show in what manner the principal axes of the ellipsis are to be found, since it is from these only that the ordinates can be computed, and the truth of the construction verified, for it is not sufficient to ascribe an elliptic character to the figure, because it assumes an oval form, as numerous oval figures can be constructed on the same axes, all of them presenting the form of ellipses, while not one of them possesses the properties peculiar to the conic curve.

The equation by which the nature of the conic ellipsis is defined, may be represented in the following specific form, viz.:—

semi-trans.$^2$ : semi-conj.$^2$ :: rec. abss. : ord.$^2$

and making the product of the mean terms equal to the product of the extremes, it becomes *semi-trans.*$^2$×*ord.*$^2$=*semi-conj.*$^2$×*rec.abss.*; then by resolving this equation in reference to the ordinate, its value will be found by an evolution of the first degree. Thus we have

$$Ord. = \frac{semi\text{-}conj.}{semi\text{-}trans.} \sqrt{rec.\ abss.}$$

Therefore, by taking certain points in the transverse axis, and calculating the ordinates corresponding to those points by means of the above formula, the truth of the construction may then be inferred from the coincidence of the measured and calculated results. This method of proof, it is true, is not scientifically rigorous, but it is sufficiently accurate for shewing that the curves produced in this way are ellipses.

When the position of the conjugate diameters is given, that of the principal axes can easily be found, for we have only to bisect the angles made by the conjugate diameters, and the straight lines bisecting the opposite sides of the parallelogram; then straight lines drawn through the centre and the points of bisection both ways, will be the principal axes. Thus, bisect the angle F*w*H, fig. 3, by the straight line MN drawn through the centre *w*, to meet the opposite sides of the parallelogram in the points M and N; then is MN the position of the principal transverse axis, and if RS be drawn at right angles thereto, also passing through the centre, it will, in like manner, point out the position of the principal conjugate axis.

## BUILDINGS NEAR DANGEROUS MANUFACTORIES.

### THE REFEREES AND THE MAGISTRATES.

At the Surrey adjourned quarter sessions the long-pending question of "Boulanger *v.* Sugden," on the construction of the Metropolitan Buildings Act, came on on Tuesday in last week, before Mr. Puckle and a full bench of magistrates, at the Sessions-house at Newington, for adjudication. The facts of the case (being no doubt familiar to our readers) were briefly these,—that Mr. Sugden, a builder, had erected certain houses near the Bermondsey New-road, within a few feet of Mr. Boulanger's manufactory, where a dangerous business is carried on as a hat japanner, and the official referees appointed under the Act had fully investigated all the circumstances, and, by their award, declared the erections of Mr. Sugden to be illegal.

Mr. Ballantine addressed the jury on the facts of the case, and proved that the business was dangerous, by Mr. Hudson, the surveyor to the West of England Insurance Office, a gentleman from the Norwich Union Fire Insurance Office, Mr. Wilson, foreman to Mr. Boulanger, Mr. Henry Hobbs, a manufacturing chemist, Mr. Richard Phillips, professor of chemistry to the Commissioners of Woods and Forests, and others.

Mr. Petersdorff, for the defence, contended that the business was not dangerous, and that these premises did not come under the operation of the Act, as they were partly commenced before it came into operation; and called Mr. Porter, the surveyor of Lambeth, who stated that these premises were commenced in 1844, so as to evade the Buildings Act; a person, named Garratt, a japanner, who denied that oil and turpentine were inflammable; and Mr. Clarke, who attempted to prove that the business was not dangerous.

Mr. Hesketh, the district-surveyor, deposed that when the houses were in course of erection Mr. Sugden told him that Mr. Boulanger could be turned out at any moment, or he should not have allowed them to proceed; and it was only afterwards that he knew Mr. Boulanger had a long lease of the premises.

After Mr. Ballantine had replied on the whole case, the chairman, having summed up, the jury retired, and after half an hour's absence returned into court with a verdict that the business was not of a dangerous nature. This verdict was received with manifest surprise. As three other cases remained to be disposed of, an application was made by Mr. Boulanger's counsel to allow a new jury to be empanneled to try them on a future day. The chairman refused to allow a new jury; whereupon Mr. Boulanger's counsel said it would be vain to enter into the cases with the present jury, and should for his part decline any further part in the matter. The jury then, without evidence, gave verdicts for the defendants in the three other informations!

## DEE BRIDGE: THE REMAINING RIBS.

The directors of the Chester and Holyhead Railway are now making preparations to test the fellow rib to the one broken by the late lamentable accident.

It has been removed from its original position to the abutment on the Saltney side of the river, and placed upon supports of masonry erected for that purpose, and they are now engaged collecting railway bars to weight it with; the test as recommended for bridges of this character in a former number of this journal. We believe it is intended to test this rib to its breaking weight, and this, if correctly and carefully done, will set at rest the much disputed question of the power of these ribs to sustain the load they were intended to support, which will be exceedingly satisfactory, so far as a weight at rest goes; but a further test is wanted, and that of a totally different character: we want data to calculate the effect of vibration, oscillation, and concussion, occasioned by the transit of heavy loads at varying velocities. These are the destructive agents of both wrought and cast iron, as evidenced in the former by the repeated failures of the axles of engines, carriages, &c., and the necessity there exists for their being frequently changed; and in the latter, by that of cast-iron girders. Cast-iron is a material so brittle in its nature, that girders are frequently broken by the motion of the carriages upon which they are being conveyed, as frequently in the course of erection by sudden jerk, from the slipping of the chains or otherwise; and if accident should occur, and the girder fall, a fracture is the inevitable result. Under these circumstances, it may be asked, is cast-iron fit for bridges of this character? Is a material that requires so much care in its preparation (as they are frequently broken at foundries), in its removal, and erection, fit for railway structures, where it is at all times subject to those strains and sudden blows just enumerated? The unhesitating answer is, no! and the sooner it is abandoned for railway purposes the better, either by the good sense of railway directors themselves, or by legislative enactment.

We must not be lulled into security by the statement, that this is a solitary instance of failure: why, they are *too numerous* to mention, as is well known to railway officials, but as they have not been attended with fatal consequences, they have not been made public. Accidents of this kind are always hushed up, as that at the Tam Valley Bridge, at Tamworth, would have been, had it not been for the vigilance of the editor of the *Birmingham Journal*.

Mr. Stephenson, himself, admits that cast-iron *alone* is not a suitable material for railway bridges, or he would not have brought to its aid as he has done (though erroneously applied), wrought-iron tension bars in many cases similar to the Dee Bridge, and in other cases, timber.

The bridge is now open for passenger traffic, the ribs having been supported at intervals by piles driven into the bed of the river; and we believe it is the intention to strengthen this bridge by throwing out struts from the piers and abutments to the joists of the ribs, and connecting those struts with horizontal pieces of timber or collar-beams secured to the central division of the rib. Surely if the bridge requires this foreign aid, it may be considered an additional argument against the further use of cast-iron for such purpose.

B. B.

N.B. Should the bridge be strengthened in the way proposed, the position of the ribs should be altered, as a curve in a bridge of this nature is exceedingly objectionable.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Contracts and Tenders—in Egypt.*—The works of the embankment of the Nile proceed satisfactorily, and it is expected to see them in an adequately advanced state at the period of the next inundation of the river. The estimates first made by the engineer amounted to *about* two millions of dollars—but now the same party states them at six millions; and the viceroy, who seems to be quite awake, and prepared for such contingencies, says that he thinks they will be near eight millions. The worst is, that some believe that the work will not answer its purpose.

*Statues of great Men—on the Continent.*—The colossal image of Frederic the Great, made of cannon by the royal founder, Mr. Klagemann, at Bresslau, has been completed, and brought from the arsenal of that city to the Guard-Place. The elegant pedestal of Silesian marble made by Stonemason (*Steinmetzmeister*) Mr. Burgerstab, is also near its completion—and the festival inauguration of the monument will take place at the next Bresslau wool fair.

*Public Sitting of the French Academy.*—20th July. The chair was taken by Mr. Reinaud, who distributed a number of prizes, of which we may mention the following. A medal was given to Mr. A. Lenoir for his "*Etudes* on the Gothic Architecture of France;" to Mr. de Caumont for "Monumental Statistics of Calvados." Numismatic prizes were given to Messrs. G. Ricci and Lecointre-Dupont for their works on the coins of *Luceria*, and those of Normandy and Poitou respectively. Mr. Lenormant read his report on the *Memoirs* sent, and expatiated on the daily increased difficulty of selecting amongst such a mass of monographies—but concluded by saying very truly: "it is out of such provincial monographies that the history of the country is to be composed." The following authors

of printed or MSS. memoirs crowned, deserve also notice. *Ed. Clerk*, the Roman Franche Comté, elucidated from its ruins, in 8vo.—*Abbé Cochet*, the churches of the arrondissement of Havre, 2 vols. 8vo. — *A. de Boisseau*, the old inscriptions of Lyons, 8vo.—*H. Bointhibault*, Memoir on the Collegiate Church of St. André, at Chartres, MS.—*Bouillet*, Monumental Statistics of the Dept. du Puy de Dome, MS.—Abbé *Texier*, History of Glass Painting in Limousin, 8vo.—*Fontenay*, Fragments of Metallurgic History, 8vo.—[*Journal des Débats.*]

*The Library and Archives* — of the Heraldic College of Paris have been transferred to a part of the ancient Hotel Choiseul, where two fine saloons (decorated in the style of Louis XIV.) have been allotted to them.

*The Statue of Marshall Drouet d'Erlon*—has been just exhibited in the Champs Elisées, previous to being conveyed to Rheims—the birth-place of this old soldier of Napoleon. It is the work of a very young man, Mr. Louis Rochet; and the bronze used weighs 1,200 kilos., cast in the foundry of Messrs. Eck and Durand of Paris.

## RAILWAY JOTTINGS.

The installation of the Prince-Chancellor at Cambridge is said to have added no less than 5,000*l.* to the week's receipts of the Eastern Counties Company.——The reduced rate of fares and tolls to which the Great Western are restricted by recent Acts of Parliament, is said to be considerable: first class, London and Bristol, from 27s. down to 21s., and all the other classes in proportion.——All the lines of which Mr. Hudson is chairman, are said to have conveyed stock and implements free of charge to the Northampton 'show' meeting of agriculturists. If the usual charges on these lines, however, be so much higher than others, as they have been declared to be, the public themselves are the real sources of a 'show' of generosity such as this, to which, notwithstanding, let all due credit be given. ——The contract for stations at Stamford, Ketton, and Luffenham, is said to have been taken by Messrs. S. Groocock and Yates.—— The Trent Valley line is to be opened for traffic on 1st September.——The *Bradford Observer* announces 'probably the cheapest and certainly the most complete and comprehensive railway trip that has ever been offered to the public.' This rather novel affair, in fact, consists of a tour for 'the million' to the lakes, the Isle of Man, and the sister kingdoms of Ireland and Scotland, diverging from Fleetwood, to which 'the million' were to concentrate from Birmingham, Leeds, and Manchester, &c.; with a choice of returning on any day from the 3rd inst. (the day of departure) till the 13th: fares 'exceedingly cheap and all arrangements liberal.' —— Captain Coddington, R.E., the Government inspector, has 'thrown up his commission, and abandoned the certainty of promotion' for the appointment of manager of the Caledonian line for ten years, with an annual salary of 1,800*l.* for the first three years, and 2,000*l.* for the remaining seven. —— The flow of the Tweed has almost suffered the fate designed by a cockney once on a time for the Thames itself, by being all but choked up and arrested by the tumbling of a bridge, 'on a gigantic scale,' now, or rather lately, in course of erection over it at Ashysteel, where its premature ruins now lie 'like a vast dam' across the channel. 'Mr. John Smith, one of the architects, had just examined it, and seen nothing wrong.' There were two arches, both of Whinstone: span 135 feet. The 'balancing' was in the act of being put on, but seems to have proved to be 'heavy weight' rather for the gigantic mass to sustain. No lives, however, were lost.——A serious accident occurred on the Dundee and Perth line, near Dundee, on the 22nd ult., from the embankments not having had sufficient time to consolidate, it is thought, and by the consequent sinking of both embankment and rails, whereby the engine of a train ran off the line, and led to the destruction of several carriages by the concussion, and to the death of one if not more persons, and the severe injury of six others.—— The Waterford and Kilkenny line, near Kilkenny, according to the *Kilkenny Moderator*, has of late 'progressed in the most astonishing and rapid manner,' under the contractorship of Messrs. Hammond and Murray. The station-house is 'rising with a rapidity almost equal to the magic palace of Aladdin,' ominous, we hope not, of an equally magical disappearance like that of this notable edifice. It is satisfactory, in the meantime, however, to know, that 'the contract to Lavistown will undoubtedly be finished at the period prescribed—next month—to the great advantage of the company.' ——All the engine drivers employed on the Jamaica railway are American blacks, who have undergone a strict examination by a European engineer, and are said to discharge their duties with exemplary skill and attention. ——The Atlantic and the Mediterranean, says a foreign paper, will be united with Moscow and Petersburg in a few years. In the meantime, the whole of the line from the frontier of Austria, to Warsaw, which it places in direct communication with the great lines of Prussia and Austria, is about to be opened for traffic.——The *Presse* announces the opening of the line from Orleans to Bourges, on Tuesday week before last.——The obstacles presented to the introduction of railways in Holland by the prevalence of navigable canals and the treacherous nature of the ground nearly every where throughout the country, have been engaging the ingenuity of the engineer. A design for the obviation of the former difficulty has been suggested by the Chevalier Conrad, the engineer of the Amsterdam and Rotterdam railway; he gives it the name of a *crane-bridge*, "*pont à grues*," in opposition to that known in England as a *swing-bridge*. Literally, it is said, the name is true, as the iron girders are nothing else than eight cranes, four on each side, corresponding to the four lines of rail, and so fastened together, that by the application of wheel machinery to one side, the whole frame-work falls back in a line parallel with the pier, leaving a sufficient opening to allow a vessel fully rigged to pass easily between. The same machinery is used to bring the series of cranes together again, when a few bolts or catches suffice to retain them firmly in a position that trains may pass over them in perfect safety. M. Conrad states that bridges on this construction are attended with little or no vibration on the passing of a train, and that they are worked with ease and precision.

## ELECTRO TELEGRAPHIC PROGRESS.

A letter from Hamburg states that a company has been formed by the merchants there to establish a line of electric telegraphs from the mouth of the Elbe to that of the Weser, to which others are to be added afterwards, communicating with the principal towns in the north of Germany.——The *Kentish Mercury* states that the Electric Telegraph Company here are "now making such arrangements as will enable them to communicate the true time, as observed daily at the Royal Observatory, at Greenwich, to every station on the various lines of railway where the company has a telegraph station, and, of course, to all large towns throughout the kingdom." It must not be overlooked, of course, that however useful a general adoption of the true time at Greenwich throughout all the large towns in the kingdom may be, the true time at Greenwich would itself be a very false time at all towns that lie either west or east of the line of its precise position north and south. For the mere *adjustment* of the different times in various towns, however, by the true time at Greenwich, the plan to be adopted must be one of great and general importance. The contrivance itself by which the end in view is to be daily accomplished is very simple. The indicating ball at Greenwich Observatory, when it begins to fall at one o'clock, is to strike a spring, which, connected with the company's various lines of electric wire, will instantly strike a bell at every station. Thus it is not only possible and practicable, but what in all probability will be a matter of daily experience ere very long,—that before the ball at Greenwich Observatory shall have reached the ground in its fall, the electric bell at Manchester, for instance, will have been struck and set ringing; so that it shall be known there that one o'clock has been announced at Greenwich, before the ball there announcing the fact by its fall has fallen even a single foot!

## NOTES IN THE PROVINCES.

The consecration of St. Matthew's Church, Widcombe, took place on Tuesday week. It is built in the decorated Gothic style, and consists of a nave and chancel, with north and south aisles the whole length of the building. The tower is surmounted by a spire or broach, about 155 feet high. Internally, the chancel is separated from the aisles by a carved stone screen. The church gives accommodation for 1,250 persons, of which 500 sittings are free. There are also 290 sittings for children. The pulpit is of stone, with tracery. The pews are of stained deal. The heads of all the windows are filled with flowing tracery. The tower contains the six bells formerly in the tower of the old parish church.——It is proposed to erect a new hall for the holding of the county court at Monmouth.——The foundation of the new church to be erected at Etruria, in the Potteries, was to be laid last Thursday.——A new Independent chapel was opened at Crewe, on Wednesday week before last.—— Stringent measures are being adopted at Liverpool under the local Sanitary Act, for the suppression of the smoke nuisance, on which subject there seem to be some rather restive attempts to resist, or, in fact, to burke the clause altogether, either by the use of insufficient or negligently worked apparatus, or by the counter-charge that such practices have "a tendency to destroy boilers, so that great danger was to be apprehended therefrom both to property and to human life." In reply to the first of these attempts, the magistrate declared that the penalty was exigible if the apparatus, which had been found sufficient, were negligently used. As to the second, the magistrate was taken a little aback, and adjourned the case before him (that of a company of ironfounders at Windsor) for further evidence on a point "so seriously affecting the manufactories of the town." Evidence was thereupon given that smoke consumers, similar to that in question, had been used for several years in the Harrington Water Works, and did not injure the boilers. The magistrate, Mr. Rushton, considered this evidence satisfactory, and "hoped that every person connected with furnaces would take warning." One of the parties charged now shifted his ground, and declared that he had applied the apparatus, but could not work it. Mr. Rushton referred him to the town council to rectify any thing that might be wrong, but as the law stood must insist on the fine being paid.——A meeting of the Architectural Committee on the Scarbro' parish church tenders, was held on Saturday before last, when Mr. Christian, the architect, was present. The meeting took place in consequence of the contracts having come in not only heavier than was expected, but exceeding all that was anticipated, to a great extent. The contract for the stone work alone, exceeds 3,300*l.* For the whole building the contracts will require 6,000*l.* To this must be added 1,000*l.* for architect's per centage, and incidental and other items. The committee, it is said, do not feel justified in taking any step for commencing the repairs until the subscription list reaches 5,000*l.*, instead of 3,250*l.* as at present. Lord Hotham has given 200*l.* towards the restoration.——A new tower to Seamer Church, to be erected by the lord of the manor, Mr. W. J. Denison, was laid week before last, according to the *Leeds Intelligencer*.——The church of St. Mary, Gateshead, has been repaired, cleaned, and re-opened.——Very extensive copper mines have been discovered near Kilbirnie, in Scotland. Mr. Bennet, an extensive English miner, says the *Glasgow Gazette*, is on terms with the proprietor, Mr. T. Paton, for a lease.——The weekly wages expended at the Forth Iron Works, near Stirling, are about to be increased from 1,000*l* to 2,000*l.* by the operation of three new furnaces in addition to the five now in use, and a new blast-engine, which with its fellow will yield a blast to the amount of 350 horse power.— The small town of Girvan, which ten years ago had only two churches and two chapels, has since then had three new churches built for an increase of population not above 700 or 800. The multiplication of sects appears to have been the exciting cause. There are nine of these at present, all differing in one form or another.—— The pavement trade of the county of Caithness, celebrated for its flags, employs, says *Jerrold's*

*Weekly Newspaper*, 700 men on the spot, and gives considerable employment to shipping. ——The Duke of Sutherland is said to be making a princely addition to Dunrobin Castle at Inverness, where he has ninety masons busily at work in the preparation of the castle for the anticipated reception of her Majesty, for whose occupation state apartments are being expressly built. Besides the occasional use of Caen stone, the buildings are of 'a beautiful white sandstone from the duke's own quarries at Brora.'——The average daily number of persons employed on public works in Ireland for the week ending 10th July, was 36,952; total expense 12,446*l*. In the week preceding, the number was 40,705; expense 19,127*l*. The stoppage of the public works is eliciting 'indignant outbursts' from various quarters.

## AWARDS OF OFFICIAL REFEREES.

WOOD DRESSINGS TO EXTERNAL OPENINGS.

With regard to four houses in James-street, Bethnal-green, Alfred Single, in altering them, had constructed the door-dressings to each house of woodwork. This was objected to by the district surveyor, and not being altered, was communicated to the official referees.

The referees determined, "that the door-dressings in question are projections from a face wall not forming a part thereof, and that not being made of fire-proof materials are contrary in this respect to the Metropolitan Buildings Act, as alleged in the said information; and, moreover, inasmuch as it does not appear to us that there is any sufficient reason, economical or otherwise, for the use of wood as outside linings or as dressings to doorways, we do hereby direct the said Alfred Single forthwith to remove the woodwork in question, that is to say, the outside linings and dressings to the doorways of the houses in question, being Nos. 5, 6, 7, and 8, James-street, Bethnal-green."

The awards of the referees, during the past month, relate chiefly to the projection of buildings before the "general line of fronts," wherein each case stands on its own merits, and has little public interest.

## BLIND BUILDERS.

The following tenders were received at the Office of Sewers for the Tower Hamlets, on the 29th ult., for 1,150 feet of second size sewer, in New-road, St. George's-in-the-East.

| | |
|---|---|
| Pegram | £1,150 |
| Blackburn | 1,000 |
| Shalders | 947 |
| Munday | 920 |
| J. Hill | 900 |
| Wilson | 799 |
| Stewart | 798 |
| Curtis | 792 |
| Crook | 792 |
| Batterbury | 773 |
| Livermore | 767 |
| W. Hill | 766 |
| Yeoman (accepted) | 695 |

Tenders for repairs, &c., at a house in Hatton garden, under Mr. C. Broadbridge.

| | |
|---|---|
| Langmead | £351 0 |
| Kemp | 338 0 |
| D. Bodjer | 329 10 |
| T. Bodjer, Hatton-garden | 230 0 |

The last accepted.

Tenders opened at Lambeth Workhouse on 26th ult., for repairs to be done at the Norwood School of Industry.

| | |
|---|---|
| Walker and Soper | £334 10 |
| Pritchard and Son | 329 19 |
| Wells | 319 10 |
| Buck | 299 0 |
| Crawford | 290 0 |
| Thompson | 243 0 |

City Improvements.—The Remembrancer having announced that the City Improvement bill in the line to St. Paul's had passed through Parliament, it was proposed and agreed to that the work should not be proceeded with until it be determined from what source the funds required for carrying the improvements into effect were to be raised. The subject was referred to the improvement committee.

## PROPOSED MUSEUM OF SCULPTURE.

M. Jules Sohn, to whose invention for the multiplication of works of art we have already referred, has published a proposal, from which we take the following:—

"The situation of the sculptor is scarcely better than that of his art. The isolation of which we have spoken is fatal to him in the last degree. Immured in his solitary studio, none interest themselves in his welfare; when he awakes from his dream of study, and attempts to carry his designs into execution, he becomes the prey of the hungry dealer, who cares not for the dignity of art. Even in the present day, when publicity seems so easy of attainment, how many fine statues and *bassi-relievi* remain unnoticed in the dust of the studio! For the few who have acquired fame and fortune, how many men of genius are exposed to the numerous difficulties which beset the path of those who possess no other resources than their own talents; how many are compelled to renounce a career that filled their youth with pleasing and hopeful aspirations; how often does the strength of genius bow in the struggle; how much oftener is it forced to undertake works frivolous and unworthy, instead of those which would confer honour upon their creator! Governments, generally speaking, are incompetent to remedy the evil, however they may have the desire so to do; the power they possess being necessarily limited."

"A general museum of sculpture, similar to that in Paris, will be established in London—the centre of the industrial world; which contains within itself so many resources of art, and is, consequently, a suitable place for such an establishment. Into this museum, which will remain a permanent exhibition of all the *chefs d'œuvre* of sculptures, we would gather such subjects as should form a complete and continuous history of the art. Here, reproduced by the best artists and by the most efficient means, will be found, by the side of the sublime creations of Greece and Rome, the sacred sculptures of the middle ages, the elegant and refined works of the *Renaissance*, and the finest statues of modern times; the collection will, therefore, be a treasury for all the plastic wealth of Europe. It is proposed to execute reduced copies of every work consecrated by the admiration of ages, and to place under contribution—in order to make the museum universal—every public and private gallery, the cathedrals, palaces, and royal gardens; in short, every place where the art of Phidias and Michael Angelo appears in all its grandeur and its glory. This gathering of works of diversified character will allow of a classification of the different schools, and of the various epochs; it will give a new impulse to historical study, and, at the same time, will furnish the student with ready means for completing his education, by enabling him to refine his taste and his style by a constant reference to the masterpieces of art, without the danger of weakening or entirely losing his own originality. Art has no country that can entirely claim her as its own; we shall, therefore, receive with pleasure our brethren from foreign lands. France and England are too little acquainted with the genius of their neighbours; the names of Thorwaldsen, of Rauh, Rietschel, Schwanthaler, Banks, Bacon, and Flaxman, are celebrated; but their works are almost or utterly unknown among foreigners; and their reputation has not yet received that meed of applause which consecrates their glory, and which each country is willing to bestow."

"But it is no part of our design to limit the contents of our museum to statuary works alone. Paris, it is well known, has for a long time enjoyed the privilege of furnishing Europe with architectural decorations; still her best artists are fully aware that what has hitherto been done in this branch has arisen from a mere mercantile spirit, and the moulding of these ornaments has therefore become a business exercised without knowledge and without taste; no doubt some modellers have produced correct and elegant designs, but, *as yet*, no manufacturer is to be found whose works are entirely satisfactory; neither is there any collection so extensive as to afford the architect a varied and judicious choice. We are desirous of extending to England the benefits that France now enjoys. By collecting from the earliest and best sources, from antiques and the monuments of the sixteenth century, we hope to restore to ecclesiastical ornamentation the important position it formerly occupied; by an intelligent reproduction of the finest examples of antiquity, and a careful selection of modern works, we shall doubtless render our gallery worthy the attention of every architect. Besides the objects already referred to, it is intended to add a rich and varied collection of models adapted to the industrial arts; thereby constituting ourselves a medium of communication between the artist and the manufacturer, the gold and silversmith, the wood-carver, and all who practise a business in which the fine arts are concerned, so that the artist may have a fair opportunity of exhibiting his productions without the labour and loss of time he is at present subject to."

## WESTMINSTER COMMISSION OF SEWERS.

At a court held on the 27th ultimo, Capt. Bague in the chair, several important questions in connection with the new Act were discussed. Mr. John White proposed a series of resolutions to enable the commissioners to carry out the Act, but it was considered better to do nothing hastily, and ultimately Mr. White confined himself to a motion for the preparation of a complete map of the jurisdiction of the court, which he thought could be done for about 2,000*l*. On this an amendment was moved to the effect that the surveyor should first report on the means of obtaining this map and the probable expense, which was carried by ten to nine. Mr. Gunter and others urged that the plan was essentially necessary.

It was resolved *nem. con.* that the bye-laws should be revised with reference to the new powers of the commission. Further,—"That in all cases where new sewers may be required to be made, or open sewers to be arched over, until the regulations and bye-laws be revised, and until further order, the mode of proceeding with the works, giving the necessary notices, and of paying for the same and recovering the costs thereof, be decided upon in each case by this court with the advice of their solicitors."

Mr. John White then moved, and Mr. Chalmers seconded, a resolution,—"That in order to prevent inconvenience to the public, the clerk and the surveyor be conjointly empowered, to grant permission to proceed with the necessary works to such persons as shall present applications in the usual form for sewers and drains, and who will bind themselves to abide by the printed regulations of the court with regard thereto; a list of the applications so granted being presented at the next meeting of the court,"—when there appeared ayes, thirteen; noes, one.

It was then resolved *nem. con.* upon the motion of Mr. Harrison, seconded by Mr. Le Breton, "That owners of sewers built within thirty-five years who shall make application under the new act for parties to be compelled to lay drains into such sewers, be required to present a plan of the entire length of the sewer, or sewers, so built by them, shewing the several houses and premises fronting thereon, with the sums already paid for each house, from which a drain has been laid, and also showing the length of frontage, and the amount demanded for laying a drain from each of those houses from which they desire that a drain should be now laid into the sewers so built by them." The present commission, it may not be generally known, expires in December next.

The Royal Academy.—At a council held on the 26th inst., the following gentlemen were admitted probationers in the Royal Academy of Arts, London. Edward Thomas Coleman, Robert Charles Leslie, Thomas Daggett, Charles Wright, John H. Smith, Wynne William Watkins, Arthur Hughes, John Brown, George Knowles, David Nathan Fisher, Richard Hollingdale, John Cleghorn, Walter Goodhall, Charles Fowler, Edward Lance Tarbuck, Charles Augustus Gould, Benjamin James Benwell, Joseph Thomas, George Bidlake, Bright Smith, William Purdue, John Pollard Peppercorn, Joseph Gawen. George Jones, R.A., Keeper.

August 6, 1847.

## Correspondence.

THE NEW COUNTY COURTS.

SIR,—Can you or any of your readers give me a satisfactory reason, why the erection of the new County Courts in Westminster, Shoreditch, Bristol, Royston, and Liverpool, should be confided solely to the care and ability of the surveyor to the Metropolitan Police Force; and no public notice be given of their intended erection inviting competition for designs? Surely the Secretary of the Home Department in the pressure of public business has overlooked this matter. Would not the present be a good opportunity for the display of more of that article, which throughout all England partakes very much of the nature of angel visits, I mean good taste, than we can possibly extract from the designs carried out at the Southwark, Vincent-square, and other recently erected Police Courts? Surely the principle of free trade may be extended to such a case as this.

AN ENEMY TO ALL MONOPOLY.

Aug. 3rd, 1847.

## Miscellanea.

IVY ON CHURCHES.—Relative to a quotation on this subject, which we lately inserted, the *Gardeners' Chronicle* says:—"Can any one inform us what learned man it was who first denounced the Ivy? That would be a curious chapter in ecclesiastical history which should tell how it came to pass that the great natural ornament of our churches was first expelled from holy places, and forbidden to guard them from decay. Is it possible that there still exists the man who thinks that ivy hastens decay? that buildings perish because it clings to their masonry and guards them from the storm? that brickwork, and stonework, and woodwork rot the more the drier they are kept? The supposition is incredible. We know that even the mud-walls of a farm-house stand the better for the ivy that mantles over them, and that the soundest part of a building is just that which the ivy occupies. We are told, indeed, that notwithstanding all which can be said to the contrary, ivy does destroy old buildings; and a very intelligent correspondent says, that he knows of 'a church which has been rendered so unsafe from the cracks in the tower, *caused* by a large mass of ivy, that it has been disused.' But we must contend, with all submission, that here is a mistake. We are not to infer that ivy causes cracks because it is associated with them. It naturally grows in neglected places, and in such situations buildings become ruinous. Rags and poverty are also associates; but it will hardly be argued that rags cause poverty. In truth, ivy is incapable of the action assigned to it. Its little roots are merely for enabling it to cling to the body which bears it, and to suck up what moisture they may find there. They cannot insinuate themselves between mortar joints, and displace masonry. On the contrary, the nutrition of the ivy is carried on by roots buried in the soil, and acting like those of other trees. We apprehend that the mistake has arisen from cracked and crumbling walls having been overgrown with ivy, which having introduced its shoots into the fissures, or perhaps formed a real root therein, if earth and other matters should have been collected, have then, by horizontal expansion, widened the rents, and so in time overthrown the masonry. We submit that the 'episcopal eye' is turned quite in a wrong direction when it frowns upon ivy; and that its severity should be directed to the churchwardens who fail to take care of their masonry. Instead of tearing away ivy, stonework should be repaired. To destroy the plant will not uphold the building. If the structure is ruinous, it will not become whole again by scraping its surface. When properly repaired, the ivy is its best friend, and we strongly suspect that, although not repaired, a ruin will last longer when covered with this plant than when left naked to the effects of a few winters."

THE TUBULAR BRIDGE.—General Pasley has published a protest against the tubular bridge, as now proposed to be executed, chiefly on grounds of objection first urged in THE BUILDER.

PROJECTED WORKS.—Tenders have been called for by advertisement for the erection of an infirmary at Watford; the completion of a row of houses in Albany-road; repairs and restoration at Normanton Church; building a barn and cart-shed with granary above near Stuntney by Ely; taking down and rebuilding a farm-house at Chignal Smealy; constructing two tanks and gas-holders at Westminster; making and building a new sewer at Kensington; and executing river-works and low-water landing place, with short railway connection with pier at Ferry-Port-on-Craig, river Tay, on the line of the Edinburgh and Northern Railway.

THE NATIONAL MONUMENT AT EDINBURGH.—A new movement has been made towards a renewal of the works of this contemplated restoration of the Parthenon on the Calton Hill of the modern Athens,—the mere laying of the foundations of which, it may be remembered, and the erection of the western portico which has so long stood, like our own monument to Nelson, a monument of more things than one, cost no less a sum than 15,000*l.* It is now proposed to cut away the church and sepulchre clauses from the Act for its erection, clauses which have long been felt to hang like a millstone round the neck of this ambitious project; and to devote the edifice at large to the purposes of a "Scottish Pantheon, or Gallery of Honour, for the reception of monumental busts and statues of great and distinguished men, whether statesmen, warriors, poets, men of literature, science, artists, &c., not limited to Scotland, or even Great Britain, but open to great men of all nations." The pediments and metopes, together with the friezes of the peristyle, are proposed to be decorated with national sculpture, and the interior with painting illustrative of Scottish and British achievements, whether in fresco, encaustic, or oil, as may be decided upon. Ere now its object was less comprehensive, though its scale was equally magnificent: for its former object was limited to "national gratitude for the successes of the British arms by sea and land in the late eventful war." It being rather *too late* now, however, to carry out such an object with any thing like a prospect of success, far less of enthusiasm, a new Act is proposed to be applied for, providing for the establishment of 5*l.* shares to the amount of 150,000*l.*, instead of 25*l.* shares to the amount of 50,000*l.* only, for the purpose of bringing the whole into shape. It is probable, however, that many of the citizens of Edinburgh will now almost regret any further addition to the picturesque and majestic pillars by which their city has been so long surmounted.

'NOTHING LIKE LEATHER.'—At a formal confabulation of assaulted citizens, on the urgent subject of strengthening the fortification of their city walls, as well, no doubt, as of their imprisoned valour, a leather merchant boldly and professionally declared that 'there was nothing like leather.' We are, therefore, persuaded, that an ingenious American citizen of Allegany—not the rocky mountain, but the 'city'—must have been a leather merchant, who,—surrounded too by imprisoning walls, and assaulted by that enemy to many an ingenious handicraftsman, the criminal law,—is said to have lately found 'nothing like leather,' for not only resisting the assaults of that thief of an enemy no less than enemy of a thief—Time,—but for placing him in clockwork harness; this ingenious handicraftsman having successfully tried his crafty hand, and cheated himself, if not the law, out of the time appointed,—in the manufacture of a *leather clock*, which, to all appearance, goes as well as any ever made of wood by his kinsman, Samuel Slick, of Slickville, Esquire.

FURNACE FOR BURNING BRICKS.—J. W. Andrews, Norristown, Pennsylvania, April 4th, 1846; added to original patent, bearing date March 21st, 1843.—Claim.—"Having thus fully set forth the manner in which I construct and use my kiln for burning bricks with anthracite, or other coals, what I claim as new, and desire to secure by letters patent, is the two principal flues passing outside of the kiln—one on each side, and one centre flue, passing through the centre and under the floor of my kiln. These main flues are connected with lateral flues, or branches (as described in my original patent), necessary to conduct the wind required under each fire or into each air chamber.

SURREY COUNTY LUNATIC ASYLUM.—The proposed enlargement of the Surrey county Lunatic Asylum, lately formed a subject of consideration at the Surrey Sessions, when a report by the Committee of Visiters was read, reciting that after the original plans, at the estimated expense of £35,000; had been ratified at the Quarter Sessions in June, 1846, approved, after alteration, by the secretary of state, and submitted for tender to eight of the principal builders in the metropolis, the county surveyor had instructed the several builders to tender only for a portion of the work, estimated by him at a cost of £28,238, and that after the lowest tender, Mr. Kelk's for £35,500, had been corrected, by a suggestion that certain fire-proof and other improvements and alterations estimated at a cost of £3,027 5*s.* 5*d.* should be abandoned, and by the discovery of a deficiency in the architect's estimate of £3,599, arising from the adoption of an erroneous basis for his calculations, the committee had submitted the whole plans to the consideration of another architect, Mr. Thomas Hopper, who suggested that Mr. Kelk's tender was a reasonable one, which it would be injudicious to reject, although it should be so altered as to comprise every part of the work. It was reported, therefore, that the several plans, working-drawings, and specifications, since their completion, had been submitted to Mr. Kelk, who had sent in a second tender for £36,500. The court approved of the report, which also provided for the architect's commission at 4 instead of 5 per cent., and resolved that the Committee of Works be empowered to expend in the erection and completion of the proposed enlargements, a sum not exceeding £43,000.

ANCIENT RELICS.—On the 8th instant, a stone coffin was discovered by men who were excavating for the Monmouth and Hereford line, about a quarter of a mile from Caerleon, in the road to Usk. A drawing of it has been forwarded to us, which shews that it was 6 ft. 2 in. long, 24 in. wide at the shoulders, 11 in. at the top, and 10 in. at the bottom. The sides were about 3 in. thick, and the bottom 3½. The lid was hollowed out to fit on to the coffin. The stone is oolitic, quite different from any to be found in the neighbourhood, and in good preservation. The coffin contained a skeleton and a small glass bottle with a very small neck. The local antiquaries ascribe it to a very early date.

COMPETITION.—Plans and estimates are wanted for a county lunatic asylum at Worcester, for 200 patients, with an infirmary, surgery, &c.

### TENDERS

Delivered for building new vicarage house, at Pulloxhill, Beds.

| | |
|---|---|
| Neal | £1,279 |
| Bryant and Francis | 1,178 |
| Cobble | 1,158 |
| Welch and Burrows (accepted) | 1,130 |
| Curtis | 1,018 |

For the Ipswich District Schools.

| | |
|---|---|
| H. Luff | £1,025 |
| F. Mason | 978 |
| W. Ribbans (accepted) | 960 |
| G. Ellis | 850 |

### TO CORRESPONDENTS.

"*Variation of the Needle at London.*" is 22° 45′ west.

"*Elastic Moulds.*"—A correspondent wishes to know how to make the new elastic moulds for casting figures in plaster of Paris, and the ingredients of the composition.

"*J. A. P.*"—Next week. The notes alluded to will doubtless make an interesting paper.

"*W. B.*"—The remark was not ill-meant, but would have been better out.

"*R. W.*"—Weale, Holborn.

"*Hardening Stone.*"—The process for hardening stone, recently described by us, see p. 353, *ante*, has been applied successfully, we believe, to chalk. With the patent process advertized we are not acquainted.

"*Monitor.*"—The basis of the design in question is the Cornaro Palace: more of this hereafter.

"*P. W. W.*" Several recipes for removing painting from old oak have appeared in our pages. We will refer to them.

*Received.*—"J. H." (Ely), "G. R. L.," "L.," "C. R. W." (Thanks), "G. P.," "Norfolk Artizan," "J. D.," "C. R. C.," "H. F.," "A Junior." (We avoid recommendations).

*Books.*—"The Art-Union Journal" for August (a capital number). "The Tradesmen's Book of Ornamental Designs." Part III. (Orr, Paternoster-row). "Dolman's Magazine," for August. "The Epochs of Painting Characterized." By Ralph N. Wornum. (Cox, King William-street). "The Law Relative to Benefit Building Societies." By Charles Egan, Barrister at Law. (Hastings, Carey-street). "The People's Journal," No. I. of new volume.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

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## ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.

**COLLINS'S ODE on the PASSIONS** will be recited by Mr. J. RUSSELL, with Illustrations in a Series of DRAWINGS magnified by means of the OPAQUE MICROSCOPE, [illegible] Tuesday and Thursday. [illegible] LECTURES on NATURAL PHILOSOPHY will comprise the Subject of the ELECTRIC TELEGRAPHS, &c. CHEMICAL LECTURES by H. M. Noad, Esq., on the Evenings of Monday, Wednesday, and Friday. The beautiful OPTICAL EFFECTS include the last DISSOLVING VIEWS. DIVING-BELL and DIVER, with EXPERIMENTS, &c. &c.—Admission, 1s.; Schools, Half-price.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses [illegible] It prevents [illegible] spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property [illegible] that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with [illegible] an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. [illegible] during occupation, it is most preferable, [illegible]

**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. G. and T. Wallis [illegible] introducing to the Trade, possesses the important qualification of effectually [illegible] and preventing them eating through and disfiguring the paint above.

Many substances have been [illegible] and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis [illegible] pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain [illegible] natural grain. To give an ornamental colour to the wood without obscuring the grain [illegible] whole interior of a house, which would take a month or six weeks [illegible] process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, [illegible] water to form the [illegible] The Trade [illegible]

[illegible] the office of "The Builder," 2, York-street, Covent Garden, London.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction [illegible] simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their [illegible] strength and stiffness, being without metal hinges, consequently [illegible] shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, [illegible]

INJUNCTION.

**BUNNETT and CORPE'S Patent RE-VOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, [illegible] tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringement of this Patent [illegible] parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering [illegible] object. In large shutters [illegible]

[illegible] Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they [illegible] keep in order, and last twice as long as [illegible]

B. and C. also manufacture REVOLVING WOOD SHUTTERS [illegible] with their patent raising gear [illegible] without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS [illegible] WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

[illegible] Brass or Zinc [illegible] Country.

[illegible] Drawings [illegible] Trade.

[illegible] street, London; Works, at Deptford, Kent.

[illegible] Moulding Cutting machines [illegible] adapted for Builders' purposes [illegible]

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

**PERSONS requiring LOANS by way of** [illegible]

[illegible] personal application at the office [illegible] letter, the party bringing with them the abstract of title, [illegible]

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS.** and WRITERS to the Trade only. 70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

TO BUILDERS, MASONS, AND OTHERS.

**TO BE DISPOSED OF, 50,000 Feet sup.** of new Stout Common-tooled York paving, at 4½s. per 100 feet sup. on the Wharf, or delivered within three miles, 4⅝s. per 100 feet sup. Terms, Cash on delivery. Messrs. PRATT and SEWELL, Albert Wharf, Wharf-road, Battle-bridge.

**GRANITE FOOT PAVING.—1,000 Feet** of this material, of a very superior quality, TO BE SOLD on reasonable terms. Apply to RICHARD WARNER, Agent for the Quarry, Cotton's and Depot Wharf, Tooley-street. Curb of usual dimensions, 12 inches by 12 by 8, &c. Cubes, Half Sovereigns, 6 inch, &c. Blocks of any size for building purposes.

Broken granite and other hard stone for roads.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

TO BUILDERS, MASONS, AND OTHERS.

**A. BAKER, Stone Merchant, 33, Pratt-**street, King's-road, Camden town, opposite the Star Coal-wharf, begs to inform Builders and others, that he is selling Nailsworth, Painswick, and other Gloucestershire Stone at the same prices as at Paddington; the Stone is equal to Portland for Staircase Steps, Landings, Coping, &c. Inch Slab 4½ per foot.

**MARBLE, STONE, &c., Works, Com-**mercial-road, Lambeth, between Blackfriars and Waterloo bridges. Monuments, Tombs, &c., for Cemeteries; Fonts, Altar-screens, Tracery, &c., executed in a superior style of workmanship. The country trade supplied with every description of ornamental masonry, figures, and ornamental modelling and carving. A collection of vases, pedestals, fountains, &c., in artificial stone for gardens, parks, or public buildings.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-**tects and others, that GOTHIC WINDOWS, and every other branch of Stone work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

[illegible] Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has [illegible] at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be [illegible] marble. The [illegible] jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and [illegible] plinths, tazzas, [illegible] dairy shelves, flooring and plain slate work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices.—N.B. The trade supplied with whole cargoes, self-faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

**SIR W. BURNETT'S PATENT for pre-**venting the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dockyards.—Vide Parliamentary Debate, April 13, 1847. It hardens [illegible] without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

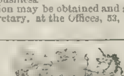
Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.

When the quantity of timber to be prepared is large special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 53, King William-Street, London bridge.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood), known as the [illegible] Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. [illegible] ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no [illegible] and shutters and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, [illegible]

N.B. It [illegible] ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

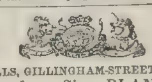
**ALWAYS on SALE, a Large Assort-**ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

**ALFRED ROSLING begs to inform the** Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship. Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

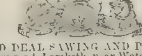
MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or grooving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

**TO ARCHITECTS, Ship Joiners, Cabinet** Makers, &c., requiring FINE WOOD. SELLING OFF, at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany yard, in Little Windmill-street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers, also upwards [illegible] The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Railing, Railway, and other Iron and Smiths' work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

**PUMPS.—The attention of Architects,** Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brick-fields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 10-inch kept for hire. Estimates given to Drawings if required.—M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

TO ARCHITECTS, BUILDERS AND BRICK MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

IRONFOUNDRY
163, Drury-lane, and Charles-street, London.

**JOSEPH GLOVER,**
Late HENDRY and GLOVER),

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**CHARLES SMITH and SON, 25, GREAT** CHARLES-STREET, BIRMINGHAM (late STANDLY and SMITH, formerly STANDLY and GALE, Bull-street), Locksmiths, Bell-hangers, Brass-founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS and ENGINEERS to their inventions for prisons, lunatic asylums, &c.

C. Smith and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar locks, signals, inspection apparatus, chapel door-fastenings, iron [illegible] as supplied by them at the MODEL PRISON, LONDON, and TWENTY THREE SIMILAR GAOLS, [illegible] satisfaction.

Among their testimonials may be shewn that of Major Jebb, attesting the efficiency of the labels, &c., invented by them.

The contracts will be executed to the approval of the inspector-general [illegible]

C. Smith and Son [illegible] prepared to contract for the supply of the whole of the [illegible] requisites for the residences of the nobility and gentry, [illegible] lunatic asylums, and workhouses, including locks, bells, hinges, grates, kitchen-ranges, staircases, grates, park fencing, fireproof safes, bookcases, doors, metal sashes of all kinds, and every description of ornamental brass and ironwork, light castings, &c.

C. Smith and Son [illegible] the extensive works performed by them at Windsor Castle, Northumberland and Sion House, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority [illegible] numerous letters from noblemen and gentlemen can be shewn.

N.B. C. SMITH and SON do not appropriate inventions or advertisements, nor label locks "Patent, Warranted, Secure," that are neither the one nor the other.

# THE BUILDER.


TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 8d. | 1s. | 1s 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 32s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3-3s. 3 ft. 6 in. do. £3. 6s. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 190, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., 8d. 9d., and 9d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**J**OHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6½d. per in. and upwards.
Bright ditto with Black and Bright Bars, 9d. 10s. and upwards.
Self acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| 3l. 3s. | 3l. 14s. | 4l. 5s. |

All articles made on the premises and warranted, and delivered free of expenses within five miles of London. Bell-hanging in superior style, hung in secret, 8s. per pull.

IMPORTANT TO ARCHITECTS, BUILDERS, and GENTLEMEN fitting up their own Houses.

**P**RETYMAN and HOBSON, being about to relinquish the Stove Trade, have a large and well-selected assortment of drawing and dining-room, library, and college Register Stoves, of the most recherché patterns, which they have determined to sell at a great reduction from the cost prices Stove and Range Manufactory, 17, Cornhill, opposite the Royal Exchange.

IRON-WORK FOR BAKERS' OVENS.

**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices. —CAST-IRON UPSETS.

**W**ARMING by means of the circulation of WARM AIR.—BURBIDGE and HEALY beg respectfully to inform the public, that they are prepared to undertake the warming of churches, hot houses, &c. with a new apparatus of the most simple and durable construction, which they can warrant to keep in order any length of time, and which is capable of effectually warming buildings of any magnitude in a most economical manner. BURBIDGE and HEALY, 130, Fleet-street.

**B**LAKE and PARKIN, Meadow Steel Works, Sheffield.—Manufacturers of improved Mill Saws, Circular Saws, Files, Patent Machine Plane Irons, Mechanics' Engraving and Moulding Irons. Cutters of all sorts. Blister, Shear, and Cast Steel, Railway Springs, &c.

TO BUILDERS, CARPENTERS, BRICKLAYERS, AND MASONS.

**E.** AND C. KITCHEN, Ironmongers and Smiths, &c., of the Gridiron, St. Giles's, beg to acquaint their friends and the public, they have REMOVED to their new premises 533, Oxford-street, nearly opposite Bedford Chapel, where they continue to keep a stock of articles required for the above trades of first-rate quality at wholesale prices.

TO EXCAVATORS, RAILROAD CONTRACTORS, AND BRICKMAKERS.

**E.** AND C. KITCHEN, Ironmongers and Smiths, beg to acquaint the above, they have REMOVED to their new premises, the Gridiron, 533, Oxford-street, nearly opposite Bedford Chapel, where they keep a stock of every article requisite to carry on the above works at wholesale prices.

CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C.** CHUBB and SON having just erected a Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron doors for strong rooms and other purposes, and Fireproof Safes at a great reduction in price, and of very superi quality. All their Iron Doors and Safes are fitted with C. CHUBB and SON'S best DETECTOR LOCKS.
57, St. Paul's Church-yard, London.

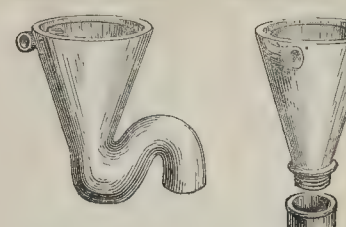
TO ARCHITECTS AND SURVEYORS.

**C.** CHUBB and SON having ascertained that some builders are in the habit of substituting inferior and insecure Iron doors for strong rooms, when "CHUBB'S MAKE" are ordered, they call the attention of Architects to the subject. In all specifications where it is intended to have the articles manufactured by C. CHUBB and SON, they respectfully request that Architects will specify "Iron doors manufactured by C. CHUBB and SON, of St. Paul's Church yard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the doors are of their manufacture.

PRO BONO PUBLICO.

**C**AUTION. To Purchasers of Locks, fire-proof Doors, Safes, &c. JOHN LEADBEATER, many years manufacturer for Chubb, LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c. that he can supply them IMPROVED DETECTOR LOCKS for any required purposes, STRONG WROUGHT-IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c. on the most improved principles of security against FIRE and THIEVES (without the aid of "expensive machinery," which is employed by some unexperienced makers, but must be paid for), at prices 25 per cent. under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved detector locks or latches. Some thousands of Leadbeater's strong-room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience proves him to have adapted every possible improvement to real security, enables him to challenge competition with any other house in London. A large assortment on sale and made to order. A pair of extra strong wrought-iron fire-proof folding doors with ventilating gates, well adapted for a banker's strong room, may be viewed at his manufactory. Strong wrought-iron doors for party walls, with wrought-iron rabbetted frames, and secured by the BEST DETECTOR LOCKS IN ENGLAND, 6 feet high by 2 feet 3 inches wide and upwards, price £10 each, always on hand at LEADBEATER'S MANUFACTORY, 133, ALDERSGATE-STREET, LONDON.



N B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

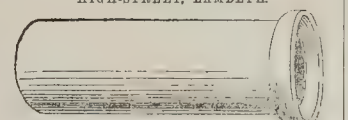
Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

**S**MITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

**T**UBULAR DRAINS IN STONE WARE, Manufactured by HENRY DOULTON and Co. POTTERS, HIGH-STREET, LAMBETH.



The only Efficient Mode of Drainage is by Tubular Drains; from their form they give every facility for a perfectly free passage. The material of which they are composed is impershable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

**P**LASTER of PARIS of the very best quality. Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

TO BUILDERS, CONTRACTORS, &c.

**G**REY STONE LIME of the best quality will be delivered alongside any wharf in London at 7s. per yard of thirteen baskets. Parties can be accommodated with a moiety of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**L**IME AND CEMENT WHARFS. — Grey-stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney-pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials, may be obtained on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs: Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland-road.—Ground Lime for Concrete.

**K**EENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

**G**REAVES'S LIAS LIME and CEMENT. RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—unmoved by the influence of time to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**J**OHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall fit to stand weather, and rather finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

**A**TKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**W**ILLIAM PETERS (Late Poynder and Medlicott), LIME, TILE, and CEMENT WHARFS, Great Scotland Yard, Westminster, and 7, North Wharf, Paddington. Welsh, and stourbridge Goods, &c. Ground Lime for Concrete.

**B**ATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts:—Three Cranes Wharf, 69, Upper Thames-street; 84, George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

**P**ORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly impalpable, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**C**AUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon the substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which it may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without pealing, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

**E**MERSON'S PATENT CEMENT PAINT. Arrangements are completed for the introduction of those VALUABLE and ECONOMIC PAINTS, the PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be requisite, with water.

The surface to which it is to be applied NEEDS NO PREPARATION, but to be clean and free from dust. It matters not whether the wall be wet or dry, its subsequence being such that it will cling to any surface. BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT, and may be made of any TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of a light creamy or stone colour.

To ROMAN CEMENT it may be applied the day after it is put on the walls, and one small cask will cover a moderate sized house.

It is particularly calculated for COUNTRY HOUSES, VILLAS, &c., for its PERMANENCY and PLEASING EFFECT; also for LODGES and ENTRANCES, as it does not admit moisture, and consequently will never vegetate, and will PRESERVE the walls as effectively as any cement.

T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as more efficient and economical.

THOS. JNO. CROGGON, 8, Laurence Pountney-hill, Cannon-street, London.

| Price | .. .. | 28. 6d. per cask of 1 cwt. |
|---|---|---|
| | 12s 6d. | .. .. 2 cwt. |

An allowance to the trade.

ZINC WORK.

**M**ESSRS. F. and J. HARLAND beg to call the attention of Builders and others, to the following list of prices, for cash:—

| | | | |
|---|---|---|---|
| 3-inch Pipe | ..... per foot | 4½d. | 3½-inch Gutter.....per foot 4½d. |
| 2½ ditto | ..... " | 3d. | 4-inch ditto ..... " 5d. |

Including fixing.

Flats Covered and Cisterns Lined from 4d. to 6d. per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Alms-houses.

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**F.** CLARK and SON, Lead, Glass, Oil, and Colour Merchants, beg to inform Plumbers, Builders, and others, that they may be supplied with goods of best quality at following prices for cash, delivered free to any waggon office, wharf, or railway station in London:

| | |
|---|---|
| Sheet Lead and Pipe, at ..... | 19 10 per Ton. |
| Genuine White Lead ..... | 26 0 ditto. |
| 2nds ditto ..... | 24 0 ditto. |
| 3rds ditto ..... | 22 0 ditto. |
| Pan Closet, complete, white basin ..... | 32s. |
| Sunk ivory, or porcelain handle, ditto, complete, blue basin, &c. ..... | 42 |
| 2½ Lift Pump, on plank..... | 80 |
| 3 ditto ditto ..... | 90 |
| Crate Crown Glass, 18 T., nets..... | 38 |

All Goods warranted of best manufacture. Old Lead bought, sold, or exchanged.

Credit given on receipt of satisfactory references.

**F**IRE BRICKS.—WARD & HART, Hondurus Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied to in ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

# THE PATENT TORRENT WATER CLOSET,

AUSTIN'S PATENT,

FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent [illegible] all classes.

[illegible] wanting; the present [illegible] advantages:

1. SIMPLICITY. [illegible] construction [illegible]

2. GREAT ECONOMY [illegible] quantity of WATER [illegible] seat the cock is again acted upon, and the result is, that the [illegible] the basin.

3. The TORRENT, or Momentary Rush of WATER.—This [illegible] made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great [illegible]

4. HORIZONTAL CLEANSING. [illegible]

5. NOISELESS. [illegible] custom for Water Companies to [illegible] the "head" of the apparatus with the service pipe, as it is called.

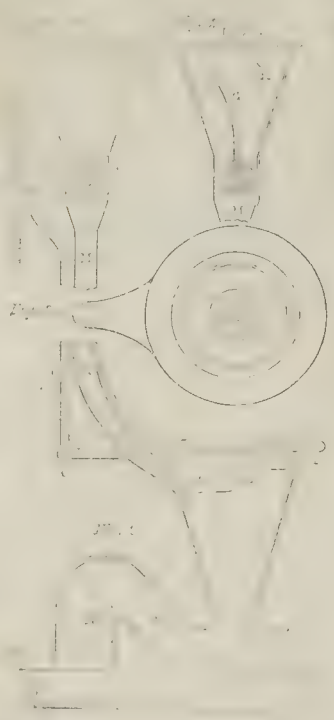
6. NO SPARE [illegible]

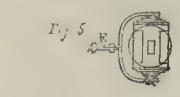
7. No [illegible]

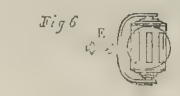
8. The EXPENSE OF [illegible] which it may be placed, are the LEAST POSSIBLE. The [illegible] substantial footed [illegible] means of screws; and it is quite unnecessary to make use of [illegible]

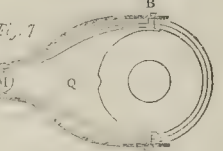
FOR THE CONSERVANCY [illegible] wherever used will much tend to prevent [illegible]

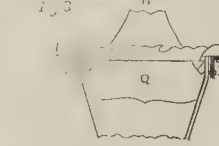
FOR RAILWAY [illegible] closets are a continual trouble and expense; they are [illegible] inadequate to [illegible] Companies' servants and others; all these objections, it is confidently asserted, are [illegible] by the use of the Patent [illegible]

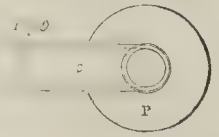












## DESCRIPTION OF DIAGRAMS.

[illegible] torrent-pipe M, spreader Q, and shewing lever [illegible] and [illegible] when open for the water to come in.

[illegible] top of cock, shewing openings [illegible] in water, and the [illegible]

[illegible] Plan of top, A of basin under seat, and shewing the [illegible] to the seat, and the action rod.

[illegible] Plan of bottom of seat, and top of basin, with [illegible]

[illegible] Plan of P, of basin, and syphon.

## MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D, [illegible] the valve F, which opens the cock E; the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure is being filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure is filled [illegible] the water rises to K and no more water can enter, nor can any [illegible] the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the supply; [illegible] discharged by the spreader Q, which directs the water to [illegible] syphon S, and the leg N. The lowest part of [illegible] syphon on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water flowing the air in the soil-pipe, connected with P, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

[illegible] the bottom of the pond between N and S, forms a trap to [illegible] through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

[illegible] trouble.

[illegible] simple means of applying water to this purpose, as shewn in the evidence of Mr. [illegible] Mr. [illegible] others. But the apparatus invented by Mr Austin [illegible] self-acting: it requires no cistern [illegible] apparatus is [illegible] out of order, and is [illegible] are effectually cleared, and all obstruction removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

[illegible] supply system [illegible] others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconveniences of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till [illegible]

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as [illegible] faithfully,

J. QUICK, Engineer.

Mr. JOS. E. DOWS

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And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

## DOWSON'S EARTHEN PIPES,

GLAZED INSIDE.

FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

[illegible] And for the same reason, as well as for the lowness of their price, are well adapted for SOIL [illegible] aptly termed "ELON[illegible]

[illegible] to [illegible] greatly accelerate by the defective surfaces of the bricks and the mortar joints, so that comparatively [illegible] [illegible] come from the sewers, through the rotten and crumb[illegible] [illegible] come under the notice of Messrs. DOWSON, and the [illegible] [illegible] to the house has given away, and considerable outlay [illegible] [illegible] one saturated.

[illegible] LOSS is not the only evil resulting from the use of brick drains—LOSS OF [illegible] consequences of the existence of these "ELONGATED [illegible] EARTHEN PIPES are a certain preventative against all these evils. They admit of being [illegible]

[illegible] make IRON AND BRASS CASTINGS OF ANY MAGNITUDE [illegible] Ornamental Ironwork.

A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.

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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 236. | AUGUST 14, 1847. | *Price* ..... 3*d.* *Stamped* ..... 4*d.*


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COURSE 3. Engineering and Government Surveying will commence on Thursday next, the 19th inst.
COURSE 4.—Architecture, Building, Draughting, &c., will commence on Friday next, the 20th
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### CONTRACTS.

TO BUILDERS AND OTHERS.

THE Guardians of the Watford Union are willing to receive TENDERS for the Erection of an Infirmary at the Watford Union Workhouse, situate at Watford, Herts. The plans and specifications may be seen at the office of Mr. LAVENDER, Surveyor, Watford, after Wednesday, the 11th of August instant. Tenders to be sent to me on or before Tuesday, the 24th August, to be sealed and delivered on at the Board to be held the next day. The Guardians do not bind themselves to accept the lowest or any other tender.—By order of the Board.
Watford, 2nd Aug., 1847. RICH. FUGH, Jun., Clerk.

### CONTRACTS.

TO BUILDERS AND OTHERS

THE Court of Sewers for Westminster and part of Middlesex will be ready at the Court house, No. 1, Greek-street, Soho-square, on Friday the 20th August instant, to receive TENDERS for the following Works, viz.—

| | | |
|---|---|---|
| 800 feet of Sewer in Foley-place and Edward street, St. Marylebone | | |
| 1,990 | ditto | in Little Castle street, ditto. |
| 615 | ditto | in Charles street, ditto |
| 3,105 | | |

381 feet of the King's Scholars' Pond open Sewer, between Vauxhall-bridge-road and Warwick street, to be arched over.

Plans, Sections, and Specifications of the above Works may be inspected, and Forms of Tender, and other particulars obtained at this office daily, between the hours of Nine and Four. Parties offering must be in attendance at One o'clock precisely, on the 20th of August, instant, with separate sealed Tenders, specifying on the outside for which of the above Works the Tender is made. Each Tender must be strictly in the printed form prescribed. The Court does not bind itself to accept the lowest Tender.
LEWIS C. HERTSLET, Clerk.
Sewers Office, No 1, Greek street, Soho-square,
13th August, 1847

TO BUILDERS.

THE Repairs of Two Houses in Devonshire-street, Queen-square, Holborn, may be contracted for by Tender, according to specification and plan, which lie for inspection with Mr. J. B. HAYNES, 9, St. Michael's-terrace, Pimlico.

BUILDERS willing to CONTRACT for the Refractory Cells to be built at the Lambeth Poor House, Lambeth, can see the specification and plan at the office of Mr. ROGERS, Architect, Palace Chambers, Lambeth. The Tenders to be delivered at the Workhouse, Princess-road, sealed, and addressed to the Board of Guardians, on or before TUESDAY, the 24th of August, at Ten o'clock. The Guardians do not bind themselves to accept the lowest tender.

TO BUILDERS, &c. POST OFFICE, NOTTINGHAM.

PERSONS desirous of Contracting for the Erection of the New Post Office, in Albert-street, in the Town of Nottingham may see the Plans and Specifications at the Office of Mr. H. M. Wood, the Surveyor, a Printed Form of Surveyor, on MONDAY next, the 16th of August instant, and the following ten days.
The Corporation Committee will not hold themselves under any obligation to accept the lowest Tender.
10th August, 1847.

TO BUILDERS

BUILDERS desirous of Tendering for the completion of a Row of Seven Six-roomed Houses, situate NEAR THE ALBANY ROAD, OLD KENT ROAD, requiring all but the floors, windows, and doors, to finish, may see the conditions and specification at the office of Mr. W. C. STOW, Architect, the Green, Camberwell, after SATURDAY next, the 21st inst. The Tenders to be sealed and delivered addressed to Mr. F. F. TOOLE, 5, Manor place, Walworth, within Eight Days of the Specification being ready. The acceptance of the lowest Tender is not guaranteed.

2, Middleton-road, Dalston, August 10th, 1847.
KINGSLAND, DALSTON, and the Boards of Town, Literary and Institution.
TO BUILDERS

THE Committee are desirous of receiving TENDERS for the several works, required in completely finishing the building intended for the purposes of the above institution. Plans and specification of which are now prepared, and may be seen between the hours of Ten and Four, at the office of Mr. JOHN CLARKE CATLING, No. 9, Middleton-road, Dalston. Sealed Tenders to be delivered at Seven o'clock p.m. on Thursday, the 26th of August. The committee do not pledge themselves to accept the lowest or any other tender, not fully approved of.—By order,
ROBERT SIMONS, Sec

TO EXCAVATORS AND BUILDERS.

THE Guardians of the Poor of the Whitechapel Union will meet at their Workhouse in Whitechapel-road on Tuesday the 24th August inst., at Seven o'Clock in the Evening precisely, to receive TENDERS for certain drainage and other works at the said Workhouse. 1st. A Tender for Excavators' and Bricklayers' Works; and 2nd., a Tender for Plumbers', Carpenters', and Smiths' Works. The particulars of which may be known by application at the Office of Mr. G. H. SIMMONDS, Surveyor, No. 7, Great Alie-street, Goodman's fields. The Tenders are to be kept separate, and endorsed "Tender for ——," and must be delivered at the Board room previous to the above named hour of meeting. The Guardians do not bind themselves to accept the lowest or any Tender. The Contractor or Contractors will have to enter into a written Contract (free of expense), and to provide a responsible Surety for the performance of the same within a limited time. The scale of the Prices to be inserted in the Tender.
JOHN SMITH, Clerk to the Guardians.
2*a*, Leman street, August 1847.

TO BUILDERS.—COUNTY PAUPER LUNATIC ASYLUM AT LITTLEMORE, NEAR OXFORD.

BUILDERS desirous of Contracting for the Building of certain additional WINGS to and otherwise enlarging the ASYLUM, according to the Plans and Specification of Messrs. Plowman and Lack, of Oxford which have been approved by the Secretary of State, are invited to transmit to the undersigned on or before the 23rd day of August next, Tenders of their terms for executing the Works.
The Plans and Specification may be seen, and Copies of them taken, at the County Hall, Oxford, on and after the 2nd of August; and any further particulars may be obtained on application to the Architects.
Each tender must be accompanied by the names of two responsible persons, who would join the contractor in the usual bond for the performance of his contract; whilst it shall not be deemed obligatory upon the visitors to accept the tender which may be lowest in amount.
The contract and bond will be prepared by the clerk of the visitors, and a copy delivered to the contractor, free of charge to him; and drafts of these documents, in the form in which the contractor and his sureties will be required to execute them, may be seen with the plans.—JOHN M. DAVENPORT,
Clerk of the Visitors.
County Hall, Oxford, July 20th, 1847.

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**PORTLAND CEMENT is the only Cement** for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fish-ponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON having completed extensive** alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL WALL, POPLAR, enables him to execute orders on an enlarged scale. He therefore solicits the favours of Engineers, Builders, and others, interested in works, who may depend on the article being of the best manufacture, and prompt attention paid to orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical action on the substances with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days, without the risk of its ever peeling off.

It is peculiarly adapted as an internal finish for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface, render it an important substitute for stone [illegible] satisfactory references can be given. [illegible] Patentees, Plaster of Paris and Cement Manufacturers, 18, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the principal advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to [illegible] covered with it. It is so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with safety [illegible] the season. It may be used in the hottest or coldest climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It can be used on the Inner Walls of new Houses, which may be papered in a short time after. Roofs laid or pointed with this Cement will remain uninjured by the severest Storms. [illegible] use being very clear and distinct. The first cost of this material [illegible] but with all the above advantages [illegible]

Architects who have used the Cement have declared that it [illegible] generally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its [illegible] together with [illegible] Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT [illegible] in flakes, being in direct chemical opposition with Cement [illegible] producing a pure stone-like effect, produceable by no other Paint whatever. It [illegible] by any Painter, in any climate, even in the most exposed Marine situations.

**EMERSON'S PATENT CEMENT** PAINT.—Arrangements are completed for the introduction of this VALUABLE and ECONOMIC PAINT. It is PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be requisite, with water.

The surface to which it is to be applied NEEDS NO PREPARATION but to be clean and free from dust. It matters not whether the walls be wet or dry, its adhesiveness being such that it will bind to any surface—BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT; and may be made of any TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of a light creamy or stone colour.

To ROMAN CEMENT it may be applied the day after it is put on the walls, and one small cask will cover a moderate sized house.

It is particularly calculated for COUNTRY HOUSES, VILLAS, &c., for its PERMANENCY and PLEASING EFFECT; also for LODGES and ENTRANCES, as it does not absorb moisture, and consequently will never vegetate, and will PRESERVE the walls as effectually as any paint.

T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as more efficient and economical.

THOS. JNO. CROGGON, 8, Laurence Pountney-hill, Cannon-street, London.

Price .. .. 9s. 6d. per cask of 1 cwt.
19s. 0d. " " 2 cwt.

An allowance to the trade.

**SIR W. BURNETT'S PATENT for preventing** the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has been in extensive use in her Majesty's Dock yards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood, without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

Licences granted to noblemen and gentlemen to use the preparation and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the Preparing station, Millwall, Poplar, where barges and vessels can lay alongside the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens seen on application to the Secretary, at the offices, 56, King William-street, London Bridge.

WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders and others that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of [illegible] further shrinkage [illegible] temperature [illegible] strengthens the fibre, thus giving greater [illegible] compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 25, New Broad-street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is avoided by the new process.

**TO ARCHITECTS, Ship Joiners, Cabinet** Makers, &c., requiring FINE WOOD.—SELLING OFF, at reduced prices, in consequence of a Dissolution of Partnership, at the Manufactory, [illegible] Little Windmill-street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 20,000 feet wainscot planks, running from 1½ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

PREPARED FLOORING BOARDS.

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**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton road, Pimlico (late C. Moore and Son).

**ALFRED ROSLING begs to inform the** Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parellel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship. Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING, FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

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N.B. Estimates given for Sawing and Planing.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 78, Princes-street, Lambeth. A stock of elbows, stink traps, and various shapes always on hand.

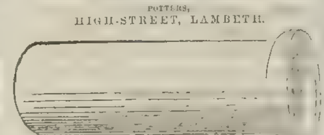
**TUBULAR DRAINS IN STONE WARE,**

Manufactured by

HENRY DOULTON AND Co.

POTTERS,

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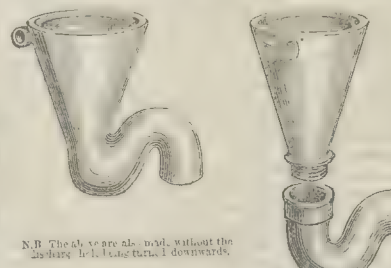
The only Efficient Mode of Drainage is by Tubular Drains; from their form they give every facility for a perfectly free passage.

The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.



N.B. The above are also made, without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,

With Trap in One or Two Pieces.

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Manufacturers of the annexed in superior

GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

By Her Majesty's Royal Letters Patent.

**PATENT ASPHALTE ROOFING FELT,** as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinburgh.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.

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CHEAP AND DURABLE ROOFING.

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**F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and** ONLY Patentees of

**THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.**

Patronized by

Her Majesty's Woods and Forests,
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Her Majesty's Estate, Isle of Wight,
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And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for [illegible] at the Royal Agricultural Society's House, Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with directions for its use, and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry Hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully [illegible] DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

The Builder.

No. CCXXXVI.

SATURDAY, AUGUST 14, 1847.

AT the risk of being reproached by one class of our readers, we devote a further space to notes on our late visit, with the British Archæological Association, to the remains of our ancient architectural glories in Warwickshire, and with the Archæological Institute to those of Norfolk; confining ourselves for the present to the latter. The increased value given to the ancient structures of a county, in the eyes of their proper guardians and those immediately around them, by the visit of a large body of persons from London, must be evident to all, whether they have personally observed the fact or not. And the effect is, that these buildings are looked at with more inquiring eyes, and their preservation, and in some cases restoration, is made more likely. Further, while ancient architecture is preserved, modern architecture is improved: the eye of the architectural observer becomes educated: those who would reproduce, not to say to improve on, the buildings of the middle ages, must study the works themselves. These lessons written in stone, are weakened by transmission to paper: the cathedrals and parish churches of England, not their representations alone, form the true field of study for our modern church architects.* The charm of these buildings is marvellous,—the beauty of the majority of them, past analysis: and when they are examined by men of varied attainments, taste, and views, brought together on these occasions, remarks are thrown out and opinions elicited which rouse the mind to inquiry, and lead to a knowledge of the principles on which they were constructed.

As the American minister observed, relative to the meeting, when at Yarmouth, "The genius, the talent, the strong sympathy with the past, which are congregated here, these are the wings upon which your inquirer and observer may endeavour to rise,—these are the pinions which may bear him up when he endeavours to acquire a knowledge of the glorious genius of ages gone by. You can hardly make present to your own minds, the admiration and delight with which one from our country views the works of art, with which England abounds. The beauties of nature, the God of nature has spread around us in common with yourselves; but works of art, traditions, and antiquities are peculiar to yourselves, and I am filled with delight, when I walk around the noble works of ancient times, and see how all unconsciously our ancestors transmitted to us works of such surpassing interest.

> 'They builded better than they knew,
> The unconscious stone to beauty grew.'"

In respect of

TOPOGRAPHY,

too, much advantage may be expected from these provincial excursions, by inducing one or more of the residents in each town or village to chronicle facts, and preserve copies of records, deeds, and inscriptions, connected with the locality. The value of these often-derided labourers is now pretty generally understood, but it may not be useless to make one extract from an essay on the subject which was read by the Rev. Joseph Hunter.

"The philosopher may smile at the minuteness of the objects which are made of importance in the books of the topographer. But it is, in fact, in the minuteness of their details that their value consists. It is because the topographer has preserved his millions of facts and observations that his writings are valued. And if, looking upon his little selected region with the eye of the geographer and yet through a glass microscopically, on finding objects naturally magnified, since there is nothing greater near at hand with which to compare them, he speaks of some little heath or common which still exhibits the pristine condition of that portion of the island,—or draws attention to some little Tempe, beautiful as delivered by the hand of Nature and made more beautiful by the hand of Taste,—or if he find a few books or paintings which some curious person has collected and deposited there, and dwell upon them as if they were a Vatican library or a Florentine gallery,—if he find a church with some little architectural pretensions, and describe it with affectionate minuteness, as another would one of the great cathedrals of the empire—or a piece of middle-age sculpture of which he feels the beauty, and seeks to make others sensible of it,—I cannot think him uselessly employed, or that *that* can be a true philosophy which shall deride taste and enthusiasm such as this. And if, in the spirit of minute research in which he acts, he set before us every remain, however inconsiderable, that opens to us any insight into the manners or characters of the early inhabitants of this island, or of the persons who induced a new population on the ruins of another,—be it only a little fragment of masonry, or a little remain of a half-obliterated trackway, or a mound of earth raised by unknown hands and for some unknown purpose,—or if he find buried in the earth all that remains among us of some primeval inhabitant,—there is at least something which strikes pleasingly on the imagination: and if, as churches are the topographer's especial delight, he preserves from future accident the records inscribed on stone, or brass, or marble, he is perpetuating evidence of which an amount scarcely conceivable has been suffered to perish."

It is, indeed, scarcely conceivable how much has been suffered to perish,—not merely evidence *contained* in the ancient buildings, but that afforded by the buildings themselves.

Many of the churches in Norwich and the neighbourhood, at this time, greatly need maintenance and repair under proper direction. The want of this latter is sadly apparent, even where endeavours have been made to remedy the effects of time. We heard of several cases where fine wooden roofs had been cleared away, through the ignorance of parties applied to, and plastered abominations substituted; and we saw masonry imitated from the original, as was supposed, by the local workmen, without artistic aid or advice, which, instead of being advantageous, was an irremediable injury. The incumbents and guardians of churches are not *always* to be blamed for suffering the fabrics committed to their charge to fall into decay, but there is *no* excuse for them when they allow restorations, or even repairs, to be attempted, without proper professional assistance.

Efforts are being made at this moment to obtain funds for the repair of several of the churches, and we hope will be successful. Amongst the structures thus canvassed for is *St. Giles's*, a fine perpendicular church, with a tower 120 feet high, and a good open wood roof, which has solid wall-pieces and large figures of angels and shields. Enough, however, under this head.

One of the handsomest churches in Norwich is that of *St. Peter Mancroft*,* the burial place of Sir Thomas Browne,* which was completed in 1455. It has a fine tower covered with flint-work panelling (admirably done), and an open wood roof of very peculiar design, having the character of stone vaulting rather than of wooden construction. The font has a very curious canopy supported on pillars, apparently of little later date than the church itself. The fittings of the church require rearrangement.†

*St. Julian's, St. Mary's at Coslany, and St. Paul's*, have round towers, ascribed to an early date. Little remains, however, to justify either assent or dissent in respect of the claims made by their local lovers.

Adjoining to St. Andrew's Hall, of which we spoke last week, are the remains of the Dominican Friary, with which the Hall was connected, and which are now used as a workhouse. Mr. Kerr, at one of the meetings, read a notice of the structure, and exhibited a plan of the remains.

The gates, through which alone the city could formerly be entered, have all disappeared. We shall get some account of them, however, in the interesting paper which Mr. Britton read in the public library,—

ON THE ANCIENT GATE-HOUSES OF THE CITY OF NORWICH.

The author commenced by congratulating his auditory on the general appreciation of archæological studies in recent times. A new era, he said, was to be dated from the first meeting of the joint society at Canterbury, in 1844; since when many valuable essays had been written and published. Every department of antiquity, and more especially the architectural antiquities of our own island, were now rendered familiar to every student; while the dates, styles, and peculiarities of our noble cathedrals, and even of village churches, were clearly defined and distinguished.

To Professor Willis the public was much indebted; and he (Mr. Britton) was ready to acknowledge the obligations he owed to that gentleman for the learning and talent he had exercised in elucidating the history and architectural peculiarities of the cathedrals of Canterbury, Winchester, and Norwich. His vivid and critical account of the latter edifice, had highly gratified him, for it was a source of great satisfaction to him to see a learned professor of one of our universities thus engaged in the illustration of a subject which had hitherto been very obscure, and but little understood. He was also gratified to see the improvement in the condition of the Cathedral of Norwich, compared with its state when he visited the city more than forty years ago. At that time the entire structure was in a lamentable state of dilapidation and neglect, and the repairs that were then in progress were heedlessly and tastelessly executed. Now, on the contrary, every attention was paid to the state of the building, and its officers were actively and liberally occupied in making sound and substantial repairs and restorations, in perfect accordance with the original style and character of the edifice.

Besides its magnificent and unique cathedral, the city of Norwich presented to the archæologist a series of elaborate *gate-houses*, forming the approaches to the cathedral and monastic precincts, and the bishop's palace; and until the present century it had also another equally interesting series of *gate-houses* in its surrounding fortified walls. Indeed, all the old cities, and many towns of Britain, were originally inclosed within massive stone walls, with tower gate-houses at intervals; the residence of the bishop, abbot, or prior, and the citadel, or castle, in which the governor, or other military lord, resided, being each inclosed within a separate wall, and provided with appropriate gate-houses. All these buildings served to indicate the lamentable state of so-

* At the Norwich meeting, there were many architects, including Professor Cockerell, Messrs. J. Billing, Brown, Bury, Donthorne, Ferrey, G. Godwin, Hakewill, R. Hawkins, Kerr, Penrose, Poynter and Wyatt.

* From "*Magna Crofta Castelli*" or the great croft of the castle, now the market-place, near which it is situated.

* Some time ago when the resting place of Sir Thomas Browne was opened, his skull was scandalously abstracted. Rainbird says it is in private hands in Norwich. Some efforts should be made to obtain the restoration of it.

† The Rev. Thomas Wilson has published a book of travels in aid of the funds being raised for ventilating, repairing, and repewing the church, under the title of *Nozrani in Egypt and Syria*. (Longman, London; Muskett, Norwich). It is one of the most charming little books that we have read for some time, and deserves an extensive sale, as well on account of its own merits as of the purpose to which the profits are to be applied.

ciety in which our ancestors lived, and which is delightfully contrasted with the present times.

It would be instructive to compare the old gate-houses of this country with the analogous structures met with in the architectural remains of ancient Egypt, Greece, and Rome, so as to deduce from their respective characteristics the history of the people to whom they owed their origin. Mr. Britton briefly mentioned the peculiarities of some interesting ancient gateways, including the Propylæa of the great temples of Luxor and Carnac, in Egypt; that of the Acropolis of Athens, the portæ, or gate-houses, in the walls of Rome, and a gateway to Herculaneum; illustrating most of them by reference to some well-executed drawings.

After alluding to the fortification of some English cities by the Romans, he proceeded to consider the gate-houses erected by our ancestors since the Roman conquest. The forms of these were greatly diversified according to their purposes and objects. They had generally a large archway for travellers on horse-back or in carriages, with one, or sometimes two, posterns, or side arches, of smaller dimensions, for pedestrians. These archways were generally vaulted over, and ornamented with ribs and bosses. Above was an apartment, reached by means of a winding staircase, wherein the warder, or porter, lived, and where, in time of need, a small band of guards could be placed to defend the entrance. In this apartment the apparatus was worked to raise or lower the portcullis.

The upper stories of gate-houses were in the form of a tower externally, more or less elevated, with or without turrets at the angles, and generally terminated in a plain or machicolated parapet. Some of the gate-houses of old English mansions, and of ecclesiastical, palatinal, and collegiate edifices, were richly decorated with niches, statues, buttresses, pinnacles, panelling, &c.; but those of castles and city walls were plainer, and adapted rather to defensive purposes than ornament or domestic comfort.

Mr. Britton described the gate-houses of London, York, Southampton, Canterbury, Lincoln, Wells,* and other English cities, and afterwards proceeded to notice those of Norwich.

The history of the fortifications of this city is narrated in "Blomefield's Norwich;" who states, from authentic records, that the walls were begun in 1294, and that a *mirage*, or tax, was levied upon the inhabitants, by virtue of royal authority, to enable the civic functionaries to proceed with their erection. Similar imposts were levied on the citizens, from time to time, till 1319 or 1320, when the walls are said to have been finished.

In 1342, the gates and towers of the city, not having been previously fitted up, were "fortified and made fit to dwell in," by Richard Spynk, citizen of Norwich, who gave "thirty *espringolds*, or warlike instruments, to cast great stones with, to be always kept at the different gates, and to every espringold one hundred *gogions* or balls, locked up in a box with ropes and other accoutrements belonging to them; and also four great *arblasters* or cross-bows, and to each of them one hundred *gogions* or balls, and two pair of *grapples* to draw up the bows with." He also expended 200*l.* in enlarging and deepening the ditches belonging to the city walls; and other large sums in various extensive works to most of the gates and towers. On the bank of the river Wensum, at the southern extremity of the city, the wall terminated in a large and lofty round tower. Opposite to this, on the east side of the river, Richard Spynk erected a similar tower, "and made two great chains to go cross from tower to tower, so that no vessel could enter the city by the river without leave; and he fixed an instrument to the tower, on the west side of the river, to wind the chains upon." This defence of the river passage was called the *boom*. The same truly patriotic citizen further "offered another hundred pounds, if any would raise as much more, to finish all the towers in the same manner as those he had done; and when no man would undertake to do it in that manner, the said Richard undertook it and performed it, by God's grace." Some other curious historical particulars respecting the walls and gatehouses are given in Blomefield's history; proving, amongst other things, that each of the parishes in the city was liable in ancient times to an assessment for the repair of a distinct and definite portion of the walls and gates.

The city gates were originally twelve in number; but one of them, called *Heigham Gate*, was taken down previously to 1741, when Blomefield's history was published. That industrious antiquary, John Carter, visited Norwich in 1786, and made a series of slight but effective sketches of the remaining eleven gate-houses, which were then in a tolerable state. These, together with all his other sketches (arranged and bound in thirty-seven folio volumes), are now in Mr. Britton's possession. Since Carter's time, the whole of these interesting structures have been taken down, to *improve* the approaches to the city.

Mr. Britton exhibited to the meeting copies of Carter's drawings, and explained the leading characteristics of each of the gate-houses, and their respective positions in the city walls. Their names and arrangement were as follows, commencing from the River Gate, or Boom, already mentioned, at the southern extremity of the city, and proceeding in a north-westerly direction round the walls.

1. *Conisford Gate*, or the *South Gate*, a plain square tower gateway, with two small loop-holes, or windows. Like all the rest, this gate-house consisted of one archway only, for foot and carriage passengers, and had a bold embattled parapet.

2. *Ber-street Gate*, a square tower, flanked and protected by a lofty round tower; both perforated with oilet-holes in the form of a cross. This was formerly the most frequented entrance to the whole city, being the principal access to the castle.

3. *Brazen Door*, a plain square tower, of considerable width in proportion to its height. This derived its name from having originally been closed with doors, or gates of brass, which were afterwards probably replaced by iron ones, as it is often described as the *Iron Door*. *The Newgate*, and *Swine-market Gate* are other names formerly applied to this gate.

4. *St. Stephen's Gate*, formerly called *Needham Gate*, was the most imposing of the series in its architectural form and appearance; being flanked on each side by a bold and massive round tower. An ornamental moulding over the archway of the exterior side, formed a junction with a plain and prominent string course around each tower. The apartment above the arch was lighted by a small triple, lancet-headed window, with canopied mouldings.

5. *St. Giles's Gate*, the most western of the series, was a plain square embattled tower, with one small window in its external face, and in this, as in several of the others, was a small square sunk panel, above the archway, sculptured with armorial bearings.

6. *St Benedict's Gate* was formerly called *Westwyck Gate*, according to Blomefield, because it stood on the western *wie*, or *winding*, of the river. It had an archway of considerable width, the tower above being square, with a double window of semi circular arches. The barbican, or wall, projecting from the face of the tower, on each side of the approach, remained when Carter made his drawings. Next to this stood *Heigham Gate*, as already noticed, which Blomefield says "was called *Helle Gate*, from its low situation, and the odd appearance that the street leading to it hath to any one that looks down it, being a prodigious chasm and declivity, like the entrance of the ancient poet's hell. This was a postern only." Here the continuity of the walls was broken by the river entering the city.

Resuming the line, on the northern side of the city, were the following gates:—

7. *St. Martin's*, formerly called *Coslany Gate*, a plain square tower, similar to the two last described in its general form, but differing somewhat from each of the others in its proportions. A part of it, converted into a dwelling-house, still remains.

8. *St. Augustine's*; and

9. *Magdalen Gate* (formerly *Fibridge Gate*) differed but slightly from the preceding. The latter had a loop-hole of peculiar form and a small window.

10. *Pockthorpe*, or *Barr Gate*, was at the north-east angle of the city, near the point where the wall again joined the river. This was also a square tower, and was the last in the line of the city walls.

The east side of the city was undefended by a wall, being sufficiently protected by the river. Over this, some distance to the southward, is the Bishop's Bridge, which is the eastern access to the city; and leads directly to the Bishop's Palace and Cathedral. This entrance was guarded by another gate-house called *Bishop's Gate* (11), which, in conjunction with the bridge, was the most picturesque of the whole. It was square, with an octagonal turret at each angle, and a barbican on the exterior side. Above the outer archway was a sculptured panel, and over the inner arch a large double window. This completed the series of twelve fortified gate-houses.

In addition to the *gate-houses* above enumerated, Mr. Britton referred to those others forming the entrances to the cathedral, the bishop's palace, and other buildings in the Close of Norwich. These are known as the *Erpingham, St. Ethelbert's*, and the *Bishop's Palace Gates*.

The first of these is remarkable for its history and architectural enrichments. It was built by Sir Thomas Erpingham in the reign of Henry IV., as a penance for having espoused and advocated the cause of Wicliff. Its exterior face is singularly and profusely adorned with niches, sculptured statues, birds, shields, &c. The lecturer gave a particular description of this building from his "History of Norwich Cathedral," and his "Picturesque Antiquities of English Cities," in which there are engravings of this, and of St. Ethelbert's gate-houses.

*St. Ethelbert's Gate house* appears to have been erected, in like manner, by the citizens of Norwich, as an atonement for injury done to the cathedral and its gates, in an insurrection which occurred in the year 1272. It is adorned with tracery, niches, basso-relievos, &c.; over it is a chapel.

*The Bishop's Palace Gate-house* was mostly built by Bishop Alnwick about 1430, and finished by Bishop Lyhart about 1470. The spandrils of the principal archway are filled with rich tracery-mouldings, inclosing blank shields. Over the arches is a very elaborate frieze of panelled compartments, inclosing other shields. Above these is a niche with a statue, crowned. The parapet appears to have been formerly enriched with tracery and embrasures.

In conclusion, Mr. Britton observed, that if his essay had been regarded as too prolix, or in any way irrelevant, or tedious, the fault should be ascribed to him, and not to the subject; for every object of antiquity must interest the fancy as well as the judgment of well-informed and laudably curious minds. The buildings of bye-gone times, and of distant countries, were the most valuable relics and memorials of man in his civil history; and therefore entitled to the diligent study of the antiquary, the architect, and the critic. The various objects of archæology furnished indeed most irrefragable evidence of the manners and customs, as well as the arts and sciences of the human race, from the earliest dawn of civilization. Hence the well-stored museum might be regarded as the record office of the antiquary; and every ancient relic as well as every broken fragment, constituted a chapter or an anecdote in the annals of the world.

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And now we must away from the city, glad to escape for a time from the sharp stones with which its streets are "fanged." A glide on the iron road, and a short steam across Breydon Water bring us to

BURGH CASTLE,

A remnant of Roman dominion, which has been recently purchased by Sir John Boileau (pleasant, fluent Sir John), in order that it may be carefully preserved.

As was charmingly said in a speech to which we have before referred, —"It is crumbling beneath the weight of centuries,—the pride of the Roman Conqueror has been humbled, it has been shorn of its splendour—and that castle which was once redolent with imperial munificence, and upon whose walls the haughty warrior proudly reared his flag of victory and

* The lecturer's account of the bishop's palace, cathedral, and ecclesiastical buildings of Wells, with reference to a carefully drawn plan, by the late John Carter, was very interesting.

triumph, as if in defiance of the world which he had conquered, must now come to supplicate the bounty of an English gentleman, in order that it may be preserved from decay."

Burgh Castle is considered by many, as most people know, the *Gariononum* of the Romans, and, like Richborough Castle, Caister, and others, consists of walls and abutment towers, constructed of flints bonded at certain intervals (of about three feet) by layers of tiles. The facing, which was regular, has disappeared: the mortar has pounded brick mixed with it, a sure sign of Roman workmanship. Ives, in his "Remarks upon the Gariononum," published in 1803, says that the bed of chalk and lime, beat down, on which the walls were raised, was covered with oak planks two inches thick, and a layer of coarse mortar (concrete) to receive the stones of the fabric.

The Rev. C. Hartshorne, in some, too hasty, remarks on the structure, which he gave mounted on its ruins, pboo-pboo'd this statement, blowing the planks to the wind. Mr. Godwin ventured to protest against a contradiction founded on a very slight acquaintance with the locality, lest error should be substituted for truth, and urged that further excavations should be made: afterward, the impress of, at all events, two planks was found on an inverted mass of the foundation.—But the steamers are ready,—and so, after a hasty glance at the parish church, which has a round tower, apparently of the Norman period, and has been recently restored and fitted up with open seats, we go again on board, and land in good time at

YARMOUTH,

where the *Church of St. Nicholas* was the chief object of attention. Here Professor Willis had an audience around him to hear his account of the church; but as we did not reach the spot until the lecturer had nearly finished his discourse, we avail ourselves of a report of it, which appeared in one of the Norwich newspapers. Mr. Willis said,

"St. Nicholas afforded a very curious example of the many changes which were made in parish churches from time to time. It might easily be supposed that when the population was small and their means limited, they built a small church, and the contrivances they adopted to enlarge it when necessary was a subject of much interest. Yarmouth Church was an example of a very curious practice. They would observe, when they entered the church, that it consisted of three aisles, which was common, but they would observe, the centre was narrower than the side aisles. If they examined a little more closely, they would find the style of architecture of the central aisle was earlier than that of the side aisles. The result of investigation shewed that originally there was a wide central and two side aisles. If they looked in the north aisle they would see that the upper part of the walls had originally been exposed to the air, and the original slope was in contact with the wall upon the arches, a low wall in the ancient fashion with small narrow windows, making a smaller and a darker church. There was no doubt that this church was begun to be enlarged by taking down the low wall with its sloping roof, and erecting another wall on the south, probably before they took the old one down. One object being to prevent, as much as possible, any interruption of the public services, they began outside, and as funds were not easily obtained, it might be a very long work; they had a long time to collect the money; they proceeded quietly till they had nearly completed, and then they took down the inner wall, put on the roof, and by that means obtained increased accommodation. These opinions were the result of examination, not only of the structure of this but of many other churches, and he was satisfied that this mode of enlarging churches was very common. The south side aisle having been completed, the north one was commenced, which is of a later date. This roof was very different from the low sloping one he had already described. The walls were of equal height, and the roof of the side aisle nearly equal to the centre. In the churches of the middle ages the side aisles being low, to allow a sloping roof, the windows were very low, and the church derived light from what were called clerestory lights. This church was one of a different and a better structure. When those aisles were erected in the way already described, the tracery they then saw was not known. That dated between 1370 and 1380. The window jambs, shafts, with arch mouldings, belonged to an earlier period. The three gables of the church were all of the early English style, the middle one was the oldest, the south second, and then the north still later. Those alterations all took place in about fifty years. Almost the only historical fact they knew of the church was, that it was commenced by Herbert de Losinga, about 1096, but in his opinion no part of that was remaining, but must have been taken down when the church was increased. The sudden and rapid enlargement of the church shewed that they must first have had a small Norman church with small side aisles, and that then the south and afterwards the north aisles were enlarged. There was, too, another change that he would point out, which was that the church had a great tower and transepts, and there was another enormous chancel, having a middle and side aisles."

The professor afterwards alluded to the diary of William of Worcester, a writer in the time of Henry V., preserved in Corpus College, Cambridge. It was made up of backs of old letters and documents, which he appeared to have kept in his pocket. These scraps Archbishop Parker collected and bound, by which means they had been preserved. William of Worcester was private secretary to Fastolff. It appeared that he visited Yarmouth Church, and wrote down many particulars, relating to its measurement, &c. He says, that "the Great Church of St. Nicholas was increased in 1250, and dedicated in 1251," which applied very well to some of the arches. He further said there was new work begun in the west part in 1320.

Very considerable works are now in progress here under Mr. Hakewill. The end of the north chancel is being rebuilt, the masonry having come over 18 inches; galleries have been taken down, divisions are to be removed, and many other things done. The size of this church is very great, namely, 260 feet long and about 180 feet wide in the clear: the length of the transepts is 150 feet.

We can only say two words about Mr. C. J. Palmer's very interesting house, built at the end of the sixteenth century,* and of Mr. Dawson Turner's wonderful collection of autographs, and of archæological and architectural drawings by his accomplished daughters, and then away from Yarmouth.

*Ely* is at some distance from it, and was visited, as a matter of course, on another day; we fly over space, however, and place before our readers a view of the east end of the cathedral there,—one of the finest remaining specimens of an Early English front.†

FAIRBAIRN'S IMPROVED IRON BEAMS.—A patent has been taken out by Mr. Fairbairn, of Manchester, for the construction of hollow wrought-iron beams. The method adopted, according to the *Mining Journal*, is to form the beam of stout plate-iron, rivetted at the joints to strong T iron, and at the angles to L iron, to give additional strength, and prevent buckling and deflection as much as possible. A transverse section represents three chambers, the two square ones at top being together rather wider than the upright one, and all bolted together in the most substantial manner. In his specification for these hollow beams, he describes them under different constructions, suitable for mills, factories, warehouses, dwelling-houses, bridges, &c.

* Mr. Palmer, who is a zealous antiquary, is about to publish "A Booke of the foundacion and Antiquitye of the Towne of Great Yarmouthe: from the original MSS. written in the time of Queen Elizabeth."

† See p. 388.

## THE STATE OF EDUCATION AND PRACTICE, AS INFLUENCING THE PROFESSION OF THE ARCHITECT.

In assigning a large amount of influence over the profession of architecture to deficiencies in the necessary apparatus of practice, and to defects in the early education of architects,* we believe we have noticed two of the most important facts in its actual position. Education must be defective so long as the constituent parts of architecture remain to be enumerated, and so long as the objects and nature of the *profession* are unexplained,—so long, in short, as there is no course whatever, prescribed as a preparation for the *profession* and the future life. The practice of architecture must be, as it now is, a matter of toil and drudgery, to an extent inconsistent with the pursuit as *art*, inconsistent with that constant mental replenishing without which no great efforts of genius can germinate, so long as what should be matters of reference require a constantly recurring outlay of time in calculation or inquiry, or oppress the memory to the exclusion of really valuable matter.

The system of the universe, the great business of life, are all expressed in one word,—order. Architecture, under all its aspects, has not less the need of this universal power of direction and government. Vitruvius recognised its value in the mere art. But it is something more than an element of beauty; and considered thus extensively, there is no profession in which it can be more requisite than in that of the architect, where so many qualifications of an apparently opposite nature are demanded, that, if attained to the extent which seems necessary to constitute the professor, health of body and mind must be taxed to the utmost power of natural endurance. In furtherance of this government of order, therefore, as well as to permit the devotion of the powers of the mind to the most remunerative objects, it is essential to employ all the aids which ingenuity can invent, or which industry can amass for preservation. Thus all manuals, and collections of data, for reference in every department of science and practice, every thing in the nature of *indices* to facts and precedents, whether printed in the form of tables, or by means of collections of specimens, should be provided, as they are in all other pursuits, and as it is especially important that they should be in the profession of architecture. How much labour in calculation is constantly saved by the use of tables of logarithms, and by those of square and cube roots? The price books (before referred to) are the only instances we can name, of similar aids in what is peculiarly architectural, yet there might be many of equal utility. By accident, there is an encyclopædia of the Metropolitan Buildings Act, or else this matter would have afforded a fitting illustration of the immense tax upon the time of the architect, in mere matters of business, and of the care which had been taken in remedying it.

We by no means wish to urge, in advocating the compilation of tables and data for reference in all departments of the practice of architecture, that such aids should supply the want of that elementary course on which we have insisted. No doubt, tables of scantlings, such as those published by Tredgold, may often prove of great service, but they were never intended to render less necessary the study of the rules by which they were calculated, and least of all are they to be used by those who do not comprehend their principles. This is not the description of aid which we more particularly refer to, but rather the want of compilations of data, to prevent the useless repetition of labour, that there are no rules of professional practice for the conduct of works, and for regulating the business intercourse between contractor and architect, no authorized scale of charges, not even a well-comprehended principle of professional *etiquette*, no *vade mecum*, or catalogue of requisites in a building, to which reference can be made in drawing up specifications, in order to prevent the possibility of omission,—indeed nothing which can bear a comparison with the extent of the need. We have elaborate works on all styles, works on masonry, on carpentry, and other departments of architecture and building, in which principles and rules are accurately investigated, but we have nothing of the nature of text books or manuals. We should be glad to see

* Vide pages 105 and 167, *ante*.

a work which would show at one view, how every part of a building might ordinarily be executed; in one plate we would show together every variety of execution in sashes, casements, and details of that description; in others respectively, the various forms of gutters, the modes of joining and flashing lead and zinc, the different bonds of brickwork, the methods of laying floor boards, the kinds of doors, and the different ways of hanging and hingeing them, the varieties of roof covering, the different methods of laying slates and tiles. Now, much has been done in some departments,—for example, different forms of roofs and *naked flooring* are collected together in more than one work of authority; still the collection might be very greatly extended, and published in a form more useful for reference. But the work which we contemplate, is one of a far more comprehensive nature. We would have in it, such things as smoke-pipes and ventilating cowls, water-closets, and kitchen ranges; for it is matter of this description, which every one is supposed to be acquainted with, which makes up the greatest tax upon the time of the architect, withdraws his attention from the art, or at best prevents through ignorance, his availing himself of those forms which he could modify to his purpose. Such a work should also, for example, specify the different sizes of pipes, the different kinds of materials used in various parts of the kingdom:—in the majority of cases a tabular arrangement of little more than names would suffice. The work would thus be in the full sense of the term, a manual, and could not fail to produce the most beneficial effect upon the *art* of architecture, by allowing the opportunity for the higher branches of the architects' practice, which require time and study. Such a manual would be useful to old and young, but to the latter it would be invaluable, for whilst now, to these, the difficulty is often so great of obtaining such requisite particulars at all, the vigour of the mind is wasted at that very time of life, when the faculty of taste would be capable of cultivation to the best advantage.

We have entered thus far into one of the necessities of architectural practice, because we wished to shew the means by which that amount and quality of knowledge required to form the architect, might be gained without a tax upon the energies scarcely to be advised. We had imputed to architects certain deficiences in elementary and professional knowledge, and we feel that we can be answered by the plea of the inadequacy of life and time, so long as the means of transacting the business of the profession are so inadequate. Certain things must be attended to, inseparable from the most important object, and therefore an architect fully competent to undertake whatever he may be called upon to do, is an exception, and therefore it can hardly be a matter for surprise, that so few have a proper estimate of what ought to be requisite qualifications. Thus each overrates the abilities which he may happen to possess. He who has great power in delineation, speaks contemptuously of So and So, who never designed an elevation, or drew a moulding, whilst So and So thanks heaven that he never wasted his time about drawing, which he can get others to do, and that he knows the difference between good work and bad. Each thinks that his particular qualifications are those which make the architect. But both will have to gain or buy the assistance of others in points, in the design and the conduct of a building; therefore neither can be considered fairly to claim the title of architect, since both are deficient in abilities which are inseparable from the pursuit of architecture as a profession. It cannot be denied, that the architect is now often not the competent professor of all that forms part of his profession and his art, but rather the head of an office, the superintendent of departments in which he himself may have no skill. Supposing a theatre has to be built,—to one person he confides every thing that relates to the heating, is advised by another as to the ventilation; decorators, upholsterers, and artists he employs to *design* as well as to execute—each in their several departments. And when the building is completed, how little is seen of the unity which should characterize the work, how little is there of the hand or thought of the architect.

So, as we have heard it said, standing in the profession of architecture becomes a consequence, not of taste in design, or skill in construction,—not of the full possession of ability in what constitutes architecture, but of length of purse;—genius and taste "without money are more profitless than sea-weed."

Thus it is capable of demonstration, that the anomalous state in which architecture is, compared with other professions, is, in a great measure, to be attributed to defects at the outset, and to those which it is the business of architects themselves to remedy. For, what may be taken to be the opinion of the world, from which the employment of architects, and their influence in bringing about good construction, and improvement of taste, is to spring? That this improvement is not to be looked for from architects, who are incapable of it. That, for any matter connected with the arrangement, ventilation, construction, and decoration of buildings, an architect may, in the greater number of instances, be dispensed with. And, so long as the public can apply to the profession of architecture, and not find, as they would in a parallel case in any other profession, that the professor has the means within himself of supplying the object and the want, so long will there be reason for that opinion, one which we are convinced is very extensively prevalent, although perhaps less from any *failure* in supplying the demand, than from want of proper alacrity in anticipating and providing for it—awant sure to exist where there has been no solid foundation in a carefully devised, and complete *elementary* course, and where every aid of that nature which may be called mechanical, is so absolutely essential, and yet so inadequately provided.

## ARCHITECTURAL STYLE.

Sir,—There is no creature in this living, breathing world of ours so ill-used, so severely tasked, so hard ridden, as your *hobby-horse*. No matter in what department the animal may be classed, for the genera and species vary considerably, whether it be your sanatory hobby, your currency hobby, your educational hobby, or your fine art hobby, only let the rider be fairly astride and once started, and away he goes, to the admiration of all beholders, setting at nought every obstacle which may present itself to less sanguine imaginations, until the poor animal is completely ridden to death.

On a pegasus of this description, Mr. Robert Kerr seems to have mounted, and the pace at which he appears to be travelling is certainly something of a killing one, to judge by the article on the subject above-named in The Builder of July 17th. To our old-fashioned notions, the road on which he is cantering his hobby, denominated "The Beautiful," is likely to terminate in a quagmire, and for the purpose of giving a friendly warning, these few remarks are penned. Let us, however, do justice to the article in question. The object at which it aims, the recommendations given as to the employment of precedent, and the freshness and vigour with which they are enforced, are worthy of all commendation. We think, at the same time, that we perceive some confusion of ideas in the mode in which the term "Style" is used, and we are still more strongly of opinion, that the doctrine laid down, that beauty in architecture has no connection whatever with "the contriving of plans," and is something to be kept altogether distinct from the material elements out of which this beauty is to be evoked, is essentially vicious in principle, and misleading in its tendency. Let us refer to each of these subjects separately.

The "essence of style," we are told, "lies simply in the essence (whatever this may be) of character and expression and sentiment,—a varied essence developed in varied manifestation." With this definition we have no quarrel, except that the triple use of the word "essence" rather detracts from than adds to its clearness. In this view we understand by the term "style," simply the evidence of the artist's mind infused into his work, imparting its character of severity or richness, of grace or massiveness, of complexity or simplicity, according to the nature of the work, and the artist's intention and purpose. In this sense the application of the word "style" is almost, if not entirely, identical with its application to the measured melody of a Milton, the tumid periods of a Johnson, the placid sweetness of a Guido, or the richly gushing harmonies of a Mozart; or, as Mr. Kerr has himself expressed it, "In music, in painting, in poetry, in architecture, there are a thousand ways to pleasure—a thousand *styles*—all equally delightful and beautiful and true."

But Mr. Kerr proceeds to say,—"The present practice of architecture lying entirely in the use of the *systems of design* collected from antiquity, there are demanded of our architects attainments in respect of *style*—in knowledge of certain systems of its variety—which hitherto were never required to be displayed," &c. Now, very little reflection is requisite to perceive that here the term is altogether changed in its meaning, by its application to discriminate between the "various *systems of design*" (a happy phrase, by the way), Egyptian, Greek, Roman, Gothic, &c., which have successively prevailed. These are merely the conventional arrangements—the language, in fact, in which the artist's ideas are to be expressed, and in which the peculiar characteristics of his genius must be displayed. It is true that each of these modes or systems has its own peculiar capabilities, as is the case also with the various languages in which authors have written, but there is a wonderful variety of styles and beauties to be evolved from each. Look, for instance, at the grace displayed in the monument of Lysicrates compared with the majesty of the Parthenon, or see the diversity still more exemplified in the sombre massiveness of the crypt of the fourteenth century, contrasted with the lightness and elegance of the lady-chapels and chantries of the same period. Surely then the same term can hardly be used with propriety, to designate both an entire system of architecture and the various expressions and shades of character of which it is capable. We are quite aware that in the loose manner in which language is frequently applied to subjects of this kind, a term is often employed in two or more senses, which has been eminently the case with the one under discussion; but if clear and definite ideas are valuable in the study of art, it is highly desirable that the exact meaning of the terms employed should be established.

Turn we now to the second subject hinted at above. Art, according to Mr. Kerr (architectural art, be it understood), is a pure abstraction, an etherial essence, disdaining all connection with the matter on which it has to work, turning up its angelic proboscis with contempt at such vulgar elements as stone and brick and timber and iron. This is no exaggeration, for we are told, that "to teach the learner the clear distinctness of the pure art, from the mere means and modes of its embodiment—is to give him the best first lesson in its true philosophy." Again, "the contriving of plans—with all other things which are very excellent in their way, and very indispensable in their value, but which have no connection with the subject, we must quite set aside for the time, and abstract the perfectly separate fine art to stand alone in the mere nature of itself, before we can hope to secure that nicety of judgment which so delicate a subject of thought demands."

We are further informed, that "the discernment of the philosophy of style can never be hoped for till the eye can look steadily at that pure art in which style has its being."

We here very naturally inquire what is this fine-art architecture, this pure abstraction? how is it to be comprehended? in what manner are we to become acquainted with such a spiritual essence, which refuses to manifest itself by outward and visible signs? We may ask the question, but our readers will in vain search Mr. Kerr's paper for a reply. He commences his fifth paragraph thus—"Having thus defined art," but those who can discover in the previous part of the article any such definition will be more successful than we have been. We are repeatedly told what art is not, but the nearest approach to telling us what it is, is the information that it is "an integer of thought, no longer confounded with the calculation of cost, or the contriving of builders' work according to the Act."

We fear that if, taking Mr. Kerr's advice, we attempt "to look steadily" at this "integer of thought," we shall find, like the clown in the *Twelfth Night*, that "it hath bay windows transparent as barricadoes, and the clear stones

towards the south-north are as lustrous as ebony."

To be candid, however, subsequently we have something like a definition of the term "art," "that which lies in the design of beauty for the production of pleasure." *Pro hac vice*, we accept the definition; but every one must see that in putting forward this expression, Mr. Kerr condenses his "etherial essence;" his abstraction becomes something tangible; his "integer of thought" is converted into an integer of matter; we have something which could have no visible existence except in connection with the material on which the mind has been exercised. Indeed, as Mr. Kerr advances he comes down from the eminence of pure abstraction, and in referring to the designs of the ancients he observes, very justly, "that the intellect of man in those days being freer in our peculiar province than now, and more under the action of the true principles of judgment, which lie in nature and reason alone —design proceeded more in the natural way, and following nature in exact adherence to fact (no sham, no concealment), and obeying reason in having no standard of criticism but abstract rationality of *means and ends, purpose and expression*—no misappropriations, no misapplications, no subversions, no Nelson columns, *no stone proportions in iron*, no architecture applied to machinery,—the human mind produced of necessity works rightly principled," &c. Now what is all this but asserting, and asserting well, that design—fine art in architecture,—to be successful, must have immediate reference to the object and purpose of the design, and to the material in which the design is to be carried out. What, then, becomes of the "segregation of the fine art architecture," "the perfect separateness of art from its mere adjuncts," and the theory of the "etherial essence" which has preceded? Our art is essentially connected with, even dependent upon, the materials on which it has to be exercised. In this respect architecture differs materially from the sister arts of poetry, painting, and sculpture. In them, Nature is the inexhaustible fountain direct from which they draw their inspiration and beauty. There does not exist in the whole range of these arts a beauty of expression, the portraiture of an emotion or passion, which has not its prototype in the world around. The connection of architecture with nature is only of a secondary class. We draw from nature our ideas of strength or weakness, harmony and proportion; but these ideas, so derived, exist as abstract principles, more or less strong as the mind has been cultivated in this direction, and are applied instinctively to the particular instances presented to us; to these is superadded that knowledge, which every one gains from experience, of the fitness or otherwise of certain materials for certain purposes. There is also the perception of the beauty of form derived primarily from nature, but existing also innate in every mind in a greater or less degree. It is then with these principles in their application to the raw material with which he has to deal, that the architect has to do; but in so dealing with them he is further confined by precedent and custom to certain systems or modes, which, like corks to the swimmer, may uphold the unskilful, but may operate as trammels to the daring and bold. It surely does not require much argument to prove that under these circumstances it is scarcely possible for the art of architecture to exist in an abstract form. What gave the peculiar characteristics to the trabeated and columned architecture of the Greeks, to the arcaded masses of the Romans, to the aspiring and taper structures of the middle ages, but the material with which they had to construct and carry out their designs? Every one practically admits the force of this. How satisfied is our sense of proportion and fitness when we see every kind of material employed about a building openly avowing its own honest character. The stone really stone, not stucco or iron painted to imitate it; iron employed where lightness and strength are requisite, a due proportion observed between the piers and apertures. If a building is erected in granite, we do not look for the same delicacy of mouldings and elaborate design as we might expect were Caen or Bath stone employed. If brick be the material used, vaults and arches naturally suggest themselves as principal features in the structure. To talk then of design, of fine art architecture as a pure abstraction, having no reference to the material employed, we again repeat, must lead to serious error and gross inconsistency.

"The contriving of plans," says Mr. Kerr, has nothing to do with "pure art, in which style has its being."

In most structures, the plan is usually first arranged, and has of itself, in all styles, dictated to a considerable extent the mode of construction, the material employed, and the nature of the embellishment. The Pantheon, the Greek temple, the Roman Basilica, the Byzantine churches, the middle age cathedral, are all familiar instances, in which plan and arrangement have materially, indeed essentially, modified the design of the exterior. It would be about as consistent in erecting a house to begin by fixing the roof, as in designing one to commence by preparing the elevation or exterior design, except in certain cases of terraces and streets, familiar to every architect. We will not further enlarge on the subject, as indeed lengthened argument would be thrown away where all that is necessary is a simple reference to the whole history of architecture and to its present practice.

We trust that Mr. Kerr may be induced to rein in his fiery charger, and descend to the quieter though safer region of plain practice, in which we heartily wish him all possible success.

P.

## THE ARMY AND NAVY CLUB COMPETITION.

SIR,—If we may judge by the applause which the art of copying elicits, we ought immediately to shun all attempts at improvement, as innovation. Camdenists appear to have set a worthy example, and established a creed which the supple spirits of the present age are too happy to follow,—nay, conceive it rank heterodoxy to doubt,—and whether ecclesiastic or layman, Goth or anti-Goth, still the universal faith in architecture, and that which marks the nineteenth century as widely different from preceding periods, is the mathematical precision and delicate exactness in which ancient or medieval art is reproduced; the displacement of a column, or the alteration of an entablature; a deviation in the form of a church, or the non-conformity to the triple rule for the east window of the chancel, are all such violations of orthodox principles as *now* established, that he is a bold man who dares to think for himself; as if our venerable forefathers had possessed themselves of all past, present, and future thoughts,—swamped the intellects of ages to come, as well as laid violent embargo upon all ideas which might have existed previous to those wonderful periods which form the *ne plus ultra* of all art. Poor architecture appears to have got into a terrible fix; its career is terminated, and it presents the curious anomaly of art, which continues to be practised, having come to an impassable full stop, at the beginning as well as at the end of her existence:—all before as well as all after this orthodoxy is—*nil, nil*.

It would be in vain for me to recount the marvellous *re*-productions of the great geniuses of the present day in the noble art which they practise with such intense application—to their books; it would be in vain to attempt such a list,—it would swell to an enormous bulk. A great work has just now been uncovered to the vulgar gaze,—the new part of the Carlton Club-house, with its polished granite columns, its gigantic entablature,—of course in strict proportion,—the whole most elaborately copied by the talented architect from a building by Sansovino. Ill-natured people will say that the casts from the original assisted the masons, in some small degree, in producing the perfect similarity to the great original, and that the mental labour of the reviver was greatly diminished thereby. But who will dare to criticise so perfect a copy? If, indeed, there had been any freaks of fancy, any attempts at original or poetic feeling, quite fresh, and even possessing, for such a thing, evidence of talent in that way, then would the critic's lash have smitten him; but now, he is safely screened by the borrowed plumage of Sansovino.*

Great and glorious is our age of fine art! Another grand work, of the same genus, will shortly rise to establish our architectural fame. The committee of the Army and Navy Club, after considerable labour and discussion, evincing an extraordinary knowledge of fine art, as well as constructive skill, and after having in the most disinterested manner awarded two premiums for designs merely for the pleasure of seeing them hang up in their rooms,—have at length determined, it seems, that their building shall be a copy of a palazzo by Sansovino!—a copy, on which will have been employed the joint intellect of two architects. The club have, however, opened our eyes to one thing—it being now made evident that they acted without much discernment in the first instance, bestowing their premiums upon two designs, both which they have thought proper to dismiss, passing over altogether the design which they have since discovered to be so excellent that they have actually adopted it for execution. Not that the club shewed themselves much more blind than most other folks —since none of those who spoke of the exhibited designs bestowed any notice on No. 46, Messrs. Parnell and Smith's, except to inform us that Count D'Orsay was somewhat unaccountably mixed up with it. Perhaps some passed it by without remark, because the first glance satisfied them as to what it was—a leaf stolen out of Sansovino. Nevertheless, after the *turn* which matters have now taken, it will be well to shew us its shape and likeness.

ANTI COPYISM.

## THE WINDOW TAX AND TAX ON BRICK.

BOTH HEALTH-OF-TOWNS-QUESTIONS IN THE FORTHCOMING PARLIAMENT.

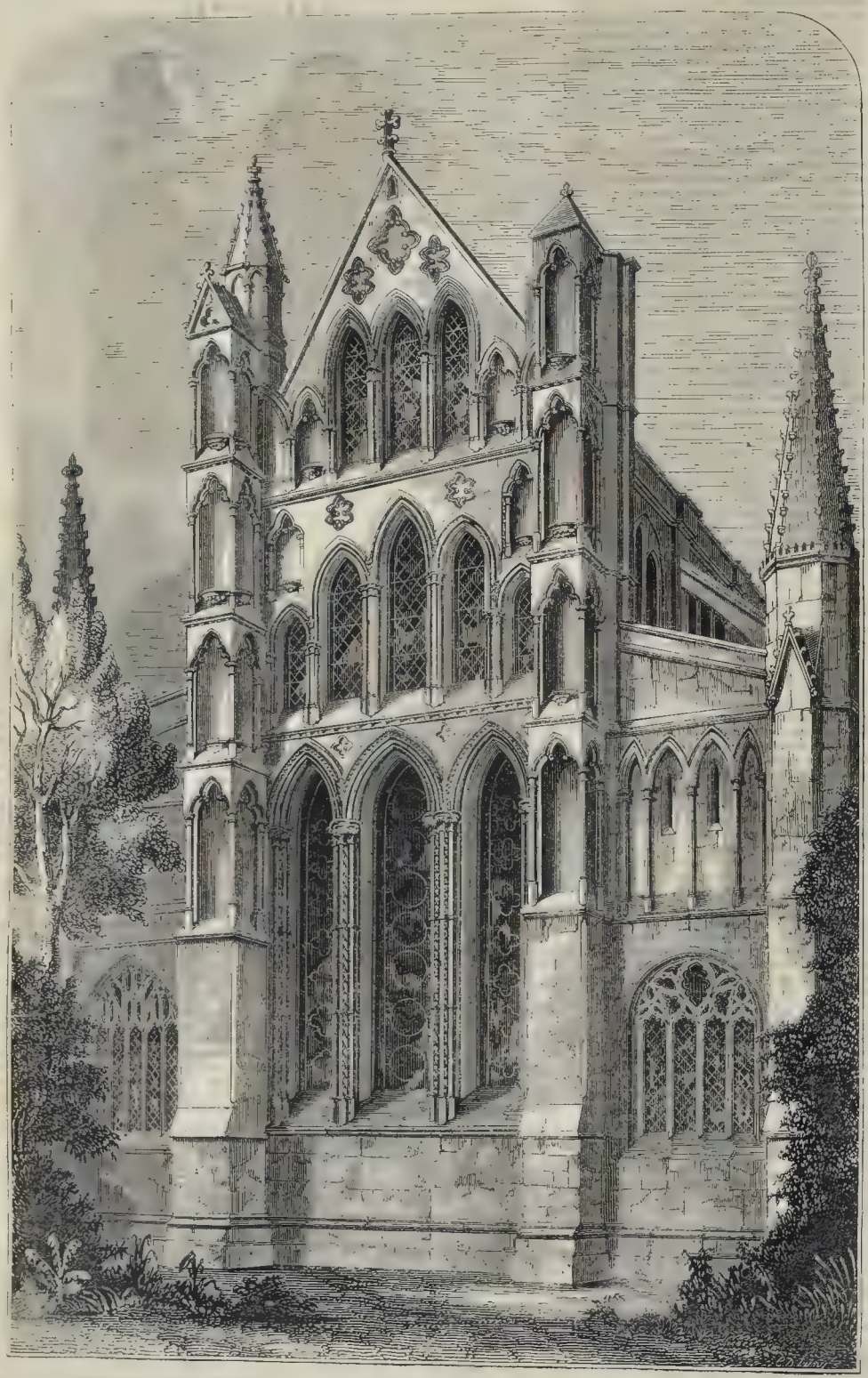
IT so happens that those two taxes which are so highly obnoxious to a free disposal of architectural and constructive detail for the promotion of the health of towns, are equally obnoxious to the same free disposal of detail for the promotion of architectural beauty in building itself, and hence most injurious to that and to the expansion of the best interests of both the science of architecture and the art of building in general. It would become none so well, therefore, as architects and builders, to take the initiative in some specific and determined measure for the purpose of sweeping away these obnoxious taxes at once, during the *highly opportune moment* of time when preliminary measures are about to be taken for the cleansing of the national Augean stable, and the foundation and establishment of the health of towns, with which those very taxes are so inextricably involved. Inextricably, we maintain, for how can the health of towns be freely and unobstructedly promoted while such hindrances to those very details most necessary, most essential, to its promotion and establishment are permitted to stop up the way. And we are very much mistaken indeed if the Government do not already perceive the gross inconsistency of upholding such taxes at the very moment that they are clearing the way for the health of the community; and that they are therefore quite resigned, *if strenuously pushed*, to take the only means of gracefully backing out of such a dilemma by yielding the point at once. They cannot pretend to any thing like sincerity in the promotion of sanatory laws unless they do. And now, therefore, is the time to take the initiative in thus bringing a not by any means new grievance, or even new movement, into *some one practical shape*.

To that end a correspondent of our own, "A. G.," proposes that AN ASSOCIATION for the abolition of the brick and window duties be forthwith established, and that, preliminarily at least, by architects and builders, whose interests are so deeply affected, and who must of necessity be best aware of the injurious opera-

* A contemporary says of the New Carlton:—"The mixture of polished marble and dead stone, as in the antique, the use of the columns, tablets, &c., of the former material, besides being unpleasant in point of colour till the London smoke shall throw its mantle over all, is [illegible] an obvious discrepancy, not to say economy. 'Cloth of frieze and cloth of gold' do not wear well together. If it requires some education (shall we say a little violence to natural taste?) to accustom the eye to the mosaic mixture of marbles in the *Campanile* of the *Duomo* at Florence—the *Chess-board* facings of the less richly

variegated at Monza—the saracenic horizontal stripes of the *Battisterio* at Pisa, and the usual precedents, and these under the tempering and harmonizing influences of a climate where all bright hues are in some measure *damped* by the dazzling 'blue above,' we could but think that the crude contrast of materials and colour exhibited to may be found highly revolting under our duller air; that at best for a London street-effect it is less effective than [illegible] and that [illegible] to admit such things as Sebastopol and Inkermann [illegible] Nevertheless, whatever be thought of the point, or taste or caricature of these new club palaces separately considered, it is however to be regretted over the palazzo [illegible] such attention, driving our architects to Venice [illegible] Florence and Genoa for models, when [illegible] of the winter ways at Venice and of the thoroughfares at No [illegible] lies in the unexpressed [illegible] But since this is the direction at which professional architects [illegible] their minds, we hope [illegible] to [illegible] Still to use the word in it. Unless to [illegible]

ELY CATHEDRAL—EAST END.



* See page 383, in present number.

tions of these duties, and be best able to explain their injurious operation, not only on their own pecuniary interests, and through these directly on the pecuniary interests of the public, who pay for all; but also on the public health, and on the free promotion and establishment of those sanatory improvements which it is now the heart's desire of the public to carry out to their legitimate issue.

If once such a parent association were fairly established in the metropolis, branch associations over all the empire, co-operating and communicating with the metropolitan head, would soon follow, and with a little well-directed energy, our new and old legislators would at once be induced to abolish these obnoxious taxes on light and safety, comfort, cleanliness and health. The great object, at present, as our correspondent observes, is to give an additional spur to that already strong public opinion which is directed against these inimical taxes, and to keep public attention, "alive to the evils consequent on what you have very justly termed the 'Light and Health (and you might add the Architectural Symmetry) Tax."

We are pleased to observe that this little *war-cry* which we had the fortune to suggest, and which our contemporaries were not slow in doing us the recognized honour of *passing along*, from one to the other, like some rallying motto,—is now in active service. From *The Times* we perceive, that at a recent meeting of the metropolitan delegates on the window tax, attended by Lords Duncan and Dudley Stuart, Sir Benjamin Hall, Mr. George Daniel, and others, in Marylebone vestry, "resolutions were agreed to which declared, in substance, that the meeting was impressed with the injurious, unequal, and oppressive effects of a *tax upon light, air, and health*; that, regarding the window-tax merely in the light of a fiscal imposition, it was in the highest degree unjust to tax the English tradesman for the first necessary of life, whilst the property of Irish landlords was exempted from any share in a taxation to which English proprietors had been for many years subject; and the meeting earnestly urged all constituent bodies to make the repeal of the window tax a primary object in the ensuing election, and, wherever it may be possible, to return no condidates who will not pledge themselves cordially to co-operate in the attainment of this great end."

On the latter point we are glad to be able, now that the result of a number of these elections has transpired, to state, in the words of a contemporary, the *Manchester Advertizer*, that not the least of those great social questions which have much more engaged the attention of constituencies and candidates than any thing of a decidedly great political character, "is the subject of the sanatory condition of our large towns, and, *connected with it in a very important manner*, the kindred point of window duties. To a greater extent than might have been anticipated, this has been one of the matters which have been brought prominently before the notice of candidates, *and we cannot anticipate from these circumstances any other than the most favourable results.* In the city of London, the question of the window duties was made one of the most conspicuous points: and it is a matter sincerely to be hoped that the premier, who has just been returned by the citizens of that great constituency at the head of the poll, will seriously and practically direct his labours to this, with the other important matters connected with the health of towns' measures we are promised for next session. As we doubt not the sincerity which the cabinet professes on this question, so also are we the more *sanguine that an effort vigorously made* to repeal the window tax *must be successful.* How can it (as has been well observed), with the semblance of consistency, be otherwise? We cannot imagine men descanting on the necessity of cleanliness, of an abundant supply of water, of freeing as much as possible the atmosphere from impurities, and at the same time denying these very persons the light of Heaven in positive profusion. Why, the enactments of the Health of Towns' Bill itself would be shorn of more than half their benefit were this not the case. * * We trust the people of England will not be slow in asserting that all sanatory regulations must be inefficient and incomplete without the abolition of the window tax," and the tax on brick, say we.

## TOMB-STONES.



## GRAVE-STONES.

Sir,—To the improved form of grave-stones in your number of June 19th, permit me to add two from Luxemburg, the plainer form of which I conceive would be more applicable in districts where the indigenous stone is difficultly worked, than the ornamental sculpture on those proposed by your correspondent "J. S.," and with whose reprobation of the base purposes for which churchyards are still sometimes employed, I cannot but agree.

I beg, however, to protest against the locking-up of churchyard gates, except during the night. Good is it, both for mind and soul, to enter the "house of mourning;" sweet also is it privately to visit, now and then, the graves of our relatives and our friends, and painful is it to be deprived of such a melancholy pleasure. Let churchyards be therefore open, as they used to be, for meditation; but let it be patrolled, if necessary, by the parish beadle, or some well-conducted inmate of the workhouse, with authority to prevent children playing therein, or other improper conduct. I see, however, no great harm in allowing a few sheep occasionally to keep down the grass, so that convenient access may be had to all the graves, although I do not like that prim appearance of our modern public cemeteries, which now causes them to be frequented more as pleasure-gardens than such sacred places ought to be.

W. Bromet.

## THE GOVERNMENT SCHOOL OF DESIGN.

The committee appointed by the council of the School of Design to consider the report of the special committee, to which we referred some time since, have made their own report to the Board of Trade, recommending nearly all that was suggested by the masters; especially the delivery of lectures and instruction in the principles of design. The following are amongst the recommendations:—

"That each professor shall be solely responsible to the committee of instruction for the management and progress of his respective class; shall suspend students if necessary, reporting the same, as soon as conveniently may be, to the committee of instruction. He shall also report, at least every two months, on the state of his class to the committee of instruction; and shall attend the meetings of the said committee when required, to give any information relative to his particular class, or to offer any suggestions respecting it.

That each professor shall, at least once a week, deliver to the students in his class, collectively, a lecture, or discourse, explanatory of the subjects of study in progress in his class.

That courses of special lectures shall be delivered to the whole school on anatomy, botany, perspective, and the history, principles, and practice of ornamental art. The lecturers to be specially remunerated, and the lectures, with the periods of their delivery, to be determined upon by the committee of instruction. The students of the female school to attend such lectures as the committee of instruction may deem expedient, and to occupy distinct seats to be provided for them.

That each professor and master be requested to contribute at least one specimen of ornamental art to each exhibition.

That a gold medal be offered as an annual prize for some high specimen of ornamental art; to be open for competition to all students in the Government Schools of Design throughout the country.

That a course of lectures on the history, principles, and practice of ornamental art shall be delivered at least once a year in each of the branch schools, by a competent person, to be appointed by the council, subject to the approval of the Board of Trade, and to be specially remunerated.

That the Board of Trade be requested to take into immediate consideration the imperative necessity of affording more efficient accommodation to the Head School of Design, in Somerset House, by providing spacious and well ventilated apartments for the purposes of instruction, a lecture and exhibition room, sufficient space for the museum and library of reference, and especially a room to be expressly used for the purposes of the modellers."

It remains to be seen what part of the report the Board of Trade will adopt, and then, whether it will work well.

There is to be no exhibition of drawings this year, at which the pupils complain.

Public Records Office.—We hear that Sir Gregory Grey, having referred the question of the proposed site for the Public Record Office in Chancery-lane to the Metropolitan Commissioners, they have reported in favour of its adoption. The estimated cost of the building is 175,000*l.*, the fittings 31,500*l.*; the houses and ground which it would be necessary to purchase, 243,000*l.*; making the total cost 450,000*l.* It is to be observed, however, that this includes the erection of several short streets in the immediate neighbourhood.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Commission of Monuments—before the Chamber of Peers.*—It might have long remained unknown to the public at large, what is done in France for the preservation of ancient buildings, if the estimates thereof had not caused some observations in the French legislature, of which the following is an abstract of what was said *pro et contra*. Count Montalembert accused the commission of some acts of vandalism — negligence in the preservation of ancient monuments. The first specific charge is on account of the church of St. Germer, which the commission has allowed to crumble to pieces. Some years ago (answers the commission) the Home Secretary sent an architect to study the restoration of that building. It has suffered by a great fire, which calcined some of its walls; its buttresses are every where ruined, and the materials of the whole building very bad and perishable. Pillars, walls, buttresses—all were to be remade at a cost of 600,000 francs. As this sum seemed too high, the commission sent two other architects (one a *member* of the Building *Council*), who, however, confirmed the first report, and thus placed such a costly enterprise beyond the limits of possibility. Another reproach cast on the commission and its architects, is the demolishing of the tower of Mantes. It is said, however, that the foundations proved to be decayed after the necessary works had been done, and that even the consolidation of this tower (built in the thirteenth century) has been a matter of great difficulty. The censure on the ruin of the belfrey of Valenciennes seems to be equally unfounded, as it came down while the official steps towards its restoration were *en train*.

The monuments which claim the help of the commission are very numerous. Often the Secretary of State is obliged to *purchase* works, disliked, it seems, by the local authorities. So, for instance, the basse-œuvre at Beauvais; the Roman Church at Beaugensy. But, if extravagant prices or expense are at stake, Government cannot afford them. The Church of Brantome—tumbling down when the architect had just applied his *professional* aid, has been adverted to by Count Montalembert. But another artist having been deputed for repairing the *bévue* of the former, the mischief may be yet stayed.

*Statue of Conradin, Naples.*—This city has been ornamented by a work of Thorwaldsen, through the liberality of H. R. H. the Hered. Prince of Bavaria. It stands in the church S. Maria del Carmine, and has been executed in marble by P. Schöpf, who has also made the basso relievos on the pedestal. One represents the farewell of the last Hotenstaufen from his mother—the other from his death-companion, Prince Frederic. These were the ancestors of the Bavarian dynasty.

*Notre Dame at Paris.* — The Common Council of Paris, foremost in so many useful enterprises, have undertaken a work, which is to be considered preparatory to the whole restoration of the above edifice, we mean the excavation (lowering) of the square before the cathedral. The expense has been estimated very low, at 53,306 francs, but once begun the work must be finished. It is a singular observation, that the portal of this (as some other old churches) *sticks* now in the ground, so much so, that the pious have to descend to the sanctuary—instead of getting up to it; the unsightly proportions of the portal point also that way. The preparatory investigations have, indeed, shewn that the entrance to the cathedral possessed once *eleven steps* — and, consequently, that the building sinks constantly beneath the surface. Whether this is to be attributed to a geological depression of the terrain, or wholly to the accumulation of rubbish, or of *world-dust* (as some German philosophers call it), cannot be yet decided.

*Munich Architectural Appointments.*—The king has appointed Mr. August Vogt, hitherto Professor of Architecture at the R. A., Superior Building Councillor at the Supreme Board — instead of the lamented Gärtner.—Eduard Metzger, Professor of Civil Buildings and Architectural Drawing at the Munich Polytechnic School, has also been nominated Superior Councillor at the Supreme Board.

*Rome. Reinhart's Demise.*—This venerable Nestor of European artists died lately, aged eighty-six years, of which he passed fifty in the Roman capital. Having been acquainted with all the notorieties of the age—none who came to Rome, neglected to see Reinhart. His works are scattered over Europe from Stockholm to Sicily, amongst which his engravings are not to be forgotten. He was a great friend of the open air and the chase, which latter he practised up to a few years before his demise.

*Oil from Stone.*—A communication was made, some short time ago, to the French Institute about what was called "*Huile aux pierres.*" The oil is perfectly clear and transparent, does not soil, and yields a flame of great intensity and clearness. A company, formed for the manufacturing of this mineral oil, possesses in the vicinity of Autun inexhaustible strata of rock, from which not only oil, but other valuable substances, as a sort of grease (*graisses*), tar, ammoniacal water, paraffine—substances of which some are valuable as manures,—are extracted.

*Free Trade and the British Iron Trade.*—It was to be foreseen, that nations who sell us their goods, would, in course of time, *take* ours. In the two sea ports near the Danube, Galacz, and Braila, the import of English manufactures in 1844 was to the amount of 624,688 fl; in 1846 it had risen to 4,017,423 fl. The iron and other metal ware imported now into Moldau and Wallachia is mostly of English origin.

## ARRANGEMENT OF LUNATIC ASYLUMS.

The arrangement of lunatic asylums is likely to occupy the attention of architects and others for some time to come, and offer an excellent opportunity for the display of ability and knowledge. The chances of cure for the patients depend greatly on the building in which they are confined, and the arrangements made for them in it. Dr. Conolly remarks justly, "Although the first thing demanded by society, when we undertake to relieve it of the presence of those who cannot be at large consistently with the safety of themselves or others, is their perfect security: it must be remembered that this security does not require gloom, or a frightful apparatus. We require that the building should be on a healthy site, freely admitting light and air, and drainage. Space should be allowed for summer and winter exercise, for various employments, and for all the purposes of domestic economy. Warmth must be provided for during the winter, light for the winter evenings, coolness and shade in the summer. Separate wards and bed-rooms for the tranquil, for the sick, for the helpless, for the noisy, for the unruly or violent, and the dirty; a supply of water so copious, and a drainage so complete, that the baths, water-closets, and building in general, may always be kept perfectly clean and free from bad odours. There should be workshops and workrooms, and schoolrooms, separate from the wards, and cheerfully situated; a chapel, conveniently accessible from both sides of the asylum; as also a kitchen, a laundry, a bakehouse, a brewhouse, and rooms for stores, and all the requisites for gardening and farming; and also a surgery, and all that is necessary for the medical staff. All these are indispensable in every large public asylum."

To a profusion of embellishments he objects; he also disapproves of "painting numbers and titles on the walls of airing courts, by which the walls are disfigured, and the patients are reminded of their confinement as insane persons when walking out for relaxation, or led to consider themselves prisoners. When it is remembered that many patients are sent to an asylum whose senses are perfect, and whose feelings are as acute as those of sane people, and that from the moment they enter the outer gate every thing becomes remedial or the reverse, the reason will at once be seen why the external aspect of an asylum should be more cheerful than imposing; more resembling a well-built hospital than a place of seclusion, or imprisonment."

The architectural deficiencies of asylums built even a few years ago are notorious: many new ones must now be raised, and we recommend the careful consideration of the subject to our architectural readers. At page 349 of our last Volume (IV.), will be found some account of the Devon Asylum, and a number of block plans of existing asylums, with remarks on their comparative advantages.

## CLAY-BUILT COTTAGES.

Sir,—Having seen in your valuable paper some articles on building clay cottages, I am induced to give your readers the method which I have seen practised for these last fourteen years in Norfolk. In many parts of this county cottages are mostly built with clay walls and clay chimneys; the walls are built either in one solid piece, or else with clay lumps or bricks well dried in the sun, of any size which may be thought convenient. They are carried up in rather a rough manner to insure a good key to the plastering either inside or externally: the angles are protected by angle beads, and the plaster consists of good clay mixed with road-sand, or silt, as it is there called. But more frequently the plaster is composed of old clay and loam or *mudgen*, well kneaded with old straw to a proper consistency by horse-treading it. These cottages are raised about 2 feet above the surface of the earth on flint walls, or pinnings, as they call them—the remaining walls above being clay; the eaves of the roof generally project from 9 inches to 1 foot beyond the walls. The windows and door-frames should all of them have a drip-board projecting about 5 inches beyond the walls to carry off the rain. This is the method which is generally practised in Norfolk, and the cottages look very neat when well finished by a good tradesman; but it requires a good workman to finish them properly. The advantages derived from these cottages are these:—1st. Cheapness in construction. 2nd. They are warm and comfortable in winter, and cooler in summer than most other houses, and, if properly built, will last a long time.

I am, Sir, &c.,

A Norfolk Artisan.

## NOTES IN THE PROVINCES.

Her Majesty's Commissioners for the erection of new churches, in their 27th annual report lately published, state that twenty-one churches have been completed since the date of the last report, by aid of grants from them, with accommodation for 17,872 persons, including 13,292 free seats; and that, in the whole, 391 new churches have been completed, and provision made therein for 440,957 persons, including 251,388 free seats. The Commissioners further report, that thirty-four churches are now in course of erection, and that plans for twenty-six churches have been approved of.——The thorough repair which Romsey Abbey Church has been undergoing for some years being well nigh finished, Wednesday week was appointed to commemorate the completion by public thanksgiving, for preservation of all and sundry from accident while engaged in the repairs. —— The *Nottingham Review* announces the opening of "the People's College erected by voluntary contributions for the education of the working classes of Nottingham and its neighbourhood for ever." The building, Tudor in style, comprises seven rooms, including a large hall, with arched and groined roof, and is said to constitute 'no inconsiderable ornament' to the district in which it stands.—— The ancient stained glass which once adorned the cloisters of Dale Abbey, and after its dissolution, was transferred to Morley Church, has been recently restored by Mr. Warrington. The windows were very much mutilated, and many portions of them were misplaced, but they now form perfect pictures. —— The plans of Mr. Johnson of Lichfield, have been selected for the restoration of Stowe Church, in that city, and plans for two new churches, one at Darlaston and one at Bilston, by the same architect, have been accepted.——At a recent meeting of the Birmingham town council, it was stated by the lunatic asylum committee, that in answer to the advertisement for tenders for the erection of the asylum, eleven tenders had been received—ten for the whole, and one for only part of the works. The committee had accepted the lowest tender, that of Mr. John Hardwick, at 38,901*l.* 9*s.* 10*d.* This tender excluded the boundary fence, and was subject to such alterations as might, under the advice of the architect, seem necessary. The committee contemplated meeting a portion of

the excess of cost arising from the increased value of labour and materials by a reduction in the quantity of the stone-work, which would not essentially alter the character of the building, while the expense would be lessened by nearly 2,000*l.* Mr. Hardwick had commenced the work.——St. John's Church, in Grange-lane, Birkenhead, the foundation stone of which was laid on 17th June, 1845, and which has been built in the early English lancet style, cruciform, with nave, aisles, transepts, chancel, western tower, with broach spire, and south porch, from the design of Mr. Charles Reed, of Birkenhead, architect, carried out by Messrs. Walker, also of that town, contractors, was opened on Sunday week. The stained-glass windows have been designed and constructed by Mr. Forest. The founders were Messrs. Jackson and Mr. Mallaby, also of Birkenhead. The interior is fitted up with pews (which the architect was bound to do), and accommodates 900 persons. The length of the nave in the interior is 100 feet; breadth, 24 feet; height from floor to springing of high-pitched roof, 38 feet; height from floor to apex of roof, 54 feet 6 inches; breadth, including aisles, 45 feet 8 inches; breadth, including transepts, 83 feet 8 inches; piers, 10 feet to 13 feet apart, and 18 feet 6 inches high; arches 9 feet 6 inches high. Three other churches, Christ Church, at Claughton Firs, St. James's, in Conway-street, and St. Anne's, in the vicinity of the park, are also making progress towards completion.——A 'considerable number of the bridges' at Manchester, it appears, are 'in a very disgraceful state,' as lately admitted by the town clerk in council. Difficulties are said to exist in compelling the right parties, legally, to reinstate them. Railway companies were prepared to do so had they got possession of canals with which they seem to be connected.——A colossal statue, in marble, of the late Earl of Lonsdale, has been installed between the court-houses at Carlisle. ——The Newcastle and Gateshead Sanatory Association have petitioned the Newcastle council to put an end to the accumulations of filth, &c., to which they have traced the prevalence of fever, and which the council are empowered by the Town Improvement Act of 1846 to do. The attention of the council has also been called to their power to put down the smoke nuisance, of which Newcastle is a notorious focus.——The face of a large and massively-built tower, imbedded in the earth, within a few feet from the surface, was lately laid open in course of excavation on the hill under the North British Railway station at Berwick, for the new bridge across the Tweed. It appears, says the *Warder*, to have been one of the towers of the ancient castle of Berwick, which through the long course of time had been filled up, and completely surrounded with masses of earth. The soil having been cleared away, it now stands an enduring relic of ancient architecture.

## RAILWAY JOTTINGS.

The aggregate of this year's calls now amounts to 29,293,702*l.*, yielding an average of 3,661,712*l.* a month. For August they amount to 1,899,489*l.*: February and August are the lowest. —— The Eastern Counties Company are now making the public pay a further *bonus* on *their* share of the recent cattle shew generosity—if they at least were really included in that 'tub to catch a whale.' They have just raised their first-class fares from London to Cambridge from 10s. 6d. to 13s. The old jog-trot system by coach cost only 12s.! so that there is, in this respect at least, a retrogradation to very primitive times indeed. There is, of course, an equivalent rise on other fares and distances, except where the more potent sway of the omnibus system compels a reduction. Other absurdities, such as the charge of 1s. for a remanent length of 3¼ miles, or 4d. per mile!—have been pointed out by correspondents of the *Cambridge Chronicle*, *The Times*, &c.——A slight yieldance of the arches and one of the butresses near to the London-road at Manchester on the South Junction line, is noticed by a Manchester paper of Saturday week.——Four arches out of eight at Little Bolton, on the line in course of formation between Blackburn, Darwen, and Bolton, gave way on Tuesday week while yet in the green state, and killed two labourers.——At the 'summit' of the Caledonian line there are now 800 labourers employed. Their labours have been greatly expedited, it is said, by the American boring machine, already noticed in The Builder. The company intend to bring four of these into use by aid of a steam-engine. Gun-cotton, too, is now used in place of gunpowder. This portion of the line, it is calculated, will cost the company 100,000*l.* before it is fit to receive the rails, which will not be for twelve months to come.——The Peruvian president has accepted the proposal of Mr. William Wheelwright to construct a line of railway, the first in Peru, between Lima and Callao, a length of about six miles, for which a decree has gone forth. The construction is to be on a cheap principle.

### ELECTRO-TELEGRAPHIC.

It is intended, we hear, immediately to establish an electric telegraph between all the fire-engine stations in the metropolis, so that when a fire breaks out, information of the fact can instantaneously be communicated to all the stations on its reaching any one of them.—— A telegraph has been for some time in operation through the Box tunnel, for the purpose of giving notice at either entrance, on the approach of an up or down train, that the tunnel is clear of all obstructions.

## WESTMINSTER COURT OF SEWERS.

A court of sewers was held on the 6th inst., Capt. Bague in the chair, when a number of letters were read from different parties, calling upon the court to put into effect the sanatory provisions of the new Act.

On the presentation of the list of petitions for new sewers and drains, leave for the execution of which had been granted by the clerk and surveyor, under the authority of a resolution passed at the last court, a long discussion ensued, in which the principle of delegating the powers of the court to their officers was strongly condemned, as highly impolitic, if not illegal. After a division the petitions were received, and at a later period of the day notice of motion was given to *rescind* the resolution at the next court!

*The Expiring Commission.*—In reference to the subject of this commission, which expires on the 5th of December next, Mr. John White brought forward the resolution of which he had given notice, viz., "That the clerk do prepare the usual application for a new commission to the Right Hon. the Lord High Chancellor; the said application to be submitted to the court at its second meeting in August." Mr. Hawkes opposed the motion, and contended that great alterations were required in the composition of the commission, and that the same persons should not be re-appointed. He was of opinion, also, that the parishes should have a greater control of their proceedings, and concluded by proposing an amendment; but as no seconder could be found for it, it fell to the ground. The chairman remarked, that this court could not control the Lord Chancellor in his selection of the persons to form the commission, and of course a large number of new commissioners would be appointed. The clerk said it was formerly the practice for the old commissioners to recommend those persons who should be the new ones, but that plan had for years been abandoned. Since the present commission was appointed, the number was considerably reduced, as upwards of sixty deaths had occurred. The chairman then put the motion, which was carried by a majority of 28 to 1.

*The Drainage of Kensington.*—Mr. J. Phillips, the surveyor, brought before the court a report, accompanied by elaborate plans and sections, on the subject of the drainage of Kensington, in consequence of memorials presented by inhabitants of Church-street and Holland-street, in that locality. The report pointed out the very defective drainage, and, in reference to the sewers passing through the churchyard, contained the following passage: —"The depth of each of the sewers running under the churchyard is about seven or eight feet below the surface, in consequence of which, and from their openness, they have been frequently broken into and temporarily made good by the grave-diggers; the rain-water penetrating the ground to that level, and the exudations from the putrid human bodies in the graves drain into them, the noxious odour and sickening effluvium from which, mixing with the current of air passing along them and the several private drains, and so into and through the houses, infect the atmosphere therein, creating fever, and otherwise annoying and injuring the inhabitants." To remedy the evil, new sewers are proposed to be built in Church-street, Holland-street, and other places, to join with the present one in High-street, and to divert the course of several others, the total length being 2,267 feet. From the character of the ground through which the new sewers will pass, being hard gravel, it is proposed that the size No. 2 be adopted, and *half a brick thick*, which will enable the whole work to be done at the cost of 850*l.* 2s. 6d.

Mr. Willoughby doubted the propriety of altering the plan of sewers already laid down, as by departing from it a discussion would be raised on every fresh application. If the sewers were to fall in, the public would have to make good the damage, and it therefore behoved them to hold by the plan that had given such general satisfaction. In other respects he cordially approved of the plans of the surveyor.

Mr. T. L. Donaldson, as a practical man, was favourable to experiments, but thought they should be exercised with great caution. Although many of the sewers in the Holborn and Finsbury division were built half a brick in thickness, yet still it was a matter of judgment and not of principle, and he was not satisfied that a sewer built of half a brick was a proper one. He believed that it would be liable to abrasion and a want of solidity. It was a great pity to try experiments where their failure might be of great inconvenience to the public; but he had no objection that the experiments should be tried in the collateral streets.

Mr. Hawkes saw no necessity for the interference of the court at all, as the inhabitants found no inconvenience from the present mode of drainage. As to fever and effluvium, he lived at Kensington and never even heard of it. The emergency was a trumped-up one, and the whole proceedings the most extraordinary ever heard of.

Mr. Le Breton said no man could take up the report without being struck with its boldness and good sense. The great merit of the commission would be estimated by the cheapness of the works executed. He hoped they would go on with the plan, and not fall back upon the old and stupid system, which was no credit to the court, or any of the parties concerned. He moved, "That the report of the surveyor as to the drainage of part of Kensington be adopted and carried into effect, with directions to him to give an average depth of 15 feet, as near as possible, along the line." After some other hon. commissioners had expressed their opinions, the chairman put the resolution, which was carried by a majority of 14 to 6.

Yorkshire Architectural Society.—The quarterly committee meeting of this society was held a fortnight ago, at the society's rooms, Minster-yard, at twelve o'clock. The following grants were made: 20*l.* additional grant towards the restoration of Howden Church, and 5*l.* additional grant for the restoration of the west window of Holy Trinity Church, Goodramgate, York. A communication was read from the Ven. Archdeacon Churton, calling the attention of the society to the present state of the interesting church of Skipton, near Selby; and notice was given that a grant would be proposed at the next meeting, to be made in aid of the restoration of the chancel of that edifice. Notice was also given that grants would be moved at the following meeting for the renovation of the roof over the chancel of St. Sampson's Church, York, and for stained glass in the chapel of St. Michael, Carleton, near Pontefract. A present of brass rubbings, from churches in Surrey, was received from the Viscount Downe, which was accompanied by an account of the inscriptions, dates, and peculiarities of the various brasses. It was accordingly resolved, "That the best thanks of the society be given to Lord Viscount Downe for his most useful contribution, and for the labour and research to which the accompanying descriptions bear witness."

## New Books.

*Tables for Estimating the Contents in Cubic Yards of the Earthwork of Railways and other Public Works.* By CHARLES K. SIBLEY, C.E., and WILLIAM RUTHERFORD, of the Royal Academy, Woolwich. London, Longman and Co., 1847.

WERE we to judge of the importance of any particular subject by the number of works on it that issue from the press, we should be induced to assign a high place to the estimation of the quantity of earthwork in railway cuttings and embankments. During the present year, so far as it has yet passed over us, no fewer than five different productions of this class have been given to the world, and all of them for the ostensible purpose of facilitating the calculations of the prismoid, a geometrical figure which admits of a very simple and elegant analytical expression, involving in its reduction not the slightest difficulty.

Of these, two are very costly and elaborate performances; the other three are more condensed, being confined to a few concise tablets calculated to embrace the usual range of practical appliances, and to exclude every thing that is not absolutely necessary.

Of the latter, the work now before us is in our opinion the most meritorious, and the best adapted for the intended purpose: it consists of three *principal* tables, and one subsidiary one; the *principals* are computed to depths of cutting and heights of embankment, from zero up to sixty feet, at intervals of half a foot, thus precluding any error exceeding three inches, either in excess or defect. The numbers themselves have been computed to three places of decimals, and tabulated to the nearest integer unit, that being deemed sufficiently accurate for every practical case.

The numbers in the body of the tables give the total content in cubic yards, of a piece of earthwork 1 chain or 22 yards in length, corresponding to the central width and ratio of slopes given at the top of each table;—the tables are calculated for the several slopes of 1 to 1, 1½ to 1, and 2 to 1; and rules are given for reducing the numbers to any intermediate slopes.

Each of the *principal* or *complete* tables is divided into three parts, distinguished respectively by the Roman capitals A. B. and C., a division which, no doubt, has been adopted for the convenience of the page; part A. is of a triangular form, ranging from zero up to 30 feet, horizontally, vertically, and diagonally; part B. is in form of a rectangle, running horizontally from 30 to 60, and vertically from zero up to 30 feet; part C. is also in the form of a triangle, similar to part A., and carries the arguments horizontally, vertically, and diagonally from 30 feet up to 60, and thus completing the table. Now, if these three parts be supposed to be brought into immediate contact in their proper order, they will be found to constitute a large triangular table, having the arguments running along its sides, from zero to the utmost computed limit at 60 feet.

This arrangement ought to have been more particularly explained in the work itself, and we cannot help also thinking, that a little more of explanation and illustration, as regards the taking out and reducing the quantities, would have been an additional recommendation to the work. The subsidiary table, No. 4, is intended for generalizing the principals, by shewing what must be added to or subtracted from the tabulated quantities, to obtain the contents for any other width of central part, greater or less than that mentioned at the head of the tables. Thus generalized, the useful performance which has called forth these remarks, cannot fail to obtain a place in the office of every railroad engineer and contractor.

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*The Tradesman's Book of Ornamental Designs*, Parts I., II., and III. Orr, Paternoster-row; Menzies, Edinburgh.

To every judicious endeavour to spread a knowledge of the principles of design amongst our operatives and others, to afford them at a cheap rate good examples, by which the eye may be schooled and the taste refined, we owe assistance and are at all times glad to give it.

The work now before us professes to have this object in view, and might be made of considerable use: some of the designs, however, display such want of knowledge of the style in which they are supposed to be expressed, that they are more likely to confuse the student than to give him clear ideas of styles and enable him to master and retain their several characteristics. For example, the first plate in Part III., headed, "Scroll, &c., Gothic," has not the slightest pretence to be termed Gothic, either as to forms or feeling; and the first plate in the second part "Iron Gate," has scarcely any more claim to the epithet *Grecian*, which is tacked to it. We would have our remark viewed by those interested in the production of the work, not as an expression of ill-nature, but as a reason for effecting improvement in succeeding parts.

Accompanying the designs is an "Essay on Ornamental Art" by Mr. Jas. Ballantine, not yet sufficiently advanced to be judged of. The writer starts however with a great and important mistake when he says, "To talk of works of art growing upon our liking is absurd. Persons may and often do improve on acquaintance, but works of art never. The perception of beauty is inherent in the human mind, which is rapid in its combinations, and prompt and irrevocable in its decisions!" Education in art, then, goes for nothing.

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*The Law Relative to Building Societies; with Notes and Comments.* By C. EGAN, Barrister-at-Law. Hastings, Carey-street.

THIS is a cheap and portable edition of the Act regulating building societies, with fewer "notes and comments," however, than the subject requires and the title of the pamphlet leads one to expect. The chief point urged by the editor, and not a useless one, is the importance of obtaining *respectable and responsible solicitors.*

## Correspondence.

STUDIOS FOR ARTISTS.

SIR,—I should rejoice to see some of the builders take the hint that was suggested in the *Art-Union Journal* a few months ago, viz., erect some rooms suitable for *painters* as well as *sculptors.* Those for the former might be erected over other buildings in town, and would do as well as the best, so that they had a private entrance; the size might be about 30 feet long, with corresponding width and height; some might be a little less than this, and some greater, according to the convenience of the spot. Those for the use of sculptors should be a little different from the former; they would require a gate-way in order to take in marble, clay, &c. The light is the primary object in rooms for this purpose, and it is not expected that they should be elaborately finished. That the speculation would be a profitable one is beyond doubt. If, however, builders should think to the contrary, let any one who wishes to give it a trial, advertise to artists in want of studios to come to any place they might choose, and after seeing their various designs, put their name down for such as they might fancy, naming the annual rent at the same time. They would then know how many they would have to erect, for which they would have tenants to step in as soon as finished.

I am, Sir, &c.,

W.

SCARBRO' CHURCH COMPETITION.

SIR,—Having seen in your columns a notice respecting the proposed alterations at St. Mary's Church, Scarbro', which states that the sum of 7,000*l.* will be necessary to carry out the repairs and restorations according to the designs of Mr. Christian, the architect selected, whilst the advertisement limited the cost for competition designs to 3,500*l.*, I think you will agree with me when I say, that it was the bounden duty of the committee to reject the plans which did not comply with the terms of the advertisement; and if they do not, it will shew that the Scarbro' competition is another instance of the gross unfairness practised towards architects by committees, and for which, I believe, they are actionable.—I am, Sir, &c.,

A VICTIM.

## Miscellanea.

RUINOUS BUILDINGS.—On Saturday last Mr. Stevens, the surveyor of the western district of the city of London, applied to the sitting magistrate, Guildhall, Sir J. Pirie, for his directions under an emergency not provided for by the new Buildings Act. He stated that a stack of chimneys belonging to some ruinous unoccupied premises in New-street-square, by the Queen's printing-office, had fallen, and from the appearance of the premises there was reason to apprehend the whole would fall in a few hours, to the danger of the public. He wanted, therefore, authority to immediately shore up and take down the premises. The alderman of the ward, the overseers, and all the local authorities were out of town. He had resorted to the Mansion-house, but was not so fortunate as to meet with the Lord Mayor. He had done what the law required him, as district surveyor, to do, and from what he had put in motion he should obtain the necessary authority about Wednesday; but he wanted authority to do instantly what was necessary for the protection of the public. Sir J. Pirie said, he would take upon himself the responsibility of ordering him to do what the safety and convenience of the public required; and gave the surveyor a written authority to that effect.

PURE WATER FOR A PENNY: PIPES AND CISTERNS PURGED BY EPSOM SALTS.—A correspondent of the *Morning Post*, Mr. G. R. Skene', of Hampstead, describes a process which, if carefully conducted, cannot but be effectual in cheaply cleansing leaden pipes and cisterns. He ordered two ounces of Epsom salts or sulphate of magnesia to be rinsed with some buckets of water through a dirty cistern, when forthwith he was told that "the cistern was turned into silver." In fact, the sulphuric acid had attacked the lead, and disengaged the whole of the brown scurf, although it might have rather been anticipated, on the modern chemical doctrine, that towards such an acid as the sulphuric, which has no peculiar preference to metals, magnesia would have had a strong enough attraction to prevent such an effect. Perhaps the acid was divided, however, between the two bases. Mr. Skene suggests the direct use of dilute sulphuric acid itself, and that, notice being given, the whole of the water-pipes [and cisterns?] in the metropolis might thus be cleansed in one day. Particular care, of course, is necessary afterwards in the cleansing away of the poisonous salt of lead thus formed in either way.—We may here too observe, what is not very generally known, that impure water itself may be cleansed by means of a small quantity of alum in powder, which precipitates all ordinary impurities in a few hours.

LEICESTER SQUARE PUBLIC BATHS AND WASHHOUSES.—On Tuesday the commissioners appointed to construct baths and washhouses for the labouring classes commenced the erection of a spacious building for that purpose on a plot of ground granted by the Commissioners of Woods and Forests in Orange-street, Leicester-square. Two hundred private baths for both sexes, a spacious washing-room, with hot closets for drying, and steam apparatus for the supply of hot and cold water, are to be constructed, the estimated cost being 5,000*l.*, which will be raised by a rate on the inhabitants of St. Martin's-in-the-fields. The water for the use of the establishment will be obtained from the Artesian wells supplying Trafalgar-square, and it is anticipated that the concern will not only be self-supporting, but also yield a considerable profit to the parish.—*Morning Post.*

THE WORKS AT WINDSOR CASTLE.—A Windsor correspondent states, that various alterations and improvements are now in progress in and about the castle and the royal lodge at Frogmore, &c. One of the principal works at the castle is the construction of a new range of coal-vaults under the grand quadrangle, on which a great number of labourers are at work. A number of workmen and artisans are also engaged in preparing the Winchester Tower for the use of the master of the household. The Wardrobe Tower has just been converted, at considerable expense, into a dwelling-house for the private secretary to Prince Albert. The royal lodge at Frogmore is undergoing very extensive improvements and decorations.

PROJECTED WORKS, &c.—Tenders have been called for, by advertisement, for the erection of a new church at Tipton, Staffordshire; school rooms, and a new post-office, at Nottingham; an infirmary at Watford; an engine-house, boiler-house, tower, and other works at Clifton, for the Bristol water-works, with two reservoirs for same; cells for Lambeth workhouse; also for the completion of an institution at Dalston; for drainage and other works in Whitechapel; and various sewers in Westminster; for the execution of 8½ miles of the Glasgow, Airdrie, and Monklands Junction Railway; and the construction of the several stations on the Rugby and Stamford line; for 1200 tons of permanent rails for the London, Brighton, and South Coast line; for a supply of glass illuminators and tubes for the Admiralty; 800 tons of Guernsey lumps and 80 fathoms of deal ends for St. Luke's, Chelsea; Honduras mahogany, pine, oak, larch and other timber and plank for the Admiralty, for two years, and 100 tons tough cake copper for same.

THE IRON TRADE.—The strike in Lanarkshire, recently noticed in THE BUILDER, had of late, according to the *Edinburgh Witness*, been every day becoming more important to the iron trade. On Thursday, week before last, the whole of the blast furnaces at Dundyvan were stopped for want of material.—It has been at length admitted by one of the iron trade oracles, in allusion to a previous rather tardy hint of acknowledgment that all had not been exactly as was represented at the late quarterly meetings [of which meetings, it will be recollected, we some time since shewed pretty cogent reasons for steering rather clear in future], that, "although the price of Shropshire pigs had been well supported, it would be useless [now, we suppose he means,] to conceal the fact that the *difficulty of obtaining former rates for Staffordshire* yet remains;" but that "*in the rial trade* we have not heard of any further display of *failing confidence*."

FOREIGN ARCHÆOLOGICAL CONGRESS.—The historical and archæological section of the "Congrès Scientifique de France" will be held at Tours, from the 1st of September until the 11th. The various questions proposed to be discussed, many of them architectural, are given by Dr. Bromet in the *Gentleman's Magazine* for the current month. Amongst them are the following:—"Of what date are the painted windows of Tours cathedral; what subjects do they represent; who were their respective artists, and in what places were they executed? What effect had the form of arch employed during the twelfth and thirteenth centuries on the origin and general adoption of the pointed style of architecture? What is the comparative lateral thrust of pointed and of semi-circular arches? What are the properties of flying buttresses? Are they of any other use than as resistance to lateral pressure? In the painted glass of the thirteenth century had the hieratic forms then employed any analogy with the rules of heraldry?" Meetings of the French Archæological Society will likewise take place at Angoulême, on September 15th, 16th, and 17th, and at Limoges on the 20th, 21st, 22nd, and 23rd, to all which English travellers are specially invited, on the contribution of ten francs, entitling them also to the "Compte-Rendu" of the session.

IVY ON BUILDINGS.—Sir: Your last number had some extracted remarks on ivy and its effect on buildings. It is there stated that ivy keeps off the rain, and is a protection to the wall on which it climbs. Perhaps this is true up to a certain period, but, besides the indirect injury arising from the concealment of decay, it destroys directly, in two ways—1. It will entwine itself in the coping, which, by contraction in the length of its stem, it will pull over. The walls surrounding a castle three miles west of Banbury are thus pulled over. 2. It will readily insinuate itself into a fissure, which it will widen, by horizontal expansion, to the overthrow of the masonry. In the north wall of the north transept of Calder Abbey, Cumberland, there is a stem of ivy 2 inches in diameter, now exposed to view, having thrust away the inside face for some 20 feet square. The gist of the argument in the extract from the *Gardeners' Chronicle* is, that because ivy is generally the concomitant of ruin, we must not therefore infer it is the cause. Nor must we; but at the same time we must not therefore infer that it is not the cause. WILCEBE.

THE NEW PARLIAMENT.—The railway, engineering, and building interest will fare very well in the new Parliament as compared with former Parliaments. Mr. Hudson again sits for Sunderland, and brings in a friend for York, to say nothing of his influence in assisting Mr. R. Stephenson, the engineer, to a seat for Whitby. Mr. Locke, the engineer of the "Grand Junction," is returned for Honiton; Mr. Peto, the builder and railway contractor, is in for Norwich; and Mr. Cubitt, for Andover; and Mr. Wyld, the mapseller in the Strand, has been returned for Bodmin. Mr. Chaplin, the chairman of the South-western Railway, is in for Salisbury; and though last, not least, Mr. Glyn, the chairman of the North-western, is member for Kendal. In this election "the battle of the guages" has gone against the broad gauge and in favour of the narrow, for while Hudson, Glyn, Chaplin, Locke, and Stephenson, all narrow guage men, are in, Mr. Russell, the chairman of the Great Western, has been defeated at Reading; and the engineer of that company, Mr. Brunel, who was talked of for Bristol, did not make his appearance.—*Morning Post.*

IMPORTATION OF ZINC.—Several very large importations of spelter or zinc have taken place within these few days, one vessel having brought 5,743 packages, another 10,232 plates, and others nearly 100 tons weight of this article, the production of Prussia. This zinc, or spelter, by both which names it is equally well known, is a metal of considerable hardness; and, although but little malleable, is easily made into plates, by passing it through the rollers of a mill adapted for the purpose; its colour is that of a bluish white; it oxidizes with difficulty, and lately has been much used in this country for various purposes, such as gutters for houses, vessels for containing water, pipes, and other articles; and more recently, also, for the manufacture of door-plates, in preference to brass and other material; it has also been drawn into a wire, for which a patent was obtained by the inventor in one of the towns of the north of England.—*Sheffield Iris.*

ART-UNION OF LONDON EXHIBITION.—The exhibition of the works of art selected by the prizeholders, will be opened to the members and their friends on Monday next, in the Suffolk-street Gallery, with the exception of some few chosen from Westminster Hall, which will not be obtainable till the end of the present month or beginning of the next. The exhibition will also comprise Mr. Selon's picture, "Queen Philippa interceding for the Burgesses of Calais," painted from the cartoon for which the Art-Union awarded their 500*l.* prize. Mr. Lauder's prize picture, "Wisdom," at Westminster Hall, is amongst the selections.

COMPETITIONS.—Plans, with specifications and estimates, by architects, have been called for by advertisement for the erection of a new borough prison at Plymouth, with premiums of 30*l.* and 20*l.* for second and third plans selected.—Designs are also wanted for a workhouse to accommodate 1,000 paupers of the City of London Union, the architect of the first selected to carry out his own design, and the second and third to receive premiums of 100*l.* and 50*l.*—Plans and estimates also are wanted from architects for the Worcester County Lunatic Asylum, to be built of best hard brick in a simple style; premiums of 50*l.*, 30*l.*, and 20*l.* for the three first selected designs.

## TO CORRESPONDENTS.

"*Restoration of Openings in Party Wall.*"—Case being still *sub judice*, papers are not open to us.

"*F. W.*"—The article "Architecture," in "Encyclopædia Metropolitana," was written by Mr. J. Narrien, A.M. It is not separately sold.

"*Architectural Student.*"—Apply to the Director at Somerset House.

"*Z Y. X.*"—The shadow being thus put in serves to shew the actual projection of the parts

"*Reader from the Beginning.*"—In measuring folding gates, the rebate must be added to the width. The paving should have rebated joints, and in this case also, the rebate added. The joggle joint in landings is always added.

"*Architect's Assistant.*"—The number of applications constantly made to men of station by parties quite unknown to them, offers some excuse for non-acknowledgement.

"*J. G. J.*" Leamington.—Next week.

Received.—"R. W." (Lambeth), "E. C.," "Observer," "Y. N.," "Young Builder," "J. R." (York).

*Books.*—"Architectural Sketches on the Continent," drawn and etched by George Truefitt, Architect: London, Masters, Aldersgate-street; Exeter, Wallis. "Report of the Commissioners on Harbours of Refuge." "Churches of Warwickshire." No. VIII.: Warwick, Cooke; London, Rivington. "The Swiss Question:" Rev. Paternoster-row.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

*Erratum.*—In the notice of Mr. Rogers's paper on "Limoges Enamels" p. 377, it was erroneously made to appear that Leonardo *da Vinci* practised the art of enamelling. It was an artist of the same christian name, who afterwards received the title "Limousin," to distinguish him from the other celebrated Leonardo.

## CHARGE FOR ADVERTISEMENTS IN "THE BUILDER."

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## ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.

COLLINS'S ODE on the PASSIONS will be recited by Mr. J. RUSSELL, with Illustrations in a Series of DRAWINGS misguided by means of the OPAQUE MICROSCOPE, accompanied by Music by Dr. Wallis, on the Mornings of Tuesday, Thursday, and Saturday, and on the Evenings of Tuesday and Thursday by Bachhoffner's LECTURES on NATURAL PHILOSOPHY will comprise the Subject of the ELECTRIC TELEGRAPHS, &c. CHEMICAL LECTURES by F. H. Holmes, Esq., on the Evenings of Monday, Wednesday, and Friday. The beautiful OPTICAL EFFECTS include the last DISSOLVING VIEWS DIVING BELL and DIVER, with EXPERIMENTS, &c. &c.—Admission, 1s.; Schools, Half-price.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only. 70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

A. CUNNINGHAM, Grainer, 50, George-street, Euston-square, respectfully informs Builders, Painters, and the Trade in general, that he will undertake to grain maple wood in a superior manner at 1s. per yard; oak, in the best style, at 10d.; inferior ditto at 6d.; pollard oak door, single, 6s.; if connected with the work at the same price as oak; all other woods and marbles equally reasonable.

PATENT METALS for Bearings.—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort for bearings and engineering purposes generally, will be found superior in quality and cheaper, than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any ordinary brass.—Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

PATENT BELLS.—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal.—Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

ECONOMY! ECONOMY!

STEPHENS' DYES FOR STAINING WOOD, as a SUBSTITUTE for PAINT. For Decorating Churches, Large Public Rooms and Theatres, as well as Private Dwellings.

When economy in expenditure of material and time is of importance, these Dyes will be found of the greatest advantage, as they give a rich colour to plain woods, while they reflect all the beauty of the natural graining, which is so superior to imitations by art, and, at the same time, avoid the disagreeable smell and deleterious consequences of paint.

The Dyes, or Stains, are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars road, London, in bottles of 6d. and 1s. each, and at 10s. per gallon. The Oak Colour may be obtained in powder at 8s. per lb., which dissolves in water to form the liquid, and 1lb. will make one gallon of stain.—N.B. The trade supplied.

Sold also at the Office of "The Builder," 2, Yorkstreet, Covent-garden, London.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Roofing-houses, and for Stopping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray or sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and applications, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

GREASE! GREASE! GREASE!—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices: White Grease, 1s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

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G. ELL respectfully invites the Attention of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Tressels, Steps, &c he has constantly on hand, at a very low scale of Prices; and is now selling Excavators' Barrows, of best framing and elm tops, as low as 15s. by a quantity being taken; and the best made of stout ash frames, stays to legs, and elm top, largest size, as low as 18s., for cash; Ladders commencing at 4d. per round. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3, and 6, Tottenham-court New-road, St. Pancras, opposite Hampstead-road.

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BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff price 5*l.*—Works, 15, Wellington-street North, Strand.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
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| 6d | 7d | 9d | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. per cwt.
Best Town Glue 40s. per cwt. Do Scotch, 52s. per cwt.

Best Patent Sash Line.

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| 4s. 8d. | 5s. | 6s. 6d. | 7s. 6d. | 9s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch Registers, 6d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 3 ft., £3 3s. | 3 ft. 6 in., £3 12s. 6d. | 4 ft., £4. |
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Lists of Prices had on application at the Warehouse; if by letter prepaid, at least a penny stamp

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 19., Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3 15s. | £3 17s. | £4. | £4 3s. | £4 10s. |

Heidy's Patent Improved, with Back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6 10s. | £7. |

Best Register Stoves, 6d. 7d., 8d., and 9d. per inch.
Do. Elliptic do., 8d. 9d., and 6d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

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OLD ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE. Kitchen range, and Stove-grate Manufactory, 16, Cross-street, Walworth.

**JOHN GRICE** most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in and upwards.
Bright ditto, with Black and Bright Bars, 9d. per inch and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3 ft. 6 in. | 4 ft. |
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| £3 15s. | £4 5s. | £4 15s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style fitted in secret, 8s. per pull.

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**HOT WATER APPARATUS.**—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method for heating conservatories, shop-counters, warehouses, hot-houses, pine-pits, greenhouses, manufactories, and warehouses, by means of the tubular steam and hot water apparatus for which principal prize medals were awarded at the last two Years' Exhibitions of Implements, and tested upon the premises, and the parties for whom he has executed such contracts express them satisfaction, also their willingness to vouch for the efficiency. An improved construction of which requiring no brickwork, may be seen in action as in the premises. BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

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**PORTER'S CORRUGATED** and PATENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge-road, Surrey. Sole Agents for the Patentees, Messrs. Hall and Porter, to supply the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in the application. Roofs, Building, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

**PUMPS.**—The attention of Architects, Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, is respectfully requested to M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth, Patentee of Rotary Pumps for Roads, Gardens, Excavations, Brick-fields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, both perfectly free from Choking. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 16-inch kept for hire. Estimates given to Drawings if required.—M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

IRON FOUNDRY,
103, Drury-lane, and Charles-street, London.
JOSEPH GLOVER,
Late HENDRY and GLOVER,

**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his, and in consequence of which, he has been enabled to make such improvements and reductions in their prices will be instantly acknowledged, combining, strength, durability, and style of patterns has been re-arranged, to give every facility for selection. A stock of Rain water Pipes, Heads, Shoes, &c.

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**C.** CHUBB and SON having just erected a Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron Doors for strong rooms and other purposes, and Fireproof Safes at a great reduction in price, and of very superior quality. All their Iron Doors and Safes are fitted with C. CHUBB and SON'S best DETECTOR LOCKS.

57, St. Paul's Church-yard, London.

TO ARCHITECTS AND SURVEYORS.

**C.** CHUBB and SON having ascertained that some builders are in the habit of substituting inferior and unsecure Iron doors for those made by them, with the MARKS and PRICES of their Patents, call the attention of Architects to the subject. In case any Surveyor finds it expedient to have the articles manufactured by C. CHUBB and SON, they respectfully request that Architects will specify "Iron doors manufactured by C. CHUBB and SON, of 57, St. Paul's Church-yard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the Doors are of their manufacture

By Her Majesty's Royal Letters Patent.

BAILLIE'S
PATENT ROUNDED RIM LOCKS,
WITHOUT ANY SQUARE CORNERS.

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, and lasting life with Mortise Locks, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 63, St. Martin's-le-Grand, London, opposite the new Money Order office.

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**THE** Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond-street Works, late Sir F. Chantrey's Foundry, Eccleston place, Pimlico.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owning to the facilities with which I can execute orders, I am enabled to produce Ornamental Glass at prices considerably lower than at these prices and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

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**FOREIGN WINDOW GLASS,** superior to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 2d. per foot. No less dimensions; smaller do., in 100 feet cases, at 2d. per foot. No less than a case can be had at these prices and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS,** equal to the Ancient.

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| Ruby in Sheets, a splendid colour, per foot | 2s. 3d. |
| Green | 1 3 |
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Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**PLATE GLASS.**—Architects, Builders, and the Trade generally, are solicited to inspect the quality and cut of glass manufactured by the UNION PLATE GLASS COMPANY.

N.B. Rough Plate supplied one-fourth, three eighth, one half, and three-quarter-inch thick. Warehouse, 26, Hatton-garden, Holborn

H. CHRISTIE, Agent.

EMBOSSED GLASS.

**EDWARDS** and PELL, 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 6d. per foot run. Architects and Builders are respectfully invited to inspect the patterns which are always on view, and while the Goods can be sent to any part of London, all the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO SQUARE. A GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian and Crown Sheet Glass, either cut to sizes or in boxes and 200 feet cases, delivered free in London and its vicinity. All the works done on the premises. EDWARDS and PELL can guarantee its being properly executed.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the Company, and St. Quirin and Cirey Companies, Paris. To Architects and Builders, and the Trade generally, is particularly requested the Goods which are offered for SALE by the UNRIVALLED BRILLIANCY OF COLOUR, superiority of substance and polish, and possess almost faultless quality. This Plate Glass may be procured of all glaziers. Applications for Samples and all further particulars, to be addressed to ALFRED GOSLETT Agent, 28, Soho-square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

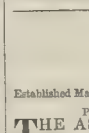
**CROWN GLASS,** in Crates of Eighteen Tables, at the following low prices, for ready money:—

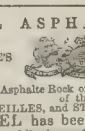
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | £ s. d. | Sizes of Small Crown Glass, at 1d. 2d. and 2½d. per foot. |
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| Thirds | 4 4 0 | |
| Fourths | 3 10 0 | |
| Fifths | 2 0 0 | |
| Sixths | 2 0 0 | |

SHEET GLASS of all descriptions equally low.—White Lead Oils, Tints, Colours, and Varnishes, at WILLIAM FREDERICK PENTON'S, Artists' Colour Man, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses hereafter it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forming complete ventilation and sunblind; as simple, cheap, and effective. Apply for houses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 31, Kingsgate-street, London.

CHAS. WM. WATERLOW,
MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 Jobbing and a large variety of Patent Sash Frames always on sale. Glazed goods securely packed for the country. Glass, Oils, and Colour Mouldings in any quantity.—N.B. This Establishment is worth the notice of all those who build.





**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in a current of air, thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stalk which, till now, feathers are subject to that are dressed in the ordinary way.

Heal and Son's Bed is therefore perfectly free from all impurities, and by expanding the feathers the bulk is greatly increased and consequently the Bed is rendered much softer. The following are the prices of New Feathers:—

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|---|---|---|---|
| Mixed, per lb. | 1s. 0d. | Foreign Grey Goose | 3s. 6d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 3s. 0d. |
| Best Irish White Goose | 2s. 6d. | | |
| Best Dantzic White Goose | 3s. 0d. | | |

HEAL and SON'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

**THE ASPHALTE of SEYSSEL** has been extensively used since March, 1838, for the following useful purposes:—

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| Foot Pavements | Dog-kennels. |
| Kitchen Floors particularly where it is essential to keep damp from rising. | Barn Floors. |
| Garden Walks and Terraces. | Granaries. |
| Carriage Drives. | Tuberoom Floors. |
| Canal Locks and Stabling. | Malt-house Floors. |
| | Pigeries, &c. &c. |

Covering of Railroad and other Arches. The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The great resources of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Testimonials may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of spurious ones.

I. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.

TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES

**HER MAJESTY'S JUSTICES** and COMMISSIONERS of SEWERS for the City and Liberty of WESTMINSTER, and part of Middlesex, HEREBY GIVE NOTICE, that they have approved a plan, whereby an efficient drainage, at very moderate cost, may be obtained for property in the above situations, abutting on streets where there are sewers. The plans and sections may be seen at the office of the Commissioners, No. 4, Greek-street, Soho.—LEWIS C. HERSLET, Clerk to the Commission

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or to take Land for Building purposes, of the situation and level of the public Sewers, and of affording the best Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

TO ARCHITECTS, BUILDERS, AND OTHERS.

**ENCAUSTIC, VENETIAN, BATH,** and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained at MINTON and Co.'s Warehouse, Although in Surrey side of Blackfriars Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire-places, &c.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles of great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREBY and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belvidere Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

**PATENT ARCHITECTURAL TILES,** for covering Churches, Schools, Ornamental Villas, Railway Buildings, &c. &c. Architects, Builders, and others, may now be supplied with these improved Roofing Tiles, which for security, effect, and economy, surpass every other kind of roofing: they form a covering equally light as slate, and the cost but little exceeds that of ordinary pantile roofs. They can be had in Blue and other colours. For prospectuses and particulars, apply to Mr. S. G. HUGHES, Secretary to the Architectural Tile Company, at their Offices, No. 158, Strand.

TO BRICK AND TILE MAKERS.

**PERSONS** disposed to Manufacture the Architectural Roofing Tiles for delivery either in London or at the nearest Railway, Station or Canal in the several Counties of England, either in the present season, of the ensuing one are requested to communicate with Mr. S. G. HUGHES, the Secretary to the Company, at their Offices, 158, Strand, London, of whom Particulars and Machines for pressing out the Tiles may be obtained

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), beg to call attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193a, Piccadilly, from 11 A.M. to 1 P.M. Mr. Robert Spence, who has been appointed to act as Agent for the Company's office, 193a, Piccadilly, from 11 A.M. to 1 P.M. Mr. Robert Spence, who has been appointed to act as Agent for the room of Mr. Ainslie, will show the Machines at the Sudbury station of the Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Paddington station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to the Secretary, at the Office of the Company, London, 193 A, Piccadilly, March 1, 1837.

These Machines may also be seen at Mr. J. KNIGHTS, Leithwalk, Edinburgh; Messrs. LAWRENCE, Hill, &c., Bankman-street, Glasgow; Mr. ROBERT CHARLES, Millhill, Leeds; Messrs. PENN and FINCH, Pendulge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

**PLASTER of PARIS** of the very best quality, Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

DRUCE'S, No. 2 WHARF late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the above part of Chelsea, Brompton, Pulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock. N.B. Depot for Glass Pantiles.

**FIRE BRICKS.**—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies Engineers, Ships, Iron, and Railway Carriage Builders, from ships from the Manufactory direct, at the lowest price. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Composition Metallic Tiles Lime, Sand, Gravel, Bricks, and Tiles, of every description.

ZINC WORK.

**MESSRS. F. and J. HARLAND** beg to call the attention of Builders and others, to the following list of Prices for cash:—

| | | | |
|---|---|---|---|
| 2-inch Pipe | per foot | 4½ | 13-inch Gutter, per foot 8d. |
| 2½ ditto | " | 5d. | 14-inch ditto " 9d. |

Including fixing.

Flats Covered and Cisterns Lined from 4d. to 6d. per foot superficial; Cornice Gutters, 8d. to 9d. No. 8, Cumberland-place, New-road, near Pancras Church, and 7, Fishmongers' Alms houses.

N.B. Orders by Post punctually attended to.

# THE PATENT TORRENT WATER CLOSET,

## AUSTIN'S PATENT,

## FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being (as is too well known) the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is noted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the Intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its connection is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

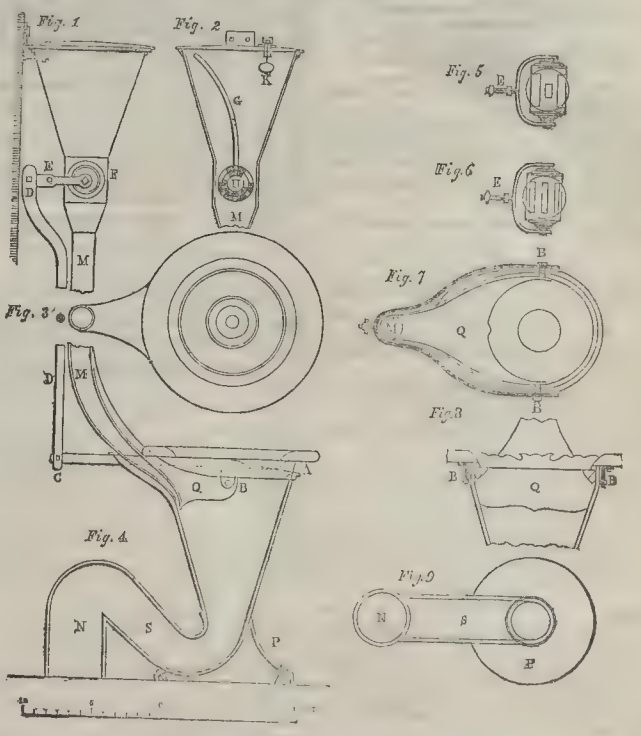
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE.—The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self-acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.




## DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock &c., at bottom.

Fig 2. Section of the measure and cock, shewing its position when open for the water to come in

Fig 3. Plan of top of seat, of torrent-pipe M, and action-rod D

Fig. 4. Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action rod D, to let water in and cut it off.

Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.

Fig 6 Bottom of cock, shewing openings to let out water, and bridle lever.

Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action rod

Fig. 8.—Section, front and side to shew front, and top of basin, with front of lower part of spreader.

Fig. 9.—Plan of foot P, of basin, and syphon.

## MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F:—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in it so violently, as to come to it with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

*Extract from the Report of the Committee to the* HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page 70.)*

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of chains and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr Foden, Mr Smith of Deanston, and others. But the apparatus invented by Mr. Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium isolated."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company.
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use. 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

J. QUICK, Engineer.

MR. JOS. E. DOWSON

*To be obtained of the Sole Manufacturers,*

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

**And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.**

## DOWSON'S EARTHEN PIPES,

### GLAZED INSIDE,

### FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the deprecations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and habitable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains. LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

MESSRS. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.

**BRICKS.—To Builders, Contractors, and** others requiring Bricks [illegible] TO BE SOLD, in large or small quantities, some very superior Yellow Seconds, Cutters, Pickings, and Paviors, &c. For Particulars apply at Mr. ISAAC PARRY'S Brickfields, Peckham lane, opposite the Asylum Road.

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TO ARCHITECTS.

**ANY Architect requiring Convenient and** Cheap Offices at the West End: the Advertiser who has been some years established [illegible] to leave London, would wish to let them. For further particulars address K. M., office of "The Builder," 2, York-street [illegible].

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TO BUILDERS.

**ELIGIBLE PLOTS OF [illegible]** GROUND in and near London, TO BE LET, upon very favourable terms and liberal advances. A list of such can be had free upon application, or by post, by inclosing two stamps. BECKWITH and SALMON, Estate and Land Agents, 25, Bucklersbury.

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**BUILDING GROUND, the most eligible** near London, Ravenscourt Park, Hammersmith, for detached Villas. Long term of years, moderate Ground rent, being a safe and profitable investment for Builders. Apply to Mr. G. E. GORDON, Architect, Ravenscourt Park.

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**BUILDING GROUND TO LET, for** Four and Six-roomed Houses. A few small Plots of Building Ground to let, near the Kingsland-road, about a mile from the City. Persons wishing for safe Investments, Builders and others, will find this Ground very cheap. The Leases granted [illegible] from the Freeholder when the Houses are covered in. For further particulars apply to Mr. KING, Stourbridge House, Mintern-street, Kingsland road, the fourth turning [illegible] the Canal Bridge.

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TO MASONS AND OTHERS.

**TO BE SOLD, Eight beautiful Statuary** Marble Tablets, on Black Marble Grounds, of various designs. Parties wanting such would find it well worth their notice.—Apply at the office of "The Builder."

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TO IRONMONGERS, SMITHS, AND BELL-HANGERS.

**TO BE DISPOSED OF in the above line,** a small business in an improving neighbourhood at the West end of London, stock and fixtures to be taken. Inquire at Mr. ANDREWS, Tin-plate Worker, [illegible] John-street, Tottenham-court road.

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**TO LET, a very Light Workshop, Ninety-** four feet long, by [illegible] feet broad.—Inquire of Mr. WEBBER, 31, Old-street, Saint Lukes.

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BUILDING LAND FOR TWENTY-FIVE THIRD RATE HOUSES.

**TO LET, at very moderate Ground Rents,** a very eligible plot of ground for close houses, in Clifton-road, near Hamilton-terrace. Also several plots for detached and semi-detached villas. The roads and sewers are made. Apply to Mr. ARMSON, Carlton-hill, Hamilton-terrace, St. John's Wood.

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HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country. For particulars and plans, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford row.

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**TO BE LET, a Spacious Freehold Resi-** dence, near Regent-street, in perfect repair, with liberty to build upon 300 feet of Ground in the rear opening to Old Burlington [illegible] Regent-street. Apply to Messrs. [illegible] and JARVIS, Auctioneers, Savile row, Regent street, and [illegible] Cornhill.

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BUILDING GROUND.

**TO BE LET, direct from the Freeholder,** the most eligible Building Ground in the neighbourhood of London, being in the vicinity of the Regent's park, and close by the site on which a new church is about to be built, for a long term, at a moderate rent. For further particulars, apply to Mr. LITTLE, 36, Northumberland street, New road.

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**TO BE LET, a Brickfield, situated within** 2½ miles of London Bridge, with about Seven Acres of Earth, now in full work, and making three millions per year, with a very excellent ready money trade, with all the necessary buildings, offices, &c. All or part of the implements may be taken, or not, to suit the purchaser. Further particulars may be had at Mr. W. C. KNIGHT'S, Newington Causeway, Southwark.

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RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, & suitable for a Builder.

**TO BE LET OR SOLD, in the vicinity** of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw-pits, Stabling, Machinery for sawing and planing, &c. To view apply upon the Premises, No. 12, Dorset place, Dorset-square. For terms and particulars, of Mr. H. BIERS, 13, Carlton villas, Edgeware-road. Written applications cannot be attended to.

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DESIRABLE SLATE QUARRIES AND CLIFFS TO BE LET, situate in the Parish of Trevalga, Cornwall.

**TO BE LET, by TENDER, for a Term of** Twenty-one Years from Lady Day next, all those excellent and productive Slate Stone Quarries, called the Growa Quarries, together with the right to search and quarry for Slate in the run of cliffs extending from the said Quarries westward to a place called Tramble Kay, all situate in the said parish of Trevalga. The Growa Quarries have been long and justly [illegible] for the superior quality of their slate, and are capable of being worked to an almost unlimited extent. They are at [illegible] the sea, and the produce can be shipped on the spot, or at the port of Boscastle, about a mile distant. The whole line of Cliffs named above are supposed to contain an abundance of Slate Rock, and as the extent to be granted is upwards of a mile, it affords ample space and a good opportunity for the employment of capital. For particulars and conditions of letting, apply to Mr. W. F. PEARCE, Solicitor, Camelford, Cornwall, to whom Tenders in writing are requested to be sent, on or before the [illegible] day of September next.

Dated, 30th July, 1847.

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TO ENGINEERS, COACH BUILDERS, AND OTHERS.

**WORKSHOPS TO LET.—The Directors** of the London, Brighton, and South Coast Railway are prepared TO LET, for a term of years, a portion of their works at New Cross, comprising very convenient and extensive foundries, smithies, carpenters' [illegible], and coach-building shops, and in [illegible] a large yard with timber-sheds, saw-pits, &c. The whole [illegible] communication with the [illegible] of railway from London into Surrey, Kent, and Sussex, and with the Thames by means of a branch railway now in progress; and provided with power from a 20-horse steam engine. A plan of the premises, and any further information that may be required, will be furnished on application to the Resident Engineer, Mr. R. J. HOOD, at Brighton [illegible] after Wednesday the [illegible] instant. Offers to take the lease to be addressed [illegible] to the Secretary, on or before the 30th inst. at noon. T. J. BUCKTON, Secretary.

London Terminus, 5th August, 1847.

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**WHARF TO BE SOLD or LET within** 2½ miles from Hyde Park Corner, on the Kensington Canal Basin, known as [illegible] Wharf, and adjoining the railway depot, having an extensive area of ground, with double water frontages, large brick and slated [illegible] counting-house, [illegible] and warehouses, all built of brick, with slated roofs, built within the last three years. The above offers a desirable opportunity for a Timber, Coal, Lime, Slate, or Brick Merchant, Builder or Contractor, or any other business requiring space and convenience, with good roads to and from the premises, or they may be divided to suit two distinct businesses. For particulars apply to Mr. NEWTON, 41, Brewer-street, Golden square.

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## SALES BY AUCTION.

BUILDING MATERIALS, WESTMINSTER.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION on THURSDAY, August 19th, at Twelve o'clock, by order of the Rev. the Dean and Chapter of Westminster, to clear the site, the materials and fittings of one large house, being No. 1, Great Sanctuary, Westminster, with out-buildings and stables at back; consisting of lead in gutters, pipes, [illegible] tiles, sound timber in roofs, joists, girders, and floorboards, [illegible] sashes and frames, doors and fittings, lead cisterns, brewing copper, about 300 ft. run of iron railing and stone plynth, paving, brickwork, &c.—May be viewed one day prior to the sale and catalogues had on the Premises and of the Auctioneers, Coal Exchange, or 1, Little Smith-street, Westminster.

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MONSON'S BANKRUPTCY.—To Builders and Others.—Ladbroke-square, Notting-hill.

**MR. MARSH (late Fuller and Marsh) has** received instructions from the Assignee of Mr. H. MONSON, to SELL by AUCTION, on the Premises, Ladbroke-square, Notting-hill, on THURSDAY, August 19th, at Twelve, a portion of the STOCK in TRADE and Effects of a builder; comprising scaffold poles and boards, prepared floor boards, several thousand feet of prepared mouldings, and other effects. May be viewed, and Catalogues obtained on the premises; of GEORGE GREEN, Esq., Official Assignee, 18, Aldermanbury; and at Mr. MARSH'S Auction and Estate Agency Offices, 27, Bucklersbury, Mansion-house.

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MONSON'S BANKRUPTCY.—The valuable Lease, Stock in Trade, Household Furniture, and Effects, East street, Manchester-square.

**MR. MARSH (late Fuller and Marsh) has** been favoured with instructions from the Assignee of Mr. H. MONSON, to SELL by AUCTION, on the Premises, 30, East-street, Manchester-square, on TUESDAY, August 24th, at Eleven, the valuable LEASE of the above conveniently arranged and extensive BUILDER'S PREMISES, upon which a considerable sum has recently been expended, and which are well adapted for any manufactory or other business requiring light and space; at the same time will be sold the remaining portion of the Stock of Building Materials, &c.; also the Household Furniture and effects.—May be viewed, and Particulars and Catalogues obtained of GEORGE GREEN, Esq., Official Assignee, 18, Aldermanbury; of Messrs. NEWBON and EVANS, Solicitors, Wardrobe-place, Doctors-commons; and at Mr. MARSH'S Auction and Estate Agency Offices, 27, Bucklersbury, Mansion-house.

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BUILDING LAND, CROYDON, SURREY.

**MESSRS. DAVIS and VIGERS will** SELL by AUCTION, at the Mart, opposite the Bank of England, on THURSDAY, September 16th, at Twelve for One o'clock, Fourteen Valuable Plots of Building Land, at Croydon, in a delightful and healthy situation, on a dry gravelly soil, adjoining Haling Park, and the Downs near to Duppas Hill, on the direct road to Carshalton, Sutton, and Epsom, a picturesque spot, adapted to the erection of villas of a superior class, well screened from the north and east winds by forest trees of luxuriant growth, and enclosed by a park fence, with lodge at entrance, only a quarter of a mile from the church, and within a mile from the stations of the Croydon and Brighton Railways. To be viewed. Particulars and conditions of sale to be had at the Lodge; at all the principal inns in Croydon; of Messrs. WOODROOFE, Solicitors, 1, New-square, Lincoln's-inn; and the Mart and Auctioneers' Offices, 3, Frederick's place, Old Jewry, London.

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IMPORTANT SALE OF IRONMONGERY.

**MR. J. W. NEWHALL will submit to** PUBLIC AUCTION, on TUESDAY, the 17th inst., on the premises, 6, King street, Snowhill (instead of Tuesday the 10th, as advertised in this paper of 24th July), a large and well assorted stock of ironmongery, articles consisting of ironmongery, brass work, nails, files, tools, spades and shovels, coffin furniture, grindery articles, iron and steel; a new six motion beer engine; several elegant bright and other register stoves, with ormolu, bronze, and porcelain ornaments; superior fenders and fire irons, &c. &c. Also the fixtures and utensils in trade, including superior iron book cases, mahogany desks, gas fittings, a town cart, &c. &c. of the usual description. By order of the proprietors, Messrs. Gardner, Nicholl, and Pettigrew, in consequence of the dissolution of their partnership. On view Saturday and Monday preceding; and Catalogues to be obtained on the premises, at "The Builder" Office, York-street, Covent Garden; and of the Auctioneer, 86, Powis-street, Woolwich, Kent.

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OLD KENT ROAD.—Valuable Freehold Property, including a Residence called Brook House, with Coach-house, Stabling, &c., and a large Plot of Ground, suitable for building purposes.

**MESSRS. WINSTANLEY will offer for** SALE by AUCTION, at the Mart, on WEDNESDAY, August 25, at Twelve for One, in one or more lots, the following valuable Freehold Property, most eligible for a building speculation, having a frontage to the Kent-road of 160 feet, and a side frontage of about 300 feet in King-street adjoining, presenting a capability of erecting a great number of houses of a class suitable to that particular situation; together with a brick-built dwelling, called Brook House, formerly the residence of the late Simeon Warner, Esq., and afterwards for many years of John Rush, Esq., with offices, coach-house, stabling, and out-buildings. Early possession may be had. To be viewed by tickets, which may be obtained of Messrs. JONES, BLANLAND, and JONES, Solicitors, Crosby-square, Bishopsgate-street; of Mr. MURRAY, Solicitor, London-street; Mr. WOOTON, Solicitor, 10, Tokenhouse-yard; and of Messrs. WINSTANLEY, Paternoster-row. Particulars will be ready for delivery by the above named parties eighteen days previous to the sale, and at the Green Man and Bricklayers' Arms, Kent-road; and at the Auction Mart.

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TO CABINET MAKERS, BUILDERS, COACH MAKERS, RAILWAY ENGINEERS, AND OTHERS.

**FOR SALE by AUCTION, on the Pre-** mises, 120, Bunhill-row, Chiswell-street, Finsbury-square, on WEDNESDAY, 8th, and THURSDAY, 9th September, 1847, at Eleven for Twelve o'clock precisely, by order of Messrs. Cheswright, Sheffield, and Co., removing to Baltic Wharf, Lambeth:—

| | | | |
|---|---|---|---|
| 10,000 | Feet St. Domingo Mahogany, in Dry Planks and Boards. | | |
| 30,000 | " | Honduras ditto | ditto. |
| 12,000 | " | Havana Cedar | ditto. |
| 350,000 | " | Wainscot | ditto. |
| 35,000 | " | American Ash | ditto. |
| 2,000 | " | American Black Walnut Tree | ditto. |
| 1,300 | " | Quebec Birch Plank | |
| 212,000 | " | ¾ inch, 1 inch, and 1¼ inch prepared White and Yellow Flooring Boards (well seasoned). | |
| 50 | Loads, Memel and Quebec Oak | | |
| 50 | " | Quebec and Baltic Fir Timber. | |
| 500 | Baltic and American Cut Deals. | | |
| 1,600 | Spruce Deals. | | |
| 5,000 | Baltic Deals. | | |
| 1,000 | Red Pine Deals. | | |
| 2,000 | Yellow Pine Plank and Battens | | |
| 5,000 | Yellow Battens | | |
| 800 | Memel and Petersburgh Yellow Planks. | | |
| 300 | Norway Balks. | | |
| 100 | Pipe Staves, and other goods. | | |

Also, the Saws, Screw Jacks, and Utensils in Trade. To be viewed two days previous to and on the mornings of sale. Catalogues may be had on the premises, and of

JOSEPH EDWARDS, 4, Railway place, Fenchurch-street, Mahogany Broker and Auctioneer.

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COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

**MR. THOMAS S. BOYS, Member of the** New Society of Painters in Water Colours, &c. &c., offers his services in Tinting Backgrounds, Landscapes, Perspective Views, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield-street.

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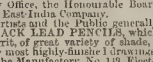
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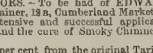
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**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS,** South-wark-bridge (and the Grove), Southwark. At the above Works, [illegible] Patent process of Galvanizing Iron as first introduced into this [illegible] Buildings, &c. Every description of Building, Railway, and other [illegible] of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

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TO [illegible] BUILDERS AND BRICK MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various [illegible] for Liquid Manure. BRICK-MAKERS' PUMPS in Wrought and Cast Iron. HYDRAULIC [illegible] PUMPS and ENGINES for Wells of any depth. [illegible] POUBLE PUMPS up to twelve inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

---

TO BUILDERS, CARPENTERS, BRICKLAYERS, AND MASONS.

**E. AND C. KITCHEN, Ironmongers,** Smiths, &c., beg to inform their Friends and the Public they have REMOVED to their new premises, THE GRIDIRON, 533, Oxford-street, where they continue to keep a stock of articles [illegible] of first-rate quality, at wholesale [illegible]

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IRONFOUNDRY,
16, Drury-lane, and Charles-street, London.

**JOSEPH GLOVER,**
Late HENDRY and GLOVER,

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED [illegible] ... The stock of patterns [illegible] for selection. A stock of [illegible], &c.

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PATENT [illegible] LIGHTNING CONDUCTORS [illegible] Churches, Towers, Chimney-[illegible]

**SMITH and ENGLISH, Princes-street,** Leicester square, London, beg to inform Architects, Builders, [illegible] Lightning Conductor has been most extensively adopted, and is giving the greatest satisfaction, it [illegible] than any other kind, and they [illegible] adopted it in preference; as also their much improved [illegible] Patent Double Action Door Springs, Patent Casement Fastenings and Sill Bars, Patent [illegible]

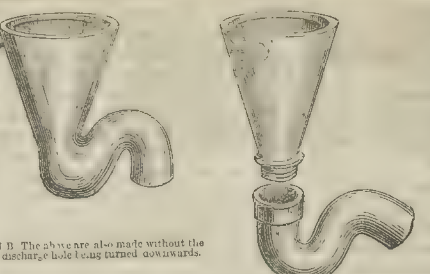
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By Her Majesty's Royal Letters Patent.

[illegible]

**THIS CHEAP and USEFUL ARTICLE,** [illegible] and insecurity [illegible] ILDESLEY, Willenhall; or from the sole [illegible] Office.

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N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

**DOULTON AND WATTS,**
LAMBETH POTTERY,
HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

---

**PATENT BELLS.—Messrs. MEARS** beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal. Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

---

**PATENT METALS for Bearings.—En**gineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort for bearings and engineering purposes generally, will be found superior in quality and cheaper, than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any ordinary brass. Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

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CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C. CHUBB and SON having just erected a** Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron doors for strong rooms and other purposes, and Fire-proof Safes at a great reduction in price and of very superior quality. All their Iron Doors and Safes are fitted with C. CHUBB and SON'S best DETECTOR LOCKS.
57, St. Paul's Churchyard, London.

---

TO ARCHITECTS AND SURVEYORS.

**C. CHUBB and SON having ascertained** that some builders are in the habit of substituting inferior and insecure Iron doors for strong rooms when "CHUBB'S MAKE" are ordered, they call the attention of Architects to the subject. In all specifications where it is intended to have the articles manufactured by C. CHUBB and SON, they respectfully request that Architects will specify "Iron doors manufactured by C. CHUBB and SON, of St. Paul's Churchyard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the doors are of their manufacture.

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PRO BONO PUBLICO.

**CAUTION. To Purchasers of Locks, fire-**proof Doors, Safes, &c. JOHN LEADBEATER, many years manufacturer for Chubb. LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c. that he can supply them IMPROVED DETECTOR LOCKS for universal purposes, STRONG WROUGHT IRON FIRE-PROOF DOORS, SAFES, [illegible] principles of security against FIRE and THIEVES, without the aid of "expensive [illegible]" which are employed by some inexperienced makers, but [illegible] per cent under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any [illegible] Some thousands of [illegible] strong room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience, during which he has adopted every possible improvement [illegible] challenge competition with any other house in London. A large assortment on sale and made to order. A pair of extra strong wrought-iron fire-proof folding doors with ventilating gates, well adapted for a banker's strong room, may be viewed at his manufactory. Strong wrought-iron doors [illegible] frames, and secured by the BEST DETECTOR LOCKS IN ENGLAND, 6 feet high by 2 feet 2 inches wide and upwards, price £10 each, always on hand at LEADBEATER'S MANUFACTORY, 125, ALDERSGATE STREET, LONDON.

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**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

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**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Farm-buildings, and for Shipping. Its adhesion is so great to iron and wood that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as [illegible], so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and adhesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

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TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only.
7[illegible], York Road, Lambeth; and at 28, Cross Street, Blackfriars Road.

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ARCHITECTURAL ENRICHMENTS.

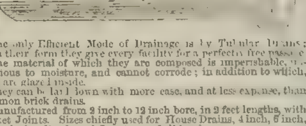
**BIELEFELD'S IMPROVED PAPIER** MACHE, which has been almost universally adopted for architectural decorations, has been patronized by her Majesty, by the [illegible] of Woods and Works, by the [illegible] most eminent architects of the [illegible] at the present House of Lords [illegible] ... designs of the papier mache ornaments, with a tariff price £1.—Works, 1[illegible], Wellington Street North, Strand.

---

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

---

**TUBULAR DRAINS IN STONE WARE,**
Manufactured by
HENRY DOULTON AND Co.
POTTERS,
HIGH-STREET, LAMBETH.



The only Efficient Mode of Drainage is by Tubular Drains; from their form they give every facility for a perfectly free passage.

The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

---

PATRONISED by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster.

**WILLIAM NORTHEN, Inventor and** Original Maker of Salt Glazed Brown-stone Socket Drain Pipes, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to his extensive stock now on hand, which for quality, perfectibility, and price, is unequalled. The following unsolicited Testimonial is respectfully submitted:—

Sewers' Office, 1, Greek-street, Soho, July 2[illegible], 1847.

Mr. ——

Dear Sir,—Should you at any time be in want of stone-ware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, stone [illegible], Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them. I am, dear Sir, yours truly,
JOHN PHILLIPS, Surveyor.

---

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent raising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

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INJUNCTION.

**BUNNETT and CORPE'S Patent RE-**VOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel in front for raising and lowering revolving iron shutters, as secured by this Patent, is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS, the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental Heads and Lamps, Moulded Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

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MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

**PERSONS requiring LOANS by way of** MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from [illegible] to £1[illegible], as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

The Builder.

No. CCXXXVII.

SATURDAY, AUGUST 21, 1847.

THE slowness with which we have arrived at a knowledge of any of the principles on which the architects of the middle ages worked, is very remarkable: our former blindness to what seems now so obvious that it could not be overlooked, is quite extraordinary, and our present blindness in other respects will be as strikingly apparent a few years hence. The belief that the Gothic architects recognized no rules, but worked merely for effect, was universal and unquestioned. "If we ask what they mean by pure Gothic," says Knight, in his 'Analytical Inquiry into the principles of Taste,' "we receive no satisfactory answer; there are no rules—no proportions—and consequently no definitions; but we are referred to models of generally acknowledged excellence," and even in stronger terms, accomplished professors of our day have spoken of the architectural productions of the middle ages as the result of caprice, simply and entirely. They saw reason to think differently of them, it is true, before the words were well out of their mouth, and at the present moment, the fact that they were erected on received principles, and according to set rules,—that caprice had no share in the general arrangement, and little, if any, even in the ornamentation of Gothic structures, is known to all who have inquired into the subject.

The similarity which buildings of the same period, and even of several periods, bear to each other, though long unrecognized, is extraordinary. The ancient parish churches of a county,—the parish churches of all England, we may say, are founded on the same type, and even where they differ, the reason is for the most part evident and explainable. The well developed chancel, growing out from the east end of the nave, sedilia and piscina on the south side of it, priest's door on the same side, a south porch at the west end of the nave, the font not far from it, buttresses to strengthen the walls at the points of thrust, a tower, et cetera, et cetera, et cetera, follow as matters of course.

And yet they did not simply copy, at least in the best years of the art; they worked on the same principles, were similarly influenced by similar circumstances, looked to what had been done before, and the results were coincident, but always with a difference. They did sometimes copy: Dugdale, in his "Warwickshire," affords us an example at Coventry. He gives the "Indenture of Covenants" between the aldermen of that city and Thomas Phillips, freemason, and John Pettit, who agreed to build a cross there, *in all points like one in Abingdon*,* but during the best periods it was less trouble to them to compose than to copy. *Geometry was the foundation of their art:* a few simple rules of proportion, apparently of universal application, regulated all their designs; and without similar attention to proportions, whether attained by geometry or by numbers, modern architects cannot hope to produce satisfactory buildings. "There are two causes of beauty," says Wren, "natural and customary,—natural is from *geometry*, consisting in uniformity (that is, equality) and proportion. Customary beauty is begotten by the use of our senses to those objects which are usually pleasing to us for other causes; as familiarity or particular inclination breeds a love to things not in themselves lovely. Here lies the great occasion of errors; here is tried the architect's judgment; but always the true test is natural or geometrical beauty." And this the mediæval architects perfectly well understood, although if any man had ventured to say so when Wren wrote, he would have been adjudged mad,—Gothic architecture being understood, then, as having no other characteristics than disorder and negligence, caprice and confusion.

That they had a geometrical system, however, is evident, and many minds, as our readers know, have applied, and are now applying themselves to the discovery of its precise nature.

Cæsar Cæsarianus, an Italian architect, born about 1481 or 82, in a translation of Vitruvius, and a Commentary, which he published, now very scarce, introduced into it a scheme which he called "The plan of the foundation of a sacred building, with columns at a distance asunder, constructed after the German manner (*Germanico more*), by means of a triangle and square, like that which is now to be seen at Milan." The diagrams consist of a ground plan of Milan Cathedral, and various sectional and other views, shewing how the proportions were fixed by means of triangles and other geometrical forms. Hawkins, in his "History of the Origin of Gothic Architecture," published in 1813, first made Cæsarianus generally known, and gives copies of the principal diagrams in question, from which, however very little can be gained.

This, with Kerrich's "Observations on the use of the *Vesica Piscis*, in the Architecture of the middle ages,"* has been the foundation of much that has been done since, and which we venture to think will shortly take a practical shape.† Our readers will remember Mr. Chantrell's paper on the subject, which appeared in our columns not long since,‡ wherein reference was made to a system proposed by Mr. John Browne, of York. This has brought us a long communication from that gentleman, complaining of misrepresentation, and claiming to be considered one of the earliest investigators of the subject, and the instructor of Mr. Chantrell. We have not space for the whole of the letter, but think it right to insert the following main portion of it:—

"It will not be deemed necessary that I should now shew for how long a period prior to 1828, I had studied and tried to apply the principle, as given by Cæsar Cæsarianus, or how long before the same year I had studied Mr. Kerrich's idea of the 'vesica piscis,' or had struggled to discover the principles that seemed to have more probably influenced the productions of the architects of the middle ages; or what was the result of the interview which I had with Mr. Kerrich, or that I should produce the correspondence which passed between us. Suffice it, therefore, that I give the following extract from one of his letters:—'I am clearly of opinion such discoveries,' as he understood mine to be, 'ought to be recorded, as they must lead to further, and, as I think, important knowledge.' But it is necessary to shew that, during the year 1828, I did present for the consideration of the Society of Antiquaries of London, an '*Essay on the Working Principles of Ecclesiastical Architecture*,' consisting of about 150 folio pages of manuscript, accompanied by a large portfolio, containing at the least ninety-four mathematical draughts, illustrative of my opinions; the draughts consisting of various portions of structures, with referential explanations for a repetition of construction to any future scale. To this essay was not prefixed any such title as 'The Trinitarian System of Pointed or Christian Architecture,' as Mr. Chantrell has stated; and therefore he is inaccurate in saying that the society 'did not approve of its title.' The title was that given above in italics, and the subject occupied the attention of the society on two evenings, viz., the 11th and 18th of December, 1828 (see the *Gentleman's Magazine*, Vol. II., 1828, page 553, where my name is by mistake printed *Byrne*, instead of Browne). There is, therefore, no ground for the insinuation that my communication was rejected.

From the year 1828, I have lost no real opportunity of testing the governing influence of my principles, whenever I could obtain a correct plan, elevation, or section of any edifice, and have always ended my labours with satisfactory conviction. But having, in 1827, commenced a series of drawings illustrative of the conventional ornaments in York Cathedral, and events subsequently occurring which drew upon me the heavy duty of extending those illustrations, and producing a new History of the Fabric from the original Registers of the See and of the Church of York, I was compelled to relinquish all consecutive study of the working principles of church architecture until that History should be completed, which is now on the eve of being accomplished, after twenty years of anxious labour and exertion.

During this delay of an exposition on my part of the working principles, my friend, Mr. Chantrell, has persevered in obtaining, both directly and indirectly, such hints from my working scheme as might answer his own purpose; and finding that more renown would accrue to himself from broaching something that might seem new, than following in the track which I had pointed out to him, he has adapted my proved results to his imaginary speculations, and given a diagram which, he states, shews the proceeding of my principles.

It is not requisite that I should here shew where and how I came to adopt such a singular and unique mode of testing the various productions of the architects of the middle ages. I have adopted it, and applied it always with apparent success; and have no doubt of its ever giving satisfaction to those who may undertake to test ancient ecclesiastical edifices thereby, providing they be tested on *accurate* drawings, or sections, of a scale *sufficiently large*, as most of the parts of those structures appear to have been designed of the working size.

The working principles which I apply to ecclesiastical buildings, are founded upon a creative scheme which is very different from the one given as mine in page 302. Mine really consists of a circle, four right angles, and three vesicas, to which I attach a scriptural meaning.*

A holy explanation of a mere geometrical scheme will probably startle the sensitive feelings of many, who are not in the least prepared either to believe, or can understand how such schemes could be made to affect masonic structures. But let it be remembered, that in ages of barbarism and war, common minds were little accustomed to reason about things generally; and consequently were not prepared to understand much of the indivisibility of the Great First Cause, nor how so many various operations should be ascribed to one only. Therefore the builders of sacred structures had recourse to symbolism and emblematic representations for explanation; and this manner undoubtedly pervaded all their proceedings and instructions. And is it too much to be believed in these days of scientific research, that the Christian architects, who had not only entered upon their career in infancy by the acknowledgment and profession of a Triune God, but had thus allowed that profession to guide all their spiritual concerns, did also allow the same religious creed to influence their exertions, especially when tending to the honour of their

* It was begun in 1541 and finished in 1544. It was 7 feet at the base, 50 feet high, with eighteen niches filled with statues, mostly of kings. The founder of it was Sir William Hollies, Knight, sometime mayor of London, who left 300*l.* for the purpose. There was an old cross there previously, which was built in 1422.

* "Archæologia," Vol. XVIII., A.D. 1817.

† The analogy existing between architectural and *musical* proportions has also occupied many artists. Durand Alexis, a learned French ecclesiastic of the seventeenth century, wrote a work entitled "Architecture Harmonique; ou, Application de la Doctrine des Proportions de la Musique à l'Architecture." Paris, 1679, 4to. The geometrical relation of consonances was illustrated by Archimedes.

‡ See p. 300, *ante*.

* Mr. Browne has forwarded his scheme, and what he considers its symbolical meaning, but we are unable now to give them.

Creator. That such was the fact, their edifices seem loudly to proclaim, by the presentation of such forms in the plans, component parts, and geometric decorations of their buildings; and it would have been strange indeed if religious fervour had not thus invented some creative scheme, whereby the temples of the living God might be produced and accomplished under the influence of a holy symbolical guidance."

Of all the inquirers into the depths of this question, Mr. W. P. Griffith, whose last work on the subject is now before us,* appears to have carried out the application of the primary figures to plans of existing buildings the most successfully. In the round church at Cambridge, the plan of which he gives, intersecting squares inscribed within the circle mark the position of the columns, and the disposition of the windows and doors. In Little Maplestead, in Essex, the primary figure used is the equilateral triangle, which in like manner gives the position of the columns, doors, windows, and buttresses. In the plan of Malmsbury Abbey Church, several very curious coincidences are pointed out, the equilateral triangle being the figure used, and in that of King's College Chapel, Cambridge, even more so. In the construction of sections the same primary figure used in the plan is employed, and a very satisfactory result is arrived at. In a letter read at the Institute of Architects, and which appeared in THE BUILDER,† Mr. Griffith explained his own views, so that we need not now state them; we will add, however, that verbal communications with this gentleman have satisfied us, that he has now mastered the subject to a surprising extent.

We are not disposed to attach any mysterious meaning to the figures employed, or to dwell on their symbolical character. We will view them simply as the means of obtaining certain proportions, and in that light alone consider the subject one of great interest, demanding to be settled. The Institute have set apart one of the first meetings in the ensuing session for the discussion of it, by which time, it is hoped, many of the members will have prepared themselves for a careful consideration of it.

We have had triangles and circles satisfactorily founded on the plans of existing buildings; what we now want are, plans of new buildings, founded on triangles and circles. A good practical geometric system is now the desideratum.‡

We add a notice of a recent foreign work, which bears somewhat on the general question.

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Although the following remarks may seem, at the first glance, novel and extraordinary, they deserve attention as emanating from a source most respectable, we mean the Engineer Wild, at Zurich, who, only a short time since, received from the king of Würtemburg the great gold medal for science and art, for a discovery relating to military art.

The results of Mr. Wild's researches relate to the monuments of Egypt and Ethiopia, and their signification as to mathematical and astronomical traditions and notions, which (if confirmed), would point at a high degree of scientific knowledge of these people. The chief source, or rather the *key* of the present lucubration, is the doctrine of magnitude (*Grössen-lehne*) of Pythagoras, which he had obtained from the Egyptian priesthood. The properties (nature) of numbers and of the triangle, are the chief basis of Mr. Wild's researches. He even asserts, that "numbers are the key by which antiquity may be wholly revealed. From out of the simplest triangle (the equilateral) he derives the figures of the three pyramids of Ghizeh—admired by men for the last 4,000 years. He proves that their size bears an analogy to the measure of the globe; viz., that the largest exhibits the extent of a portion of the meridian; the second, the size of the parallel circle, on which it stands; that the third implies a measure of time—the solar year!

After the Pyramids, follows the laying down the position of cities, which flourished in times of remotest antiquity. The city of Memphis stood on the spot where the "half angle of the centre of the regular hexagon corresponds with the geographical latitude," viz., at 30° north latitude, the very spot where the pyramids also were erected. The *same* half angle of the centre of the regular heptagon, points exactly to the latitude of ancient Thebes; and Mr. Wild asserts that the ancient Egyptians were such accurate cosmographers and surveyors, that the centre of the ruins of the city corresponds to the very *second* with the place it was intended to occupy. The regular octagon corresponds in a similar way with the ruins of the temple of Ibsambol, in Ethiopia.—Beside thus assigning the situation of cities and temples by the properties of polygonal figures—the author points out others, by the properties of triangles, in a trigonometrical way, by which operation the position of cities and temples may be ascertained, which have completely vanished from off the surface of the land. Mr. W. applies this procedure to the ascertaining the position of ruins hitherto unknown. He also shews that along the meridian, running through the great pyramids, there extends a series of numbers, by way of which it is possible to ascertain the position of the temples and cities along the Nile—and thus he lays down the position of old Meröe in Ethiopia!

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## ON THE POSITIVE SCIENCE AND MATHEMATICAL PRINCIPLES INVOLVED IN THE FINE ARTS.

ALTHOUGH this attempt to prove the possibility and importance of establishing art on the solid basis of science cannot command the implicit confidence, which a more advanced professional rank in the writer would warrant, yet I hope it will be read by some who will bestow a patient consideration on opinions the result of careful and deep meditation.

It is to be hoped there are few

> "Who every theoretic truth disdain
> And blunder on mechanically vain."

Most, I think, after their first timid excursions in the art, when strengthened in daring by the teachings of experience, will eagerly proceed in quest of the regions of perfection on a course of their own, but in revealing to others their views, they may expect,—like Columbus, first prophesying from the voyage of intellect a yet practically to be realized new world,—their courage to be recorded as rashness—their conviction as idle presumings—and for their pains, a farewell of sneers instead of "God speed you." For men consider that he only deserves honour of them, who returns successful with his vessels treasure laden, and the voyage chartered that others may follow.

Finding that, in common with many others, I possessed confused notions on matters connected with art, I could never rest till an instinct of my nature was satisfied, which continually urged me to obtain fundamental principles. Confused ideas on any subject must render all reasonings upon it extremely inaccurate and inconclusive. Could this admit of remedy, I imagined it could only be from a diligent investigation of natural laws; and could I accomplish this, the rules deducible from such an inquiry might be applied to the imitative arts, and to whatever else they concerned, without much difficulty. The labour I have undertaken has appeared, since commencing it, in its full magnitude, and that which is ordinarily deemed an isolated investigation, seems to demand nothing less than a profound study of the whole range of physical science.

I have quoted largely authorities advocating the reduction of the varied departments of human experience to the positive or scientific condition, introducing Conte's law of mental evolution as expounded in Lewis's "Biography of Philosophy," shewing this to be the ultimate state, at which all knowledge arrives. In this introductory discourse I act only in the capacity of architect and builder, selecting from heaps of ready and beautifully prepared materials, those best suited to the purpose of my own design; thinking it would contribute much more to the successful effect of the whole than if composed of my own rough masonry.

If I should succeed in favourably impressing you with the possibility of art arriving at the condition of a recorded science, you will be the better prepared to follow investigations, the themes of future papers.

It may be observed with regard to an art—science, that England and Germany are equally deficient, and discussions on the subject in both countries are of as metaphysical a nature as can well be imagined—and we enter our protest against metaphysical systems.

There are many, I am fully aware, who repudiate the notion of art ever becoming a science, and those even who feel convinced to the contrary must bear witness to this experience,—that, notwithstanding man's highest convictions, the struggle between reason and fancy is always a hard one: we tenaciously cling to all the fanciful creations of ignorance long after any faith in their reality exists.

Many urge the apparent variety of tastes, as rendering any general law by which all should be influenced impossible of attainment, but I believe this seeming difference is on account of various degrees in education and judgment, and as often in art those qualities which are universally pleasing have to be rejected by the artist of mature judgment, a difference of opinion arises, as many more people see than weigh.

Those who deny the possibility of art being reduced to more scientific principles than at present, are often found to express contempt for the metaphysical notions of the Germans: confused indeed must be their system—if system it can be called, which at once rejects both positive and metaphysical doctrine—relying perhaps on supernatural inspiration.

It is to be hoped, however, the number is decreasing of those who give credence to this notion of inspiration. As our art is not a divine gift, so neither is it a mechanical trade; its foundations are laid in solid science, and practice, though essential to perfection, can never attain that to which it aims unless it work under the direction of principle.

To speak of genius and taste as in any way connected with reason or common sense, would be, in the opinion of some towering talkers, to speak like a man who possessed neither; who had never felt that enthusiasm, or, to use their own inflated language, was never warmed by that Promethean fire which animates the canvass and vivifies the marble.

The arts would be open for ever to caprice and casualty, if those who are to judge of their excellencies had no settled principles by which they are to regulate their decisions, and the merit and defect of performances were to be determined by unguided fancy. How many more principles may be fixed and ascertained we cannot tell; but as criticism is likely to go hand-in-hand with the art which is its subject, we may venture to say, that as that art advances, its powers will be still more and more fixed by rules.

It is the very same taste which relishes a demonstration in geometry, that is pleased with the resemblance of a picture to an original, and touched with the harmony of music.

"All these (says Reynolds speaking of proportion, colour, &c.), have unalterable and fixed foundations in nature, equally to be investigated by reason, and, therefore, true as mathematical demonstration, but known to be true only to those who study these things."

If, in order to be intelligible, I appear to degrade art by bringing her down from her visionary situation in the clouds, it is only to give her a more solid mansion upon the earth. It is necessary that at some time or other we should see things as they really are, and not impose on ourselves by that false magnitude with which objects appear when viewed indistinctly, as through a mist.

It must of necessity be, that even works of genius, like every other effect, as they must have their cause, must likewise have their rules; it cannot be by chance that excellencies are produced with any constancy or any certainty, for this is not the nature of chance, but the rules by which men of extraordinary parts, and such as are called men of genius, work, and are either such as they discover by their

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* Account of the Churches, their Proportions and Chromatics," by [illegible], the author to St. John's, Clerkenwell.

† See p. 267, ante.

‡ Some of the writers on this subject is Mr Cresy, not mentioned by [illegible] Dictionary of Civil Engineering, which they have sent out. In his elaborate "Encyclopædia of Civil Engineering," the last chapter, XXXII. is appropriated to "Proportion."

own peculiar observations, or of such a nice texture as not easily to admit being expressed in words, especially as artists are not very skilful in that mode of communicating ideas. Unsubstantial, however, as these rules may seem, and difficult as it may be to convey them in writing, they must still be seen and felt in the mind of the artist; and he ought to work from them with as much certainty as if they were embodied, as I may say, upon paper. It is true these refined principles cannot be always made palpable, like the more gross rules of art, neither can the various modifications of dynamical laws, which influence each particle of a cloud of dust or globule of a wave, be recorded in the book of science.

All that science can effect is to systematize the accumulation of experience, *i.e.*, facts, deducing from the multitudinous and complex, simplicity and order, by selecting the invariable from the variable;—the invariable always constituting the grand laws which should first tutor the mind, as these are more palpable, till at last it acquires a scientific sense, which words, particularly words of unpractised writers such as we are, can very feebly suggest. It appears to me that most treatises upon art are wanting in methodical arrangement, and the few precepts they are intended to inculcate are only arrived at with much circumlocution; but the greatest evil in them is that they almost invariably deduce their rules from human precedent, rather than seeking them in nature: thus, through teaching us for ever to look back, we become fixed and immoveable pillars, standing monuments of our folly.

Forward! must be the watchword of the champions of truth and human progress, and to this end let us study nature intimately by principle, and this will shew us, if we be in search of permanent fame, we ought to examine and judge for ourselves. Let us not make the virtue modesty our plea, for under this does omnipresent mediocrity shelter itself. Modesty, indeed, is not so properly virtue as the garb and ornament of virtue, and of existing positive power. Let us study nature in parts and the whole, as if no man ever had observed, or ever should observe, but ourselves. Is it sufficient that a Phidias, a Michael Angelo, a Raphael, or a mediæval artist did thus and thus; they may have been right, but let it be remembered that error wins the, at first, unwilling sense to a loving disposition, through the blandishments and importunities of custom, till truth appearing deformed, is banished as a suitor, and error lastingly wedded.

Had Phidias a Phidias as precedent? or Raphael, a Raphael to tutor him? or the mediæval age, an anterior mediæval to educate it in architecture? The answer is apparent. Yet they had a precedent which they may have attentively studied, and which we may also study, that is—Nature.

Modern has not surpassed, or even rivalled, ancient art; but we may reverse the case in ancient and modern science; as long as science pinned its faith to schools and metaphysical notions, was it unprofitable, till Bacon taught it to commence on its own account to investigate nature. He was indeed thoroughly opposed to antiquity, and was the first to expose the fallacy of a supposed debt of reverence. "The opinion which men entertain of antiquity is a very idle thing," said he, "and almost incongruous to the word; for the old age and length of days of the world should in reality be accounted antiquity, and ought to be attributed to our own times, not to the youth of the world which it enjoyed among the ancients, for that age, though with respect to us it be ancient and greater, yet with regard to the world, it was new and less." He writes, also, "Let none expect any great promotion of the sciences, especially in their effective part, unless natural philosophy be drawn out to particular sciences; and again, unless these particular sciences be brought back again to natural philosophy. From this defect it is that astronomy, optics, music, many mechanic arts, and what seems stranger, even moral and civil philosophy, and logic, rise but little above their foundations, and only skim over the varieties and surfaces of things, viz., because, after these particular sciences are formed and divided off, they are no longer nourished by natural philosophy, which might give them strength and increase; and, therefore, no wonder if the sciences thrive not, when separated from their root."

Those, no doubt, who shall be bold enough to begin art afresh, and construct a science founded on nature, instead of mocking ancient examples, and lay the foundation-stones of a new era, must suffer contumely, as they must unavoidably resemble the infancy or youth of human progress in other epochs. Mankind travels the same road it has often travelled before, as is testified by the frequent correspondence of the footsteps of the present with those of the half obliterated past.

It is a fallacious supposition of many unqualified writers upon art, that art may be resumed at the point where the Greeks or Raphael left it. No doubt, most artists would if they could; the absurdity, however, of such a doctrine appears from a parallel case which suggests itself: for example, who would give a man anxious to study astronomy, the results of Newton or Herschel's computations—assure him they are quite correct, but deny him all information with regard to the steps by which they were attained, and then desire him to carry the science forward?

Yet, this is precisely the condition of the artists—the results of ancient art are before him; but the experience, the science is lost: whether it was ever recorded it is, perhaps, now impossible to say; we know, however, that Greek as well as Italian art had crude beginnings, which were gradually thrown aside in its progression until it reached the culminating point in a Phidias or a Raphael; traditional communication may have answered the purpose of the then present, but through being unrecorded, the science was lost to the future.

It seems a hard doctrine that this journey must be commenced anew, with a prospective distance that is not likely to be attained in one generation.

It behoves every one then to remove with assiduity as many impediments as possible, that those who may be destined to follow, shall travel with greater celerity, overtake, and pass us. Let us exert ourselves in the capacity of humble pioneers of progress—content to bow at the altar of pure truth rather than indulge a morbid craving after popularity.

The general objection which is made to the introduction of philosophy into the regions of taste, is, that it checks and restrains the flight of the imagination, and gives that timidity which an over carefulness not to err or act contrary to reason is likely to produce. It is not so. Fear is neither reason nor philosophy. The true spirit of philosophy by giving knowledge, gives a manly confidence, and substitutes rational firmness in the place of vain presumption; but in philosophy as in every thing else, man must pass through infancy and wayward youth. A man of real taste is always a man of judgment in other respects; and those inventions which either disdain or shrink from reason, are generally, I fear, more like the dreams of a distempered brain than the exalted enthusiasm of a sound and true genius.

We may now be permitted to refer to M. Comte's law of mental evolution, to shew that all knowledge is progressively developed, and that the mysterious or unscientific always precedes the positive or scientific perception. It may be thus stated:—

Every branch of knowledge passes successively through three stages,—1st., the supernatural or fictitious; 2nd, the metaphysical or abstract; 3rd, the positive or scientific. The first is the necessary point of departure taken by human intelligence; the second is merely a stage of transition from the supernatural to the positive; and the third is the fixed and definite condition in which knowledge is alone capable of progressive development.

In the supernatural stage, the mind seeks after causes; aspires to know the essences of things and their modes of operation. It regards all effects as the production of supernatural agents, whose intervention is the cause of all the apparent anomalies and irregularities. Nature is animated by supernatural beings. Every unusual phenomenon is the sign of the pleasure or displeasure of some being, adored and propitiated as a God. The lowest condition of this stage is that of the savages, viz., fetichism. The highest condition is when one being is substituted for many, as the cause of all phenomena.

In the metaphysical stage, which is only a modification of the former, but which is important as a transitional stage, the supernatural agents give place to abstract forces (personified abstractions), supposed to inhere in the various substances, and capable themselves of engendering phenomena. The highest condition of this stage is when all these forces are brought under one general force, named Nature.

In the positive stage, the mind, convinced of the futility of all inquiry into causes and essences, applies itself to the observation and classification of laws which regulate effects; that is to say, the invariable relations of succession and similitude which all things bear to each other. The highest condition of this stage would be, to be able to represent all phenomena as the various particulars of one general view.

Thus in astronomy we may trace the gradual evolution from Apollo and his chariot to the Pythagorean ideas of numbers, harmonies, and so many other metaphysical abstractions, to the firm basis on which it is now settled, the law of gravitation; so that it is by geometry and dynamics we hope to wrest their secret from the spheres; not by the propitiation of a Sun-God. Thus also in physics, where thunder was the intervention of Jove, and where metaphysics had introduced Nature's "horror of a void," we now seek truth in the regular study of gravitation, electricity, light, &c.

We cannot pursue the illustrations of this law; its history is the history of mankind. Those critics who have spoken of this law as if it were an ingenious *aperçu*, cannot have seen its bearing, nor can they have duly studied Comte's work.

To pretend to judge of such a law by a mere reflection on its statement, without tracing its verification throughout the history of speculation, is as wise as it would be to judge the law of gravitation *à priori*, without waiting to see its application to phenomena. We believe that Comte's law is the fundamental law of mental evolution. It is proved by the experience not of one science only, but of all sciences; not of one nation and one epoch, but of all nations and all epochs. Therefore does the diligent perusal of Comte's work become indispensable to those who would form any opinion on his system. The neglect of this has led some of his critics into ludicrous misstatements. They have made objections which he had early anticipated and refuted. They have denied his facts, because they have not learned that all history confirms these facts. They have mistaken his law for a mere hypothesis. It is now some years since we first read the work; and since that time we have met with nothing but confirmations of its truth.

Although the verification of this law exceeds our limits, we may fitly adduce Comte's arguments in its favour. All are agreed, in these days, that real knowledge must be founded on the observation of facts. Hence contempt of mere theories. But no science could have its origin in simple observation; for if, on the one hand, all positive theories must be founded on observation, so, on the other, it is equally necessary to have some sort of theory before we address ourselves to the task of steady observation. If in contemplating phenomena we do not connect them with some principle, it would not only be impossible for us to combine our isolated observations, and, consequently, to draw any benefit from them, but we should be also unable to retain them, and most frequently the important facts would remain unperceived. We are, consequently, forced to theorize. A theory is necessary to observation, and a correct theory to correct observation.*

W. Cave Thomas.

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Ornamental Roofing Tiles.—On the 7th instant a vessel arrived in the river from Antwerp, laden with blue ornamental roofing tiles, consigned to the Architectural Tile Company, the first shipment, as we understand, of this description of tiles into this country. They somewhat resemble slate in point of colour, and are large and handsome. As it will be seen by our advertising columns that the proprietors of the patent are willing to encourage the manufacture by our own tile makers, we commend the tiles to their attention, that they may not be behind our foreign neighbours in enterprise, and that in these days of ornamental building we may be provided with materials of our own manufacture rather than employ our capital abroad.

* The remainder next week.

## THE GAS MOVEMENT IN THE FORTHCOMING PARLIAMENT.

Some of our contemporaries of the newspaper press, such as the *Liverpool Weekly News*, already quoted, and the *Bridgewater Times*, unquoted till now, but who, while also directing attention to the gas movement, as at length a national question for decision in the forthcoming Parliament, and at the same time freely doing us the credit to declare that "the public are greatly indebted to The Builder for the agitation of the gas question, which, despite the powerful opposition of the metropolitan gas companies, aided by their provincial monopolists, has been continued, till the kingdom, from one extent to the other, has rung with his alarums, and many of the companies have been frightened into something like consistent charges for the article they render to the public,"—have of late been "strenuously recommending" to their readers (as we ourselves, indeed, also did) the propriety of every constituency in the kingdom taking advantage of the present position of the gas investigation, and urging on those Parliamentary representatives who are about to issue forth from the impending general election (now more than *in mediis res*) the necessity of seeing that the subject is thoroughly sifted and justice done. How far the constituencies have called for or will obtain such pledges as will be practically useful remains to be seen. But we would ourselves be inclined to place much less reliance on pledges than on the force of reason and fact upon the minds of the new members themselves, whether pledged or unpledged; to the end that one of the most rampant and "abominable monopolies and means of extortion with which this country has been or is inflicted" be forthwith effectually emasculated; and to that end we would—nay we *only can*—refer them, in the first place, to what has been already urged in the present volume of The Builder, in which alone this question has been systematically and originally argued as a question of disinterested public principle, the importance of which in the eyes of the companies themselves, and the conscious imminence of their peril, have recently, as our readers know, been very clearly evinced by the consequent appearance of an undisguised organ of monopoly, in the shape of a monthly periodical devoted exclusively to the interests of the companies that be against all that would henceforth compel them, by fair competition or otherwise, to renounce a portion of their *indebted* profits.

But the attention, it now appears, of all and sundry the new members of Parliament has already been pointedly drawn to The Builder's efforts, although for a *very different purpose, or end*, to any ever contemplated by us, namely, not to the *destruction* of monopoly, but to the enforcement of a sort of *black mail* from its public plunder, in the shape of taxes for behoof of the revenue, to the amount of 2,000,000*l.*, out of one little corner of the monopolist free-profit-purse! A tax on the *light of day* we have long had, and a tax *on darkness*, in the place of it, has been only recently suggested; but here we have a tax on the only passable light wherewith to *enlighten our physical darkness!* Were such a tax eventually one on mere monopoly itself, as it is intended to be, it would be *unobjectionable;* but it would merely tend to perpetuate monopoly and to prevent the cheap diffusion of the best of all yet practicable substitutes for the light of day; and we are on various grounds [illegible].

The author of this project is Mr. H. Fitz-Gerald, who enforces his idea by a calculation of the "enormous surplus profit in hand" amongst fourteen metropolitan companies, from whose annual surplus of 457,497*l.* he proposes to slice off the comparatively moderate tax of 1s. out of 6s. per 1,000 cubic feet of gas, a tax which, in this case alone, would yield 122,434*l.*; and in order to shew that such companies can afford to make gas at less than even 4s. 6d., he refers members of Parliament "to The Builder newspaper from January 29th, 1847," and to another calculation, given by himself, of the expenditure and receipts of the Imperial Gas Light and Coke Company, from which it appears, that when deductions to the amount of 61,543*l.*,—including 13,775*l.*, or 10 per cent., on the gross receipts of 137,757*l.* for all charges on the establishment,—6,887*l.*, or 5 per cent., for shareholders,—and 40,880*l.* for 51,100 tons of coals, at 16s. per ton,—are made from the gross receipts, which include 109,226*l.* for 364,088,500 cubic feet of gas, at 6s. per 1,000 feet; 3,832*l.* for 613,200 gallons of gas tar, at 1½d. per gallon; and 2,342*l.* for 562,100 gallons of ammonia, at 1d. per gallon,—there still remain of net receipts a sum of 76,213*l.*, leaving a surplus profit of 58,009*l.*, after deduction of the tax of 18,204*l.* "Bad debts," he very appropriately gives to the "breeze."

However accurate or inaccurate these calculations may be, the declaration that the companies "can afford to make gas at less than 4s. 6d. the 1,000 cubic feet" is undeniable; and he with great justice maintains, that "if their full consumption of coals were taken, which cannot be obtained without a parliamentary return, the surplus profit would nearly be doubled," even on the moderate estimate of the cheapness of price at which they could afford to make gas; on which interesting subject we have already thrown not a little light; and, for the sake of increasing that light even a little more, we will now add another and rather a striking instance of what is *practicable* elsewhere than in the metropolis, although it is only in such peculiar circumstances as those about to be adduced, that such little secrets of the gas-house happen, now and then, to come broadly and plainly out. The peculiarity of the circumstances alluded to might easily be guessed at, when it is considered, that if gas-works really do yield gas at an almost nominal price compared with what the companies charge for it, one would naturally expect, that in such cases as those of public institutions, which may happen, as a few of them do, to make *their own* gas, and make no secret of their accounts of cost and profit, the *secret* would inevitably *come out.* Now we have long been looking for just such a little secret, and, if we mistake not, out it seems to have come with a vengeance, if the *Leeds Mercury*, as quoted by the *Sheffield Iris*, is to be credited. It appears that at the Wakefield House of Correction the gas used *is made on the premises at 5½d. per 1,000 cubic feet!* To be sure that is "exclusive of servants' wages," and even in all probability of interest on outlay for apparatus and for repairs; but let us suppose that *Wakefield House of Correction* gas were sold to the public at 4s. 6d. (the *mitigated* price named by Mr. Fitz-Gerald, far less at 6s., the actual price demanded in the metropolis), to cover these expenses, — even in that case no less than about *ten hundred per cent.* beyond the actual cost of the gas so sold, would be saddled on the public, in order to cover the mere outlay for wages and repairs, and interest and dividends—or multiplicands or whatever such right royal returns deserve to be called! Now here is "a secret worth knowing." True, our metropolis does not stand in the midst of a coal field, but what of that? It seems to stand in the midst of what is vastly better,—namely, a mine of gold itself! And as for returns like these they ought to clear out the expense of carrying coals from the very antipodes, and that too ten times over, and plenty to spare. Well might Mr. Cox, a practical gas producer, say that companies in certain (or rather in *uncertain*) circumstances, *might* sell gas *with a profit* at 3s. 8d. per 1,000 cubic feet. (*a*) Yes, well they *might*, to oblige the public! And well might Mr. Cox, too, declare that he himself had supplied the Great Western Railway Company at Swindon with gas at 1s. 8d. per 1,000 cubic feet, and *did not lose by it.*" (*b*) Modestly spoken indeed! No wonder, moreover, that many manufacturers at Sheffield, "considering 2s. 6d. to be too high, manufactured their own." (*c*) And well, too, might a dividend of 5 per cent., with continued prosperity, occur at North Shields in the very face of a reduction from beyond 45s. per street lamp—which 'could not possibly pay,'—down all the way to 17s., which did pay! (*d*) No wonder, in fine, that no metropolitan or other gas company cares to give a fair trial to Radley's patent, taken out in 1845, for the manufacture of gas from old bones or other offal at 5d. per 1,000 cubic feet!

The curious inference fairly deducible from all this, reminds us strongly of the contemptuous reply of an insolvent surgeon to a friend of our own, when congratulated on the profitable move he had made in establishing a company for the sale of drugs,—an article which was commonly understood to yield a profit of elevenpence in the shilling. "Elevenpence in the shilling!" responded the quondam Esculapius, with sovereign dignity, "Elevenpence in the penny you mean!

We have much more to add, especially with reference to the vast benefits in store for the public, in the endless diffusion of cheap gas, for heat and comfort, as well as for light and safety, throughout all the penetralia of domestic and municipal arrangements, *if their Parliamentary representatives only do their duty;* but we must defer the remainder till another opportunity, remarking only, in the meantime, that although the transfer of the main bulk of the enormous profits of the companies to the pockets of the public,—under deduction of no such extinguisher of our lights as darkness or the prevalence of blank walls and extinguished windows proves the tax on our light of day to have ever been,—would be a transfer that would fructify in the form of an immense diffusion of not only light but heat, to the more immediate and permanent benefit of the public themselves,—the frequent experience of Government in the compensatory benefits derived from immense reductions of taxation *on articles of general use*, ought to enlighten even those really blind leaders of the darkened public, the monopolists, to a knowledge of the assured fact, that they themselves would be equally and much more satisfactorily benefited by the substitution of *smaller profits, indefinitely multiplied* by the endless demand to which an immense reduction in the charges yet insisted on would inevitably lead, a demand which can only arise out of such a previous reduction of price, whether voluntary or by compulsion.*

(*a*) See p. 395, ante.
(*b*) See p. [illegible] ante.
(*c*) See p. 85, ante.
(*d*) See p. 330, ante.

* The [illegible] that the initiative in such a movement must be taken by them in [illegible] else in the shape of sound inference. "*That the demand for gas be no douse*; and in proportion to the *(previous)* increase of the [illegible] said "that the demand for [illegible] would have stood legitimately founded on what went before; but, [illegible] "lowering of the price" ought to *come first*, and the "greatly increased [illegible]

† Viz., The Right Hon. Earl Cadogan, Sir Walter James, Bart., the Rev. G. Prince, LL.B., Messrs. G. R. Finch, Rogers, and J. W. Archer.

## THE RETARDATION OF GLASS PAINTING IN ENGLAND.

### FREEMASONS OF THE CHURCH.

At a meeting of the Freemasons of the Church, held on the 10th instant, a committee was appointed to co-operate with certain other societies in adopting means to obtain and preserve Shakspeare's house.†

Mr. William Cave Thomas read a paper "On the Positive Science and Mathematical Principles involved in the Fine Arts," which we give elsewhere *in extenso.*

At a previous meeting reference had been made to the state of the painted window in Limehouse Church, which is so decayed as in many parts to shew the original surface of the glass.

In reply to an inquiry as to the cause of this, Mr. Wilmshurst read the following remarks:—"The simple answer would be, that the colours, instead of being vitrified, have been used in varnish, either entirely or partially. But as we cannot suppose any gentlemen or committee would sanction the outlay of a considerable sum of money to decorate a church, with the certain knowledge that in a few months it would become unsightly and defaced, exciting ridicule, instead of reverence, in the house of God, we must look further for the *cause.*

Some time since my attention was called professionally to the window of a neighbouring church, viz., Poplar. When I first went it had all the appearance of small streamlets of dirty water running over it, from top to bottom, and had so strange an effect (being a figure of Christ) that some of the parishioners said they would be content to pay handsomely for its demolition. Upon examination I found

the figure was painted or laid in (to use an artist's phrase) in vitrified colours, of course immoveable; then it had been finished, to a deep and full tone of colour, completely in varnish, which is now, and has been for some years, rapidly disappearing; and if the varnish colour was completely removed, the window would be like a vision of its former self. Upon inquiry, I came to the following conclusion as to the cause of many windows, painted about the same period, being in this lamentable state.

Until within a very few years, it was the constant and almost undeviating practice for gentlemen and committees to give commissions for stained-glass windows to men in various businesses, and *not* to the artists by whom the windows were to be painted,—the painter being usually kept in profound ignorance as to its destination, and the person for whom it was painted, lest, by the artist becoming known, the orders should flow into his hands. I have had applications to paint windows, some of them after the best Italian masters, from glass-cutters, chandelier manufacturers, glaziers, upholsterers, house-painters, dealers in curiosities, ironmongers, and carpenters, all of whom had, no doubt, represented themselves as the fitting supervisors and directors of works of art. I am afraid, the grand consideration with them would be, in a majority of cases, how much per cent. could be obtained by the transaction,—their first inquiry, who will paint it for the least money; in fact, from the artist being unknown, they were enabled to give any sum they thought proper. Can the result we now witness in the two churches under consideration be marvelled at. The painter had no prospect of fame to incite him, no character to lose, and was only anxious to finish his dreary task, by *hook or by varnish*, in order to receive the beggarly reward of his toil.

To such expedients did tradesmen have recourse to prevent the patron and the artist becoming acquainted, that if the former expressed a wish to see the work in progress, he was told, to get a good work painted he had sent it to Italy, &c. And the large sums paid for works, and the small price paid to the painters, would, if stated, be incredible.

These circumstances will, I think, in part account for the wretched state of many modern windows. I am very happy to say, that the system is now much altered for the better, and a tradesman would find it difficult to get any one of repute to execute a window for him,—although there are many examples occurring at the present time, both of committees and professional men giving the preference to men in business, rather than have direct intercourse with the painter; thus checking the advancement of art, and procuring inferior works; as, until the artist feels his true position, and that his best aspirations are dependent upon the character of his works, it is hopeless to expect works of equal merit to those produced where royalty and public opinion reward the meritorious.

Under proper encouragement, there can be no doubt, that works will be transmitted to posterity equally durable and beautiful as the most celebrated examples of antiquity."

## AWARDS OF OFFICIAL REFEREES.

### ADDITIONS TO STRUCTURES OF THE PUBLIC BUILDING CLASS.

With regard to a building known as Otto House, and situated at North-end, Fulham, which is occupied as a private lunatic asylum, and covers more than fourteen squares, it was proposed to add thereto a building of two stories, containing four rooms. The district surveyor was of opinion that the building is occupied as a hospital, and that, being so occupied, it was to be deemed to belong to the third, or public building class; and that inasmuch as it corresponded in form, structure, and disposition with a dwelling-house, and covered more than fourteen squares, it was to be deemed a building of the extra first-rate; "and that, being a building of the extra first-rate of the third class, the thickness of the external walls of the proposed new rooms must be at the least 21½ inches, unless the official referees should otherwise appoint; and also that the floor of the passage, on both stories, must be wholly supported, constructed, formed, made, and finished fire-proof."

The builder, Mr. Poole, contended, that "the said building, inasmuch as it is not used as a hospital, or for the assemblage of persons in large numbers, or for any public purpose, but is, from the nature of its occupancy, invariably occupied by a peculiarly limited number of persons, was to be deemed to be a building of the first, or dwelling-house class; and as regards the thickness of the walls of the proposed new rooms, that such rooms being to be built against a substantial external wall of the existing building, and that no part of such walls (except for the formation of one doorway in each story) is to be removed, the said rooms are to be distinctly rated, and constitute an attached building of the second rate of the first class."

The award of the referees was,—"That the building in question is a 'hospital' within the meaning and for the purposes of the Metropolitan Buildings Act, and that it corresponds in form, structure, and disposition, with a dwelling-house; and inasmuch as it so conforms, and moreover covers more than fourteen squares, that it is a building of the extra first-rate of the third or public building class; and with regard to the proposed structure (or four rooms), we do hereby determine and award, that the same is an addition to the said extra first-rate building, and not an attached building, within the meaning of the Metropolitan Buildings Act; but inasmuch as it contains two stories only, and having regard to the height of such stories, and inasmuch as regarding its connection with the main building it is structurally an independent building, not exceeding in area a building of the second-rate of the dwelling-house class, and having regard to the circumstances that by schedule C, part 2, walls of the thickness of thirteen inches only are prescribed for second-rate buildings of the first class, we do hereby approve of the proposed walls being built of the thickness of thirteen inches only—but we are of opinion that in building the said addition, it will be the duty of the said Henry Poole to make the floors of the passages between the main building and the proposed addition to the building wholly of fire-proof materials, and to make a staircase to lead to the passages in the upper story of such addition to the building, in like manner wholly of fire-proof materials."

### RAISING ON OLD WALLS.

With regard to a building at the corner of Great Russell-street and Tottenham-court-road, it was proposed by Mr. E. B. Lamb to raise the front external walls to a height not exceeding seven feet above the level of the existing walls. This was objected to by the district surveyor, he being of opinion that the walls were not sufficiently secure to allow of the raising "the wall next Tottenham-court-road, which is built upon a wood brestsummer (as is the other wall), overhanging to the extent of four inches, whilst the wall fronting to Great Russell-street shews a considerable fissure throughout its height, in the line of the wall fronting the house in question from the adjoining house, No. 2, Great Russell-street."

Mr. Lamb was of opinion that the walls were sufficiently secure to allow of the raising thereof, and that such walls being of the thickness prescribed by the said Act, it is not competent to the district surveyor to object thereto.

The district surveyor contended, "that before any building be raised, it is the duty of the district surveyor to object thereto, if he is of opinion that such raising ought not to be done; and that it is competent to him to object, whether such building be an already or a hereafter-built building; and that by the provision in section 31 of the said Act, with regard to buildings already built, it is not intended to limit the power of objecting to walls of insufficient thickness of buildings already built, but that it is thereby intended to provide that already built buildings may not be raised under any circumstances, unless with the consent of the district surveyor; and that under no circumstances may walls of insufficient thickness of buildings already built be raised to an additional height exceeding ten feet."

When the referees surveyed the building, they found the walls of the building had been already raised to the proposed additional height.

Their award was, first, with regard to the jurisdiction of the district surveyor generally, under the 31st section of the Metropolitan Buildings Act, that although the walls of buildings already built may be of the thicknesses prescribed by the said Act, after any intended raising of the walls of such buildings, it will not be lawful to raise any such building if, in the opinion of the district surveyor, any such walls be not sufficiently secure to allow of such raising; and, secondly, with regard to the building in question, we hereby find and certify, determine and award, that the district surveyor has properly objected to the raising of the building in question, inasmuch as the walls of the building are not sufficiently secure, and are so defective as to be incapable of being rendered sufficiently secure to be raised upon; and we do, as required by the said requisition, direct that the walls which have been raised be forthwith taken down to the extent, at least, to which they have been raised."

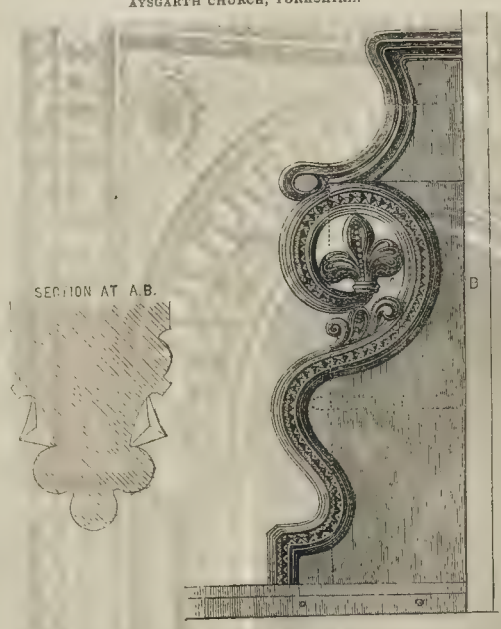
## METROPOLITAN.

Twenty owners and occupiers of the "dark arches" under Adelphi-terrace, amongst whom were Miss Burdett Coutts, Mr. Chaplin, M.P., Sir Edmund Antrobus, Mr. Marjoribanks, &c., were "brought up" at Bow-street, on the 12th inst., under the Paving Act, and at the instance of the Paving Committee of the parish of St. Martin's-in-the-Fields, for "suffering noxious and offensive matter to accumulate in the arches," as it had done for years, causing stench and nuisance in their most aggravated forms. The vestry clerk of St. Martin's parish, stated that so deadly was this nuisance, that even passengers from the steamboats had been suddenly seized with illness, and one had died in consequence. Mr. Lake, surgeon, said that malignant fever had lately broken out on the premises from the same cause, and had determined him and others to put the law in force. Certain parties, it was observed, had threatened law in retaliation, if their "vested rights" were interfered with by the Paving Committee; but at length the greater number of the defendants condescended to allow the committee to cleanse the premises for them, and the remainder promised to do so themselves.——At a public meeting lately held at the Western Literary and Scientific Institution, Leicester-square, Sir Charles Aldis in the chair, to consider the best means of preventing disease and pestilence in the metropolis, it was resolved, by acclamation, that the interment of the dead in the midst of the living should be prohibited by law; that no effective measures for protecting the public health will ever be carried out by irresponsible parochial boards; but that the various parochial authorities be urgently requested to do what they possibly can towards the abolition of cesspools, under Lord Morpeth's act, the frequent cleansing of streets and gully-holes, courts, yards, and alleys, *the erection of public water-closets and urinals*, and the establishment of parochial baths and wash-houses.——To the model lodging-house in St. Giles's, opened on Monday week, has been added a library of 400 volumes. Lectures also are to be given by a committee of 16 gentlemen, turn about, on some interesting and popular subject.——A number of houses in Billingsgate have been sold by auction for removal from the site of the new Coal Exchange, which is to be forthwith begun, on a plan which was exhibited in the Royal Institution, Trafalgar-square, and which will cost about 100,000*l*.——The subscriptions to the building fund for St. Mary's Hospital, Cambridge-place, Paddington, now amount to 21,287*l*. odds. The hospital is to be made complete for about 400 patients.——Christchurch, Greenwich, the foundation-stone of which was laid on the 2nd instant, by Mr. John Angerstein, is to be built by Messrs. Farrant and Turrel, from a design by Messrs. Brown and Kerr, of Norwich.

Damp Walls.—When damp walls proceed from *deliquescence* in the case of muriate of soda, &c., in intimate combination with the sand used for the mortar, it is merely necessary to wash the wall with a strong solution of alum. This converts the *deliquescent* salt into an *efflorescent* one, and the cure is complete. Or, alum may be added to the plaster in the first instance.—*Dr. Murray.*

EARLY ENGLISH BENCH END,

AYSGARTH CHURCH, YORKSHIRE.




## EARLY ENGLISH WOODWORK.

AYSGARTH CHURCH, YORKSHIRE.

Sir,—In wandering a summer's day last month amidst the enchanting scenery of Wensley-dale, in the West Riding of the county of York, I found myself towards evening at the pretty little village of Aysgarth, celebrated by its proximity to the superb falls of the river Ure.

My custom is always, if practicable, to see the interior of a church, however humble its appearance, and in this instance my curiosity was well rewarded by the discovery of two *early English bench ends*, carved in oak, and somewhat like the accompanying drawing. I am not even a tolerable antiquary, but it struck me that in the numerous works on Gothic architecture that I had seen of late years, nothing approaching this interesting relic of early English woodwork had either been noticed or engraved; and viewing it in this light, I fancied that you might deem it worth a place in your interesting journal. Myself and an architectural friend examined them closely, and at once were satisfied that they were *genuine examples*, and not copies of old work, executed at some much later date.

The carving is characterised by the usual features so often met with in stonework of that date, conveying at once to the antiquary or architect an *unmistakable* signature of its date. The two elbows (both in a similar state of dilapidation) occupy the same position, *i.e.*, at the end of the stall seats in the chancel, and stand on each side of the rood screen door, and abutting against it, as shewn in the sketch.

The drawing will, I hope, clearly demonstrate that portion of the elbow at present existing. The dotted lines are intended to shew my humble attempt at a restoration of the form it may have assumed when perfect. Both the sides are carved, and otherwise ornamented in a similar manner, though at present a *board* is nailed against the interior, causing me at first sight to imagine it only sunk carving, and not pierced. The design may be, I think, justly entitled to credit, and doubtless in those early times of scarce woodwork was considered something first-rate.

Besides these interesting relics, the church contains much woodwork of a very ornate and splendid character. The roodloft (given in Whittaker's "Richmondshire") is magnificent, and at the present day has its painting and gilding quite perfect; two perpendicular standards, most elaborately and exquisitely carved, make the finish to the front of the stalls, in the same manner as the bench ends do to the seats, and two chantry screens, of perpendicular date, are to be found in the chancel. One of them bears an inscription, giving the name and date of a certain Abbot of Jervaulx, and thus plainly indicating the *history* of so much *sumptuous woodwork* in so simple a village church.

Jervaulx Abbey is about nine miles distant, and contains amidst its ruins some valuable specimens of early English date, characterized more especially by the great elegance of its mouldings. The remains existing at the present day were founded about the end of the twelfth century.

Wensley-dale, besides its well-known and unrivalled scenery, contains many examples of old English architecture, and will well repay the student or antiquary for two or three days' ramble.

* * *

Lancaster, July 30th.

*** The elevation is on a scale of one inch to a foot: the section is half the real size.

## THE ANTIQUARIAN RAMBLE IN WARWICKSHIRE.*

BRITISH ARCHÆOLOGICAL ASSOCIATION.

At a short distance from Coventry, of which we have already spoken, is *Coombe Abbey*, the seat of Lord Craven, where the unfortunate Princess Elizabeth, daughter of James I., and afterwards Queen of Bohemia, passed the early part of her life. Howitt, in his "Visits to Remarkable Places," says, with some justice, that "Coombe Abbey has altogether that air and those vestiges of old times which must, independent of its connection with the Queen of Bohemia, give it great interest in the eyes of the lovers of old English homes, and of the traces of past generations." So little care, however, seems employed to preserve consistency in the fittings and furniture of the rooms, that the pleasure which would otherwise be found in a ramble through it is materially lessened.

The architecture is of various character, much intermixed and disfigured by alterations at different periods. The cloisters of the abbey which once occupied the site, now included within the house, are Norman. The most interesting apartment, known as the Elizabethan room, completed in the reign of James I., and which formed part of the suite occupied by the princess, has a fine chimney-piece of the period, partly of wood, partly stone. In connection with this suite of rooms is the quaint and interesting garden porch, engraved in our last volume,* where will also be found an account of the Abbey.

There is a large number of paintings of various degrees of excellence, including the "Samuel and Eli," of Rembrandt, a marvellous production, well worth a pilgrimage.

Amongst the other interesting old houses visited by the association was *Astley Castle*, the seat of Lord Lifford, originally a fortified erection of early date, but now for the most part modernized. Parts of the exterior, belonging to the time of the Tudors, retain their characteristics; and the moat remains.

*Astley Church*, closely adjoining the residence, has several points of considerable interest. According to Dugdale, Sir Thomas de Astley built here in the fifteenth year of the reign of Edward III., "a most fair and beautifull collegiat church in the form of a cross, dedicated to the assumption of the blessed Virgin, with a tall spire, covered with lead." The spire being pulled down by an after owner, the tower decayed, and was rebuilt about 1607. At the same time was totally taken away "all the west part of the church, with the north and south cross ıles, making that which was the quire the body of the church." They also pulled down the chapels, "setting up that which stood on the north side at the east end for a chancell." This agrees with the present arrangement of the church. The added chancel has upon the face of the masonry the date 1608, in large sculptured figures.

In the nave (formerly the chancel) is a series of eighteen canopied stalls, with a figure painted on the wall at the back of each, and a legend in a scroll.

A very short distance from Castle Astley stands *Arbury*, the beautiful seat of Mr. Newdegate Newdegate, M.P., who received the association with elegant hospitality. The drawing-room and dining-hall, in the late pointed style, are remarkable, if we were rightly informed, as having been executed from the drawings of an amateur, Sir Francis Newdegate, at a time when Gothic architecture was less understood than it is now. Arbury contains a number of very interesting pictures and portraits,† amongst which is the remarkable painting, or rather series of paintings, inscribed, "The combate in Paris betwixt John de Astley and Peter de Mape, 29th August, A.D. 1438," and "The Combate in Smithfield betwixt Sir John de Astley and Sir Philip Boyle, 30th January, A.D. 1441," engraved, as many of our readers will remember, in Dugdale's "Warwickshire."

Of Mr. Newdegate's beautiful grounds, and his pleasant speech at the luncheon, we may not stop to speak. *Marche, marche, toujours!* (as in *Le Juif Errant*) is ever the cry at the archæological meetings. We once more take to the rail, and, before leaving for London, whisk our readers back to *Kenilworth*, that we may, in redemption of our promise, lay before them a representation of the interesting Norman doorway in the church there, engraved from a drawing made some years ago by the late W. Alexander, F.S.A.

In the course of these notes, which we have confined as closely as possible to matters connected with our architectural antiquities, we have not alluded to the visit of the Association to Stratford-on-Avon, and the steps that were there taken to insure the retention of Shakspeare's house. This was from no lukewarmness towards the proposal: we have long since and more than once expressed our strong feeling on the subject, and we suggested a plan for purchasing it, which has been very

* See pages 357 and 373, *ante*.

* Vol. IV., p. 4.

† Many of these pictures, by the way, seem to require attention to ensure their preservation.

NORMAN DOORWAY, KENILWORTH CHURCH.



generally quoted as "from a contemporary." The fact is, however, that further excitement seems unnecessary. The house must be obtained for the nation; whether our great bard was born in it or not,—even if it be like "my father's knife," which had first a new blade and then a new handle, and is still preserved "because it was my father's knife," the house *must* be purchased, protected, and honoured, and we have no doubt will be. We are not at all anxious, however, that the hucksters, in whose unworthy hands this honoured relic is, should make a harvest out of public feeling, as they evidently wish to do, and we are more disposed at this moment, therefore, to cry caution than to help push.*

## AN ACCOUNT OF WARWICK CASTLE.†

The castle of Warwick has no architectural features which can clearly be traced to a period earlier than that of Edward I. or II.; but that from a very remote date, it has existed as a place of importance in our national history, may be fairly inferred. Long before the twelfth century, its defences had been repeatedly exposed to the assaults and violence of invaders, and it was not until that date it assumed the form which seemed to defy the attacks of violence, or the more insidious assaults of time. We find it stated, that in 542, Dubritius, bishop of Llandaff, afterwards archbishop of St. David's, made his episcopal seat at Warwick, in the church of All Saints, *where afterwards the castle was built*, and I conceive the present chapel to have been built on this site; an early stone coffin exhibited at the porter's lodge, having been discovered near this spot, warrants this inference. In 915, Ethelfleda, the daughter of King Alfred, made a strong fortification, called "The Dounjeon," on an artificial mound at the western extremity of the castle. The mound forms a conspicuous object in the general view, but no traces of Ethelfleda's fortification are to be discerned. Turchil de Warwick, at the time of the Conquest, is said greatly to have enlarged the castle by command of the Conqueror, who, nevertheless, bestowed the same (*then newly* built, or rather enlarged) on Henry de Novo Burgo, or Newburgh, one of his Norman followers, afterwards promoted by him to the earldom of Warwick. In the year 1153, Gundreda, Countess of Warwick (to use Dugdale's expression) *outed* King Stephen's soldiers forth of Warwick Castle, and delivered that fort to Henry II. In 1259, John Giffard, governor of Kenilworth Castle, surprised the garrison at Warwick, and demolished the walls from tower to tower. Between the years 1315 and 1370, Thomas Beauchamp rebuilt the walls of the castle, and it is to him, I think, the greater part of the edifice, which I now proceed to describe, is to be attributed.

From the present entrance a road has been for some distance cut through the rock, and at its termination the eastern side of the castle bursts on the view, Guy's Tower being the nearest object. The moat is dry, and a bridge of a single arch supplies the place of the ancient drawbridge: the openings to receive the chains of which are, however, remaining in their original state. The portcullis is also retained and regularly lowered every evening. A quick ascent leads to the inner court of the castle. The whole of this central gateway is carefully defended by an internal pair of gates (the hooks for which remain), an inner portcullis and court, from the battlements of which, and from loop-holes, assailants could be molested at all points, as also from a gallery, the approach to which is by an inclined plane in a passage at the side of the wall. The chambers over the outer gateway also command the lines of approach, and above those of the inner gateway is a flying curtain, communicating with the two towers. South of this gate-house stands Cæsar's Tower. In plan it is extraordinary, and well adapted for purposes of resistance and defence. Founded on the rock, it appears to defy the attacks of time. No salient point occurs on which the cunning engines of the besieger could take effect. The plan externally presents three segments of a circle, and on the side next the inner court the plan is angular. Descending by about twenty steps

* We defer the conclusion of our ramble with the "*Archæological Institute*," in Norfolk, till next week.

† The following is the more detailed account of this fine structure, given by Mr. J. G. Jackson, of Leamington, to the British Archæological Association, to which we before referred.

from the court-yard, the lowest apartment, called the dungeon, is gained. It is 17 feet 4 inches long, and 13 feet 6 inches wide, groined in two bays. The ribs are deep, and have a plain chamfer. On the south side, an opening, one-third the width of the room, admits the light from a deeply splayed window, the opening of which is narrowed to the width of six inches towards the outside of the wall. On the north side, and at some height from the floor is a smaller window, admitting light from the courtyard.

Emerging from the dungeon and on a level with the court-yard, the interior is divided into a principal apartment about 19 feet 6 inches by 14 feet 6 inches, and communicating with two smaller chambers. The groining, as below, is simple early pointed, the rib deep and chamfered or slightly hollowed, the door-jambs plain chamfer with deep rebate. The principal windows are deeply splayed, the jamb set forwards towards the external wall, the opening narrow and ogee-headed, with a single transom, and the external jamb a double splay and fillet. The smaller openings to turret stair, &c., are slit lights, with square-headed and chamfered jambs. The two floors above are similarly arranged, the lower of the two hung with some very good tapestry. From the third floor are communications with the south and eastern ramparts; and above this floor access is gained to the first outer platform of the tower. Here the deeply-projecting battlements are supported on corbels, between which are open spaces, to allow of missiles being thrown down on the assailants below. Above this arises the upper tower, having two apartments, floored over at the height of 6½ feet, and a single heptagonal chamber above, lighted by large square openings in the massive walls, and having a groined roof. Above this chamber is the upper platform of the tower, commanding an extensive view in every direction, having on its south-west side another platform ascended by steps.

Proceeding westward from this tower, we descend into the basement of the castle, and passing by the more modern portion erected under the library, bed-room, &c., the old part of the castle is entered. This extends under the great hall, ante-room, cedar, and compass rooms, armoury passage, and chapel, and is groined throughout, the principal portion being supported by dwarf pillars of the same early character as the groining,—about the time of Richard II.

In the ale cellar is a two-light window, indicative of the character of the building. In the south-west angle of the building a small turret stair gives a further descent of seven or eight feet, at which level it is now stopped up, but in all probability at a lower depth it afforded egress from this part of the castle.

The ancient external features of the castle are much obscured on the south, or river side, by the insertion of numerous windows of late date, and on the north side by the dining-room and wing buildings, erected for the late Earl of Warwick; but there are sufficient indications to warrant the date which I have assigned to the structure, the chapel being, perhaps, somewhat later in period. Internally the whole has been modernised to the date of the last century, with the exception of the great hall, mentioned before.

By a passage, said to be formed in the thickness of the north wall, and called the Armoury Passage, the visitor is conducted to a tower, having four angular turrets, and the archway in the basement affording egress to the park at the foot of Ethelfleda's Mount: this tower has also been much modernised.

Ethelfleda's Mount, or Keep, appears to have been surrounded by an embattled wall; and Hollar's map, attached to Dugdale, shews a tower at the north-west angle, which at present exists, and has been ascended by an external stair, renewed from time to time. There is one single chamber, with an ascent to the summit. Another tower has been added in modern times, but according tolerably well with the character of the whole. From this north-west angle a narrow flight of steps extends towards the Bear Tower, but the rampart is terminated abruptly at a short distance, *i.e.*, at the break, where the curtain wall is thrown across.

The summit of the mound presents an area of about twenty yards in diameter, and in the centre stood a fine fir tree, evidently of some age in Dugdale's time. It is said that buildings exist beneath this area, but I am not aware of any researches having been made, and no indications are at present visible. The area is certainly not *too large* for a Norman keep circular in form, but it is scarcely credible that its walls should be buried by a surrounding mound of earth. A foot below the level of the windows of the north-west tower a series of round holes occur, which were most probably made for self-defence during the siege in 1643. From this mound there is an extremely fine view of the dormitory. In Canaletti's time it was formally planted with clipped firs, but since then it has been clothed with shrubs and fine trees by the late earl, and now presents a beautiful and luxuriant appearance. The two octangular towers, called the Clarence and Bear towers, are connected by a flank wall, and the court-yard was here approached by a draw-bridge, west of which the moat runs out to the level of the ground at the foot of the mound. These towers consist each of a single chamber, with a small staircase at the side, affording access to a rampart, which runs round the walls. Over the towers is a spacious platform, ascended by steps. A subterraneous passage is said to communicate with the western tower; and from the eastern rampart a considerable flight of steps affords a communication with the third story of Guy's Tower. This tower, built by Thomas Beauchamp, in 1393, at a cost of 395*l.* 5*s.* 2*d.*, is uniform in style throughout. The ogee-headed windows are inserted in a square, externally chamfered, thus differing from the windows of Cæsar's Tower, which have the ogee head repeated on the external moulding.*

* All the details are given in "Pugin's Specimens."

## NOTES IN THE PROVINCES.

THE Dartmoor granite is about to be quarried, it is said, by a body of convicts, to be domiciled at the Prince's Town prisons.——The widening of the Old bridge, Bath, long contemplated, is about to be commenced.——The Wesleyan Collegiate Institution, recently erected at Taunton, has been opened. The building is in the domestic Gothic style, with a frontage of hewn stone 240 feet long, and a central tower. There are also a terrace, swimming bath, playground, lodge, and entrance gates, &c., and the whole establishment is well supplied with water from the tower.——A site for the new post-office, Hereford, has been fixed on near the cathedral close.——A new town-hall for Merthyr Tydvil is to be built, it is alleged, by the new member, Sir John Guest, as a present to his constituents.——The church of Shelsley Beauchamp, Worcester, was lately re-opened, on the completion of its restoration, from designs by Mr. Cranston, of Oxford, architect. Its original character had been much effaced since the fourteenth or fifteenth century, when it was probably built. The lost proportions have been restored, and unsightly superfoetations removed. A new north aisle has been added, and the whole of the rest of it, in short, raised from its foundations. The roofing and other woodwork is of oak, and the pewing plain, with stalls in the chancel. The pulpit is of stone. Mr. Wailes, of Newcastle, has filled the centre of the east window with painted glass. Lord Ward has given 500*l.* towards the expense of the restorations.——A new workhouse is contemplated for the Shepton-Mallet union at a cost of about 20,000*l.*——From experiments tried at Salford in watering and cleansing the streets with hose, applied directly to the water mains, and jets with tinned plates placed obliquely before the nozzle to spread the rounded stream into a sheet, it appears that a surface of 1,800 square yards can be sufficiently watered in four minutes, and that a surface of 240 square yards can be very efficiently scoured in three minutes. The jet, however, in the latter case, was found to wash away the gravel rather injuriously from between the stones. As a useful adjunct to the sweeping machine, however, its value has been sufficiently tested; and for foot pavements, and perhaps, too, for house-fronts and even — gently applied—for windows also, it will be equally useful. Manchester is thus likely to perfect those means of cleansing streets which it also originated in the sweeping machine. The temporary damp produced in removing so inveterate and continued a source of injurious damp as mud is, might well be submitted to, even independently of its refreshing coolness in the dry heat of summer. Mr. Edwin Chadwick and the secretary of the Health of Towns' Association were present in course of these experiments.——In the Leeds council the other day, on consideration of what is called "the Architects' Bill," for building the new jail, it was proposed to grant to the contractors, Messrs. Perkin and Backhouse, a sum of 150*l.*, in addition to the amount of their estimate, 552*l.*, and on account of the 'very satisfactory manner' in which their work had been done, and the 'much longer period' during which they had been called upon to continue their services than what was originally contemplated. The town clerk, however, read a letter from their solicitor, claiming a sum of 500*l.* over and above the amount of their contract, on account of "extra professional duties, arising from alterations in the original plans and additions," the work having thus, it was alleged, extended a year beyond the period originally calculated on. The council were thus, of course, taken a little aback in the effectuation of their generous intention, and some of the members then rebelled against the idea of giving them even "one penny more than by law they were entitled to," although it was observed "that if right in their claim, they had not thrown away that right by employing a solicitor," and that for alterations made in the original estimate they certainly were entitled to remuneration. One item of 27*l.* was admitted to be exigible, but no other; and the subject was ultimately referred back to the Gaol Committee, with power to pay such extra sum as they might consider reasonable for work so 'satisfactorily' done.——Messrs. Craven and Sons, the contractors for the construction of the Sunderland docks, have commenced their work.——The usual authorities in the Scotch iron trade, in quoting pig at 48*s.* per ton, free on board, now speak of a further "decline of full 2*s.* having taken place since Monday last [week], *notwithstanding the continuation of the strike* amongst the miners and colliers, and the stoppage of blast furnaces in the Monkland districts;" and one of the chief authorities at Birmingham seems to find it necessary, or advisable, in discussing the prospects of the trade in general, to endeavour to suppress something like 'alarm' by assurances that such alarm is not shared in by him at least.

## RAILWAY JOTTINGS.

THE 'extraordinary rise' of charges on the Eastern Counties line has already begun to work out its own cure, by giving rise to the re-establishment of coaches on the road between London and Cambridge, and to the increase of cheap steamers between London and Yarmouth: so that to that salutary awe which the omnibus system already exercises over the rising charges on this line of rail, where they happen to compete, will soon be added a still more general, and, in all probability, still more effectual check to its *rising* ambition.——The East Anglian line was opened from Lynn to Swaffham on Tuesday week. The works were commenced about two years and a half since, and finished last year to Narborough. In the second contract to Swaffham, there is still much to do in widening cuttings for a double line. The engineer in chief of this line is Mr. Valentine, and the resident engineer, Mr. Hall. The contractor from Lynn to Narborough was Mr. J. Walker. Messrs. Frost, Fly, and Mathewson were the contractors from Narborough to Swaffham, a hilly district of chalk and flints, with heavy cuttings and embankments, and large bridges. Middleton, East Winch, and Pentney stations are built of Carr stone. The Narborough station is ten miles from Lynn. Not far from it the line crosses the Narby, a large timber bridge, with five openings of 30 feet each. One of the chalk embankments here is 1¼ miles long and 20 feet high. Over the road to Narborough there is a large girder bridge; girders 25 feet span. Towards Swaffham the line is made up of alternate cuttings and embankments. Over the last cutting there is a large brick bridge of three arches, 30 feet span each, 11 feet spring, and 16 feet in height, with arches

turned in cement. The Swaffham station is only one story in height, of Elizabethan design and flint material, with York stone dressings and brick quoins. It is 96 feet in length and 20 feet in height, with 200 feet in length of platform. The site is convenient to the town. The high road is carried here over a girder bridge below which the permanent way is laid onwards to Sporle, where there is a station also of flint with a long timber platform. By November the opening to Dereham is expected to complete the railway connection from Lynn to Norwich. From 800 to 1,000 men are now employed on the works.——At a recent meeting of the Chester and Holyhead Company, a report was read by the Secretary, in which it is stated that in the progress of the works an average of 90,916*l.* per month has hitherto been expended, and that owing to the progress now being made with the tubular bridges and the completion of station buildings, &c., the average will henceforth be at the rate of 120,000*l.* a month, until the main completion of the line in February next, when it will be opened throughout, except the Britannia or Menai Bridge, which is expected to be ready in the early part of the ensuing summer. The legislative enactment was also announced to the company, under which they are to contribute 200,000*l.* towards the formation of a free or Government harbour of refuge, and packet harbour and pier at Holyhead. In the engineer's report, also read, it was stated that one of the tubes on the platform at Conway is nearly completed, and the plans for moving and raising the tubes are being carried out, hydraulic presses, chains, and pontoons being in progress. The tube so far completed, it is said, 'manifests all the strength and rigidity which was anticipated.' This bridge is expected to be ready by November next. The Britannia also is in active progress, but in a more backward state than the Conway, where the sufficiency of the principle on which the tubular bridges are formed, will be first tested. In reply to a question put to Mr. Stephenson, he said that General Pasley's letter to *The Times* did not touch the actual principle on which the bridges were being constructed, but he admitted that that principle was involved in the general's objection to the mode of erection. "There were only two or three people in this country," he said, "who knew the facts with regard to this kind of construction." The plans were then and there before the company, but "it was impossible to make the details intelligible to a large meeting like the present." Indeed, Mr. Stephenson was understood to admit that "his machinery is very complicated." The vibration, he was assured would be very trifling, as the weight of the tube would be twelve times that of the train; and as to a "Mathematician," who spoke of vibration destroying the tenacity of wrought-iron, or rather, as Mr. Stephenson quoted it,—"the vibration of wrought-iron turning it into cast-iron,—he might as well have asserted that it would be turned into plumbago!" In conclusion, Mr. Stephenson remarked that "he believed that nothing [requiring correction?] would arise in the erection which would not suggest immediately a mode of correction." In reply to a second question, he also stated that "he expected the tubes would be able to support themselves without the chains. The chains were only intended to raise the tubes to their places, and not to support them."——The Landore viaduct, which is to connect the South Wales line a little above the Morfa copper works, and which will be about half a mile in length, and upwards of 60 feet in height above the tidal level, was begun on Monday week, and is expected to be completed in about ten weeks.——On the inquest held on the body of the engine-driver on the Midland line, who was killed near King's Norton, on Friday week before last, the jury in their verdict attributed the accident which led to his death, to "the engine being of much too heavy a description to be used on the present light road, at the rate at which it was travelling, with a light train to which it was attached." A great portion of the line, we understand, is now being relaid.——The contract for the great Central Station in Neville-street, Newcastle, has been let to Messrs. Mackay and Reed, for 92,000*l.* The estimates, says the *Gateshead Observer*, differed to the extent of 20,000*l.*!——Berlin appears to rival London itself in the puffing system. A mercantile house has offered to supply every German railway carriage with silk blinds, gratis, for fifty years, on the mere condition of being allowed to cover them with advertisements, and change them as often as they please.——A Parisian engineer, named Ybry, has patented a new time table, by means of which, at a glance, successive trains can be so regulated with reference to express or extraordinary trains, and to one another, as to avoid collision at any one or all points. It shews at once, without calculation, by the mere intersection of lines representing the length of the line, with vertical lines representing time, the place and time of any train while on its journey, the time of stoppage and departure from any station, &c.

## ELECTRO-TELEGRAPHIC PROGRESS.

The telegraphic system of Messrs. Brett and Little, of Furnival's-inn, is an elaborate result of years of studious ingenuity. The first improvement to be noticed is one for the equalization and sustainment of galvanic power in its continued application to the main apparatus of the electric telegraph. In this case the old evils resulting from the incrustation of the battery-plates with sulphate of zinc are overcome by the establishment of a steady and continuous system of percolation through the main trough, which is supplied with a bare sufficiency of dilute acid, to keep the sand in which the plates are imbedded in a state of saturation. This supply is sustained from a trough above, through nipples which allow it to drop down gradually between each pair of plates, while the solution of sulphate, as it is formed, sinks, by its own gravity, to the bottom of the main trough, and escapes through somewhat similar orifices filled with sponge, into a trough below.

The next improvement is one for the more complete isolation of the power thus steadily generated, during its course along the telegraphic wires, where it has hitherto been liable to dissipation by moisture, such as rain conducting it into the earth along the usual isolaters. This has been obviated by the use of isolaters of solid crystal, prolonged below into an inverted cup-like form, from the rim of which all rain must drop or run, without taking its course up again through the interior to the support of the isolater at the top of the cupola, through which alone it *could* complete the conduction to the ground.

The advantages of thus from the outset economizing the power wherewith the telegraphic apparatus is to be worked, are various. No separate electro-magnetic apparatus, for instance, is necessary at every station, at a cost of 8*l.* each or so, for connection with the bell; the power itself, eliminated, it may be, and indeed it virtually was, at a distance of 1,000 miles *of wire*, being capable itself of acting directly on the bell mechanism through a delicate little magnet mounted on an axis, with its poles both pointing to the ground; and not only capable of doing so at one, two, or at the utmost, five or six stations, but at many—seventeen, on our own observation, represented by seventeen distinct repetitions of the apparatus from which the battery was divided by the 1,000 miles of wire, the additional resistance of which whilst twisted into coil must be also overcome.

There are two indicators, which indicate the alphabetical characters by the number of pendulations, or rather semi-pendulations, of either, or both, towards the perpendicular, according to an arbitrary but simple arrangement engraved on the front of the instrument. Numbers are also indicated in a similar way, and responses, such as "understood," "repeat," "yes," "no," &c.

Perhaps one of the most interesting advances in the general principle of the electric telegraph towards ultimate perfection yet attained, consists in the capability of conversing by Messrs. Brett and Little's telegraph on a dozen different subjects at one and the same time, on one and the same line of telegraph, extending between only twice that number of stations,—and that through one line of wire alone, exclusive of a line for preliminary warning by bell. Earth-plates are provided at each station, so that when desired the circuit may be completed through the earth between any two, or every two, stations, and the communication between any two of these coupled stations be thus temporarily shut off from all *beyond* them, while these may all be also otherwise engaged. Thus in a line established between London and Liverpool and Manchester, *viâ* Birmingham, intelligence may be communicated from London to Birmingham without interfering with either Liverpool or Manchester. And, moreover, those stations *between* any two such points of converse may shut themselves off from any temporary intercourse in which they may not be interested, until the warning bell announce the contrary.

It would far exceed our present limits were we to particularize the details, by means of which other advantages have been obtained, such as the obviation of the annoyance, confusion, and damage arising from the ringing of bells by atmospheric electricity, and the withdrawal through graduating conductors of all atmospherical electricity, weak or strong, that might otherwise interfere with the action of the wires. We cannot conclude, however, without observing, that although we conceive even this invention to be still far from the *beau ideal* of electro-telegraphic perfection, *that* may be a consummation destined never to be any thing else than *ideal*, while there certainly now appears to be a prospect of a speedy realization of something like practical benefits to the public in general and the railway system in particular, which latter it is full time that this foster-child, so long and so deeply indebted to its parent, should bethink itself of now repaying.

## THE PRESENT STATE OF ARCHITECTURE.*

In the architectural works of the nineteenth century nearly all known styles from the first beginnings of art are exhibited, the classic and Gothic as well as the revived antique and rococo. These forms are conjured, like spirits of times of old, to give account of our present architectural questions; but one vanishes after the other without a distinct answer.

Such shapes of former times, we must acknowledge, in numerous imitations, rather show that they are not master of the magic key to free the spirit of his charm, that it will perhaps be the work of our own time's genius to find the word by which, dispersing the apparitions of the past, he will in his productions, as in a magic mirror, make appear his true character, clearness, and truth.

There is no absolute beauty or sublimity in any style of architecture, nor will it ever be. Neither the Greek style is absolutely beautiful nor the Gothic, though many admirers of it lately gave vent to that opinion. In themselves both are perfect, because each of them completely expresses the character of the time by which it was created. They both are relatively beautiful and sublime, but this must also be said of every other style that gives a true picture of the genius animating its very period.

Thus some ancient languages are of so indisputable a perfection, that their knowledge is justly considered even till now as indispensable for the accomplishment of a learned man. The philologist may enjoy the delight of tracing the spirit of such a language, may be charmed with contemplating its beauties; yield to his enthusiasm in praising their preferences, but never will he think of forcing a nation who has a confidence in its own intellectual powers to give up its original language for a foreign one. During many centuries the Germans were to hear their masses in Latin, but, as unknown strangers, the Latin words resounded in their ears, and the desire to worship in their own tongue grew, so that at no time the faithful called more loudly for the use of it than even now.

So totally impossible it is to recall into life a dead language, whose forms, being the expression of another time, and not immediately congruent to the ideas of the present, must be either altered into a heterogeneous shape or lack precision by circumlocutions, in the same manner it must be impossible to perform the architectural tasks of our own day with the architectural means serving the purposes of another time. The artist attempting this will be obliged either to sacrifice the fitness of the internal disposition to the external forms he is necessitated to choose, or to disfigure them by

* From *Sieben Bücher Vorvenetianischen Baustyls*: Von F. W. Horn, Architekten. Potsdam, 1837.

an unnatural modification. The productions of both these methods will be monstrous, and will never be considered as works of an elegant art.

We are convinced it is as much indispensable to the young artist to study the former styles of his art as it is necessary for the learned man to study the ancient languages, and surely the experienced artist's delight in admiring the excellencies of ancient art may be greater than that of the most learned philologer diving into the treasures of the ancient languages. Yet the form in itself will never instruct the young artist or delight the master, but only its harmony with the idea from whence it sprung.

And because the genius of our time is quite different from that of former ages, it is impossible it can be expressed in ancient forms without giving discords instead of harmony.

Granted that nearly all gave up the erroneous idea to re-establish one of the former styles in our time, yet many will be found embracing the no less error of maintaining, that not a single style alone should be used everywhere in the works of our architecture, but that we must keep close to the most accomplished forms of all styles, and for every building choose the pattern most convenient to its intended character. So, for instance, for a theatre the Greek, or lately the rococo style, for a church the Gothic, for a palace the Florentine or Venetian, for a sepulchre the ancient Dorien or Egyptian style.

But should it not be very curious to use in different dispositions of mind alternately different languages? Or what should be thought of a poet who supposing it needful would compose a hymn in Hebrew, a lay in German, a sonnet in Italian, a romance in Spanish, and an ode in Latin?

Just the same would it be with an architect presuming every style to have a right of being naturalised in every country and nation, he having the choice of style only dependent upon the destination of the building, confining every style to a sort of buildings, and fancying that no right exists to use it beyond these limits, not able, perhaps, to find a higher sense in the idea of style than in the difference of the regimentals of an army according to the kind of service to which the soldiers belong.

But those labour under still greater a mistake who, in choosing the style for their buildings, are led either by their own fancy or by that of another or by chance, who do not care at all whether the peculiar destination of the building be in harmony with the general character of the style they are about to choose or no, provided their buildings have an imposing exterior, though serving even very vulgar purposes. But let the first impression of a profane building be masked with as grand an architecture as it will, the allusion will as soon vanish as we are informed of the real destination of the building, and the remaining effect will then be no other than the constant remembrance of the fable which shews us—the ass in the lion's skin.

To find illusion where it is intended, for instance, on the stage, may give delight; but to meet with it in real life affects us with displeasure or pity, or seems, at least, ridiculous. If in a masquerade the water-carrier makes his appearance as a sultan, the lime-burner or miller's man as a well armoured knight, they are in their right, and nobody will dispute this right for the time of its validity, that is, for a night. But at sunrising all is changed, and woe to the nightly roamer who is obliged to pass the market in such borrowed finery.

Passing over the opposite extreme of exhibiting all sorts of flat, insipid forms of no style at all, even in the most important edifices, as too far from the proper sphere of the true elegant art, we are lastly to mention that false method of modern architecture, whose works make their appearance, as it were, in the motley dress of a fool, botched with patches of all possible styles. In this proceeding may be acknowledged the want of constant principles of our modern architecture in its oddest shape. This arbitrary use and mixture of the most different architectonic forms is the utmost point to which modern architecture in its aberration has been able to arrive.

He to whom architecture is nothing but an arbitrary play with forms, never understood its real essence. Architecture is a language which speaks in the most powerful style from one generation to another, and bears witness of the genius who animated the different succeeding generations, a language the fragmentary lines, even single letters, of which loudly and clearly speak, when long ago the authors are forgotten, and even history scarcely retains their names. Thus we still acknowledge the genius of ancient Greece in the ruins of the Acropolis of Athens. The vast ruins of Thebes reflect the colour of Egyptian life, as well as you may trace the character of the former Hindoos in the rock temples of the Ghat mountains. Thus the Pyramids of Memphis project the uniform shadows of the remotest time into the vicissitudes of our own days.

Will the ruins of our own architecture be able to represent the character of our time, the efforts of its genius? Or, are we merely eclectic and imitators? as the recent best works seem to prove; or is our architecture so mean, that it wants mask and disguise, as in many deplorable buildings of the day? or is our method so inconsistent and desultory, as to delight only in irregular combinations of the fragments of a past glory?

This question has already been answered not only by architects and critics, but even by those who are less initiated into the essence of our art; it has been answered by the general desire of a peculiar style of architecture, which, conforming to the demands of construction as well as of taste, should perfectly satisfy the wants of our present time.

It is, indeed, maintained by some, that the complete system of the really beautiful in architecture has already been produced by its former periods, and that, therefore, nobody could find out any principle of a new style. But we are convinced that art will be eternally young and new, as well as the genius of whom she springs?

## STATE OF THE SEWERS.

### LONG ACRE.

During the inquest, last Monday, on the body of a labourer who was killed (on going into the closet) by inhaling bad air from the drain of a house in Langley-court, Long-acre, caused by vitriol being poured into a defective and foul drain, it was proved, that the mouth of the drain leading into an old sewer, built about twenty-four years ago, was nearly choked up. The soil was 3 feet 3 inches in depth at that end of the sewer, and 1 foot 8 inches in Hart-street, and the accumulation was evidently caused by the improper construction of the sewer, which was flat bottomed.

The surveyor of pavements proved that there was no cesspool (the drain itself, let us remark, had become a cesspool); cesspools now were destroyed as nuisances, but forty years ago they would not allow you to have a drain without a cesspool.

Mr. Le Breton said that he attended not only as one of the commissioners of Sewers, but as solicitor for the parish in which this lamentable event had occurred, rather to watch the proceedings than to take any part in them. At the same time, he begged to say both the commissioners and the parish authorities were anxious to remedy any grievance that might exist and which came within their cognizance. The inhabitants of Long-Acre were without a sewer. The commissioners had for many years past been endeavouring to have a sewer constructed, but till last year they had no power to enforce the construction of one. The Mercers' Company were the principal proprietors of the property in the street, and several plans had been submitted them for building a sewer, which would have been attended with a trifling expense, but they had not done it. The Act of last session gave the commissioners power to erect sewers where necessary, and to charge the proprietors of the property with the cost. This power the commissioners now intended to act upon.

*** We have received a contradiction to the remarks on the Westminster Commission of Sewers, which formed our leading article of July 24th; but as it is anonymous, and is simply assertion, we decline inserting it. If the writer will affix his name, it shall appear. To prove the truth of our statements, we need do little more than cite the evidence which was given at the above-named inquest.

## MR. VERNON'S GIFT TO THE NATION.

The rumour which has prevailed for some time, that Mr. Vernon intended to present his fine collection of pictures to the nation, is now a certainty, that gentleman having placed it at the *immediate* disposal of the trustees of the National Gallery. For this noble act the public is most deeply indebted to Mr. Vernon, and it is to be hoped that some public acknowledgment of it will be made. Consisting for the most part of modern works, this collection will form the nucleus of a *really* national gallery of British art, which the trustees will now feel compelled to increase. Fear of the imputation of favouritism and jobbing has hitherto prevented the trustees from purchasing modern works; but this must be overcome. One other advantage likely to result from this important gift is an early alteration at the National Gallery. Its enlargement has been commenced; but it seems clear either that a fresh building for the national collection must be found, sufficiently large to encourage constant donations, or that the Royal Academy must be provided for elsewhere with the same end in view. Our opinions as to the necessity of this have been long ago expressed.

## THE BATALHA.

This celebrated monastery, made familiar to many of our readers by Murphy's work, has been visited recently by a correspondent of the *Athenæum*, from whose account we take the following notes:—

"The Monastery of the Batalha was founded by King John the First, about the year 1386. It is very large and lofty—in the florid or decorated Gothic. The details are fine, but in many respects different from those in English-decorated Gothic. The square abacus to the capitals of the shafts are common,—and many other details which with us belong to a much earlier period. The exterior of the church seems richer in detail than its interior. As the roofs are nearly flat, there are no gable ends; and a richly foliated parapet, with a cresting on the top, goes all round. There are no timber roofs. Those near the nave and transepts are formed by large slabs of marble—or of a hard stonelike marble—of waved form section; which lap over each other somewhat in the manner of our house tiles, and so form a secure and fire-proof roof that rests immediately on the vaulting beneath. The roofs of the aisles are covered with flat paving stones. As there are no sloping roofs over the aisles, there is no triforium gallery, which forms so beautiful a feature in the northern cathedrals. The clerestory windows are immediately over the arches which separate the nave from the aisles; and these arches, with the aisles, are considerably higher in proportion than is usual in our churches. I mention these particulars because I believe Murphy in his work endeavours to shew that this abbey was the design of an English architect; a statement which the Conte de Raczynski, in his work entitled *Les Arts en Portugal*, controverts by extracts from Portuguese critics and from the archives.

The interior of the church is fine, simple in its details, and very lofty. Near the entrance at the west end on the south side is the superb mausoleum of King John I. of Portugal and his wife Phillipa, the daughter of John of Lancaster. The plan of the mausoleum is a square, in the midst of which are eight clustered or shafted piers supporting an octangular lantern with a vaulted roof. The eight arches are beautiful in their proportions, and foliated richly at their edges. A noble monument, on which lie the effigies of the king and queen, occupies the centre of the mausoleum.

There are two spacious squares of cloisters belonging to this monastery. Those furthest from the church are simple and quaint in their style—of the same date as the church. The grand quadrangle of cloisters with the chapter-house is very rich, and appears to have been completed at a later period. I suppose that no cloisters in Europe can equal these in extent and magnificence. The vaulting is simple, though sufficiently ornamented. It is in the windows or open arcades which separate the cloisters from the green sward in the quadrangle that the architect has chiefly shewn his invention. The shafts supporting the tracery are fluted spirally, with various ornament. The

tracery, which varies in different arches, resembles the interweaving of branches and leaves with sometimes pomegranates and flowers. The style is not strictly pure; but the fancy displayed and beauty of execution make ample amends for the offence against architectural rule. In one corner of the cloisters a rich chapel of open tracery work projects into the quadrangle, and covers a carved marble fountain three stages in height. On the east side of the cloister is the chapter-house, a noble apartment, said in the 'Modern Traveller' to be 64 feet square. It is vaulted, but without any central pillar, the vaulting resting entirely upon the side walls. At the east end of the great church is the unfinished mausoleum, begun by King Emanuel in the 15th century. Seven out of the eight main arches, which were intended to support the lantern and vaulting of the centre space, open into polygonal chapels, all richly vaulted; the eighth is the entrance, and is perhaps the richest piece of masonry in existence. Different planes of tracery, one over the other, with rich mouldings and carvings of figures and foliage in the utmost profusion, decorate it. The execution of the ornaments (all in stone, almost equal to marble) is perfect. The architectural style is Gothic, mixed with Italian; and the mixture in this instance is most strange and picturesque. It is said that King Emanuel left this noble design unfinished (in the year 1513) for the purpose of building the monastery of Belem, near Lisbon, which is in the same style, but very inferior both in plan and execution. I need not describe the immense kitchen. This, with the granaries and the vaults for wine and oil attached to the monastery, are now all useless lumber rooms. Yet some care seems to be taken of the building by the government, as several masons were about doing various repairs, and the broken windows have been lately mended."

## New Books.

*Architectural Sketches on the Continent*, Drawn and etched by GEORGE TRUEFITT, Architect. Masters, Aldersgate-st.: Wallis, Exeter. 1847.

The author of this volume says, with truth, that "the examples of architecture on the continent have been illustrated but little in comparison with their number, their beauty, or their interesting peculiarities. The principal cathedrals and public buildings are well known, but the villages and by-ways are, as were those of England till recently, seldom visited by archæological students." The sketches which he has here given, accurately made and cleverly etched by himself, include several very curious spires (mostly covered with slate), several specimens of ancient ironwork, some graveyard crosses, bench ends, and examples of glazing, all very suggestive, and likely to be useful in actual practice. Mr. Truefitt, as a draughtsman, is not unknown to our readers; and the elegant little work now before us will serve to increase his reputation. Some letterpress, giving the dates, or approximate dates, of the examples, would greatly add to the value of the volume.

LOOK TO YOUR COIN DEPOSITS.—Another proof has of late been accidentally adduced that the imposing ceremonial of the laying of foundation-stones along with legacies to posterity in the shape of sterling coins of the realm, and medals of 'immortal' men, is one that will be much less likely to turn out, in the eyes of posterity, an evidence of the taste, the glory, or the riches of the present generation, than of its light but 'dirty-fingered' thievishness and poverty, as well as error. The first stone of the Manchester Exchange was laid about 40 years ago, or upwards, with the usual display; and a 'marble vase,' with coins and medals, was inclosed, as "a treat to the curious, when time shall bring these seeds of antiquity to the view of unborn antiquarians." This very stone was lately uncovered, and what, think our readers, then displayed itself to the view of the "unborn antiquarians," as "a treat to the curious?" A coinless porcelain white-biscuit vase, with its virgin purity tarnished by the trail of dirty fingers *O tempora! O mores!*

## Miscellanea.

ART-UNION OF LONDON EXHIBITION.—The works of art selected by the prize-holders of last year, and now exhibiting to the subscribers and their friends in the Suffolk-street Gallery, form an exceedingly interesting collection. Besides Herbert's picture, "Christ subject to his parents at Nazareth," Allen's landscape, "the Vale of Clywd," Elmore's "Invention of the Stocking Loom," Haghe's marvellous work, "the Meeting-room of the Brewers' Corporation at Antwerp," and many other paintings, by Cooper, Hurlstone, Lee, Redgrave, Witherington, Cope, Hart, Pickersgill, Pyne, Hook, Marshall, Holland, Fripp, Copley Fielding, Duncan, Gastineau, Nesfield, Bentley, Corbould, &c., which every one saw at the various exhibitions whence they were selected, many of great excellence are now made visible by good hanging for the first time. The exhibition is deprived of one fine picture, Lauder's "Wisdom," selected from the collection in Westminster Hall, as it may not yet be removed. Mr. Selous's prize painting is, of course, a chief point of attraction. The comparative difficulty with which purchases are made at the Royal Academy Exhibition has led to the expenditure of a much smaller sum there than would otherwise have been the case.*

LECTURES AT THE SCHOOL OF DESIGN.—Sir,—It is to be hoped, when the Board of Trade shall take into consideration the recommendations of the Council of the School of Design, that they will further recommend or order, that, when the lectures shall be established, the public, *or at least, former pupils*, shall, upon the payment of a certain fee, be admitted to the courses; for you must be well aware that there are many in this metropolis who are already sufficiently practised in mere drawing and cannot afford the time to attend the school, but would gladly avail themselves of the opportunity of attending any lectures where the true principles of the various styles of ornament would be ably treated and fully illustrated. Without some arrangement of this description, it would, by shutting out the older men, give the younger ones an unfair advantage over them, and thereby, for a time, defeat the objects of the establishment; whereas, the older ones might bring the improvement they might gain from those lectures at once into use, from their being already in employment, whilst the younger ones will have to *seek an opportunity* for bringing their improved knowledge and taste into use. The zeal with which you advocate the advance of knowledge has induced me thus to trouble you. J. B.

STATUE OF HUSKISSON.—The statue of this eminent statesman has at length found a resting-place. Workmen are now employed in digging the foundation for the monument on the area at the north side of the Custom-house, immediately opposite South Castle-street, Liverpool. The statue, we believe, is a metal cast of the marble one by Gibson. The figure, which is 9 feet 6 inches high, will stand upon a base and pedestal composed of granite, 9 feet high.

CONGRESS OF ARCHITECTS.—A meeting of the architects of Germany will take place at Mayence from the 26th to the 29th of the present month; at which, according to the *Athenæum*, M. de Lassaulx, the able state architect of Coblentz, will bring forward a new series of models illustrative of the construction of roof-vaulting—a science wherein he is thought by some more eminently learned than any other architect in Europe.

* The *Morning Post*, with a truer appreciation of the views of the Art Union committee than has been exhibited elsewhere, says, "The founders of the Art-Union deserve more than a mere tacit approval. They are quietly doing that which we are of opinion royal commissions will never effect. They are instructing artists *by teaching the public*, and the benefits which have resulted from this course are too well marked to allow the ultimate consequence to be questioned. The taste of the nation is being elevated, and the interests of art are being thereby exalted. Every person who pays a guinea to the general fund does so in expectation of obtaining a prize of some amount. The simple probability that the next year may place hundreds of pounds at the disposal of an individual creates a desire to know something concerning the articles upon which the money is to be expended. There may at first be no more than a desire to know the market value of different pictures; but, labouring to comprehend the pecuniary worth, the mind cannot fail to be awakened to the artistic excellence by which the price is regulated. To be able to name the one, it is imperative the other should be recognised; and, therefore, admitting that the majority of people join the Art-Union only in the expectation of profit, we nevertheless would contend that the intention of the founders is, in the end, equally certain of being attained." "They who by their energy and disinterestedness started and established this society may now point to the result, and from it deduce more than an answer to all the objections which have been advanced against Art-Unions."

PROJECTED WORKS, &c.—Tenders have been called for by advertisement, for the execution of works to be done in the erection of a church, fence-walling, and palisading, at Sheffield General Cemetery; the removal of a stone bridge, and the erection of an iron one, near Yarmouth; the widening of Bath bridge; the alteration of the Bar-gate station-house, Southampton, and conversion of an adjoining tenement into cells, &c.; Mason's and Pavier's works at Tothill-fields foot-ways and carriage-ways, for one year; drainage and other works at Whitechapel union workhouse; work to be done at Camden Grove, Kensington (payment by carcass in exchange); making various sewers at Cambridge; also for the supply of two cylindrical wrought-iron boilers at Leicester-square; of sleepers for the Shrewsbury and Birmingham and Shropshire Union railways; and of iron, &c. for the East-India House.

TO OBTAIN HEIGHTS WHICH CANNOT BE MEASURED.—In reply to an inquirer, who asks how he can obtain the height of a tower without measuring it:—Take any two rods of unequal length, place the short rod at any convenient distance from the building, and the long rod at such a distance from it, that looking over the short rod to the top of the building, the top of the long rod shall cut that sight. Then say, as the distance between the rods is to the height of the long rod over the short one, so is the distance of the long rod from the building to the height of the building, to which result add the short rod, and you have the height of the building.

THE GRAVEYARD QUESTION.—Mr. G. A. Walker delivered his fourth lecture on this subject at the Mechanics' Institution, on the 13th inst., and brought forward a fresh budget of irrefragable facts.

BUILDERS' BENEVOLENT INSTITUTION.—We have much pleasure in stating that this charity progresses in a most favourable way. A large list of supporters has been obtained.

## TO CORRESPONDENTS.

"*S. H. D.*"—The evidence has not been received.

"*Along-shore Man.*"—We will look in at Stepney Church.

"*Constant Subscriber*" has no legal remedy.

"*W. J. H.*"—Power of district surveyor to recover from "D." would depend on some circumstances. We should think he could not.

"*Short Time Movement.*"—We have received the names of various firms who have yielded to the request of the operatives, but think it unnecessary to print them. In reply to inquiries, the assent appears to be but partial.

"*Professional Church Movement.*" We do not know where subscriptions can be paid in London.

"*J. B. Z.*"—The supplement to Parker's "Glossary" contains some head-dresses of various periods. Planché's or Fairholt's work on costume might be usefully consulted.

"*G. S.*" will see that his communication was *apropos*.

"*G. J.*"—Apply to the clerk of the company.

*Received*.—"Ventilation of Drains." "A. B." "J. G." "C. T." "S. N." (Pimlico). "An Observer." "R. W." "Anti-Quack." "Lover of fresh Air." "Heavy-the-lord."

*Books*.—"The History and Pedigree of the Portrait of Prince Charles, painted by Velasquez." Reading, John Mare. London, 21, Old Bond-street.) "Liverpool Guardian Gas Bill; Minutes of Evidence."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.

COLLINS'S ODE on the PASSIONS will be recited by Mr. J. RUSSELL, with Illustrations in a Series of DRAWINGS originated by means of the ORACULAR CROSCOPE, accompanied by Music by Dr. Wallis, on the Mornings of Tuesday, Thursday, and Saturday, and on the Evenings of Tuesday and Thursday. Dr. Bachhoffner's LECTURES on NATURAL PHILOSOPHY will comprise the Subject of the ELECTRIC TELEGRAPHS, &c. CHEMICAL LECTURES by F. H. Holmes, Esq., on the Evenings of Monday, Wednesday, and Friday. The beautiful OPTICAL EFFECTS include the last DISSOLVING VIEWS. DIVING BELL and DIVER, with EXPERIMENTS, &c. &c.—Admission, 1s.; Schools, Half-price.

BARROWS.—TO BE SOLD, a Great Bargain, 150 to 200 Excavators' Barrows, of Best Quality.—Persons in want of such will find this highly advantageous, as they may be bought at a great reduction, their room being wanted for other purposes.—Apply at Ellis' Manufactory, New-road, St Pancras.

LADDERS, BARROWS, &c

G. ELL respectfully invites the Attention of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Tressels, Steps, &c. he has constantly on hand, at a very low scale of Prices; and is now selling Excavators' Barrows, of ash frames and elm tops, as low as 12s. by a quantity being taken; and the best make of stout ash frames, stays to 1, 5, inch elm top, largest size, as low as 15s. for cash; Ladders commenced at 1d. per round. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3, and 6, Tottenham-court, New-road, St. Pancras, opposite Hampstead road.

GREASE! GREASE! GREASE!—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest rates. A large stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

**MR. THOMAS S. BOYS, Member of the** New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield street, Oxford-street.

TO BUILDERS, MASONS, AND OTHERS.

**FOR SALE, 50,000 feet sup. of New Com-**mon-tooled York Paving, at 44s. per 100 feet sup., on the Wharf, or delivered within three miles at 46s. per 100 feet; also a quantity of [illegible] Paving at [illegible] per 100 feet. Terms, Cash on Delivery. PRATT and SEWELL, Albert Wharf, New Wharf Road, Battle Bridge.

**MOSAIC PAVEMENTS. — SINGER'S** PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall bridge, Surrey side.

**GRANITE FOOT PAVING.—1,000 Feet** of this material, of a very superior quality, TO BE SOLD on reasonable terms. Apply to RICHARD WARNER, Agent for the Quarry, Cotton's and Depot Wharf, Tooley street. Curb of usual dimensions, 12 inches by 6, 12 by 8, &c. Cubes, Half Sovereigns, 6 inch, &c. Blocks of any size for building purposes.

Broken granite and other hard stone for roads.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above price, and the work guaranteed. Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 1, WHARF-ROAD, CITY ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

TO BUILDERS AND MASONS.

**ALFRED BAKER, Stone Merchant, 33,** Pratt-street, King's-road, Camden Town, opposite the Star Coal Wharf, begs to inform builders and others that he is selling Nailsworth, Painswick, and the same stone as is called the Walls Quarry, at the same prices as at Paddington. Inch slab, 4½d. per foot. Builders supplied with chimney-pieces cheaper than any other house in London.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Archi-**tects and others, that GOTHIC WINDOWS, and every other branch of stone work, &c., are executed at the cheapest possible rate, and [illegible] for the country ready for fixing, [illegible] enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in [illegible].

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful [illegible], in addition to the usual extensive stock of Chimney-pieces and FONTS.

[illegible] for building generally.

**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has [illegible] Palace, the drawing rooms at [illegible] House, Stafford House, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is [illegible] used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable and less liable to chip at the edges, than [illegible] such as black and gold, sienna, [illegible] jet black, &c. are not more than one-third [illegible]. Among the articles manufactured at the [illegible] Works are chimney pieces, consoles, billiard and table tops of all designs, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate work in general executed on [illegible] terms. Welsh slate slabs, of the finest description [illegible] price. N.B. The trade supplied with whole cargoes, sawn [illegible], or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

**WORCESTER ENCAUSTIC TILES.—** Specimens of these Tiles in great variety, both glazed and unglazed, [illegible] information obtained at the [illegible] Messrs. GREIVE and GRELLIER, Marble Wharf, [illegible] Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The [illegible] very much reduced since March last. [illegible] or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

**PATENT ARCHITECTURAL TILES,** for covering Churches, Schools, Ornamental Villas, Railway [illegible] &c. Architects, Builders, and others may now be supplied with the approved Roofing Tiles, which for security, effect, and economy, surpass every other kind of roofing; they form a covering equally light as slate, and the cost but little exceeds that [illegible]. They can be had in blue and other [illegible] and particulars apply to Mr. S. G. HUGHES, Secretary to the Architectural Tile Company, at their [illegible].

TO BRICK AND TILE MAKERS.

**PERSONS disposed to Manufacture the** [illegible] Architectural Roofing Tiles either on their own account, or for the Company, to be delivered in London or in the [illegible] Counties, are requested to communicate with Mr. S. G. HUGHES, [illegible] the Company, at their offices, 1[illegible], Strand, London, of whom Particulars and Machines for pressing [illegible].

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY. James Smith, Esq., of Deanston, [illegible] attention to their IMPROVED BRICK and TILE MACHINES [illegible] at work at Alperton, and at the Company's office, 193 A. Piccadilly, from 10 A.M. to 5 P.M. [illegible] appointed manager in the [illegible] Mr. [illegible] the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution [illegible] WILLIAM [illegible] of the [illegible] March 1847.

[illegible] at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Millhill, Leeds; Messrs. PENNY and FINCH, [illegible]ridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assort-**ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

**ALFRED ROSLING begs to inform the** Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship. Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground street, Blackfriars.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

**TO ARCHITECTS, Ship Joiners, Cabinet** Makers, &c., requiring FINE WOOD.—SELLING OFF, at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany yard, in Little Windmill street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 30,000 feet wainscot planks, running from 1½ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

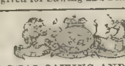
MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, despatch and economy of material are so certainly obtained. In shooting, or groving and tonguing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

**SIR W. BURNETT'S PATENT for pre-**venting the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dock yards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

Licenses granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 53, King William-Street, London-bridge.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood), known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, an essential importance for floor-boards, doors, shutters and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

**CEMENT AND PLASTER ORNA-**MENT WORKS, 42, Parker-street, Drury-lane.—TO THE BUILDING PUBLIC.—First-rate Ornaments in Roman and other Cements, and Plaster of Paris, at reasonable prices, consisting of Vases, Ballusters, perforated Panellings, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Gothic and other Chimney-shafts, Soffits, Bead-moulds, Pateras, &c. &c. 36-inch Centre Flowers fixed complete, 24s. each, smaller in proportion. An assortment of Shop-front Trusses always ready for fixing. JOHN HERBERT and SON, Modellers, &c., 42, Parker street, Drury-lane.

TO ARCHITECTS, BUILDERS, PLASTERERS, AND OTHERS.

**W. HUGHES and Co., Ornamental Plas-**terers, Modellers, &c., are enabled to supply at very reasonable prices, all kinds of Cement and Plaster Ornaments for Architectural purposes, they having a large quantity of moulds and patterns, consisting of Trusses for Shop Fronts, Cantilevers, Capitals for Columns and Pilasters, a variety of Animal and other Figures, Fountains, Vases, &c. for Gardens or Pleasure grounds; Balustrading for Terraces, &c.; a variety of Centre Flowers, Soffits, Beadmoulds, &c., [illegible] Models executed with strict attention to drawings.

Workshops at No. 1, Brewer-street North, near Saddler's Wells, St. John-street-road, Clerkenwell, where specimens can be seen. Dwelling removed to 116, Goswell-road.

N.B. First rate Plasterers may be obtained for town or country by applying as above.

DRUCE'S, No. 2 WHARF late Paradise-wharf, Chelsea.

**TO THE TRADE.—Parties desirous of** delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and draw-dock. N.B. Depôt for Glass Pantiles.

**LIME AND CEMENT WHARFS. —** Grey-stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney-pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials, may be obtained on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland-road. Ground Lime for Concrete.

TO BUILDERS, CONTRACTORS, &c.

**GREY STONE LIME of the best quality** will be delivered alongside any wharf in London at 7s. per yard of thirteen baskets.—Parties can be accommodated with a moiety of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**ATKINSON'S CEMENT. — WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**BATHSIDE CEMENT WORKS, estab-**lished to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts:—Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

**PORTLAND CEMENT is the only Cement** for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON having completed exten-**sive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL-WALL, POPLAR, enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION. —Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

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THE Advertiser, who has been in two of the first London Offices, and has had considerable experience in the management of Estates, is desirous of a SITUATION as CLERK. He is fully acquainted with the usual routine of an Architect's Office, is a good draughtsman, and is perfectly competent to make out working drawings. Address to F. C., 8, Grove-hill Terrace, Camberwell Grove.

TO ARCHITECTS, BUILDERS, CONTRACTORS, AND OTHERS.

THE Advertiser, a Surveyor, 32 Years of Age, is desirous of forming an ENGAGEMENT with either of the above, as SURVEYOR, or CLERK of WORKS; he has a thorough practical knowledge of his Profession, is a tolerable Draughtsman, and in every respect well qualified to give satisfaction to those requiring his services; he has had good Practice as regards Repairs and Alterations of Old Buildings. No objection to go Abroad.—Address to E. L., Attwood's Library, 30 Great Castle-street, Regent-street.

AS FOREMAN, or Principle Clerk to a House Decorator, Plumber, Painter, Upholder, or as CLERK, BOOK-KEEPER, COLLECTOR, or TRAVELLER to any similar Business, a respectable experienced Person, of superior address and active business habits, in every way fully competent to discharge the duties of the above engagements in the most efficient manner.—Address X. Y. Z., No. 4, Union terrace, Notting-hill.

A GENTLEMAN of considerable experience, who is practically acquainted with each branch of the Building Trade, and has for years had the superintending extensive works, is open to an ENGAGEMENT in or near town. Any Architect requiring extensive works carried out in a superior manner, will find this worthy an attention. Would have no objection to undertake the superintendence of a line of railway stations, &c.—Address J. B., 5, Wells-street, Gray's-inn-road.

TO BUILDERS, &c.

EVENING or Afternoon Employment Wanted, daily or occasional, at 6d. per hour, by an experienced and practical Young Man, who is a superior Penman, Bookkeeper, bringing up any accounts in arrears, &c., makeup accounts, measuring up works, estimating, specifying, and plans for alterations in the general routine of a builder's office. Satisfactory testimonials.—Address, J. C., 7, Fulham place, Paddington Green.

ART UNION of LONDON.—EVENING EXHIBITION. The Works of Art selected by the Prizeholders of the Year 1847, now Exhibiting at the GALLERY of the SOCIETY of BRITISH ARTISTS, Suffolk-street, Pall-mall East, will be open from Seven till Ten o'clock in the Evenings of the 31st of August, and 1st, 2nd, 3rd, 4th, 5th, and 10th of September.—Admission by Tickets only

GEORGE GODWIN, } Hon. Secs.
28th August, 1847. LEWIS POCOCK, }

CIVIL ENGINEERING.—The Session for the Department of CIVIL ENGINEERING, Architecture, and Machinery, will commence on WEDNESDAY, 13th October. This department consists of the following classes:—

Mathematics—Professor De Morgan
Natural Philosophy—Professor Porter, A.M.
Chemistry—Professor Graham.
Practical Chemistry—Professor Fownes.
Civil Engineering—Professor Hartman Lewis, A.M.
Mechanical Principles of Engineering—Professor Eaton Hodgkinson.
Machinery—Professor Bennet Woodcroft.
Architecture and Construction—Professor Donaldson, M.I.B.A.
Geology—Professor Ramsay, F.G.S.
Drawing—Teacher, Mr. G. H. Meure.

Prospectuses and further particulars may be obtained at the office of the College.

FRANCIS NEWMAN, Dean of Faculty of Arts and Laws.
CHARLES C. ATKINSON, Secretary to the Council.
University College, London, August 19th, 1847.

PUBLICATION.

Now Ready.

REMARKS on CHRISTIAN GRAVE-STONES, with Twenty Working Drawings.
By the Rev. ECCLES J. CARTER, M.A., of Exeter College, Oxford, Minor Canon of Peterborough Cathedral.
Demy 8vo., price 3s. 6d.
London: J. MASTERS, Aldergate-street.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the aid of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being with all metal hinges, consequently cannot warp, twist, or become out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex lath, if required. The worm and wheel motion for raising and lowering revolving iron shutters, as secured by this Patent, is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adapted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with the convex laths.

B. and C. also manufacture the REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c. IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plate or Ornamental, handsomely Lacquered, Moulded, Sash-bar, Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 23, Lamb's-conduit-street, London; Works, at Dartford, Kent.

Specifications, Sawing, Planing, and Moulding, Cutting-machines on Improved Plan, especially adapted for Builders' purposes, may be seen in operation at the Works.


### CONTRACTS.

OFFICE OF ORDNANCE, 23rd Aug. 1847.
TO BUILDERS.

TENDERS will be received by the Honourable Board of Ordnance, at their Office, Pall Mall, London, on MONDAY, the 6th day of September, 1847, from such persons as may be willing to undertake the erection of the SEVERAL BUILDINGS, &c. required for the LABORATORY ESTABLISHMENT, at Priddy's Hard, near Gosport. Plans, Specifications, and Conditions of the Contract may be seen, and every information obtained, on application at the ROYAL ENGINEER'S OFFICE, Hill Head, Fareham, between the hours of Ten and Four, each day, Sundays excepted. Tenders to be sealed up, and endorsed on the outside, "Tender for the erection of the New Laboratory Establishment, Priddy's Hard."—By order of the Board.

R. BYHAM, Secretary.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.
Court of Sewers, Tower Hamlets.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets, (excluding St. Katherine's and Blackwall Marsh,) at their meeting to be held on Wednesday, the 8th day of September next, at two o'clock in the afternoon precisely, at the office of Sewers, No. 13, Great Alie-street, Goodman's fields, will be ready to receive TENDERS sealed up from any persons or person willing to enter into contract for the works necessary in EXTENDING THE SEWER in Cambridge road, and 3, Colt-lane, Bethnal green, being a length of 1,030 feet, and in arching over the sewer at the back of Sidney-street, and Pelham-street, Mile-end New Town, being a length of 2,045 feet, and at the back of Stepney-green, being a length of 850 feet. Plans and Specifications of the said several works, with the forms of tender, may be inspected at the Office of Sewers daily, between the hours of eleven and three o'clock; separate Tenders and separate Contracts will be required for each of the said several works respectively. Tenders to be addressed with the name of the sewer contracted for. The Contractors will be required to sign provisional agreements to secure the due execution of the said Contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners: no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon. Dated this 26th day of August, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the lowest tender.

TO PLASTERERS.

PARTIES desirous of Tendering for Inside and Outside Work, including Materials, at Kensington, Payment by a Carcase, may see the Specification and Particulars at Mr. SALMON'S Office, 20, Camplen-grove, Church-lane, Kensington.—Amount of work, about 300*l.*

KINGSLAND, DALSTON, and DE BEAUVOIR TOWN LITERARY AND SCIENTIFIC INSTITUTION.
TO BUILDERS.

THE Committee are desirous of receiving TENDERS for the several works required in COMPLETING AND FINISHING THE BUILDING intended for the purposes of the above Institution, Plans and Specifications of which may be inspected, and may be seen between the hours of Ten and Four at the Office of Mr. JOHN CLARKE CATLING, No. 2, Shilleton road, Dalston. Sealed Tenders to be delivered as soon as convenient, on THURSDAY, the 2nd of September. The Committee do not pledge themselves to accept the lowest or any other Tender not fully approved of.—By order,

ROBERT SIMONS, Secretary.

Aug. 16th, 1847.

GUILDHALL, London, 25th August, 1847.

THE Committee for Letting the Bridge House Estates will meet at Guildhall, on FRIDAY, the 10th day of September next, at One o'clock precisely, to receive TENDERS for LEASES of the following Premises, viz.:—TWO HOUSES, Nos. 8 and 12, in North Buildings, Finsbury-circus, in the City of London; a THREE HOUSE, No. 1, 2, and 3, on the north side of Great Tower-street, Minories, in the City of London; and a HOUSE, No. 16, on the east side of High street, Deptford, in the county of Kent.—Further particulars may be obtained at the Office of Works, Guildhall.

FERDINAND BRAND,
Comptroller of the Bridge House Estates.

GUILDHALL, August 24, 1847.

THE Committee for Letting the City's Lands will meet at Guildhall, on WEDNESDAY, the 8th day of September next, at One o'clock precisely, to receive TENDERS for LETTING, on a Building Lease for Sixty-one Years, from Michaelmas next, a PIECE of GROUND, on the east side of Puddle Dock, on the south side of Upper Thames-street, and on the north side of the River Thames; and also for Letting, on a Building Lease of Sixty-one Years from Michaelmas next, a Piece of Ground, on the north side of Narrow-street, at the corner of Cross street, at Ratcliffe; and also for Letting on Lease, for Twenty-one Years, from Michaelmas next, a House, No. 10, on the north side of Broad-street-buildings.—Further particulars may be obtained and plans seen by applying at the Office of Works, Guildhall.

THOS. SAUNDERS, Comptroller.

LITHOGRAPHY—IMPORTANT TO CONTRACTORS AND BUILDERS

M. COON having discovered a new method of Lithographing Designs and Plans of every description, in about half the usual time, begs to inform Architects and Contractors that they may have plans of contracts lithographed by this method for about the ordinary price of tracings. Estimates for any number of copies will be given on inspection of a plan, &c. All orders, whether in town or country, prompt, attended to.—Lithographic Printing Office, 15, Cheapside.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c.," and of "London as it is," offers his services in the production of Perspective Views, Interiors, &c. From close experience he has had in such subjects, he is fully aware of the requirements necessary to be attended to. Drawings and specimens lithographed in a superior manner.—Address, Mr. BOYS, 11, Great Titchfield street, Oxford street.

TO BRICKMAKERS.

**WANTED, to Purchase, a PUG MILL.** Lowest prices and particulars to be addressed to Mr. HILL, No. 2, Lutterly Buildings, Upton.

**FIRE BRICKS.—WARD & HART,** Hondurus Wharf, Bankside, Manufacturers and Exporters of every size of Fire Bricks, Lumps, Tiles, Clay & Builders, Gas Companies, Engineers, Shipowners, and all large buyers, supplied from ships from the Manufactory direct at the lowest Prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patents Coin for Jarvis' Mill for Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

**A PAIR of well built, full-sized Third-rate VILLAS TO LET,** at a Ground Rent, together or separately, reduce to the eligible part of each house Nos. 1 and 2, Albion-road, Queen's road, Dalston.—Apply to Mr. TURNER, 6, Devonshire Cottages, Green lanes, Stoke Newington.

BUILDING LAND—BRICKS AND MONEY ADVANCED

**GROUND TO LET, for Third-rate Villas,** in pairs and three's, at Islington, fronting the High-road, for Ninety-nine Years. Land-tax Redeemed. Such a class of houses always much required in this improving locality. Apply to Mr TURNER, No. 6, Devonshire-cottages, Green lanes, Stoke Newington.

BUILDING LAND FOR TWENTY-FIVE THIRD-RATE HOUSES

**TO LET, at very moderate Ground Rents,** a very eligible plot of ground for close houses, in Clifton-road, Kentish-town. Also several Lots for detached and semi-detached Villas. The roads and sewers are now finished. Apply on the Premises, Cantelowes, 1, Hamilton-terrace, St John's Wood.

HORNSEY ROAD.

**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country.—For particulars and plans, apply at Messrs. White and POWNALL'S Offices, 7, Bedford row.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c., suitable for a Builder.

**TO BE LET OR SOLD,** in the vicinity of Dorset-square and the Regent's-park, a very excellent Residence with commodious large Premises, Workshops, Sawpits, Sheds, and Yard. The above is well situate, having extensive frontage to a thoroughfare, and is replete with every convenience for carrying on a large business. There is stabling for eight horses, &c. It also possesses other qualifications which render it very desirable for the business of a Builder, Cabinet-maker, Timber Merchant, or Dealer in Wines. For further particulars apply to Mr. WILLIAMS, Auctioneer and Estate Agent, 9, Great College-street, Camden-town, or 20, Regent-street, Westminster.

STEAM SAW MILL.

**FOR SALE, the Steam Engine and Machinery** for a STEAM SAW MILL, complete, consisting of a 10-horse power Steam Engine, by Joseph Nash, Millwall, London, with large patent deals, circular Saw Tables, Shafts, Drums, Bands, Saws, &c.; likewise Two Sets of Three Throw Pumps, with Iron Barrels, any part of which can be separated. Engine and Machinery may be seen at work at MEARS'S Saw Mills, No. 2, Stamford-street, Blackfriars. Apply to Mr. MEARS, Engineer, &c., Forest View, Stoke Newington Causeway.

STANDARD FACTORY, No. 12, Wharf Road, City Road.

**TO BE SOLD by Private Contract,** under Power of Sale, valuable Planing and Moulding Machinery, in full working and good working order. For cards to view apply to Messrs. OVERTON and HUGHES, Solicitors, No. 37, Old Jewry.

TO SMITHS, BELLHANGERS, &c.

**TO BE DISPOSED OF,** with immediate Possession, AN OLD-ESTABLISHED BUSINESS in the Smithery and Bellhanging line, in the Neighbourhood of the City, and with a good Connection. Coming in, for Goodwill, Stock, and Lease, about £—. The Premises consist of a Shop and Dwelling-house, and are capable of considerable improvement for an active Person wishing to commence Business.—Address to M. S., Office of the Builder, No. 2, Catherine-street, Strand.

## SALES BY AUCTION.

FREEHOLD BUILDING LAND.

**MR. W. H. DEAN** will SELL by AUCTION, at the Swan Inn, Stratford, Essex, on Tuesday, September 18th, 1855, at Four for Five o'clock precisely, FOUR FREEHOLD BUILDING SITES, eligibly situate, and well adapted for Shops, Residences, or Warehouses, fronting the Broadway, Stratford, adjoining the Independent Chapel, and are in a short distance of the East India Docks. From the immense and rapidly increasing population of Stratford, and its central locality, a safe investment with the certainty of securing a liberal interest for their capital.—Particulars and Plans may be had at the Inn; of Messrs. HINE and HOLDEN, Solicitors, Abchurch-lane, London; and of the Auctioneer, Stratford.

NEAR KINGSTON, SURREY, at the Twenty Miles-stone. Freehold Ground, in Plots, beautifully situate, most eligible for Villas, Cottages, and Building Purposes.

**MR. MOORE** will SELL by AUCTION, at the Mart, on THURSDAY, September 18, at Twelve, in Lots, the valuable FREEHOLD GROUND, with a frontage of 300 feet to the Kingston-road, and 120 feet to Albert-road, in the occupation of detached and other Cottage Residences; the Ground forming an Orchard, enclosed with a substantial Wall and well stocked with Fruit-trees in full bearing, and two dwelling-houses immediately formed.—Particulars, with Plan, at the Mart; of G. A. FARR, Esq., 1, Princes-street, Spitalfields; Black Horse, opposite the property; George and Dragon, Kingston-hill; and at the Auctioneer's offices, Hill-street, Berkeley-square.

IN BANKRUPTCY.—To Members of Building Societies, Small Capitalists, Builders, Ten Pairs of those desirous to Invest

**MESSRS. BROWN and ROBERTS** will submit for ABSOLUTE SALE, at the Auction Mart, opposite the Bank of England, on THURSDAY, September 20, at Twelve, in Lots, the following valuable FREEHOLD and LEASEHOLD PROPERTIES, comprising THE BERKELEY VILLAS, consisting of Ten Pairs of Semi-detached Villas, and Two Pairs of Detached Villas, situate in the Berkeley-road, Upper Holloway, and Nos. 1 and 2, Berkeley-villas, Seven Sisters'-road, Holloway; also Nos. 1 and 2, Albion-villas, Queen's-road, Dalston. These Properties are well built, and in a healthy and improving neighbourhood, near the metropolis; the whole of the houses are in a forward state, and will be completed previous to the Sale. Plans and particulars may be had at the Mart; of Messrs. WHITE and POWNALL, Solicitors, 7, Bedford-row; at the Auctioneers' offices, 33, Moorgate-street; and at the Auction Mart.

Harbour Road; of P. JOHNSON, Esq., Official Assignee, Basinghall-street; of Messrs. JENKINS and SWEETLAND, Solicitors, 29, Lincoln's-inn-fields; at the Mart; and of Messrs. HENRY BROWN and MATT. A. ROBERTS, Auctioneers, 33, Moorgate-street.

## SALES BY AUCTION.

TO STATUARIES, MASONS, BUILDERS, SCULPTORS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION at the Marble Wharf, near Wood's Bridge, Pelton-road, Lambeth, on TUESDAY, September 18, at Ten for Half-past, by order of the Proprietors, about 150 Tons of Marble, comprising Statuary, Vein, Dove, Black, Bardilla, Black and Gold, and other Marbles in Block, Scantling, and Slab.—May be viewed three days previous, and Catalogues had on Monday and Morning of sale, when catalogues may be had on the Premises, or at 13, Broad-street, Golden-square.—Approved Bills at three months.

MARBLE CHIMNEY-PIECES, MONUMENTS, TABLETS, &c. &c. UNDER A DISSOLUTION OF PARTNERSHIP.

**MR. H. BIERS,** by direction of Messrs. Wills and Son, will SELL by AUCTION, on TUESDAY, the 18th, and following day, at Twelve, on the premises, in NEW ROAD, side, CHAPEL-MAN COURT ROAD, HILLY, very superior CHIMNEY-PIECES in STATUARY, SILVIAN, LIMA, BLACK and GOLD, BARDELLA, and other MARBLES. They are quite new in design and the workmanship and materials of first Quality. Also several MONUMENTS and TABLETS of Classic Design, in Statuary, Vein, and Pedestal.

Mr H. BIERS particularly invites the attention of the Trade to this sale, the chimney-pieces, &c., being of the newest designs, and the workmanship and materials of first character. Approved Bills at three months may be viewed on Monday and morning of sale, when catalogues may be had on the Premises, or at 13, Broad street, Golden-square.—Approved Bills at three months.

TO BUILDERS, RAILWAY CONTRACTORS, AND OTHERS. —Important Sale of Building Materials near ASHFORD Railway Station, KENT

**MR. H. BIERS,** by direction of Mr. Grisell, will SELL by AUCTION, without reserve, on WEDNESDAY, September, the 19th, and following day, the contract being completed, THE WHOLE OF THE EXCELLENT MATERIALS at the Locomotive Works, Ashford Railway Station, Kent, comprising a large quantity of TIMBER, DEALS, BATTENS and PLANKS, IRONMONGERY, BAGS of NAILS, Rod Bar, and Sheet Iron, several TONS of RAILS and CHAIRS, Capitals, Shafting, about Two Thousand SQUARED POLES, BOARDS, PLUGGS, and CORDS, Mortar Boxes, BLOCKS and FALLS, CHAINS, ROPES, HORSES, CART and Harness, Four temporary TURN TABLES, Trucks, Barrows, CRAB and OTHER ENGINES, a Large Quantity of Sleepers, BRICKMAKERS' PLANT, CORN MILLS, PUMPS, BORING and WELL-SINKING Tackle, Plasterers' Lasts, Drain Tiles, GRANITE, and other PAVING; the Erections of SHEDS, SHOPS, COUNTING-HOUSES, and SAW-PITS. Also several Fathoms of FIREWOOD and Scaffold Poles, and when ready, on application, will be sent to any part of the kingdom.—13, Broad-street, Golden-square.—Approved Bills at three months.

FREEHOLD BUILDING GROUND, Haverstock Hill, Hampstead Road, Kentish Town, Land-Tax redeemed, presenting to Capitalists, Builders, and Speculators a most desirable opportunity for Investment, in the creation of Ground-Rents of a first-class character.

**MESSRS. ROBERTS and ROBY** are directed to SELL BY AUCTION, at the Mart, on FRIDAY, August 24th, at Twelve, Seven Acres of excellently valuable Freehold Building Ground, in Forty-two Lots, with frontages to Queen's-head-road, Lower Road, Southampton Road, and Gospel Oak Fields, forming a portion of the valuable Copenhagen Estate, being in Junction Town and Hampstead, within a short distance of the High Street, Camden Town, Hampstead, and Highgate Hills, surrounded by beautiful scenery and within a few minutes' walk of numerous railway stations, including those of the East Counties, Great Northern, and London and North-Western Railways, and will be sold in such lots as will suit the views of Capitalists, Builders, and Speculators. For further particulars see Bills; of Messrs. WOMBWELL and Son, Solicitors, 9, Great College-street, Camden-town; at the Estate Offices, 9, Great College-street, Camden-town, and 20, Regent-street, Westminster; of Messrs. ROBERTS and ROBY, Auctioneers, 33, Moorgate-street; and at the Mart.

TO CABINET MAKERS, BUILDERS, COACH MAKERS, RAILWAY ENGINEERS, AND OTHERS

**FOR SALE BY AUCTION,** on the Premises, 120, Bunhill-row, Chiswell-street, Finsbury-square, on WEDNESDAY and THURSDAY, 5th and 6th, and FRIDAY, 16th Sept. after 12 o'clock precisely, by order of the Proprietors (removing to Baltic Wharf, Lambeth, in order that the premises may be cleared before Michaelmas, the year) the lot.

| | | |
|---|---|---|
| 1 | Feet St. Domingo Mahogany, in Dr. Plank and Board | |
| 30,000 | " Honduras | ditto ditto. |
| 12,000 | " Havana Cedar | ditto. |
| 250,000 | " Wainscot | ditto. |
| 3,000 | " American Ash | ditto |
| 2,000 | " American Black Walnut Tree. | |
| 1,300 | " Quebec Birch Plank. | |
| 212,000 | " 1 inch, 1 inch, and 1¼ inch prepared White and Yellow Flooring Boards (well seasoned | |
| 50 | Loads Mexican and Cuba Logs. | |
| 60 | " Quebec and Baltic Fir Timber. | |
| 500 | Baltic and American Cut Deals. | |
| 1,000 | Spruce Deals. | |
| 3,000 | Baltic Deals. | |
| 1,000 | Red Pine Deals. | |
| 2,000 | Yellow Pine Plank and Battens | |
| 5,000 | Yellow Battens. | |
| 60 | Memel and Petersburg Yellow Planks. | |
| 50 | Norway Balks. | |

Lot 2 Pipe Staves and other goods.

Also the Saws, Screw Jacks, and Utensils in Trade. To be viewed two days previous to and the mornings of Sale. Catalogues may be had on the premises, and of

JOSEPH EDWARDS, Mahogany Broker and Auctioneer, 4, Railway place, Fenchurch-street, London.

TO BUILDERS, MASONS, AND OTHERS.

**FOR SALE,** 50,000 feet sup. of New Commanded York Paving, at 4s per 100 feet sup. on the Wharf, ordered within the month at 4s per 100 feet, also a quantity of Landed Paving at 4s per 10 feet, terms, cash or Bankers' PRATT and SEWELL, Albert Wharf, New Wharf Road, Battle Bridge

**MOSAIC PAVEMENTS. — SINGER'S PATENT,** for Churches, Halls, Conservatories, Verandahs, Paths, &c. This most beautiful and durable of all ornamental Pavements has been lately much improved in cheapness, and reduced in price to a moderate rate for every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall Bridge, Surrey side.

**GRANITE FOOT PAVING.—1,000 Feet** of this material, of a very superior quality, TO BE SOLD on reasonable terms—Apply to the HARD YORK WHARF, Agent for the Quarry, Chowns and Pepper Wharf, Tooley-street. Cost of landed charges, 2s. 2½d. per foot. Kerbs & Gutters, Hollow-gutters, Sinch, &c. Blocks of any size for building purposes.

Broken granite and other hard stone for roads.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above rate, by Steam Power, at the Patented Works, LONDON BILLINGTON PLONCEAUX'S BITUMEN PAVEMENT OFFICE, 13, WHARF ROAD, CITY ROAD.—N.B. Country Agents and Railway Companies supplied with the best bitumen for covering bridges and arches.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone Stock, to the more convenient premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-street, Borough, London.

Orders also received direct from Caen to any part

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

**SAMUEL CUNDY** begs to inform Architects and others, that GOTHIC WINDOWS, and every other Branch of Stonework, &c., are executed at the lowest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other Buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in their yards, blocks, or cuts, sent from the saw, or prepared ready for fixing or fixed, avoiding either waste in the roads or carriage.

Box Chimney-pieces for the Hospitals.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be supplied in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

**THE INDURATED and IMPERVIOUS STONE COMPANY.**—Provisionally Registered.—Capital £40,000, in 8000 Shares of £5 each. Deposit £1 per share, payable on allotment. Preliminary call £1 per share to be made on or before 1st November next. Further calls not to exceed £1 per share, with two months' previous notice. Offices, East Temple Chambers, 2, Whitefriars-street, Fleet-street.

Bankers—Messrs. Strahan, Sir J. D. Paul and Co., Strand.
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J. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

The Builder.

No. CCXXXVIII.

SATURDAY, AUGUST 28, 1847.

THE new front to Buckingham Palace is being proceeded with rapidly under the direction of Mr. E. Blore. In our present number we give a view of the palace as it will appear when completed, seen from the south-east, together with the elevation of the centre part of it on a larger scale, to afford a clearer idea of the details than can be conveyed by the general view.*

Our readers will remember the architect's amusing report of the distressing position of our illustrious Queen and accomplished consort,—made in this same month of August, last year,—their domestic discomforts and miserable home. The hammering of cabinet-makers, the smell of the glue-pot, risk of fire, and want of room for the young princes to stand upright in their apartments, were only a few of the inconveniences to which the royal family were exposed in Buckingham Palace as it then stood. So melancholy a picture so touchingly set forth, deprived the House of Commons of thought for any thing but immediate improvement, and, with tears in their eyes, they at once voted 20,000*l.*, in part of the sum of 150,000*l.*, for the enlargement of Buckingham Palace, and, as we believe, were sorry for it directly afterwards.

The proposed works included a new east front to the palace; clearing out and re-arranging rooms in the south wing; new kitchens with a large ball-room; decorations and painting; taking down the marble arch, and altering the drainage.

We strenuously opposed the expenditure of more money on this unsatisfactory building *as a royal palace*, being satisfied that it could not be made fit for the purpose and worthy of the nation, and we were fully borne out in this opinion by concurrent testimony from all quarters. Our suggestion that it should be appropriated as the National Gallery and Palace of Art, and a new palace built elsewhere, for the Queen, was received with general favour and republished in numerous journals. However, the Government would not alter their views, and the works, as we have said, are now making rapid progress.

The building, it will be remembered, occupied three sides of a square ⊓. The double portico which terminated the east end of each wing was taken down, and the addition is being built against these wings, extending north and south, so as to form the fourth side of the square □ and inclose the court. The new structure projects but very slightly beyond the face of the old building on either side, and occupies in the whole about 345 feet. Its depth from east to west is about 73 feet, which brings it up to within a few feet of the marble arch, and the height to the top of the balustrade will be about 77 feet. The extreme height in the centre, exclusive of the decorative arms, will be about 90 feet. One central and two side archways give entrance to the new building and to the court. There are twenty-three windows in each of the two upper stories. The mezzanine is lighted by panels over the windows of the ground floor, and the top story by openings in the frieze of the entablature. The whole is crowned by a balustrade, and the dies which form it into panels will each carry a vase or urn as at the Privy Council Office, Whitehall. The quoins of the building which at first were to have had pilasters, are rusticated.

It will be seen that the design does not pretend to grandeur or magnificence, scarcely to dignity; and although all will probably agree with us in thinking that these are the characteristics to be looked for in the palace of the sovereign, the architect was probably right in attempting, in the present instance, little more than an ordinary piece of street architecture in stone instead of stucco.

We have heard a rumour of a gallery of art, in Buckingham Palace, to be opened to the nation at certain times: what truth may be in it we will not venture to say, but that it may be found wholly so is our earnest wish, feeling satisfied that every enjoyment of this kind afforded to the public has a greatly salutary and lasting effect.

Our hope was, that Buckingham Palace might have become a palace of art for the people. Besides affording space for a collection of works of art worthy to be called national, and capable of great extension, accommodation could have been afforded to various societies connected with the arts and sciences, whose efforts are for the most part crippled by the rent they now have to pay. In respect of the national collection, at all events, something *must* be done. The enlargement of the present gallery, which has been commenced, or is about to be commenced, can be but temporary, unless indeed the interests of the nation be disregarded and valuable donations continue to be refused. Room for a gallery of *casts*, too, accessible to all, is much to be desired, and would prove of the greatest service to the arts; the want of it in the metropolis, scarcely to be believed, is greatly felt and deplored. The museum of architecture, also, often dwelt on by us, and for which the trustees of the British Museum say they have not space, might then be hoped for; indeed, the urgent necessity for accommodation in respect of artistic progress and the general advancement of the people, is evident on all sides. The building, either in the park, as once suggested by Sir Robert Peel, or elsewhere, must come, sooner or later, and the sooner the better, say we right earnestly.

Our view shews part of Mr. Blore's suggestions for laying out the ground in front of the palace, which, if we understand it rightly, involves lengthening the present piece of water in the enclosure, to bring it nearer the palace. As the ground slopes away from the palace towards the east, he proposes, as may be seen, to lower the surface of it at a certain distance from the front of the palace, so as to form a terrace, faced with stone, as in Trafalgar-square.*

* See p. 410.

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MIDDLE-ROW, HOLBORN.—We are distressed to find that the foundations are being put in for rebuilding one of the houses in Middle-row. Can nothing be done to prevent the perpetuation of this great obstruction in such an important thoroughfare as Holborn?

* The probable fate of the marble arch still occupies the attention of several of our correspondents. One of the most recent says:—"Will you allow me, through the medium of your useful publication, to inquire what is intended to be done with the arch in front of Buckingham Palace? As it is a handsome and costly structure, does it not seem a pity to do away with it altogether? My idea is, that it were transferred to the entrance of the gateway next to Constitution-hill, and another arch, to correspond, were erected on the opposite, or Pimlico, wing, a very handsome addition would be made to the entire façade of the palace. Part of the road requires to be taken into the inclosure on that side to afford greater privacy, and the arch would form a good entrance, the same as on the other side. The arches might be ornamented also, the one with rural and the other with military trophies." We do not care much what may be done with the arch, but should protest violently against the further waste of money on a material so entirely unsuited to the London atmosphere as marble, if there was any fear of a duplication.

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## ARCHITECTURAL SCAMPER IN NORFOLK.

### THE ARCHÆOLOGICAL INSTITUTE.*

ONE of the pleasantest of the week of pleasant days spent with the Institute, was that wherein the whole party made an architectural pilgrimage to Little and Great Snoring churches, Binham Abbey, Old and New Walsingham churches, Walsingham Abbey, Barsham Hall, and Fakenham Church. The rail conveyed the party a certain distance, and then a stage-coach, a hearse-like omnibus, and other lively-looking vehicles of various kinds, not forgetting a dog-cart and its good-natured owner (though it did discharge its three occupants once during the journey in a somewhat head-over-heels style), were pressed into the service. Had this accident, by the way, been as serious as it might have been, the dean and chapter must have sought another architect, there could be no second volume of "Newleafe Discourses," and these notes would not have been written. But let that pass;—we have reached *Little Snoring Church*, a curious structure, with a detached round tower close to the west end of it (on the south side), which has evidently belonged to a former church. The tower has been called Saxon, but shews nothing to justify the statement. The existing church belongs to the transition period, between Norman and early English: the south doorway has a stilted horseshoe arch, over a pointed one ornamented with zig-zags, and under this latter comes the round arch of the door, with shafts in the jaumbs. The east end of the church had three lancet-headed (early English) windows, one of which has been destroyed by rebuilding the north wall of the chancel. On the south side of the chancel is a piscina in the jaumb of the window, across the angle of the cill, as at Cheltenham. There is a similar piscina in Fakenham Church, which we visited afterwards.

*Great Snoring Church* has a very good perpendicular tower; and, inside, the rood-screen remains. The old open wood roof was removed forty or fifty years ago.

*The Rectory-house*, close by, is a curious example of the moulded brickwork of the time of Henry VIII., including heads, shields, and other decorations. Jesu M., in Tudor characters, is repeated numerous times in a string course: the repetition gives regularity as a decoration.

The remains of *Binham Abbey Church*, the next place visited, are particularly interesting, especially the west end, which is a charming example of early English work. It was originally a very large cross church, founded at the end of the eleventh century; but only the nave, which is chiefly Norman, is preserved, and even here the aisles have been destroyed, and the spaces between the main arches on either side, which carry the clerestory, are built up. It must have been a noble structure originally. At the east end solid masses of flint concrete, now standing, mark the central tower, transepts, and chancel. Some of these masses are much larger at the top than at the bottom, like inverted pyramids, thanks to man rather than to time, and shew the extreme solidity which construction of this sort acquires. Inside the church are a number of old benches, with poppies and open carved backs of varied and elegant design, probably of the perpendicular period.

The sketch books having been duly called into requisition, the pilgrims started for the shrine of "Our Lady of Walsingham," once even more frequented than the shrine of Thomas à Becket. The "Milky Way" in the heavens was pointed out by the monks as a miraculous indication of the road to this celebrated place, in consequence of which it was even called by some "The Walsingham Way!" The modern *Walsingham Abbey* is the seat of Mr. H. Lee Warner, who received the Institute in admirable style. Some fine remains of the convent are in the pleasure grounds, and incorporated with the mansion: part of the refectory adjoining the house is particularly interesting; steps to the pulpit and the corbel of the latter are to be seen.

*Fakenham Church* has a fine perpendicular tower of flint and stone, the former beautifully fitted into panels. The stone doorway with niches, sculptured shields, &c. is an excellent piece of work. The sedilia and piscina are

* See pages 360 and 381, *ante*.

interesting, and there are some carved wooden screens at the east end of the aisles, which deserve examination.

On the road from Walsingham to Fakenham, at a place called *Houghton in the Dale*, (a pretty place with a pretty name), we passed a beautiful little chapel, now in ruins. The arrangement of the gable is very charming, and its rapid decay cannot be too much deplored. If it be true, as we heard was the case, that it belongs to an active member of the Institute, there is perhaps some hope that he may be led to restore it, or, at all events, to sustain it. Its restoration would be one of the most interesting monuments of the visit of the Institute that could be devised, and a valuable result to be appealed to hereafter.

It is not our province to record how that his lordship, the bishop, entered warmly into the business of the meeting, how the excellent Lord Northampton aided and abetted right willingly, how the Dean of Westminster had often something to say, how the lady who always writes the nice notice of these meetings in Chambers' was seen, note book in hand, in all sorts of unapproachable places, or how Mr. Cunningham bustled about and got people into order. Suffice it for us to remark, under this head, that the week was spent pleasantly as well as usefully; and, with a memorandum that, in our last volume, will be found a good engraving of the bishop's palace gate-house,* alluded to in Mr. Britton's paper already reported,† we close our present notes of the meeting at Norwich.

At Ely, Professor Willis delivered a discourse on the cathedral in the cathedral itself, and as we have not yet referred to it, we avail ourselves of a contemporary for the following notes of the lecture:—

"Ely (he said), was a much larger, more imposing, and more magnificent cathedral than Norwich. The nave was late Norman, and very light for that style. It was a most magnificent Norman nave, and as nearly as possible untouched. The presbytery was of the best order of Early English; the Galilee at the west end also Early English, and of the best character and time (see our engraving, p. 374, ante). Indeed, Ely Cathedral contains nearly a complete series of examples of the several styles—decorated work of most excellent execution, and perpendicular work that is extremely beautiful. Instead of the usual square tower in the centre, we have here an octagon lantern of wonderful beauty and proportion. It was easy to see how Sir Christopher Wren had adopted it at St. Paul's,—and how in supporting the cupola of his cathedral he had studied the way in which the octagon lantern at Ely was supported. This part of the structure would well repay attention. In settling the position of the choir and the presbytery, he would direct attention to the bosses on the vaulting. One boss representing St. Peter still remains, and this is immediately above the high altar. Another eastward of this, represents Etheldreda and the Virgin,—and immediately beneath this is the shrine of Etheldreda. Ely Cathedral was erected very shortly after Winchester Cathedral, and there was a very considerable resemblance between them—the dimensions, however, were nearly the same. Abbot Simeon, he would remark, who commenced the conventual church at Ely, was brother to Walkelyn, Bishop of Winchester. Another cathedral with which Ely was associated in the history of its architecture was Lincoln; and he was happy to think that the institute would be at Lincoln next year, and he would then have an opportunity of explaining the connexion always an interesting point in studying the progress of architecture; and here he could not but express his regret that the north aisle of the south transept are still unbuilt up. Much had been done, and in excellent taste, by the present dean; and he really hoped that before long the side aisles would be again thrown open. He scarcely could trust his eyes when he contrasted Ely Cathedral twenty years ago with Ely Cathedral as he now saw it. Twenty years ago there was the great deep plentifully about it, more whitewash than he cared to see, and a great economy of glass. Now, the green damp was nowhere to be seen, the whitewash had been scraped away, the vaulting cleaned, and the stone exhibited in its native colour."

* Vol. IV. p. 81 and p. 90. † See p. ‡ A temporary museum of antiquities was collected there, which, we think, added much interest. A full account [illegible] will be found in the Norfolk Chronicle of the week.

## ON THE POSITIVE SCIENCE AND MATHEMATICAL PRINCIPLES INVOLVED IN THE FINE ARTS.*

The double necessity imposed upon the mind, of observation for the formation of a theory, and a theory for the practice of observation, would have caused it to move in a circle, if nature had not fortunately provided an outlet in the spontaneous activity of the mind. This activity causes it to begin by assuming a cause, which it seeks out of nature, *i.e.*, supernatural. As man is conscious that he acts according as he wills, so he naturally concludes that every thing acts according to some superior will.

Hence Fetichism, which is nothing but the endowment of inanimate things with life and volition. This is the logical necessity for the supernatural stage. The mind commences with the unknowable; it has first to learn its importance,—to learn the limits of its range before it can content itself with the knowledge.

The metaphysical stage is equally important as transitive. The supernatural and positive stages are so widely opposed as to require intermediate notions to bridge over the chasm. In substituting an entity inseparable from phenomena, for a supernatural agent, through whose will these phenomena were produced, the mind was habituated to consider only the phenomena themselves. This was a most important condition.

The result was, that the ideas of these metaphysical entities gradually faded, and were lost in the mere abstract names of phenomena.

The positive stage was now possible. The mind having ceased to interpose either supernatural agents or metaphysical entities between the phenomena and their production, attended solely to the phenomena themselves. These it reduced to laws; in other words, it arranged them according to their invariable relations of similitude and succession. The search after essences and causes was renounced. The pretensions to absolute knowledge was set aside. The discovery of laws became the great object of mankind.

Remember, that although every branch of knowledge must pass through these three stages, in obedience to the law of evolution; nevertheless, the progress is not strictly chronological. Some sciences are more rapid in their evolution than others; some individuals pass through these evolutions more quickly than others; so also of nations. The present intellectual anarchy results from that difference; some sciences being in the positive, some in the supernatural, and some in the metaphysical stage; and this is further to be subdivided into individual differences; for in a science which, on the whole, may fairly be admitted as being positive, there will be found some cultivators still in the metaphysical stage. Astronomy is now in so positive a condition, that we need nothing but the laws of dynamics and gravitation to explain all celestial phenomena; and this explanation we know to be correct, as far as any thing can be known, because we can predict the return of a comet with the nicest accuracy, or can enable the mariner to discover his latitude and find his way amidst the "waste of waters." This is a positive science. Remark also, that while in the present day no natural philosopher is insane enough to busy himself with the attempt to discover the cause of attraction, thousands are busy in the attempt to discover the cause of life and essence of mind! This difference characterizes positive and metaphysical sciences: the one is content with a general fact, that "the operation of attraction is inversely as the square of the distance," this being sufficient for all scientific purposes, because enabling us to predict with unerring certainty the results of that operation. The metaphysician, or metaphysical physiologist, on the contrary, is more occupied in guessing at the causes of life, than in observing and classifying vital phenomena with a view to detect the laws of their operation.

First, he guesses it to be what he calls a "vital principle,"—a mysterious entity residing in the frame, and capable of engendering phenomena. He then proceeds to guess at the nature or essence of this principle, and pronounces it "electricity," or "nervous fluid," or "chemical affinity." Thus heaps hypothesis upon hypothesis, and clouds the subject from his view.

The closer we examine the present condition of the sciences, the more we shall be struck with the anarchy above indicated. We shall find one science in a perfectly positive stage (physics), another in the metaphysical stage (biology, or electricity and the fine arts), a third, in the supernatural stage (sociology). Nor is this all. The same varieties will be found to co exist in the same individual mind. The same man who in physics may be said to have arrived at the positive stage, and recognize no other object of inquiry than the laws of phenomena, will be found still a slave to the metaphysical stage in biology, and endeavouring to detect the cause of life; and so little emancipated from the supernatural stage in sociology, that if you talk to him of the possibility of a science of history, or a social science, he will laugh at you as a "theorizer." So vicious is our philosophical education; so imperfect the conception of a scientific method! Well might Shelley exclaim,—

"How green is this grey world!"

The present condition of science, therefore, exhibits three methods instead of one: hence the anarchy. To remedy the evil all differences must cease: one method must preside. Auguste Comte was the first to point out the fact, and to suggest the cure; and it will render his name immortal. So long as the supernatural explanation of phenomena was universally accepted, so long was there unity of thought, because one general principle was applied to all facts. The same may be said of the metaphysical stage, though in a less degree, because it was never universally accepted; it was in advance of the supernatural, but before it could attain universal recognition, the positive stage had already begun. When the positive method is universally accepted,—and the day, we hope, is not far distant, at least among the *elite* of humanity—then shall we again have unity of thought, then shall we again have one general doctrine, powerful because general.

That the positive method is the only method adapted to human capacity, the only one on which truth can be found, is easily proved; on it alone can prevision of phenomena depend. Prevision is the characteristic and test of knowledge. If you can predict certain results, and they occur as you predicted, then are you assured that your knowledge is correct. If the wind blows according to the will of Boreas, we may, indeed, propitiate his favour, but we cannot calculate upon it. We can have no certain knowledge whether the wind will blow or not. If, on the other hand, it is subject to laws, like every thing else, once discover these laws, and men will predict concerning it as they predict concerning other matters. "Even the wind and the rain," to use the language of one of our most authoritative writers, "which in common speech are the types of uncertainty and change, obey laws as fixed as those of the sun and moon; and already, as regards many parts of the earth, man can foretel them without fear of being deceived. He plans his voyages to suit the coming monsoons, and prepares against the floods of the rainy seasons." If one other argument be needed, we would simply refer to the gradual and progressive improvement which has always taken place in every department of inquiry conducted upon the positive method. And with a success in exact proportion to its rigorous employment of that method—contrasted with the circular movement of philosophy, which is just as far from a solution of any one of its problems as it was five thousand years ago—the only truths that it can be said to have acquired, are a few psychological truths, and these it owes to the positive method.

Every artist must have felt, as every votary of science, the truth of this law of mental evolution in its historical as well as individual application to art. Individually he will more particularly recollect how the fanciful notions of the earlier days of his career gradually gave way to more fixed and certain maxims, enabling him to accomplish with comparative ease, un-

* [illegible]

dertakings which appeared to him at one period almost impossible of attainment, and this owing to his having gained (I may say unconsciously) a greater degree of positive science.

Every work even appears to pass through an analogous progress, from the undefined mystical sketch, to its positive or finished condition: this is indeed consequent upon the law, —it is the visible image of mental evolution.

We shall now endeavour to explain on what we can depend for a fixed correspondence between cause and effect on mankind.

All knowledge is derived through the senses; if the mechanism of these be examined in thousands and hundreds of thousands of mankind, it would be found the same anatomical demonstration would suffice; this does not apply merely to the organs of sensation, but throughout the structure of man. If this were not the case it would be useless to write works on anatomy; the similarity of bones, muscles, arteries, nerves, &c., must convince every one who reflects, how much more men resemble one another than they differ. That which is variable is very superficial, but as the variable constitutes the individuality, we are necessitated to observe these slight variations to enable us to recognize one man from another.

So it is in all specific creations, but when it is not of importance to recognize individually, the great resemblance between each member of a species is paramount. All lilies appear very much alike at the first glance, yet when examined minutely no two are precisely similar. It is thus, too, that the casual observer remarks the great resemblance in a flock of sheep; yet this, which is evidently the most predominant idea, is entirely lost sight of by the shepherd, who is necessitated to observe wherein each one differs — consequently the variable becomes the chief object of his observation. In like manner, in our intercourse with society, we have to regard the peculiarities of men; it is only by dint of reflection we can divest ourselves of the notion that every man is entirely different in organization, and unsubjected to any influence in common with others,—although it is curious to find we must at some time or other have been impressed to the contrary, by frequently using the word man to express collectively mankind. It will therefore be a consequence of this predominant resemblance in organization, that the same cause must produce a predominant resemblance in its effect on men; the more particularly so, since the delicate organs by means of which we receive the greatest share of intelligence, vary in a considerably less degree than the grosser portions of our structure; indeed, were it not for this universal conformity, music could not exist, pictures would be useless, certitude impossible, and science impracticable.

All phenomena may be divided into two kinds—internal and external,—internal phenomena operating on sense within us; external phenomena operating on sense from without; the two constituting all the subjective phenomena of sensation. Sensation may be termed comprehensively the mirror of the world.

Art must be entirely imitative of phenomena operating on the senses; it ought therefore to obey laws as certain as those of any other branch of science, it being subject to precisely the same conditions; consequently he who best comprehends the laws of phenomena, has, if he adds thereto *the practical mechanism of imitation*, the greatest power of recombining and creating, after the example of the great archetype, Nature;—also of exercising the greatest influence in the world;—has the greatest claim to be honoured by mankind, and the right to the highest title of intellect—genius.

For who could be a greater genius than he who should know and be able to perform all things?

The artist, then, perceiving that he cannot effect any useful purpose without imitating nature, will have a just right to conclude the best means of comprehending the science of art will be by the deep study and understanding of the science of nature.

We will now briefly recapitulate:—We first stated our convictions in the possibility of a more scientific comprehension of art, supported by the opinions of Reynolds, examining in our progress Comte's "Law of Mental Evolution," to shew that the mind passes from the mysterious to the positive and defined in acquiring knowledge, and that it is equally applicable to art as to any other branch of human understanding. We then attempted to prove that a fixed correspondence between cause and effect in art, depended on the same law that all other branches of science have for their certitude, and that all knowledge of art is derived through the senses.

From which, it is hoped, this maxim may have been deduced, viz.: that the best means of arriving at excellence in art will be by the intimate understanding of nature; that is to say, the laws of the external world, and those of sensation; — if to this is also added the practical mechanism of imitation.

We will now in a few words consider the advantages of a scientific system.

All professions tenaciously cling to the complex and mysterious, long after the period has arrived when it is evident generalization and simplicity are essential as well as attainable. It imposes by magnifying the difficulties to be overcome; as it is perhaps considered, that any levelling of the irregularities of the great highway might increase the number of travellers; but this ice-bound feeling must thaw before the genial influence of science as it approaches the zenith.

One of the greatest misfortunes of art-education, at the present time, is the deficiency of traditional education; this is evidently an immense loss of time, as we lose the experience of others which might often save years of futile wandering in paths of error. And it ought to be the more imperative on this account, that every one should record to the best of his power the results of his experience: it would at once improve ourselves and advance others. I say improve, for it is astonishing the effect of attempting to record our own notions: it brings us to a clearer comprehension of things; it is not till this is done that we have any conception of the confused state of our ideas.

A recorded science must of necessity facilitate the mental evolutions of men, and may, in a great measure, supersede the necessity of tradition. The difficulty of multiplying written records in past ages, no doubt compelled the system of scholarship.

In the event of a complete system of art being established, it will form the basis of pure criticism, from which should the critic swerve, either through ignorance or interested motives, his delinquency must at once be detected; it would form, too, a safeguard against such impositions being attempted.

This paper is an introduction to an attempt of my own,—to form a system on the solid basis of science. It may at first bear the semblance of presumption, till it is recollected we often propose to ourselves early in life a plan which is to absorb a large share of attention in our future career.

Wherein it is true it will beget truth; where error exists let it be exposed and condemned; right will then be substituted for wrong. Indeed, I should have felt much more reluctant to occupy your time, had I not felt convinced that "the history of error, properly managed, often shortens the way to truth."

My efforts will not have been destitute of effect, if they have at all succeeded in strengthening the convictions of those who believe art may be practised on more fixed principles than at present, or that I have at all illustrated the sentiments of the poet, which he has thus concisely expressed:—

"Art is but nature, better understood."

W. Cave Thomas.

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Government Contracts.—It seems that in all Government contracts, jobbing is inherent. To buy worthless goods in the dearest market is proverbial in these affairs. Whether the contractor is most at fault, or is victimised in his turn, by having to fee the Government underlings, or deems it a point of business to get as much as he can out of the ignorance of public men, is a matter that ought to undergo searching inquiry. It appears that the coals used by the royal squadron for the Scottish voyage, and which were "taken in" from the stores at Portsmouth, were the veriest rubbish that ever lumbered a shoeing smith's forge, producing more pounds of clinker than ounces of steam, and just as economical as chaff.—*Bristol Journal.*

## ARCHITECTURAL REFLECTIONS.

The distinctive characteristics in art of the age we live in should prove a subject for meditation neither devoid of profit nor interest, as tending to provoke comparisons with those of bygone days, to awaken energies dormant or inactive from force of circumstances, yet capable of high results if roused into action, and to promote a generous spirit of emulation and even exertion, without which art must ever languish, and eventually retrograde.

The scholar, the amateur, the man of taste, the refined observer of passing events, will derive a satisfaction from the alternate contemplation of the past and the present, unknown to the unreflecting many; he will ponder over the crumbling monuments of nations long since extinct, examine their various features and traits of difference as developed in successive ages, follow the progress of the arts from infancy to maturity, from maturity to decline, with gladness see them revive and bloom again, more beautiful than ever, trace their progress down to his own time, and with judgment matured by study and reflection, scrutinize its leading features, and see what claim it will have to the admiration or gratitude of posterity.

It may not be too much to assert that by their architecture the various nations of the earth present a record of their former greatness or character, far more convincing, far more lasting than either of its sister arts can effect. It is by their architectural remains that mighty empires, long since passed away, exhibit to the beholder the history of their power and greatness, stamped in characters so imposing and striking, that doubt vanishes on the instant, and wonder and admiration alone remain.

The imperishable ruins of the mighty cities of Assyria, the gigantic pyramids of Egypt,—the stupendous excavations of Elephanta and Ellora,—the richly decorated yet barbarous pagoda of the Hindoo and later mosque of the Mogul dynasty,—the singular ruins of ancient Mexico,—the classic portico and open temple of Greece, the foundations of the Saturnian cities of Latium and Etruria that flourished ere Rome existed,—the high-arched aqueduct, the columned forum and vast amphitheatre of Rome herself,—her vast remains throughout Italy, Spain, Africa, Asia Minor, Gaul, and Germany,—the site of ancient Tyre,—the spot where Carthage stood,—the Greek church of Byzantium, type of innumbered styles,—the Alhambra, wondrous relic of the Spanish Moor,—the gilded cupola and clustered semi-dome of the Turk,—the lofty minaret and burnished crescent of the Persian,—the Norman portal, ponderous but grand,—the pointed arch, the clustered column and matchless tracery of the Gothic style, the adopted of all countries, yet still preserving a character peculiar to each;—these, and many such as these, unnamed, are histories of ages past, written in characters legible to all who have learnt to read them.

If, then, the erection of churches for the Christian and temples for the Pagan, of palaces for their monarchs and trophies for their warriors, of theatres for their sports, and senate houses for their statesmen, in short, of all those buildings whereon man is wont to lavish his wealth and taste be an outlet for the riches and a vehicle for the display of power and taste with great nations, how natural is it, when they no longer exist, to deduce our notions of their resources and power from their architectural remains, and how beautiful must be the study that consists in collecting, classifying, and comparing the knowledge thereby derived, and seeing wherein we ourselves excel or fall short of the specimens that are our models for imitation.

For the past, the testimony of the civilized world has been given; the verdict of universal approval has been pronounced; dates and periods, styles and orders, have been arranged definitively and finally; and a beautiful progression of harmonious changes established quite satisfactory and conclusive. For the future, the curtain has yet to be withdrawn, our merits or demerits have to receive the judgment of posterity, and our position and rank in the annals of art cannot be distinctly ascertained until the lapse of time shall have shed that halo of antiquity over our works and

history that seems almost indispensable for their due appreciation and knowledge.

But that the age we live in presents features in art most striking and original, none but the most bigotted devotee to the antique can deny. The lapse of a few years has effected changes that are astonishing; mechanical contrivance has attained a degree of perfection but little anticipated by our predecessors;—producing an amount of work and quality of performance that throw the operations of simple industry entirely into the background by the comparison.

Invention is the leading feature of the day, celerity its natural concomitant. These features are exhibited in every species of art or science. Literature, music, painting, sculpture, architecture, engraving, mechanics, engineering,—all are influenced by them, and exhibit a marked character from their presence. Nature herself would appear to be inadequate to the task of providing necessaries for our artifical requirements. The horse, most noble, patient, and symmetrical of her bounteous gifts,—the type of swiftness, strength, and beauty,—stands at a discount in competition with the fire-breathing locomotive: the breeze, once deemed sufficient to waft the wealth of the Indies to our recipient shores, now idly beats the spray caused by the revolving paddle of the steam-ship: nay, the very seasons, shorn of their prerogative of producing fruits and flowers when nature so ordained, are anticipated in their intentions and forestalled in their productions by the precociously generative powers of the hot-house and forcing bed!.

In the midst of this general progression, architecture keeps pace with the arts around her, and vies with all in the brilliant competition. A few years have much altered the position of this noble profession in public opinion and in real interest. The time is gone by when unbounded patronage was lavished upon one or two favourite individuals, to the exclusion of hundreds,—the dishonour of the nation and the ruin of the art. The cheapness of professional education (much as improvement in it may be necessary), the easy means of access to innumerable and valuable works upon art and science, the opportunities for travel, both foreign and domestic, which the use of steam power has granted to the world, and the consequent intercourse with all nations, and knowledge of their styles and customs, have created within us a large body of artists, highly capable and most enthusiastic, whilst the increase of population, the spread of refinement and knowledge amongst all ranks, and the consequent increase of our requirements, private and public, have produced increased opportunities for architectural display. The favours of patronage, once bestowed upon one, are now by necessity divided amongst many. The principle once tried became unavoidably fixed, and the system of competition became established, which, if still guilty of numerous faults, has at least been the means of encouraging and exciting the spirit of invention amongst us; and the consequence is, that a total reaction in public taste has taken place; and the domestic style, best known by the *soubriquet* of the "Hole in the Wall," seems upon the eve of total extinction.

The merits and demerits of public competition we will not here enter upon; papers without end have been written upon it, and volumes will be filled with it before the system becomes perfected. Be it as it may, however, and admitting numerous abuses, the tongue and pen of disappointment will ever find arguments wherewith to lodge complaints against the fiat of justice, though the voice of public opinion be unanimous in approval of its decision. But so it is with all national institutions. The constitution of our army, navy, law, police, magistrates, all abound with defects which the searching eye of poverty, suffering, and disappointment, detect, magnify, and anathematise, though the remedy be difficult,—sometimes impossible.

The page of history may present a soothing and romantic picture of the perfections of governments long since passed away,—as of Greece, for instance; the lapse of centuries may sober down, reduce, and harmonize all spots of colour too prominent, too glaring in the agreeable composition; but could the ruins of Greece herself speak, how many a tale of penury, neglect, and injustice would they relate even of the age when her laws, her arms, and her arts where at the zenith of their celebrity—that of Pericles!

The restoration of medieval architecture in this country is a decided epoch in our history. The great regard now paid to the preservation of ancient works of art, and the increasing anxiety evinced for the elucidation of all matters, archæological and antiquarian, must free us from the reproach bestowed by Horace upon the Romans for the want of this feeling; nor can it be the less consolatory to ourselves, as knowing that heretofore we have deserved censure for our indifference, to know that so great a nation as the Romans has received it before us.

But respect for the works of our ancestors should not make us forget that due to ourselves; nor does regard for antiquity preserve more than half its value when it degenerates into servile reduplication and imitation of its beauties. It is not possible to improve upon the orders or members that have been handed down to us; be it our care out of the old materials to produce such new combinations as shall suit the wants and requirements of the day we live in, and tell a tale of wealth, talent, and ingenuity to those who may succeed us.

In the practice of Gothic architecture the charge of imitation of style without spirit, the body without the soul, is brought against us. Questions, such as these, are difficult to determine, and should be received with caution. That it has long been the rage to decry modern art none can deny; but that a more enlightened view of things is now taken is equally the fact.

True it is, that the vast cathedrals which adorn the face of Europe are no longer erected, but equally true it is, that they are no longer called for, otherwise we doubt not there are numerous artists both in our own and other countries quite equal to the task of designing them. Indeed, the contrary supposition would seem an absurdity, when constructive science is brought to the height it now fills, and the various details of the style are thoroughly understood.

The various styles of Gothic architecture exhibit the wants and characteristics of their respective periods, and are a record of the feelings and sentiments of their founders. Like the inscriptions of Ancient Egypt, they present a succession of pages of hieroglyphics, mute and blank to the eye of ignorance and presumption, but eloquent, breathing, and inspiring to him who, with awe, admiration, and intelligence, approaches them in the true spirit of inquiry. To copy slavishly is paltry and unartist-like, and useless for the advancement of the art. A new spirit should be infused into our works, symbolical of our peculiar requirements; and in ransacking the stores of antiquity, we should select the beautiful and the useful only, and leave such features as present no other merit than age, to illustrate the time when men and manners were satisfied with them, and desired no more.

The criticism of the world, take it generally, is tolerably unanimous in approval or dissent; and the opinions passed by the most enlightened nations upon the principal remains of antiquity are mostly similar.

Simplicity and purity were the aim of the Greeks, and these qualities they attained to a degree that cannot be exceeded. An innate feeling assures us that their style was perfection, and as soon may we expect to hear that the harmonious common chord of the musical system is discord, as to see the shaft of criticism levelled at their sublime proportions.—On the other hand, the architecture of the Romans does not so well escape the tongue of censure. With them grandeur and richness were the features most sought after, and mistaking size for the former, and a redundancy of ornament for the latter, simplicity and breadth were sacrificed to the indulgence of this ill-judged liberality.

The numerous styles at present in use, at the same time form of themselves a grand feature of the present age; with what success they are employed is another question. We have already alluded to the facilities we enjoy for studying these various styles; we may now add that the multiplicity of our studies and extent of our knowledge is the very reason why our excellence in any one of them in particular is impeded. Necessity is the mother of invention, and it was the limitation of knowledge with the nations of antiquity, and consequent concentration of energy to one particular subject, that gradually advanced that subject to perfection. Had Greece flourished at the present day, the Parthenon would probably not have been built. Limited in her architectural knowledge to the ponderous grandeur of Egypt, she studied the one idea presented to her until she had brought it to perfection.

Rome followed in her track. More beautiful she could not make the style, but she varied its members, multiplied its uses, and added to it a feature, which, if not her own invention, was certainly her own introduction, a feature destined to change the face of art over the whole world—the arch!

Rome, after giving laws to the world, and attaining an elevation of magnificence that made the splendour of other states indigence by the comparison,—palsied by luxury, began to totter on her throne,—and the removal of the seat of government to Byzantium paved the way for her total ruin.

The Christian churches of Byzantium embraced a style differing widely from that of the pagan temples of Rome. The Greek cross, crowned by a cupola, became the general plan of these erections, and the finishing stroke was given to the ancient architecture of Greece by the descendants of the very nation that invented it! The basilica form now became neglected, and the mosque of St. Sophia, built by Justinian, has served as the model for every minor mosque even to the present day. The wreck of the arts and literature became centred in Constantinople, and from thence their architectural features spread on every side. In Ravenna, Venice, Padua, Ancona, Parma, Piacenza, Verona, Milan, Pavia, and throughout Lombardy, they abound. France contains some fine instances, the Rhenish towns numerous ones, Cologne especially. The arch changed from the simplicity of the Roman semi-circle, exhibited many modifications, and with the other details of the style followed the larger features of plan and effect over Europe, constituting what has since been termed the Lombard style.

Persia has borrowed much from Byzantium; her style is a mixture of certain indigenous principles of her own, with the leading features of her neighbour.

The Arabs, savage and wandering at home, became lovers of art abroad, and the Saracenic remains in Spain, Sicily, Africa, &c., exhibit clearly their derivation from Persia and Byzantium. India, too, under her Mogul princes, in her mosques and mausolea, offers another tribute to Byzantine omnipresence.

The pointed style, descendant of the same common parent, though crossed by numerous foreign features, and influenced by unnumbered circumstances (the examination and history of which will ever furnish abundant matter for the pen of discussion and inquiry), after attaining an absolute monarchy over the whole of Europe, in its turn succumbed to the neglected architecture of ancient Rome. Her principle of existence, her springs of action were exhausted, and when the societies of freemasons who possessed her secrets, who had nurtured and matured her, were dispersed and destroyed, those secrets of proportion and construction expired with them. Then it was that ignorance, under the assumed pretence of preference, affecting a love for the classic and the antique in art, roused from their long slumber the neglected forms of ancient Rome, and the style of the revival was hailed with rapture by the different nations of Europe.

How fortunate for domestic architecture was this change, the streets of modern cities can best attest. The stride now making in English art must convince all that if a St. Paul's, a Somerset House, a Blenheim, or any other of the specimens that marked the beginning of the last century, are no longer required, the capacity to execute such may still exist. Works of such magnitude are, unfortunately, but seldom demanded, yet, when called for, the response of thorough competency has not been found wanting. Take, for instance, two vast and noble specimens of very opposite styles, now erecting, namely, the Houses of Parliament and St. George's Hall, Liverpool, both an honour to the age and a lasting tribute to their talented designers, and our position must be established.

In the absence, however, of opportunities

for producing cathedrals, palaces, *et id genus omne*, unprecedented scope is given for the designing of a secondary rank of edifice, still of high importance and value in the scale of art. Churches, schools, almshouses, hospitals, workhouses, railway stations, and termini, exchanges, town-halls, markets, club-houses, &c. &c., have multiplied, and continue to do so to an extent surprising. The latter especially have given a new impulse to Italian design, and present some superior adaptations of the palazzi of that country. The efforts now making by the Royal Institute and other societies of architects for the ennobling of the art and the directing the studies of the rising generation of artists into such channels as shall be productive of important results to the art, are another feature of the times.

Much as has been done since the prevailing style of the Adams was thought to be the production of taste and talent, much more must be effected ere our metropolis can present the features which our wealth, industry, and perseverance should effect.

To arrest the flight of the shaft of foreign ridicule would be impossible, but to make ourselves proof against its point and its poison is fully within our power. A. F. A.

## THE VENTILATION OF SEWERS.

Notwithstanding the check that sanatory reform has received in the postponement of the "Health of Towns Bill," the agitation of the question has had the good effect of awakening public attention to the vast importance of the subject, in its relation both to health and morality. The salubrity of the atmosphere in populous districts can only be effectually maintained and fitted for healthy respiration by a complete system of drainage, and thorough ventilation. It is satisfactory to see medical men foremost in the rank, and taking advantage of their peculiar position to expose to public view every flagrant neglect of the proper authorities, and exerting themselves strenuously to effect sanatory changes wherever they are deemed necessary or found to be advantageous. Much honour is due to such men as the late Dr. Lynch, Dr. S. Smith, and others, for their strenuous exertions in the cause of sanative reform, and we are convinced that men were never more in real earnest to accomplish their object, for we find them risking health and even life itself in the cause. The late report of the proceedings at Bow-street, where forty or fifty individuals were summoned to answer to that extensive nuisance which has from time immemorial been accumulating in the arches of the Adelphi, and infecting the whole contiguous neighbourhood, is fresh in recollection; its compulsory removal by the parish or other authorities, has hitherto been effectually resisted upon the plea of its being private or extra-parochial property; but through the exertions of a medical gentleman residing directly over the nuisance, Mr. Latta, assisted by Dr. Goolden, Mr. Berry, and other professional friends, the cause of complaint, we trust, will be effectually removed.

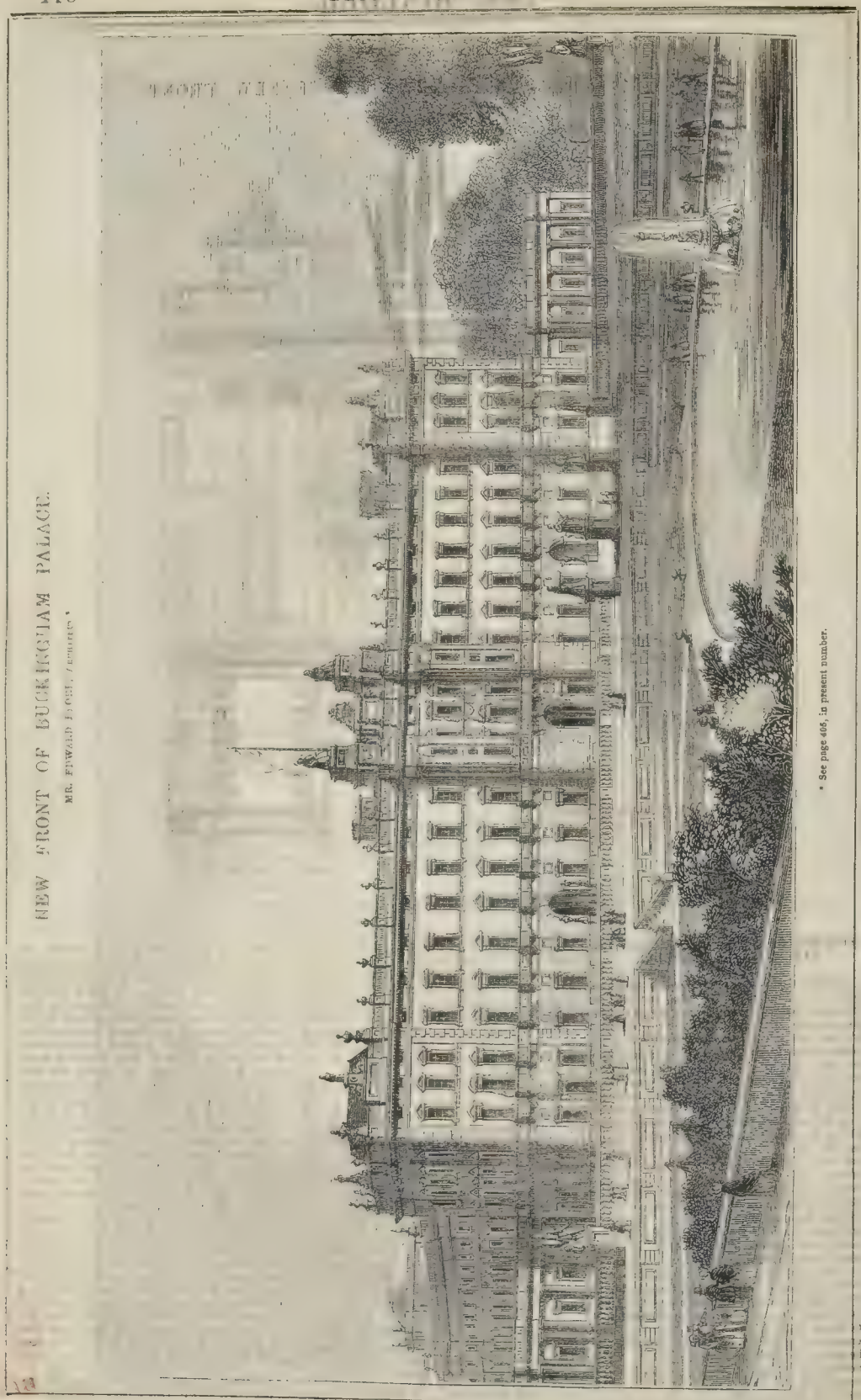
An adjourned inquest of fearful interest was lately held upon a poor man, who, while in a mis-called water-closet, was instantly destroyed by a sudden gush of offensive and mephitic vapour. The case occurred, as our readers know, in a densely populated court leading out of Long Acre. So great was the amount of offensive gas suddenly emitted, that the whole neighbourhood was described as being contaminated. Mr. Berry, of James-street, Covent-garden, the medical gentleman who was summoned to give his evidence, proved to the coroner and jury, that the fatal event arose from foul air gradually accumulating, and suddenly set free; he called the attention of the court to the disgraceful state of drainage in the whole of that densely populous district. He at the same time exhibited some models for the purpose of demonstrating how effectually and easily offensive gases may be removed and carried away before there was time for their dangerous accumulation. He proposes by means of appropriate apparatus, to cause a constant current of air to circulate through sewers, drains, and other confined places, where offensive vapours may accumulate. He proposes to form a pipe or chimney from the sewer, to pass beneath the pavement and be carried up the side of a house or wall in the neighbourhood; it is to be furnished at its summit with a revolving wind-propeller connected with a fan, screw, or blower, so that the stream of foul air shall be always flowing in one direction, viz., upwards.* At the same time he would throw a stream of pure air downwards into the sewer by shafts in the road with revolving wind propellers, moving a screw, fan, or blower. Mr. Berry further proposes to use, in situations where great power might be required, the fluid of the sewer itself as the motive agent, taking advantage of a fall or declivity in its course to propel a water-wheel, connected by means of shafts and multiplying wheels with the screw or blower. In situations where the application of these suggestions would be inconvenient or impracticable, an upward current, he suggests, might be preserved by introducing into a tube or chimney jets of gas, for the purpose of heating copper plates or copper gauze placed within the chimney, so that the air in contact with these becoming highly rarified, would necessarily ascend, producing a partial vacuum which would be filled from the foul air of the drain beneath. The foul air at the same time would be partially consumed.

* During the past session, Mr. Varley laid before the Institute of Architects a somewhat similar proposition.

## RAILWAY JOTTINGS.

The wear of cast-iron rails has been estimated in '*Thompson's Colliery Inventions and Improvements*,' thus:—On a line over which, for eighteen years, 200,000 tons weight were annually conveyed,—50,000 tons of empty waggons in one direction, and 150,000 tons of coals in the other,—the waste was about one pound per lineal foot of rail in course of the time named, or 587 pounds per mile of road per annum, the rails being cast from cold-blast-pig-iron. The waste is considered to be altogether mechanical, on the ground that there is *no* chemical waste from oxidation on rails in regular use, the *heat* occasioned by the traffic *preventing* oxidation,—very doubtful and ultra-scientific considerations these, surely, although the traffic is known to keep the rails *clear* of rust, a fact by no means identical with *prevention* of oxidation, which heat in general promotes instead of retarding. Hot-blast cast rails Mr. Thompson considers much more liable to wear, still more to breakage, and requiring one-half more metal for competent weight and strength,—malleable of course much less liable to either breakage or wear, and the more highly wrought the more economical in all respects—as well as much more safe for public use he might have added.—— An ingenious plan has been matured, by a correspondent of a scientific periodical, for the prevention of evil consequences from collisions of passenger trains. The inventor proposes that a 'patent railway buffer' or live 'director' be attached to an iron 'chair' in front of the engine, in order to 'break' the force of the meeting between the up and down 'traffic.' One peculiar advantage of such an arrangement would be, that one solitary 'buffer' only might be sacrificed at the worst in each collision, while many breaks and many buffers would be saved. The invention ought to be tested forthwith by a fair trial on one of our leading lines of railway.——The Post Office authorities have quietly taken possession of the power to monopolise the carriage of small parcels by railway. This they have virtually accomplished under the Act passed at the close of the late Parliament, "for giving further facilities for the transmission of letters by post, and for the regulating the duties of postage thereon, and for other purposes relating to the Post-office." By this act the Post-office may transmit a ton-weight if they choose, and at any *rate* they may choose for all weights above the penny letter weight. They have also power to dispatch their packages by train without a mail guard, so that they may swallow up the whole parcel traffic of trains in one enormous maw, without the smallest adequate compensation or compunction. It does not necessarily follow, however, that the public are to be sufferers by such a monopoly; it may be the very reverse, and at any rate Mr. Rowland Hill, or other P. O. authority, announces a determination to carry the Act already into execution.——The Blackwall railway directors, in announcing a dividend of only 1s. 6d. per share, clear of income-tax, state that "the concurrent circumstances which have diminished the receipts of so many other railways have also operated prejudicially upon this company."——Visiters give a cheering detail of the sanatory and other progress coincident with the railway development in Essex. Stratford has now become a most important place. The hitherto quiet marshes near the Thames are now in a state of commercial bustle and activity, and in this locality the most extraordinary metamorphoses have been produced. Around the station at the Barking-road a new town is being formed. The model cottages on the Barking-road are said to be in advance of any thing they have seen for the industrious classes; each possesses a garden back and front, an entrance porch, a sitting-room, kitchen, and wash-house, with oven and boiler, and above, three bed-rooms, with handsome painted iron bedsteads. At Stratford, the Hudson New Town progresses rapidly, and the health and comfort of the poor have also been attended to there.——The various contracts for the Manchester, Sheffield, and Lincolnshire line, are in a more or less rapid and advanced state of progress. The viaduct at Sheffield has been let to Messrs. Millar, Blackie, and Shortridge. At Handsworth tunnel, the No. 2 contractors have quarried a large quantity of excellent stone for the Sheffield viaduct and other works. The Rother viaduct No. 3, has been commenced. No. 4, from Retford to Gainsbro' has been let to Messrs. John Waring and Sons. At Clarborough tunnel, all the shafts are down and further progress made. The Trent bridge at Gainsbro', stopped by the Admiralty, is now progressing, as Kirton tunnel and other works also are. The stations here and on the Market Raisen branch to Lincoln are also let to Mr. Kirk, of Sleaford. The New Holland jetty and haven contract has been let to Mr. Linn. The dock works at Grimsby, are in an advanced state of progress, and the whole area of the dock and wharfs is expected to be reclaimed by the time for next half-year's report. The Thurgoland coal branch contract has been let to Messrs. Millar and Blackie.——A large and deep shaft at the Stalybridge tunnel on the Manchester and Huddersfield line, has been completely filled by a quicksand while the contractors were about to arch the tunnel. Such it is said is the nature of the soil here, "that the contractor is obliged to have recourse to an unusual mode of excavating—in fact, totally different from ordinary mining operations. The men remove about 30 feet square of the soil, and having got it to a sufficient depth (50 feet) the brickwork of the tunnel is completed, and then the soil is replaced over the arches." It was one of these excavations that gave way. The damage done will not be less than 1,000*l.*, and the foundations of nine houses have been so injured that they will have to be taken down. This will involve a loss to the company of from 3,000*l.* to 4,000*l.*——The direct taxes, exclusive of income tax on dividends, paid by the London and North Western Company, is said to exceed 100,000*l.* per annum.——The Emperors of Russia and Austria have forbidden any person or company to construct lines of electro-magnetic telegraph within the limits of their respective dominions, without their special permission.—— When the Wheeling line of telegraph is completed, says an American paper, "the charges will be as follows:—From Wheeling to Pittsburg, the toll for ten words costs some twenty cents; from Pittsburg to Philadelphia, fifty cents for fifteen words or less; and from Philadelphia to New York, twenty-five cents for ten words. To get ten words from Wheeling to New York, costs ninety cents, which is too high. We should like to see all the companies agree upon uniform rates of charging; and the best method for this purpose would be to charge two, three, four, or five cents for each word."

Archangel nearly destroyed by Fire.—It is reported by the Dublin agent of an Archangel firm, that on the first instant two-thirds of this important sea-port town were burned down, and five to six thousand people rendered houseless, from what exciting cause is not yet known.

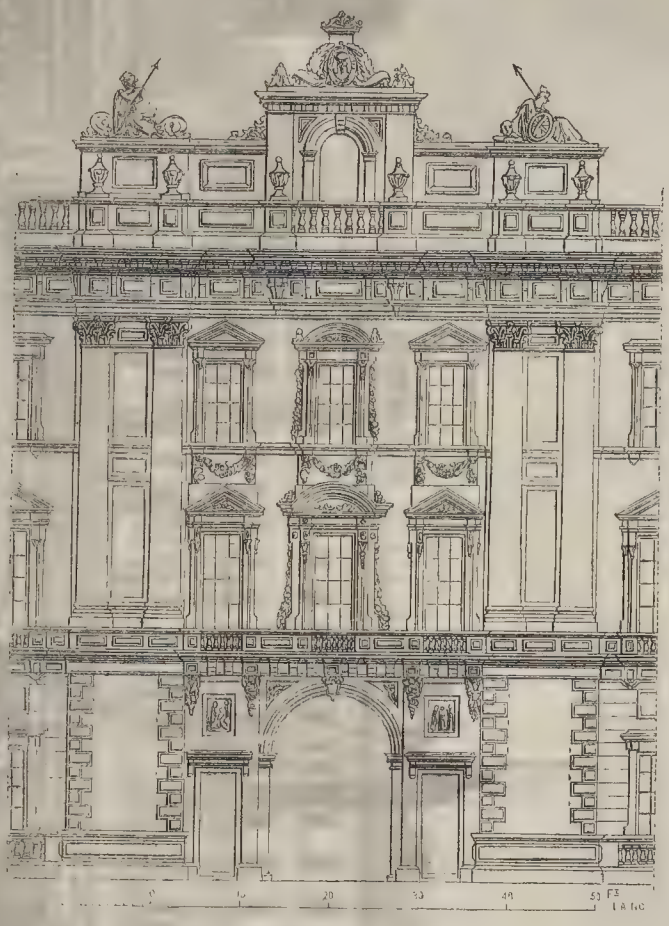


NEW FRONT OF BUCKINGHAM PALACE.

MR. EDWARD BLORE, *Architect.*

* See page 405, in present number.

## BUCKINGHAM PALACE.——CENTRE OF NEW FRONT.



### THE RESTORATION OF THE "KAISER SAAL," AIX LA CHAPELLE.

Amongst the beauteous structures which adorn the banks of the Rhine, the Aachen town-hall (known by the above name) occupies a prominent place. At the beginning of the last century—a period of decay and degeneracy in many respects—it had been mutilated in a way, that neither its original plan, size, nor internal ornaments, could be any more recognised. The plan of this huge hall was similar to that of several mediæval buildings—as the royal residence at Paris, erected under Philip the Fair, and only destroyed a century ago; or the *Gurzenich* of Cologne:—viz., it was separated by a row of columns into two halves. Only the northern part had been completed, which, albeit of considerable size, still exhibited no trace of the splendour of the original design. The southern hall had been parcelled out into a number of subordinate spaces, and even divided by a flight of stairs, which passed from an under story right through it. As, however, amongst other laudable acts of King Frederic William III., the restoration of ancient buildings was thought of, the common council resolved on the ornamenting of the north hall. But it was a strange occurrence, that none seemed even to be aware of the real size of the structure they had before their eyes! A hasty plan was, therefore, concocted, and the stucco ornaments (triste trophies of the architectural genius of 1747) knocked down, for substituting frescoes in their stead. This, however, led to a clever arrangement with the Art-Union of Düsseldorf—which, in the laudable expectation of finding here a worthy scope for their fresco painters, consented to contribute one-half of the profits of their exhibitions for three years to the above purpose. The cartoons of Mr. Rethel were accepted, and the plan of the restoration confirmed at Berlin.

The secrecy and exclusiveness with which the Aachen Common Council proceeded in this case, produced some disappointments and mistakes, because they really did not know what they were about. It was Professor Bock, of Brussels, who at last solved the enigma, and demonstrated the identity of the north and south hall as parts of one building.* His work affords interesting glimpses of the mechanism and theory of Byzantine and Carolingian palace structures. After the walls, which had been inserted (at a later period) between the vaults of the two halls, have been removed, Professor Bock's assertions became self-evident. *After* this, it was (wisely) resolved to pull down the intercepting walls, and to restore the original double hall, retaining, however, the hitherto frescoes. As the intermediate walls fell, a new one was to be constructed. But here again, *some one* thought, that the windows of the south hall were to be blocked up, for obtaining a large surface; and it was asserted that those southern windows were not of the original design, but an addition of an after period. On this a sore controversy is still pending. Abstracting from even the old documents brought forth by Mr. Oebeke, there can be no doubt that these windows belonged to the original plan, although in the *hurry* in which most mediæval monuments were completed, or rather not completed,† they may be somewhat less symmetrical than those to the north. It is quite impossible to think, how the architect of such a building, should enter so little into its whole system and organism, as to construct a double hall whose halves are quite similar, but whose *north* side only should have windows, and thus prevent even the fine sight of the splendid minster. Another fault of the present restoration of the hall, encroaching on its very practical use, is, that the great entrance is to be placed in the middle of the hall in that place where the windows were formerly; while, the *old master*, with the tact appertaining to that so called mystical period, had placed it at the lower end of one of the length sides, "thus to afford, on festival occasions, to the processions or official entries, an appropriate expanse for their procedure and location in the whole hall." Proceeding in this mode of spurious *modernization*

* "The Town Hall of Aachen—a plea for the preservation intact of the German Crowning Hall." *Das Rathhaus*, &c. Aachen, 1845. 8vo.

† This observation, applicable to even the social affairs of the middle ages, made Prof. *Steffens* exclaim: "*Das Mittelalter ist nicht fertig geworden.*" The middle ages had no time—to get ready.

(*Modernisirung*), the flight of stairs, ten feet wide, in the south part of the hall, was also to be removed. Although this old staircase may not possess the pompous elegance of modern corridors and stairs—still, it is more in keeping with the *spirit* of the building, than to see the plain south front of the city hall of rough, unpolished freestone, and to it added a quite modern structure. In alluding to these objections, raised by the Opposition of German and Rhenish architects—we cannot but urge the necessity of fully entering (in any given restoration) into the ideas and intentions of old masters. Mr. Zirner's plan for the restoration of Cologne Cathedral is a pattern in this respect. But the more architectural and art taste pierces all classes of society—the greater the duty of the builder to renounce all egotistic conceit, and still more low selfishness, and to come up to the demands of an emerging (*aufiauchenden*) age by great works, or, at least, by truthful restorations.

## THE PURIFICATION OF LEADEN PIPES AND CISTERNS.

Sir,—In the last number but one of your generally well-informed paper, you have published an article taken from the *Morning Post*, entitled "Pure water for a penny,—Pipes and cisterns purged by Epsom salts," calculated to alarm the public, from its obvious inference that the whole of the water-pipes and cisterns of your great city are impregnated with a "*poisonous*" salt of lead. If this impression exists in any degree, however small, it should be at once removed, for which purpose I trouble you with these remarks.

The writer of the article alluded to does not appear to understand his subject, or he would know that sulphuric acid has a greater affinity for lead in solution than for magnesium, and also that it does not act on the former unless concentrated and at a boiling heat, therefore is lead used for cisterns, &c., in our manufactories where large quantities of sulphuric acid are required.

The effects, too, "*of turning the cistern into silver*," as described by this philanthropist, would be produced if the water contained either lime or barytes in solution, both of which have a stronger affinity for the acid than magnesia; but I desire most to direct attention to that point where the writer, by way of caution, says, that "particular care, of course, is necessary afterwards in the cleansing away *of the poisonous salt of lead*, thus formed in either way." Now it is well known to every one having the least knowledge of the subject, that the sulphate of lead *is not a poisonous salt*, but insoluble and innoxious; and, in fact, to produce this salt when any other salt of lead is taken internally, the whole of which are more or less poisonous, a salt is given as an antidote, containing sulphuric acid, which combines with the lead, and precipitates the harmless but much-abused sulphate of lead. So that, instead of its being of so dangerous a nature, whatever poisonous salts of lead may exist in water from the accidental presence of the nitric or acetic acids, some addition of sulphuric acid would render them perfectly harmless.

Your general remark respecting the application of allum to deposit impurities is correct, it being a sulphate of allum.

I beg to say, in conclusion, that my only object in writing is, that no incorrect idea of danger should take possession of the public mind so as to prejudice them against the use of a metal that has been in use in all parts of the known world for thousands of years.

I am, Sir, &c.,
Vox.

Brighton.

*** Our correspondent's anxiety to prevent the public mind from being prejudiced against the use of a metal respecting which, and its various forms and uses, *caution*, such as our own, has been reiterated for hundreds of years, or at least ever since "Vitruvius (de architectura lib. 8, c. 7) published a very strong remonstrance against leaden pipes when used for the purpose of conveying water," or since "Galen *cautioned* us" * to the like effect, is an anxiety which would be justifiable and becoming, in a matter of so much importance, did it not display rather more zeal than either knowledge or prudence. But it is rather an odd way to establish or increase the confidence of the public in lead, by drawing their attention so pointedly to the fact that 'the whole' of its salts, with one alleged but denied exception, are 'poisonous.' However, let us now to the more immediate subjects of complaint.

In the first place, as to the precautionary advice to clear away a poisonous salt of lead which *would* be formed *were* the pipes and cisterns to be cleansed in the way *proposed*, how does that lead to the "obvious inference that the whole of the water-pipes and cisterns of our great city *are* impregnated with a 'poisonous' salt of lead?" And if it does not, who then is the 'philanthropic' alarmist? Our correspondent "Vox" seems to have raised an Umbra out of the 'chambers of his own imagination' for the mere pleasure of knocking it, if possible, on its own unsubstantial Caput. Then again how does his assurance that "the sulphuric acid has a greater affinity *for lead in solution* than for magnesium," affect the statement or inferences in the paragraph complained of: *the lead seized by the sulphuric acid of the Epsom salt was not in solution at all!* And, moreover, although in the struggle of affinities *between two salts in solution*, an insoluble resultant salt will precipitate, or a volatile one escape, out of the field of action, with one of the unsettled acids, that is no proof that the bases of such salts have 'a greater affinity' for the acid with which they are either precipitated or volatilized, than the base left in solution. The fact is often quite the contrary.

As to any affinity of sulphuric acid for the metaloid magnesium, does not "Vox" know that the saline affinity of such an acid is one for the oxide magnesia, and not for the metaloid magnesi*um* at all, and that in fact it will unite with no metal or *metal*oid, till it be oxidized; and hence that concentrated sulphuric acid will even fail to act on a metal which diluted acid will oxidize by aid of the water of dilution, and then will readily dissolve. That *dilute* sulphuric acid *will* thus oxidize and then dissolve even metallic lead, the following quotation from Christison will sufficiently prove:—"I have found," says he (p. 537, last edition) "that if *distilled water* contained a 4000th *or even only a* 7000th *of sulphuric acid*, fifty grains of lead kept in it for thirty-two days gained one-seventh or one twelfth of a grain in weight, and were covered with beautiful crystals of sulphate of lead! A minute trace of lead could be detected in the water." In the case under discussion however, it is lead already in the dissolvable form of oxide or carbonate in the scurf, and not the metallic lead at all with which it would more obviously unite, and thus the more speedily strip, and leave comparatively untouched, the pure surface of the cistern.

The allusion to 'silver' is altogether irrelevant; it was a mere menial's mode of announcing the cleansing of the surface; so that we shall now pass at once to the gist of the whole argument, which we shall very soon dispose of. "It is well known to every one having the least knowledge of the subject," says our correspondent, "that the sulphate of lead *is not a poisonous salt, but insoluble and innoxious*." Now really "Vox" is very much to blame in not affording our standard authorities in medical jurisprudence, such as Paris and Christison, 'the least knowledge' of a subject of so much importance; for although they recommend, in the case of poisoning by *soluble* salts of lead, which enter the blood and penetrate the whole frame, that, of *two evils*, it is best to choose *the least*, by converting the soluble salt into an insoluble, which *only* acts poisonously on the bowels, whence it can, moreover, be more readily purged; yet not one of these authorities has dared to tread on the dangerous ground on which "Vox" has rushed, in assuring the public that they may safely swallow sulphate of lead *ad libitum*, as it is insoluble and innoxious. On the very contrary, Paris says, without the least exception in favour of any one salt, that although "lead in its metallic state does not exert any action on the living system,—when oxidized or *in the form of salt, its virulence is very considerable*;" and Christison declares that "it is probable that ALL the preparations of lead are poisonous except the metal, and *perhaps* also the *sulphuret*," a *very different* thing from the sulphate; and he thus partially excludes the metal and the sulphuret, simply because it is a general principle in toxicology that "the metals are not poisonous unless *oxidated*," but he afterwards adduces facts to prove that even these also may be oxidized in the bowels, and there assume a poisonous form. As to the sulphate, surely it is not necessary to remind or inform one who 'understands his subject,' that *it* contains an oxidated, and hence a poisonous, form of lead, though sulphuret does not; and that, although insoluble, it is not the only insoluble form of lead that is poisonous.

The importance of this subject to the public must be our excuse for the length of this note; and we trust that "Vox" himself is now conscious of the danger of rashly assuring the public that they may safely allow sulphate of lead to get into their food and their bowels, as undoubtedly it would, unless cautiously and carefully cleansed away, wherever the mode of cleansing, pointed out in the paragraph complained of, might happen to be adopted; and we may add, that the caution was our own, and *advisedly* given; the facts alone having been taken from the *Morning Post*.

* See Paris's Medical Jurisprudence, vol. i. Christison on Poisons.

## THE ALTERATIONS IN WESTMINSTER ABBEY.

The alterations, to which we have several times referred, are being proceeded with rapidly, notwithstanding a very generally expressed opinion in opposition to opening the transepts, and in favour of removing the organ-screen and fitting up the nave, or part of it, for the services. Objectors to the latter course say, what are you to do with the organ, and where place the screen? but the reply to this is easy.

It happens that the space of wall between the head of the west door and the bottom of the great west window is greater than in most churches, and at once obviates the first difficulty, as it affords a good place for the organ. There is a space of about 25 feet in height, 29 in breadth, and 24 in depth, without stopping one pane of the window, or concealing one architectural feature of the building. As to the screen, place it to support the organ as it now does, and let it extend across between the first pair of pillars of the nave, with its architectural face to the east. It will then be seen by the whole congregation (whereas now it faces the deserted nave, and is only seen by those who visit the monuments), and it will match the altar-screen, which will then bound the lower part of the view at the east end of the church.

Workmen have commenced putting in the new painted glass in the rose window of the south transept.

Candidates for the Degree of Associate of the Royal Academy.—The following gentlemen entered their names in the book of the Royal Academy as candidates for its honours:—Among them are some we never heard of before; while others, well known and esteemed, we miss from the list. *Painters*—William Linton, John Dearman, John Lucas, Edward J. Niemann, George Harvey, John Rider, George Lance, Richard Ansdell, John Philip, J. D. Harding, Eden Upton Eddis, Alfred Vickers, James Henry Nixon, John Zephaniah Bell, Henry W. Phillips, Frederic Newenham, Frank Williams, Augustus Leopold Egg, William Essex (enamel), E. V. Rippingille, Samuel West, Thomas Mogford, J. Goddard, W. D. Kennedy, Henry Barnard Chalon, Frederic Goodall, Edward William Cooke, Henry Bright, George Richmond, Richard Rothwell, Robert Thorburn, Alexander Fraser, Frederic R. Pickersgill, William Simson, Samuel Hallé, Henry Pickersgill, jun., Alexander Johnston, Thomas Ellerby, R. S. Lauder, Henri Philipe Heidemans, F. H. Henshaw, Thomas Henry Illidge, John Wood, Marshall Claxton, John Calcott Horsley, Frank Stone, and N. J. Crowley. *Sculptors*—John Bell, William Behnes, Edmund Cotterill, William Graham, Henry Weeks, Thomas Earle, Frederick Thrupp, Christopher Moore, M. L. Watson, Edward B. Stephens, John Ternouth, Charles Augustus Rivers, and Edward Davis. *Architects*—Sydney Smirke, Thomas Henry Wyatt, George Gilbert Scott, and J. J. Scoles.—*Art-Union Journal.*

## RESTORATION OF WARE CHURCH.

The parish church of Ware, in Hertfordshire, an exceedingly interesting structure of the fourteenth and fifteenth centuries, long disfigured by rough-cast and cement, has been gradually falling into decay, and had approached the danger point. The churchwardens and vicar (the Rev. J. W. Blakesley), co-operating well together, took professional advice, and then reported to the parishioners on the state of the church. The result of this was, that Mr. Smith, of Hertford, the county surveyor, and Mr. George Godwin, were invited to submit plans and estimates; and at a vestry meeting held last week, the perfect restoration of the church, at the cost of a large sum of money, was decided on, and Mr. Godwin was elected to carry it out. This proper determination of the parish to restore the church is the more noticeable, as Ware, it will be remembered, was the scene of a painful contention not long ago, between the then vicar and the parishioners. The church will afford us subject for illustration shortly.

## NOTES IN THE PROVINCES.

The citizens of Bristol will in a few weeks be supplied with pure water in several parts of the city and its suburbs, through their new water-works, from the springs at Barrow. Arrangements also are in progress to supply the highest parts of Clifton with water from the Mendip hills. The rates of charge rise from 10s. a year for a house at 10*l.* rental, to 40s. for one at 50*l.*, and so on upwards in proportion. "To the prospect of health and comfort thus literally poured into their dwellings," says *Felix Farley*, "we want only a repeal of the fever-breeding window-tax to complete an improvement of even greater importance than the Health of Towns' bill of Lord Morpeth."——The foundation-stone of a new Independent chapel was laid on Wednesday week before last at Marshfield, near Bristol. It is to be in the early English style, 64 feet by 36, and will cost about 700*l.* The building will be under the superintendance of Mr. A. N. Langdon.——The Southampton council have resolved to apply to Government for copies of the Ordnance map of their town, to be engraved at the public expense and sold at the usual low price of Government work to parties interested.——The committee appointed at Newport, I. W., to inquire into the stability of St. Thomas's church, agreed with Mr. Philip Hardwick the architect's conclusion, that the church, except the tower, should be rebuilt, and their constituents have resolved, therefore, not to take any further steps towards repairing or restoring the present building.——St. John's schools, Worcester, built in the Gothic style from designs by Mr. Perkins, for 150 children, were opened on 28th ult.——With reference to a subscription set on foot for a stained glass chancel window for St. Martin's church, Birmingham, a correspondent of *Aris's Gazette* suggests that the pews and the barbarous brick casing on the outside should at same time be removed and the church completely restored, which could now be easily done by a church-rate, as was proved, he remarks, 'by late decisions of the Lord Chief Justice, and the Lord Bishop of Gloucester and Bristol.'——The pebble, or 'petrified kidney,' pavements at Leicester are being replaced by squared granite.——The first approach to the elegant luxury of a public fountain at Manchester, says the *Advertiser*, has been erected in the centre of the Smithfield market-place, where a pillar lamp throws out a great body of light above, and four lions' mouths a small body of water beneath. The whole is surrounded by a basin, which receives the water.——The new Church of St. Simon, Gloucester-street, Liverpool, was to be opened on Wednesday last. The architect, Mr. Hay, says the *Standard*, has produced his building at a cost of £400 less than his estimates, and has made a gift of a stained glass chancel window, by Ballantyne, of Edinburgh, at a cost of £120, to boot. The contractors, too, have presented a west window, of like value, by Cairney, of Glasgow. The contractors were Messrs.—Dodd, stone-mason; W. Tomkinson, bricklayer; G. Wilkinson, joiner; W. Goodall, plasterer and slater; Cockbain and Wooley, plumbers, &c.; and B. and I. Fowler, iron-founders. The style of the church is purely ecclesiastical, with arched aisles, and varnished oak-painted joiner-work and pulpit.——Kidderminster Church is closed, in order to effect the contemplated improvements in the roof and body of the church.——The Newcastle Society of Antiquaries have applied to the council for a lease of the old castle, and a donation towards putting that venerable stronghold into a creditable state of repair.——Extensive improvements are in progress at the Charity Hall, Hull. The façade will then present an unbroken range to the street, with three entrances, each surmounted by a Roman arch, and with wings of four storeys in height, and centre of three.——An improvement is being made at Beverley by the removal of the north gallery of St. Mary's Church, which, it is hoped, says the *Hull Packet*, will be only the commencement of extensive restorations.——A plan is on foot for the erection of a public hall at Ipswich, with 4,000 sittings. Of 2,000*l.*, in shares of 2*l.* each, for the purpose, upwards of 600*l.* have been obtained within a week of the starting of the project.——The building of the St. Clement's National Schools, Leigh, was commenced on 12th inst. The design is Elizabethan, quadrangular in form, and will comprise a residence for the curate as well as for the master. The material is Kentish ragstone. The steepness of the ground has been overcome by the architect placing the buildings on a succession of terraces.——The olfactory organs of the Bungay Nuisance Committee having fallen into a state of functional collapse, the *Ipswich Journal* gently reminds their no doubt disappointed constituents, that by 9th & 10th Vict., cap. 96, boards of guardians are empowered to "take steps for the removal of nuisances in any parish where there is no town-council, public trustees, or commissioners," on certificate by two duly qualified medical practitioners, and authority by two justices of peace on complaint and evidence adduced.——The first brick of a congregational meeting-house and anti-state-school was laid on the 12th instant, at Romford.

## SUN PICTURES.

We have lately seen some excellent portraits made by the Talbotype photographic process,—a process to which, up to this time, sufficient attention has not been given. Mr. Henneman, with the direct authority of Mr. Fox Talbot, the inventor, has opened an establishment in Regent-street for the production of these portraits, and here may also be seen some marvellous representations of buildings and views well deserving examination. By means of this process, a tourist with a good camera, some *iodized* paper, and a small box of chemicals, may bring home fac-similes of every thing he sees.

One peculiarity of this process is, that the representation direct from the object is *negative*, the darks are lights and the lights are dark, and that from this, by the agency of light alone, any number of perfect impressions may afterwards be obtained, so that it may be resorted to for the illustration of works. The views are taken on paper, and are therefore quite free from metallic glare.

Weston-super-Mare Pier.—We learn from a report recently laid before the shareholders, that the masonry for the pier, in course of erection at Weston-super-Mare, by Mr. Dredge, is now above the low tide, and the top of it fifty feet square, tapering in its height from sixty feet at the base, and containing about 79,000 cubic feet. The building is shingled about ten feet high on the north-west side, which stands well; and it is intended to protect it by this means still higher, as opportunity offers. The ironwork of the permanent bridge is nearly completed; namely, the bolts, nuts, and screws; and the service bridge and a considerable portion of the chains of the permanent bridge are in a state of forwardness. While the top of the work was under high-water-mark stormy weather did some little damage, but this has been made good. The engineer has since adopted the plan of fixing upright larch poles in the interior of the work, and bolting the outside face of the masonry to them with iron ties.

## NOXIOUS EMANATIONS FROM CESS-POOLS, SEWERS, &c.

SHOULD THEY BE 'DISINFECTED,' OR THEIR CAUSE REMOVED WITH PROMPTITUDE, OR BOTH?

It is rather remarkable that the appalling, and as it were concentrated and warning evidence at Long Acre, of the deadly influence of the fœtid gases fostered in, and emanating from, unscoured sewers and overflowing cesspools, should have raised a host of chemical exorcists to *lay* these evil spirits, much rather than a potent reinforcement of uncompromising sanatory physicians, to insist upon the more speedy and effectual purgation and expulsion of their malignant causes from the 'haunts of men.' It seems to be already altogether forgotten, that to the very 'disinfection,' exorcism, or *laying*, itself, of these diabolical agencies, by the help of quicklime, and their consequent accumulation in the quiescent, fixed, or solid, state, within the sewer or privy at Long Acre, till their simultaneous and sudden liberation was effected by the accidental advent of a fellow-spirit of fire and brimstone—oil of vitriol,—is to be attributed the sudden and warning death of Gross by sulphuretted hydrogen. Let not even the most brilliant discovery, then, of 'disinfecting agents,' to be cast into our cesspools, sewers, &c., for the mere temporary palliation of so enormous an evil, even for an instant lead us to overlook the *paramount necessity*,—now more clearly than ever manifested,—for a perpetual outcry to the Government for legislative authority to compel the thorough and frequent scouring of sewers and cleansing of cesspools, and all other nests and barbours of so fatal a scourge.

But notwithstanding the determined agitation of this main object and end in view, disinfecting agents have proved and will prove highly beneficial, if used as a mere subsidiary adjunct to frequent scouring and removal of filth. They are by no means new, indeed; for a former government, we recollect, once paid an enormous sum of money for the public possession of one of them, namely, nitrous fumes evolved by oil of vitriol from nitre; only, in destroying one noxious spirit (for in this case it was absolute *destruction* to the fœtid hydrogenous compounds) a rather mal-odorous though wholesome one was thus evoked. Chloride of lime, too, has been often used for their *destruction*, though with like disadvantage, as every one knows. But the agents now proposed, though very analogous in one or more of their elements, have the *advantage*, as the lime at Long Acre had, of absorbing or neutralizing noxious gases without the substitution of any other odour. Such is the chloride of zinc of Sir William Burnet, highly spoken of also for its direct disinfecting power in contagious disease; such also is the nitrate of lead of a foreigner named M. Ledoyen, lately under investigation, and by means of which in solution, a rag saturated and waved about is said to have quelled the most offensive stench like magic. Nevertheless, this magical solution has been denounced by the *Lancet* as a "solemn humbug, a delusion, and a snare,"—which certainly it cannot but be, if it merely catch its prey alive within its meshes, and allow it there to lie ensconsed until it 'bide its time,' as it did in the lime at Long Acre.

The *Bradford Observer*, too, notices a pamphlet on disinfection, with a similar process, discovered by a Mr. Charles F. Ellerman, late Hanoverian consul at Antwerp, and, moreover, a Manchester correspondent of *The Times*, Mr. W. Maddick, jun., declares himself to be 'the originator of this movement' at large, inasmuch as he 'long before others' matured a plan of a similar nature, which was submitted 'early last year' to the corporation of Manchester. By the way, what has become of the 'French count and his engineers,' who were not only to disinfect Birmingham by wholesale, but to do something far better, viz., regularly to remove the inodorous solids, in the disposal of which they were to render Birmingham the fertile prototype of a new "manufacture?"

Church in China.—The English residents at Shanghae have resolved to erect a church, which will be the first Protestant place of worship, though not the first Christian church, ever built within the dominions of the emperor of China.

## WESTMINSTER COURT OF SEWERS.

A GENERAL court was held on Friday last, Capt. Bague in the chair. The first business of importance was to receive tenders for further works, in pursuance of the recommendation of the surveyor, for the sanatory improvement of Marylebone, viz., 3,105 feet of sewer, in Foley-place, Edward-street, Little Castle-street, and Charles-street, Marylebone. The tenders were as follow:—

| | |
|---|---|
| H. Perkins | £2,650 0 |
| Scissons and Co. | 2,610 0 |
| J. and S. Williams | 2,580 0 |
| W. Dethick | 2,401 14 |
| G. Barr | 2,295 0 |
| W. Yeoman (accepted) | 2,287 0 |

Tenders were also received for arching over 381 feet of King's Scholars' Pond sewer, viz.:—

| | |
|---|---|
| J. Barr | £1,033 0 |
| Scissons and Co. | 992 0 |
| Humphreys and Thirst | 983 0 |
| W. Yeoman (accepted) | 976 0 |

*The expiring Commission.*—Mr. John White brought forward his resolution for making application to the Lord High Chancellor for a new commission. He suggested, in the course of his remarks, that, in consequence of the clamour about sewers, the clerk and surveyor should attend the Lord Chancellor, to be in readiness to answer any questions, and to give all information required. He concluded by moving, "That the petition now prepared be adopted and signed by the commissioners present." The resolution was put and carried, with but one dissentient.

A report was read from the solicitors as to the omission of Chiswick from the jurisdiction of this commission, stating that they saw no valid reason why that parish should not be included.

*The Right of Granting Petitions.*—Mr. Willoughby brought forward the motion of which he had given notice.—"That the Court do reconsider the order of the 27th of July last, delegating to the clerk and surveyor the granting of petitions for sewers and drains during the intervals of the court-sittings, with the view to the repeal or amendment thereof." He stated that he had been induced to bring the question forward from a belief that their former decision had been hastily arrived at. By the adoption of this resolution they sanctioned a new principle, and it entirely swept away from the Court its ordinary functions; instead of which he thought it was high time that the commissioners should take a more active part, and not add to the already heavy burdens of their officers, to say nothing of the question of its legality.

Mr. White (the mover of the resolution) defended the vote that had been deliberately come to; and said, that for a considerable time past the petitions had been presented to the court in gross, and were usually granted on the guarantee of the surveyor that they were in conformity with the regulations of the court.

Mr. Marriott and Mr. Baylis supported Mr. Willoughby's motion, and Mr. Cumberlege the original resolution, as he said it would be most ungracious to rescind a former resolution, producing thereby a strong party feeling. The resolution being then put, there appeared for rescinding the resolution, 14; against it, 10: majority for rescinding it, 4. [Such child's play as this is eminently calculated to damage the commission. Mr. White's motion would have saved the time of the public, and will, we hope, be renewed.]

*The late Loss of Life from a Foul Drain in Long Acre.*—Mr. Le Breton brought before the court the motion of which he had given notice, relative to the want of drainage in Long Acre; and in illustration of his argument alluded to the late coroner's inquest on George Grosse, whose death, if not directly caused, had been instrumentally hastened by want of proper drainage in Langley-court, in that vicinity, the particulars of which had been brought fully before the public in the reports of the inquest. There was so great an accumulation of filth, and such an effluvium therefrom, that the owner of the house, knowing the general disinfecting properties of vitriolic acid, had cast a quantity of it into the drain, which, there meeting with other substances, had emitted sulphuretted hydrogen, and being inhaled, had caused the poor man's death; thus proving the foul drain to have been the moving cause. The greater part of Long Acre was without sewer at all, and as that court, in the last session of Parliament, had obtained powers to make sewers where none before existed, and to charge the owners of the property with the cost of them, a great responsibility was thrown upon this court; a responsibility, in fact, for all the deaths that occurred in the districts under their jurisdiction. A great mortality amongst children prevailed in those parts, co-existent with scrofulous and other diseases, and there was not an hour to be lost in devising a remedy. Mr. Dowley, their late surveyor, five years ago, had presented a plan how this object might be effected; but as they had since then changed their plans, by the general adoption of the egg-shaped sewer, this could not be adopted, and it would require their present surveyor to go over the ground again. He concluded by proposing the following resolution:—"That the surveyor be directed, with all possible dispatch, to prepare a report and all necessary plans, sections, and estimates, with the view of affording sufficient drainage in Long Acre and the streets and courts adjacent. That, owing to the importance of the case and the advanced season, the surveyor be authorised to employ during the time such assistants as he may require. That when the surveyor's report is prepared, a special court be summoned to consider the same, and take all necessary measures thereon."

Mr. Kendall seconded the motion. Mr. John White hoped the plan proposed would have reference to a general system of drainage of the entire district. Mr. Phillips, the surveyor, said this was absolutely necessary. Experience had proved to him that without a plan and levels were taken previously, the chances were that sewers may be put in at improper levels, and so have no reference to their ultimate extension. Mr. Hawkes said that they had got a good plan before them, and that a remedy ought not to be delayed. It appeared now, that nothing could be done unless it received the sanction of certain parties, and formed one of the evils of this monster commission. For his part, he saw no reason why the plans should not be laid on the table by that day week. Mr. W. Donaldson said, that as long since as 1845 plans for this object had been offered to the Mercers' Company, who could not be induced to move at all in the matter. Mr. Unwin remarked, that a very efficient drainage for Wellington-street had been provided, but that not above seven or eight householders had availed themselves of it. Mr. Le Breton replied, and stated that if they extended the existing sewers, the expense would fall on the ratepayers, and not on the Mercers' Company.

The motion was then unanimously adopted.

## New Books.

*Monumental Brasses and Slabs; a Historical and Descriptive Notice of the incised Monumental Memorials of the Middle Ages.* By the Rev. CHARLES BOUTELL, M.A. G. Bell, Fleet-street. 1847.

THE monumental brasses of the middle ages, independently of their beauty as works of art, and their value as historical memorials, are of great service to the architect and architectural decorator.

"To the genealogist they afford authentic cotemporary evidences: to the herald they furnish examples of the original usages in bearing arms, and authorities in the appropriation and adjustment of badges and personal devices: the architect here will find, in rich variety, the details and accessories illustrative, as well of peculiar modes of arrangement and combination, as of the distinctive characteristics of style and design: the chronologist hence may deduce authentic data to determine, with truly remarkable exactness, successive eras and epochs: the artist has before him original compositions, illustrating the early excellence, and then the progressive, though happily only temporary, decline in the art, of such pre-eminent importance, that of incision: to the general antiquary, from the same source, widely diversified information will accrue: the palæographer also is hence enabled to fix the distinctive form of letter used at certain periods, together with the prevalent peculiarities of contraction and abbreviation, conformable, for the most part, to that which is found in legends depicted upon stained glass, in illuminations, or on engraved seals."

The work before us is a very pretty book, profusely illustrated, and got up in a manner creditable to Mr. Bell, the publisher. Moreover it is a readable book, and when we first dipped into it we were disposed to give it a hearty recommendation. Examination and comparison, however, have greatly altered our opinion of the work; the labours of others have been appropriated wholesale, and that, too, in a case where it presses most heavily, tending greatly to the pecuniary injury of the parties laid under contribution. Had the author been contented with borrowing from Cotman's and Stothard's, and other works which have been for some time before the public (as he has done pretty largely), we should have said little about it; but when we find no fewer than *fourteen plates* copied, without permission or acknowledgment, from an elaborate and costly work *now in progress*, and which, at present, cannot possibly return to its authors the cost of its production, we feel it to be our duty to protest in the strongest possible terms against such a proceeding. Many of our readers will understand that we allude to the Messrs. Waller's work on brasses, for which the drawings here copied were obtained with labour and expense. To prove the truth of what we have said, we may point to the following as amongst those taken from the work in question; the frontispiece; Sir John D'Abernoun, 1277 (to obtain which the Messrs. Waller were at the expense of removing the altar rails); Sir R. Septvans; Sir R. Trumpington; Sir — Fitzralph; Priest at Wensley; Sir John Leventhorpe and lady, and the Swynhornes, at Little Horkesley. Nor is there the slightest acknowledgment of the theft, excepting in one other case where permission was asked and given, and which, being duly set forth, of course serves to convince the unsuspecting public of the honesty of the author, and makes the matter worse. All are interested in discouraging such a system.

## Correspondence.

GEOMETRIC SYSTEM OF THE ANCIENT ARCHITECTS.

SIR,—Perhaps the following quotation from Spenser's "Faerie Queene" (if it has never been previously remarked) may throw some light upon the proportions of ancient structures. It is curious and interesting, from one who delighted to study "The image of the antique world."

"The frame thereof seem'd partly circulare
And part triangulare; O worke divine!
Those two the first and last proportions are:
The one imperfect, mortal, feminine;
Th'other immortall, perfect, masculine;
And 'twixt them both a quadrate was the base,
Proportioned equally by seven and nine;
Nine was the circle set in heaven's place:
All which compacted, made a goodly diapase."

W. C. T.

## Miscellanea.

RESTITUTION OF OPENINGS IN NEW PARTY-WALLS, LONDON.—In the case of an appeal against the district surveyors' certificate relative to a party-wall in Wood-street, City, the question has arisen, and remains still unsettled, as to whether when a party-wall is condemned as ruinous, and ordered to be rebuilt, the party building is to leave similar openings in the new wall to those in the old wall. The official referees are for preserving the ancient lights, and have so awarded, as we are informed; but the registrar thinks that no openings ought to be permitted in the new party-wall, and has refused to affix the seal of office to the award.

THE OLD DEANERY, LINCOLN.—Workmen are now busily engaged in demolishing the old deanery, north of the cathedral, the most modern part of which, called Wolsey tower, was built during the short period that the cardinal was Bishop of Lincoln. According to the *Daily News*, a new building, in the Elizabethan style of architecture, is to be built rather more to the eastward; it is regretted that the present opportunity will be allowed to pass over of opening the north side of the minster to view.

STATISTICS OF RAILWAY EMPLOYMENT.—A return of the number and description of person employed on the railways of the United Kingdom (open for traffic), on the 1st of May last, has just been printed, from which it appears there were employed on seventy-four railways, comprising an extent of 3,305 miles, 47,218 persons. From a similar return on lines and branches in course of construction at the same period, amounting to 128, and comprising an extent of 6,155 miles, it appears there were 256,509 persons employed. Total, 303,727.

ST. MARK'S SQUARE, VENICE.—The view of St. Mark's-square, at Vauxhall Gardens, is a very creditable piece of decoration. The "Library," by Sausovino, the prototype of the New Carlton, is seen to good effect.

THE DISCOVERIES AT NINEVEH.—A writer in the *Nottingham Review* says:—"From Jezirah we went to Mosul, not far from which town one of my best friends, Mr. Layard, is engaged in excavating the great mound of Nimroud, the English Government having obtained a firman from the Sultan, and furnishing funds for that purpose. I spent several days with Layard, at his temporary residence near the mound, which is about twenty miles from Mosul, and a mile and a half from the Tigris, and was enabled to form a tolerable idea of the nature and extent of his operations. Only fancy an immense artificial mound, composed of unbaked bricks, 900 yards in length by 600 in width, and about 50 yards high, which for ages has been overgrown with grass, and the top of it well cultivated and built upon, nobody suspecting that in this mound, and under these ploughed fields, were the splendid remains of the palaces of the old Assyrian kings. Remains, indeed, they can hardly be called, since the greater part of the walls and the bas reliefs with which they are covered, are in as perfect a state of preservation as if they had been chiselled yesterday. To attempt to describe these antiquities would take ten times more space than the limits of a letter will allow; suffice it to say, that together with the French excavations at Khorsabad (a mound of the same nature, though not nearly so large as that of Nimroud), they are by far the most remarkable things in the way of antiquities, not excepting even Palmyra, that have been discovered within the last hundred years. A great many of the bas reliefs and curious ornaments, articles of dress, vases, weapons, armour, &c., are now being transported down the Tigris to Bussora, on the Persian Gulf, whence they will be shipped round the Cape to England. They will, altogether, form a splendid collection for the British Museum, much superior, I think, to that of the French, though the government of the latter have been much more liberal than ours, having allowed Messrs. Botta and Flandin, for their expenses and remuneration, upwards of 35,000*l.*"

IMPORTANT TO IRONFOUNDERS.—At Liverpool, on Friday week, Messrs. Smith and Willey, ironfounders, appeared at the county court, to defend three actions brought against them by men lately in their employ, for balance of wages alleged to be due. On the part of the defendants it was stated, that, in consequence of the conduct of the moulders, belonging to the moulders' club, Messrs. Smith and Willey had been forced to put labourers and boys to perform work previously done by moulders, and that strong ill-feeling had been displayed by the club men in consequence. One of their plans was to send men to take employment as moulders, and after these had worked a day or two, the work entrusted to them they wilfully spoiled. The magistrate refused all the claims, observing, that although it was possible a single article might have been accidentally lost, the fact of three men losing their work at the same time was sufficient to convince him that the defendants were justified in resisting the demand.

TESTAMENTARY DISPOSAL OF COINS AND OTHER ANTIQUES, &c.—Among the specific bequests by the late Rev. J. W. Mackie, M.A., student of Christ Church, Oxford, who died at his residence, Siddons House, Upper Baker-street, Regent's-park, on 1st July, are the cabinet, late Lady Warburton's, with the coins it contains, and all his papal coins, to the Ashmolean Museum; the View of the Piazza de Popolo, Rome, to the trustees of the Tayler Gallery, Oxford; the antique bronze plate found at Tours of the Dedication of the Chapel to St. Elvy, described in the "Archæologia," to the Society of Antiquaries; the bust of Proserpine, by Powers, of Florence, to the dean and chapter of Christ Church, Oxford; and all autographs, prints, portfolios, coins, &c., not specifically bequeathed, to the Rev. W. Nourse, together with all MSS.

THE SHORT TIME MOVEMENT.—Some readers have construed our intimation, last week, that the assent given to the wishes of the operatives was at present but partial, into an indication that our previously expressed opinion was changed. This, however, is far from being the case; and we hope, as we have done from the first, that the masters will all grant the request. We are informed that the number of London firms who have done so now amounts to eighty.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement, for the erection of a Laboratory Establishment, near Gosport; the several works required in completing and finishing the Kingsland, Dalston, and De Beauvoir Town, Literary and Scientific Institution; inside and outside work, including materials, at Kensington; the erection of a chapel, board-room, and other works, at Bishop Stratford Union Workhouse; Carpenter's work, and painter's and glazier's work at St. Leonard's, Shoreditch Workhouse, Kingsland-road; Construction of 3,000 yards of the Glasgow, Kilmarnock, and Ardrossan railway, and for alterations in the line and levels, and relaying, with heavier rails, 2,700 yards of the Doura Branch of Ardrossan line; for the erection of a new iron bridge near Yarmouth; also for the supply of two cylindrical wrought-iron boilers, at Westminster; and the supply of 35,000 perforated tiles, for filters, and as many hard burned bricks of best quality, for the Gorbals Gravitation Water Company, at Glasgow.

RATING PUBLIC COMPANIES.—THE CHARTERED GAS COMPANY, *Appellant*.—ST. MARGARET'S PARISH, *Respondents*.—This case was partly heard at the last sitting of the Westminster Petty Sessions, and was an appeal by the Chartered Gas Company against a rating of 4,000*l.* a year on their works in St. Margaret's parish.—On Tuesday Mr. Rogers, the vestry clerk, said, that in consequence of the company having made a return of 28,000*l.* a year profits, the parish had only considered it fair to increase the assessment from 3,040*l.* to 4,000*l.*, on the principle that any person would pay that amount for the use of the extensive works and interests enjoyed by the company.—Mr. Burls, the secretary, contended that no reason had been shown to alter the arbitration of 1830, and that to make an assessment on an income tax return was not just.—Alderman Johnson doubted if the profits could be rated.—Mr. Rogers observed, that it was not the profits that were proposed to be rated; if so, it would be on 28,000*l.*, instead of 4,000*l.*; but the parish contended that any one would give 4,000*l.* a year for permission to carry on the works, and it was for the company, by the production of their books, to show that amount could not be obtained. The parish could not do that.—The court observed that the question was one of great importance to the company as well as the parish, and they wished some better evidence had been brought forward. The room was cleared for about a quarter of an hour, and upon parties being called in, Mr. Evans announced that he and his brother-magistrates were of opinion that the rate should be affirmed. The company could have brought forward evidence that it was too much; they had not done so, but they could appeal.—Mr. Burls thanked the magistrates, and said, the company would consider what course they should pursue.

PUNISHMENT OF BAD ARCHITECTS IN FRANCE.—The correctional police of Vire were lately occupied with the trial of M. Dupont, the architect of the school-house of Vassy, for having, by the badness of the construction, caused the death of eight persons. It appeared from the evidence that, on June 9th, a main beam of the building gave way, and the two floors fell in, crushing in their way the persons below. The beam in question was proved to have been always suspected as weak, and when the school-house was given up to the authorities, some questions were asked about it. It was then finally decided that a partition should be placed immediately under it, as a means of support. This had not been done when the accident occurred. The court, considering that sufficient care had not been evinced, condemned M. Dupont to three months' imprisonment and 50*f.* fine.

## TENDERS

For proposed chapel at Park-crescent, Clapham-common, for 600 sittings; to be built under the direction of Mr. L. W. Lloyd, Architect.

| | |
|---|---|
| Mr. John Loat ..... | £3,267 |
| Messrs. Haward and Nixon.. | 2,754 |
| Mr. Trego ..... | 2,537 |
| Mr. Harnden ..... | 2,585 |
| Mr. West ..... | 2,495 |
| Mr. Mills ..... | 2,395 |

## TO CORRESPONDENTS.

"*J. T.*" (Cornwall.—We cannot undertake to supply our correspondent with a system of perspective at this moment.

"*W. R. C.*" shall appear, though perhaps not immediately.

"*R. W.*" We have not yet found an opportunity to examine his communication.

"*B. D. C.*" next week.

*Received.*—"H. B. H." "J. K."

"*Books, Prices, and Addresses.*"—We have not time to point out books of kind addresses.


## ADVERTISEMENTS.

LONDON and PROVINCIAL JOINT STOCK LIFE INSURANCE COMPANY.—The Directors invite the Public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and existing advantages offered by the Office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE FOURTHS of PROFITS divided. For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No 38, Nicholas lane, Lombard street.

TO ARCHITECTS, BUILDERS, AND OTHERS.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained as MINTON and Co.'s Warehouse, 9, Albion place, Surrey side of Blackfriars Bridge. Also an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire-places, &c.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN & BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY, James Smith, Esq., of Deanston, chairman, invite attention to their IMPROVED BRICK and TILE MACHINES which are to be seen at work at Mitcham, and at the Company's office, 194, Piccadilly, (from 10 AM to 4 PM) Mr Robert Scrivener, who has been appointed manager in the room of Mr John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 194, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr SLIGHT'S, Leith-walk, Edinburgh; Mr LAWRENCE HILL, 133, Buchanan-street, Glasgow; Mr ROBERT CHARLES, Mill hall, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, LINE RILNS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and compared with white lead, its property of concealing is as 3 to 2, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. Blended with other paints it has a better tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however large, from preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

GREASE! GREASE! GREASE!—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New road, London.

JAS. COVINGTON and SON, Licensed Lightermen, No. 8, Wharf, City Road Basin, and No. 3, Warkworth terrace, Limehouse London. CONTRACTS TAKEN FOR LIGHTERAGE of every description of goods to any extent.

N.B. Heavy castings, &c. craned under Twenty Tons. Goods landed and carted.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS

THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 2, Old Bond Street Works, late Sir F. Chantrey's foundry, Dockton-place, Pimlico.

TO BUILDERS, PAINTERS, AND OTHERS

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only 79, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

ZINC WORK

MESSRS. F. and J. HARLAND beg to call the attention of Builders and others, to the following list of prices, for cash:—

| | | | |
|---|---|---|---|
| 2 inch Pipe ..... | per foot | 4d. | 3½ inch Gutter.... per foot 4d. |
| 2½ ditto ..... | " | 5d. | 4-inch ditto ..... " 5d. |

Including Bends.

Flats Covered and Cisterns Lined from 4d. to 6d. per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington. Surrey, opposite to the Fishmongers' Almshouses.

N.B. Orders by Post punctually attended to.

ARCHITECTURAL ENRICHMENTS.

BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronised by H. M. Queen, by the Honourable Commissioners of Board of Work, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition. Suitable for many and durable flat Design prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1000 designs of the papier mache ornaments, with a tariff price £1.—Works, 15, Wellington Street North, Strand.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office Hatton-garden is open daily between the hours of Ten and Four, where [illegible] to purchase or lease Houses, Property, [illegible] land for building purposes [illegible] capable of affording sufficient Drainage, and which they request all such Persons to apply [illegible].

By the Court,
STAPLE and LUSH, Clerks.

TO BUILDERS, OWNERS OF HOUSES AND PROPERTY, AND OTHERS.

**THE Commissioners of Sewers for the City** and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that by an Act of Parliament [illegible] and 11th years of the reign of her present Majesty, chap. [illegible], intituled, "An Act to explain and amend the Laws and personal, intituled, "An Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster, and part [illegible] passing of that Act [illegible] of the Commissioners, to any such [illegible] into such existing sewer: and it is [illegible] shall in all cases [illegible] Commissioners [illegible] portion of the expense [illegible] to expend a greater sum [illegible] interested are requested to attend at the Office of the Commissioners, No. 1, Greek-street, Soho, between the hours of nine in the morning and four in the afternoon, where a map and plan of the sewers under the jurisdiction of the Commissioners may be seen, and the form of sewers and drains required, ascertained, and a form of the written request required may be obtained, and all further information and assistance given: And further take notice, that parties are requested [illegible] at least before they shall so attend at the said office to send, by post or otherwise, to the Surveyor of the Commissioners at the said office, a description of the house or erection intended to be built, with the mode in which it is proposed to join any sewer, or provide for the drainage of such premises.

By order of the Court,
[illegible] HERTSLET, Clerk.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute [illegible] I am enabled to reduce my former prices considerably. [illegible] ONE SHILLING PER FOOT SUP. [illegible] SIXPENCE PER FOOT RUN. A large pattern [illegible] always in stock. [illegible]—CHARLES LONG, No. 1, [illegible]-street, Baker-street, Portman-square. [illegible]

**THOS. MILLINGTON, 87, Bishopsgate-**street Without, has a large Stock of Crown Glass on hand of the following sizes: [illegible] 8, 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

**FOREIGN WINDOW GLASS,** superior to English, 16 ounces to the foot, suitable for general purposes, in cases [illegible] per foot in large dimensions, smaller [illegible] at [illegible] per foot. No less than [illegible] can be had [illegible] must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS,** equal to the Ancient.

| | s. | d. |
|---|---|---|
| Ruby in Sheets, a splendid [illegible] per foot | 2 | 3 |
| Green | 1 | 3 |
| Blue | 1 | 0 |
| [illegible] | 1 | [illegible] |

Glass [illegible] to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**PLATE GLASS.—Architects, Builders,** and the Plate Glass Trade generally, are solicited to inspect [illegible] by the UNION PLATE GLASS COMPANY. [illegible] Holborn. N.B. Rough Plate Glass supplied one-fourth, three-eighths, one-half, and three-quarter inch thick. H. CHRISTIE, Agent.

EMBOSSED GLASS.

**EDWARDS and PELL, 15, Southampton-**street, Strand, Embossers, and Ornamental Glass Painters, [illegible] Work in the best style [illegible] LONDON. As the work is [illegible] EDWARDS and PELL can guarantee its being properly executed.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade [illegible] Sheet Glass, either [illegible] Having a large stock [illegible] Warehouse [illegible] the favor of an inspection; he has also just received a few cases of very [illegible]

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade [illegible] UNRIVALLED FOR BRILLIANCY OF COLOUR [illegible] Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

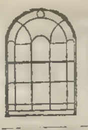
TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS, in Crates of Eighteen** Tables, at the following low prices, for ready money:—

| | | £ | s. | d. | |
|---|---|---|---|---|---|
| Crown Glass cut to [illegible] and upwards, at 3d. per foot. | Thirds | 4 | 4 | 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot. |
| | Fourths | 3 | 10 | 0 | |
| | C.C. | 2 | 8 | 0 | |
| | C.C.C. | 2 | 0 | 0 | |

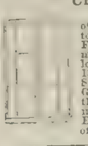
SHEET GLASS [illegible] White Lead [illegible] WILLIAM FREDERICK [illegible] 23, [illegible] London.

**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger [illegible] It [illegible] operation (four different ways), forms a complete ventilator and sun-blind; all simple, cheap, and effective.—Apply for licenses and to inspect its [illegible], to HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

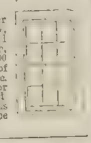


TO THE BUILDING WORLD
**H. BANKS,**
Manufacturer of Shop Fronts, Sashes, and Frames, and Joiner to the Trade, 78, Bethnal-Green Road, London. Parties engaged in building will find the charges at this establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.
N.B. Glazed Goods securely packed for the Country.

**CHAS. WM. WATERLOW,**



MANUFACTURER of Sashes and Frames and Joiner to the Trade, 121, [illegible] row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-sawed Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.





**LAWRENCE & SON,**
CARPENTERS AND SASH MAKERS,
26 and 27, Tottenham-street, Fitzroy-square.
FOR SALE, about Ten Square [illegible] perfectly clean Yellow Battens, for flooring; also, some 1¼ inch framed Flush Wainscot Floor; also, several 2-inch fine Spanish Mahogany 4-panel double margin Doors, and some 2½ Deal ditto.



By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12B, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, [illegible], and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

**DR. ARNOTT'S CHIMNEY VENTI-**LATOR.—F. EDWARDS, Stove Maker to her Majesty, 20, [illegible]-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly valuable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description. Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS. NO CURE, NO PAY.
Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description [illegible] F. E. [illegible] the cure of smoky chimneys on the [illegible] terms of no cure no pay.

**BLAKE and PARKIN, Meadow Steel** Works, Sheffield.—Manufacturers of improved Mill Saws, Circular Saws, Files, [illegible] Plane Irons, Machine [illegible] Plaster, Shear, and Cast Steel, [illegible]

CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C. CHUBB and SON having just erected a** Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron [illegible] rooms and other purposes, and Fireproof Safes at a great reduction in price, and of very superior quality. All their Iron Doors and Safes are fitted with C. CHUBB and SON'S best DETECTOR LOCKS.
57, St. Paul's Church-yard, London.

TO ARCHITECTS AND SURVEYORS.

**C. CHUBB and SON having ascertained** [illegible] rooms, when "CHUBB'S MAKE" [illegible] the attention of Architects to the [illegible] CHUBB and SON, they respectfully request that Architects will [illegible] manufactured by C. CHUBB and SON, of St. Paul's Church-yard, and to require on the completion of the work, a certificate from C. CHUBB and SON [illegible] of their manufacture.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,
[illegible]

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, [illegible] St. Martin's-le-Grand, London, opposite the new Money Order Office.

IRONFOUNDRY.
1[illegible], Drury-lane, and [illegible]-street, London.
**JOSEPH GLOVER,**
Late HENDRY and GLOVER,

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that [illegible] solely his; [illegible] of which he has been enabled to make such arrangements and improvements that [illegible] very advantageous [illegible] stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**IRON FOUNDRY, 9, Brick-lane, Old-**street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, [illegible] Window Guards, [illegible] Tomb [illegible] other Brackets [illegible], Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.
BAKERS' OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

**HOT WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating [illegible] for drying timber &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of [illegible] upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

TO BUILDERS AND CARPENTERS.

**A Considerable saving will be effected in the** purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| | | | | | |
|---|---|---|---|---|---|
| 3d. | 4d. | 6d. | 9d. | 10d | 20d. |
| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 50s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler Wrought Bars and Bright Fitting
3 ft., £3 3s. 3 ft. 6 in., £3 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 1[illegible], Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at [illegible]d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE most respectfully solicits** the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from [illegible] per inch and upwards.
Bright ditto, with Black and Bright Bars, 3d. [illegible] and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright.

| 3 ft. | 3 ft. 6 in. | 4 ft. |
|---|---|---|
| [illegible] | £3. 14s. | [illegible] |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell hanging in superior style, hung in secret, 9s. per pull.

IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, [illegible] pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney bars, Inside, Outside, and Ash-pit, Doors and Frames, Boilers, and Frames, Lamps, &c., &c., all of the best description, at very moderate prices.—CAST IRON CLOSETS.

**PATENT BELLS.—Messrs. MEARS** beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition of a new metal, called the Union Metal, and the bells [illegible] cheaper than those made of the ordinary bell-metal.—Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

**PATENT METALS for Bearings.—En-**gineers and all Manufacturers in Brass, &c., &c., are respectfully [illegible] than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than [illegible] MEARS will be happy to send any [illegible] pattern sent to them.

**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge, and the Grove, Southwark. At the above Works [illegible] superior make and [illegible] Patent process of Galvanized Iron as first introduced into this Country, [illegible] improvements in its application to Roofs, Buildings, &c. Every description of Building [illegible] Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

PATENT COPPER WIRE ROPE LIGHTNING CONDUCTORS for the Protection of Churches, Towers, Chimney-Shafts, &c.

**SMITH and ENGLISH, Princes-street,** Leicester-square, London, beg to inform Architects, Builders, and others, that the above form of Lightning Conductor has been [illegible] adopted, and is [illegible] proving considerably cheaper first cost, much simpler of application, with less injury to the building, than any other kind, and they can refer with great satisfaction to eminent architects and others, who have [illegible] preference:
as also their much improved Revolving and Panelled Iron Shutters,
PATENT DOUBLE ACTION DOOR SPRINGS,
PATENT CASEMENT FASTENINGS AND SILL BARS,
Patent Copper and Iron Wire Sash Lines,
IMPROVED FLOORING CRAMPS, &c. &c.
which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

**LESLIE'S PATENTS.—GAS CON-**SUMERS guaranteed the following important sanatory and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or [illegible] feet [illegible] per hour, according to the requirement of light [illegible] all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails [illegible] the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light-producers, and not Smoke-producers: these will vary in price according to the duty they have to perform, from [illegible]

PRICES:—Upright Burners, with [illegible] Glass Holders, with either sized glass, [illegible] 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers [illegible] SAMPLE PACKAGES, with [illegible] a set of the glass combustion chambers [illegible] forward [illegible] of a post-office order, payable to JOHN LESLIE, at the Charing Cross [illegible] desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted [illegible] the Patentee [illegible] Builders and others to erect. The construction [illegible] brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.

Offices and Manufactory, 59, Conduit-street, London.

# THE BUILDER.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.
**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 14 across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**LIME AND CEMENT WHARFS.** — Grey stone, Flam, burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney pots, Fire-bricks, Lumps, Fire-clay, and other Building Materials, may be obtained on the best and most reasonable terms, of Messrs. ROSLER, at the following Wharfs:—Albion Wharf, Holland street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Lambeth; and Kingsland-basin, Kingsland-road. Ground Lime for Concrete.

TO BUILDERS, CONTRACTORS, &c.
**GREY STONE LIME** of the best quality will be delivered alongside any wharf in London at 7s. per yard of thirteen baskets.—Parties can be accommodated with a moiety of a freight.—Apply to CHARLES FORMBY, Esq., Hailing, near Rochester.

**ATKINSON'S CEMENT.** — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**BATHSIDE CEMENT WORKS**, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, 5, Laurence Pountney Hill, Cannon-street, London. Depôts—Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich
N.B. Plaster of Paris and Bricks at reasonable prices.

**PORTLAND CEMENT** is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.
Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fish ponds, &c.
Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.
**JAMES WESTON** having completed extensive alterations and erected new and powerful machinery at his CEMENT AND PLASTER WORKS, MILL-WALL, PADDOCK, enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders
Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.**
RUTTY and VEREY, 2, South Wharf, Paddington.
LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.
As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—setting firm as a rock under water—using one bushel of lime to eight of gravel.
LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.
Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.
**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a mineral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—
1. It rapidly acquires the hardness of stone
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, for all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.
For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin
For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 18, DRURY LANE.
Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL
**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building, however covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter as no frost has no effect upon it. It may be used on the inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain perfectly sound by the severest Storms. Any Plasterer may apply it, the Instructions for using very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, it is, in every application, in point of economy.
Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.
Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., RULE AGENTS for the Patentees, 39, Maiden-lane, Queen-street, Cheapside, London; of whom also may be had.
JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over Cement or Plaster Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

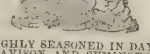
**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

**EMERSON'S PATENT CEMENT** PAINT.—Arrangements are completed for the introduction of its VALUABLE and ECONOMIC PAINT, the PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be requisite, with water.
The surface to which it is to be applied NEEDS NO PREPARATION, but to be clean and free from dust. It matters not whether the walls be wet or dry, its adhesiveness being such that it will cling to any surface. BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT, and may be made of any TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of a light creamy or stone colour.
To ROMAN CEMENT it may be applied the day after it is put on the walls, and one small cask will cover a moderate sized house.
It is particularly calculated for COUNTRY HOUSES, VILLAS, LODGES and ENTRANCES, as it does not absorb moisture, and consequently will never vegetate, and will PRESERVE the walls as effectively as any cement.
T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as more efficient and economical.
THOS. JNO. CROGGON, 5, Laurence Pountney hill, Cannon-street, London.

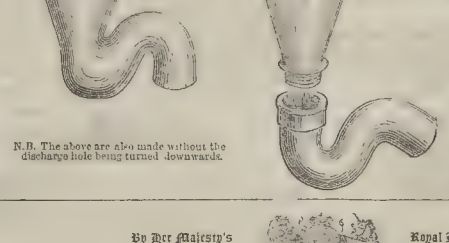
| | |
|---|---|
| Price .. .. | 8s. 6d. per cask of 1 cwt. |
| | 19s. 6d. " 2 cwt. |

An allowance to the trade

**SIR W. BURNETT'S PATENT** for preventing the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.
This process has long been in extensive use in her Majesty's Dock yards—Vide Parliamentary Debate, April 14, 1847. It hardens and improves the texture of wood without impairing its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.
Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade
Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.
When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.
A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.
Further information may be obtained and specimens seen on application to the Secretary, at the Offices, 35, King William-street, London bridge.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.
**THE Patent Desiccating Company** beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Docks, Rotherhithe, has commenced working. The sawing and planing machinery is entirely of the newest designs, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the sap, prevents further shrinking, so much that it will warm the temperature or not the climate, strengthens the fibre, thus giving greater facility and compactness to the materials, all of essential importance for floorboards, doors, shutters, and similar work. For prevention to work the patent, scale of prices, or any further information, address, post paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad street, City.
N.B.—It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 9 per cent of moisture, causing a shrinkage of one eighth of an inch in the width of the board, which is counteracted by the new process.

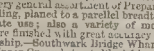


N.B. The above are also made without the discharge hole being turned downwards.

PREPARED FLOORING BOARDS.
AT REDUCED PRICES.
**ALWAYS** on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from 1 inch to 1¼ inch thick
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.
Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico late C. Moore and Son.

**ALFRED ROSLING** begs to inform the Trade and consumers generally, that he keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS** (from Byron and Co.), late S. Pare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING, FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension. Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Handle, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.



MUIR'S PATENT — PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.
**TIMBER** of any Size, **PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and watercarriage, being come direct up the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.
Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

TO ARCHITECTS, SHIP JOINERS, CABINET MAKERS, &c., REQUIRING FINE WOOD.
**SELLING OFF,** at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany-yard, in Little Windmill street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 20,000 feet scrimsoot planks, running from 11 inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronised by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

PATRONISED by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster
**WILLIAM NORTHEN,** Inventor and Original Maker of Salt Glazed Brown-stone Socket Drain Pipes, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to his extensive stock now on hand, which for quality, perfectibility, and price is unequalled. The following unsolicited Testimonial is respectfully submitted:—

Sewers' Office, 1, Greek-street, Soho, July 20, 1847.

Mr ——
DEAR SIR,—Should you at any time be in want of Stone-ware Drain-pipes, I take the liberty of recommending you to purchase them of Mr Wm. Northen, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly.
JOHN PHILLIPS, Surveyor.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

**DOULTON AND WATTS,**
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,
Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their
CLEANLINESS AND CHEAPNESS.

By Her Majesty's — Royal Letters Patent.

**PATENT ASPHALTE ROOFING FELT,** as used by

| | |
|---|---|
| Her Majesty's Woods and Forests, | The Liverpool and Manchester, |
| The Royal Agricultural Society of England, | The Chester and Holyhead, |
| The Leeds and Manchester, | The Norfolk and other Railways, |
| The London and North Western, | And the Corporation of the City of Edinbro'. |

PRICE ONE PENNY PER SQUARE FOOT.
Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 5, Laurence Pountney Hill, Cannon-street, London

CHEAP AND DURABLE ROOFING.

By Her Majesty's — Royal Letters Patent.

**F. McNEILL and Co.** of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by

| | |
|---|---|
| HER MAJESTY'S WOODS AND FORESTS, | HONOURABLE BOARD OF ORDNANCE, |
| HER MAJESTY'S COMMISSION OF CUSTOMS, | HER MAJESTY'S ESTATE, ISLE OF WIGHT, |
| HONOURABLE EAST-INDIA COMPANY, | ROYAL BOTANICAL GARDENS, REGENT'S PARK. |

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Polytechnic Society's House, in Hanover-square
Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its use, and the manner of application, with TESTIMONIALS, some of the first in the land, may be had on application to Messrs. McNEILL and Co., Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for ceiling Rollers, &c., is also manufactured, by which a saving of about 25 per cent in fuel is effected. The TRADE are respectfully requested to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only works in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW LONDON
Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

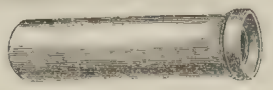
## TUBULAR DRAINS IN STONE WARE,

MANUFACTURED BY

## HENRY DOULTON & CO., POTTERS, HIGH-STREET, LAMBETH.

The great fault of forming house drains is now admitted to be extremely bad, being formed of brick with mortar or cement joints, the inner surface is necessarily rough and uneven, thus offering the best possible harbour for foul matter, from the porous nature of the bricks absorbing the moisture, which at once becomes a receptacle of the solid particles to such an extent as sometimes entirely to stop the conduit while the constant saturation soon renders them rotten, thus allowing the escape of noxious gases and vermin. For these evils the Glazed Stoneware Tubular Drains will be found an efficient remedy. The material of which they are composed is impermeable, impervious to moisture, and cannot corrode; they are easily laid down, and are offered at such prices as to admit of their universal application, from their anti-corrosive nature these tubes are also well adapted for the conveyance of water.

**STRAIGHT TUBES**, with Socket Joints, in Two Feet Lengths.



3 in. bore, 5d. 4 in. 6d. 6 in. 8d. 9 in. 1s. 1½d. 12 in. 1s. 10d. 15 in. 3s. 4d. per Foot.

**BENDS.**



*Fig.* 1.

3 in. bore, 1s. 3d.

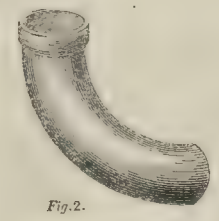


*Fig.*2.

4 in. 1s. 9d. 6 in. 2s. 3d.



*Fig.* 3.

9 in. 3s. 6d. each.

**JUNCTIONS.**

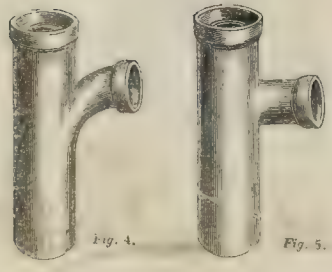


*Fig.* 4. *Fig.* 5. *Fig.* 6. *Fig.* 7. *Fig.* 8.

3 in. bore of Main Tube, 1s. 3d. 4 in. 1s. 6d. 6 in. 2s. 9 in. 3s. 6d. each.

DOUBLE JUNCTIONS, as Figs. 7 and 8 :—3 in. bore of Main Tube, 1s. 8d. 4 in. 2s. 6 in. 2s. 8d. 9 in. 4s. 6d. each.

*The Junctions may be of any diameter.*

**TRAPS.**



*Fig.* 9.

TRAPS, as Fig. 9, for Iron Flap.

3 in. bore, 1s. 3d. 4 in. 1s. 6d. 6 in. 2s. 9 in. 3s. 3d. each.

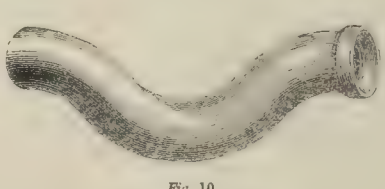


*Fig.* 10.

TRAPS, as Fig. 10.

3 in. bore, 2s. 6d. 4 in. 3s. 6d. 6 in. 5s. 9 in. 7s. 6d. each.

*Any other kind of Bends or Junctions made to Order.—— The Figures are on a Scale to represent 6-in. Tubes.*

*From Mr.* J. PHILLIPS, *Surveyor to the Westminster Commission of Sewers.*

Sewers Office, 1, Greek-street, Soho, 25th August, 1847.

DEAR SIR,—With your request that I would give you my opinion as to the advantages of using Glazed Stoneware Pipes in the construction of house-drains, I am most happy to comply. I look upon house drains as the most influential cause for good or evil on public health. If such all therefore be arranged and constructed as perfect as possible. I know that much has been much want of attention to this very important subject. Drains are, in general, built in a slovenly manner, and how can it be otherwise, when they are almost invariably become receptacles of filth, instead of allowing the means, which they should do, of carrying it off as fast as it is produced. Brick drains are usually made very rough and irregular in fall, and without great pains are taken to bed the bricks in and render the bottom as compact, they allow the fluid to percolate through the joints and soak the foundations of the house, and they also become foul. In the case of glazed Stoneware Pipes with a combination of the best materials, and junctions for the branches the most perfect drains may be formed, which will soon wash themselves right clean, should a small quantity of water be occasionally put into the pipe, as the surface of the pipes is thus kept sweet and free from deposit, and the drain, and there is little chance of earthy matter lodging. Pains should be taken to lay in drains as true as possible, and as regular a fall as possible. The joints of the pipes should be well cemented; and the best cement for the purpose is partly made of quick-lime and common oil, which in time, becomes nearly as hard as the pipes themselves. All essentials are economy, tests and guarantee. It is certainly important to all which to be ever desirous to, and sometimes does take pleasure in giving them all information. That is the need of essentials at all, those should therefore as all I shall, which I can readily be [illegible] as to the adaptation of the pipes, the junctions and traps, and the best mode of constructing and not hesitate to get out of order.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article. The prices of pipe-drains are now lower than the prices of brick drains of the same diameter; so that it is economical to use pipes instead. Persons about to purchase and rent houses, should be particular in inquiring how the drains have been constructed, and they should in all cases give preference to houses having glazed pipe drains. The size of drains is also of much importance. Upon this point prejudice is the great bar to improvement. This must be removed. I have seen pipe drains from 3 to 6 inches diameter, which have been in use for a number of years, quite clean, and which had never become choked up; while other drains of 9 and 12 inches diameter, in similar circumstances, were nearly filled with filth, and when these have been cleansed have again and again become stopped. Mr. Leslie, of Coudrit-street, has a drain from his house only 4 inches diameter. It has been in use for many years. I examined it the other day, and found that it had kept itself quite clean. Glazed pipe drains of from 3 to 4 inches diameter, are of ample size for small houses having four to six rooms; 6 inches diameter for houses from six to ten rooms; and nine inches diameter for larger houses and mansions. The stupid and absurd Building Act, however, presents house drains from being smaller than 9 inches diameter, and thus in this case it is an unsanatory statute; this anomaly should be removed.

I am, dear Sir, yours very truly,

H. Doulton, Esq. JOHN PHILLIPS.

*From* Mr. JOHN ROE, *Surveyor to the Holborn and Finsbury Commission of Sewers*

Sewers Office, Hatton-garden, August 26th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend build to or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.


LONDON: Printed by CHARLES WYMAN, of 16, Castelnau Villas, in the Parish of Barnes, in the County of Surrey, Printer, at the Printing-office of J. & H. COX, Brothers, 74-5, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the County of Middlesex; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent Garden, in the Parish of Saint Paul, Covent Garden in the said County.—Saturday, August 28, 1847.

# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 239. SEPTEMBER 4, 1847. Price ..... 3d. Stamped ..... 4d.


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### ADVERTISEMENTS


TO ARCHITECTS AND BUILDERS.

WANTED, by a Respectable Young Man, who is a tolerably good draughtsman and writes a clear legible hand, an ENGAGEMENT in an Office as above. Only a small salary required. Undoubted references.—Address, prepaid, W. Y., Mr. Browne, 89, Wells-street, Oxford-street.

TO BUILDERS AND OTHERS.

WANTED, by a Respectable Young Man, a SITUATION in an Office as CLERK. The Advertiser has a practical knowledge, understands Measuring, &c. Writes a good Hand, and is quick at Figures. Would have no objection to fill up Time at the Bench, if required. Can be well recommended. Salary no object. Address F. R., 138, High-street, Camden-town.

WANTED, Two Men, of sober and industrious Habits, TO GO ABROAD, viz.: a BIRMINGHAM BLACKSMITH, that understands Smith's Work in general, and can work at the vice and lathe, and an IRON CASTER, who understands hollow and spinning work, with some knowledge, if possible, of smelting, and the management of a furnace.—Apply to C. C. REW, 3, Bank Chambers, London.

AN Experienced Clerk of Works is open to a RE-ENGAGEMENT. Unexceptionable Reference.—Address A. N., 46, Canterbury street, York-road, Lambeth.

TO RESPECTABLE YOUNG PERSONS DESIROUS OF IMPROVEMENT IN THE PROFESSION.

AN Architect and Surveyor of Experience gives Instruction in Drawing and Estimating according to London practice.—Address, C. K., Office of "The Builder."

TO ARCHITECTS AND BUILDERS.

A GENTLEMAN of Considerable Experience is desirous of an ENGAGEMENT to make finished and working drawings, specifications, &c., and to take out quantities and measure works.—Address (prepaid), to W. T. S., 15, New Ormond-street, Queen-square.

A YOUNG MAN wishes to engage himself in a PERMANENT SITUATION as Plumber, Painter, Glazier, and Paperhanger. Can have good reference as to ability.—By letter, post-paid, P. R., Post-office, Streatham, Surrey.

TO CARPENTERS, GENERAL REPAIRERS, AND OTHERS.

A YOUNG MAN, a Carpenter, but who has been principally employed in the jobbing way and general repairs of houses, &c., is desirous of obtaining a CONSTANT SITUATION with a Carpenter in the jobbing way, or any one doing general repairs. Moderate wages required.—Address to A. Z., 30, Severn-street, St. George's East.

TO MASTER PLUMBERS, &c.

A YOUNG MAN (whose master is lately deceased), wishes to RE-ENGAGE himself as TURNOVER for the remainder of his term; has a general knowledge of the business, but is desirous of being perfected in the various branches of the trade. Can have an excellent character. A small premium would be given.—Apply to A. B., post-paid, 35, Grove-street, Camden Town.

TO BUILDERS, ENGINEERS, AND OTHERS.

THE Advertiser, an excellent Workman as Pattern Maker, Millwright, Engineer, and Draughtsman, is desirous of meeting with an ENGAGEMENT as FOREMAN, where he would feel happy to take an active part in the business; has had good experience in all its branches. Builders, where sawing machinery is used, would find the Advertiser a great acquisition to them. No objection to the country or to go abroad; good reference can be given.—Direct to O. P., at Mr. Organ's, Boot Maker, Church-street, Hackney.

TO BRICKLAYERS AND BUILDERS.

A STRONG Active Lad, aged 18, who can lay Bricks tolerably well, wants to ENGAGE with a Master for THREE or FOUR YEARS, to learn the Business of a Bricklayer.—Letters, free, with particulars, to be addressed to C. HENRY, 13, Payne-street, Copenhagen-street, Islington.

TO CIVIL ENGINEERS AND LAND SURVEYORS.

A PERSON of Several Years' Practice, and fully competent to undertake railway surveying, levelling, setting out curves, and general field work, is desirous to form an ENGAGEMENT with any gentleman requiring such assistance. Though he would not object to office work or the management of an office, he would prefer outdoor employment on a railway in course of construction, or on any other public works. He can furnish satisfactory testimonials from, or would refer to gentlemen with whom he has been actively engaged for the last 6 years.—Address, R. S., Post-office, Bristol.

TO BUILDERS, &c.

EVENING or Afternoon Employment Wanted, daily or occasional, at 8d. per hour, by an experienced and practical Young Man, who is a superior Penman, Bookkeeper, bringing up any accounts in arrears, &c., making out accounts, measuring up works, estimating, specifying, and plans for alterations in the general routine of a builder's office. Satisfactory testimonials.—Address, J. C., 7, Fulham-place, Paddington Green.

THE BUILDERS' BENEVOLENT INSTITUTION, for giving Relief and granting Pensions to decayed Members of the various Branches of the Building Trades, and Widows and Orphans. Also, for affording temporary Relief to Workmen in case of Accidents.

The Committee of Management beg to inform the Builders in general, and all Persons connected with the several Branches of the Building Trade, that they have appointed Mr EDWARD HERBERT, 23, Crawford-street, Marylebone, COLLECTOR of the SOUTHERN, and Mr. CHARLES JACKSON, 3, Paradise-place, Holloway, for the NORTHERN PARTS of the Metropolis, to receive SUBSCRIPTIONS and DONATIONS for the above Valuable Institution.

The Committee also beg to intimate they have already received considerable Donations and Subscriptions from some of the most eminent Builders, and are assured the Institution will have universal Patronage as soon as it is known to be firmly established.—Subscriptions and Donations are also received by the Treasurer, Mr GEORGE BIRD, 36, Edgeware-road, and the Bankers, Sir SAMUEL SCOTT and Co., 1, Cavendish-square.


### COMPETITIONS.

TO ARCHITECTS.

CITY of LONDON UNION.—UNION WORKHOUSE.—The Guardians of the Poor of this Union are prepared to receive DESIGNS for a WORKHOUSE, to accommodate 1,000 adult Inmates, classified in accordance with the rules of the Poor Law Commissioners. The Plans and Drawings to be accompanied with descriptive particulars, and an Architect's Estimate. The rules of the Poor-Law Commissioners, and full particulars relative to the intended buildings, may be obtained at the offices of the Union, 35, Cannon street, any day between Ten and Four. The Guardians intend to select from the Designs sent in such three as they shall consider the most eligible for the purpose. They intend that the Architect of the Designs firstly selected shall be engaged to carry such designs into execution, subject to such previous inspection and alteration by the Poor-Law Commissioners as may be necessary; to the Architect of the Designs secondly selected, the Guardians intend to give a Premium of 100*l.*; and to the Architect of the Design Thirdly selected, a Premium of 50*l.* The Designs to be without name, but marked with a motto or initials, and to be accompanied by a sealed letter, addressed to the Guardians of the Poor of the City of London Union, containing the name of the Architect. The Designs to be sent to the office on or before the 1st of November.

JOHN THOMAS ROWSELL,
Clerk to the Union.

Union Office, 35, Cannon-street, August 28, 1847.


THE Advertiser is about to build a neat Villa Residence, on the slope of a hill near the sea side, having a south and west aspect, sheltered from the east and north by a hill, is very desirous of receiving ELEVATIONS. Should any Architect or Artist be disposed to furnish Designs, FIVE GUINEAS will be given to the party from which the selection is made. Done in etching or pencil will do, so as to convey the idea. To consist of Entrance-hall, Dining, Drawing-room, and Study; together with China Pantry, Closet, &c.; with Kitchens, &c.: all on the Ground Floor. Four best Bed-rooms and Closet over, with Domestic Apartments over the Kitchens, &c. No Underground work except Cellars and Cistern. No Steps to go up to the House. The object of the Advertiser being simply to fit upon an Elevation or Design. The ground upon which the house is proposed to be built is flat, though half way down the hill which is covered with trees and shrubs. Plenty of stone on the spot. Cost not to exceed 1,200*l.* to 1,250*l.* The front to face the south. Designs not to be sent in later than WEDNESDAY, the 29th of October.—Address, F H. F., Messrs DAWSON and SONS, 74, Cannon-street, City.


### CONTRACTS.


WANTED, a Quantity of 9 ft. Oak Posts, 6 by 4, with Butts, 4 in. Arris Rails, and 1¼ Planks, 5 in wide, and 6 ft. Park Pales. Parties desirous of TENDERING for the same at per Post, per foot run for the Rails and Plank, and per hundred for the Pales, may address to T. LITCHFIELD, Builder, on Bethnal Green; or any person feeling disposed to Tender for about 800 feet of 6 ft. Park Paling, delivered in London, and the time required to prepare it, may also address as above.

TO BUILDERS.

PERSONS desirous of Contracting for all or any part of the Works, namely, Excavators', Wallers', Masons', Carpenters' and Joiners', Smiths', Slaters', Plasterers', and Painters', to be done in the ERECTION of a HOUSE and OFFICES at Casterton, near Kirkley, Lonsdale, Westmoreland, may see the Plans and Specifications on and after September 1st, by application to Mr. FOSTER, Bookseller, Kirkley, Lonsdale, and Tenders are to be sent in to the Architect, Mr. CHRISTIAN, 6, Bloomsbury-square, London, on or before September 15th. The parties do not bind themselves to accept the lowest Tender.


### CONTRACTS.

OFFICE OF ORDNANCE, 23rd Aug. 1847.

TO BUILDERS.

TENDERS will be received by the Honourable Board of Ordnance, at their Office, Pall Mall, London, on MONDAY, the 6th day of September, 1847, from such persons as may be willing to undertake the erection of the SEVERAL BUILDINGS, &c. required for the LABORATORY ESTABLISHMENT, at Priddy's Hard, near Gosport. Plans, Specifications, and Conditions of the Contract may be seen, and every information obtained, on application at the ROYAL ENGINEER'S OFFICE, Mill Dam, Portsea, between the hours of Ten and Four, each day, Sundays excepted. Tenders to be sealed up, and endorsed on the outside, "Tender for the erection of the New Laboratory Establishment, Priddy's Hard."—By order of the Board.

R. BTHAM, Secretary.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS

Court of Sewers, Tower Hamlets.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets', (excluding St. Katherine's and Blackwall Marsh,) at their meeting to be held on Wednesday, the 8th day of September next, at two o'clock in the afternoon precisely, at the office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive TENDERS (sealed up) from any persons or person willing to enter into contract for the works necessary in EXTENDING THE SEWER in Cambridge-road, and 3, Colt-lane, Bethnal-green, being a length of 1,060 feet; and in arching over the sewer at the back of Selby-street, and Pelham-street, Mile-end New Town, being a length of 2,948 feet, and at the back of Stepney-green, being a length of 350 feet. Plans and Specifications of the said several works, with the forms of tender, may be inspected at the Office of Sewers daily, between the hours of eleven and three o'clock; separate Tenders and separate Contracts will be required for each of the said several works respectively. Tenders to be endorsed with the name of the sewer contracted for. The Contractors will be required to sign provisional agreements to ensure the due execution of the said Contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners; no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon.

Dated this 26th day of August, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the lowest tender.

TO BUILDERS, CONTRACTORS, AND OTHERS.

TENDERS are required for the Erection and Completion, or for the work in detail, of SEVENTY-TWO ATTACHED HABITATIONS, about 30 miles from London. For an appointment to examine plans and specifications and to obtain further particulars apply or be addressed to Mr. HILL, No. 9, Bartlett's Buildings, Holborn Hill, London.

TO BUILDERS.

TENDERS are required for Rebuilding the Premises, No. 1, Great Russell-street, Bloomsbury, under the direction of Mr. E. B. LAMB, Architect. Plans, Specification, and Conditions may be seen on the premises, from MONDAY the 6th, till WEDNESDAY, at 9 o'clock, on the 15th September, at which time all Tenders must be sent. The lowest Tender will not necessarily be accepted, and parties tender ng will be required to give the names of two sureties.—30th Aug. 1847.

GUILDHALL, London, 26th August, 1847.

THE Committee for Letting the Bridge House Estates will meet at Guildhall, on FRIDAY, the 10th day of September next, at One o'clock precisely, to receive PROPOSALS for LEASES of the following Premises, viz.:—TWO HOUSES, Nos. 8 and 13, in North Building, Finsbury-circus, in the City of London; THREE HOUSES, Nos. 1, 6, and 13, on the north side of Swan-street, Minories, in the City of London; and A HOUSE, No. 18, on the east side of High-street, Deptford, in the county of Kent.—Further particulars may be obtained at the Office of Works, Guildhall.

FERDINAND BRAND,
Comptroller of the Bridge House Estates.

GUILDHALL, August 20, 1847.

THE Committee for Letting the City's Lands will meet at Guildhall, on WEDNESDAY, the 8th day of September next, at One o'clock precisely, to receive TENDERS for LETTING, on a Building Lease for Sixty-one Years, from Michaelmas next, a PIECE of GROUND, on the east side of Puddle Dock, on the south side of Upper Thames street, and on the north side of the River Thames; and also for Letting, on a Building Lease of Sixty-one Years from Michaelmas next, a Piece of Ground, on the north side of Carter-street, at the corner of Cross-street, at Ratcliffe; and also for Letting on Lease, for Twenty-one Years, from Michaelmas next, a House, No. 19, on the north side of Broad-street-buildings.—Further particulars may be obtained and plans seen by applying at the Office of Works, Guildhall.

THOS. SAUNDERS, Comptroller.

ART UNION of LONDON.—FREE EXHIBITION. The Works of Art selected by the Prizeholders of the Year 1847 Exhibiting at the GALLERY of the SOCIETY of BRITISH ARTISTS, Suffolk-street, Pall-mall East, WILL BE OPEN TO THE PUBLIC WITHOUT TICKETS FREE, from the 6th to the 11th of September, inclus ve, from Ten till Six o'Clock; and BY TICKETS, from Seven till Ten o'Clock on the Evenings of the 8th, 9th, 10th, and 11th.

GEORGE GODWIN, } Hon. Secs.
2nd Sept. 1847. LEWIS POCOCK, }

ROYAL POLYTECHNIC INSTITUTION.

LECTURES ON CHARACTER, with MUSICAL ILLUSTRATIONS, by Mr. J. RUSSELL, accompanied by Dr. Wallis, on the Pianoforte, every evening, at Eight o'clock, except Saturday. Dr. Bachhoffner's LECTURES on NATURAL PHILOSOPHY will comprise the Subject of the ELECTRIC TELEGRAPHS, &c. CHEMICAL LECTURES by Robert Hunter Semple, Esq., on the Evenings of Monday, Wednesday, and Friday. The beautiful OPTICAL EFFECTS include the last DISSOLVING VIEWS. DIVING-BELL and DIVER, with EXPERIMENTS, &c. &c.—Admission, 1s.; Schools, Half-price.

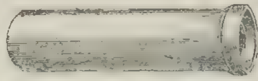
# TUBULAR DRAINS IN GLAZED STONE WARE,

MANUFACTURED BY

## HENRY DOULTON & CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.

The present mode of forming house drains is now admitted to be extremely bad, being formed of bricks with mortar or cement joints, the inner surface is necessarily rough and uneven, thus obstructing the free progress of the refuse matter, from their porous nature they absorb the moisture, which occasions successive coatings of the solid particles to such an extent as sometimes entirely to stop the outlet, while the constant saturation soon renders them rotten, thus allowing the escape of noxious gases and vermin. For these evils the Glazed Stoneware Tubular Drains will be found an efficient remedy. The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; they are easily laid down, and are offered at such prices as to admit of their universal application; from their anti-corrosive nature these tubes are also well adapted for the conveyance of water.

**STRAIGHT TUBES,** with Socket Joints, in Two Feet Lengths.



**3 in. bore, 5d.** **4 in. 6d.** **6 in. 8d.** **9 in. 1s. 1½d.** **12 in. 1s. 10d.** **15 in. 3s. 4d. per Foot.**

**BENDS**

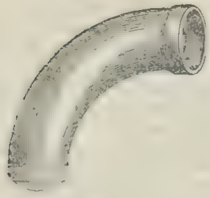


*Fig.* 1.



*Fig.* 2.



*Fig.* 3.

**3 in. bore, 1s. 3d.** **4 in. 1s. 9d.** **6 in. 2s. 3d.** **9 in. 3s. 6d. each.**

**JUNCTIONS.**



*Fig.* 4.



*Fig.* 5.



*Fig.* 6.

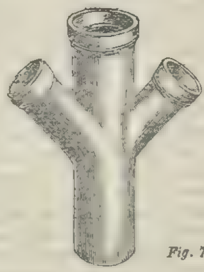


*Fig.* 7.

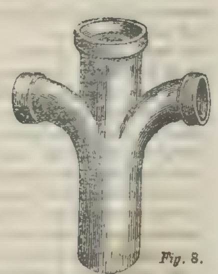


*Fig.* 8.

**3 in. bore of Main Tube, 1s. 3d.** **4 in. 1s. 6d.** **6 in. 2s.** **9 in. 3s. 6d. each.**

**DOUBLE JUNCTIONS,** as Figs. 7 and 8.—**3 in. bore of Main Tube, 1s. 8d.** **4 in. 2s.** **6 in. 2s. 8d.** **9 in. 4s. 6d. each.**

*The Junctions may be of any diameter.*

**TRAPS.**

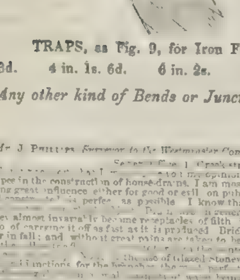


*Fig.* 9.

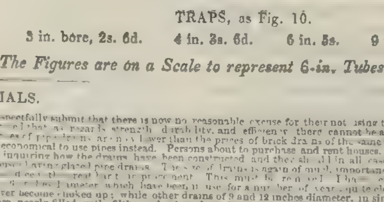


*Fig.* 10.

**TRAPS,** as Fig. 9, for Iron Flap.

**3 in. bore, 1s. 3d.** **4 in. 1s. 6d.** **6 in. 2s.** **9 in. 3s. 3d. each.**

**TRAPS,** as Fig. 10.

**3 in. bore, 2s. 6d.** **4 in. 3s. 6d.** **6 in. 5s.** **9 in. 7s. 6d. each.**

***Any other kind of Bends or Junctions made to Order.—The Figures are on a Scale to represent 6-in. Tubes.***

## TESTIMONIALS.

*From Mr. J. Phillips, Surveyor to the Westminster Commission of Sewers.*

Sewers Office, 1, Greek-street, Soho, [illegible] August, 1847.

Dear Sir,—[illegible] my opinion as to the advantages of using Glazed Stoneware Pipes in the construction of house-drains, I am most happy to comply. I look upon house drains as having great influence either for good or evil on public health. They should therefore be arranged and constructed as perfect as possible. I know that there is and has been much want of [illegible] Drains are in general built in a slovenly manner, and consequently they almost invariably become receptacles of filth, instead of affording the means, which they should do, of carrying it off as fast as it is produced. Brick drains are usually made very rough, and irregular in fall; and without great pains are taken to bed the bricks in and render the bottom [illegible] the use of Glazed Stoneware Pipes, with a combination of [illegible] junctions for the branches [illegible] drains [illegible] as regular a fall as possible. The joints of the pipes should be well cemented; and the best cement for the purpose is partly made of quick-lime and common oil, which, in time, becomes nearly as hard as the pipes themselves. All cesspools are common pests and nuisances. It is extremely improper to allow filth to be ever decomposing, and poisonous gases to be produced thereby in our dwellings. There is no need of cesspools at all; they should therefore be abolished, which can easily be done as by a [illegible] of the pipes, the junctions and a pan, a most efficient water-closet may be constructed, and not liable to get out of order.

I would [illegible] no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article. The prices of pipe drains are now lower than the prices of brick drains of the same diameter, so that it is economical to use pipes instead. Persons about to purchase and rent houses, should be particular in inquiring how the drains have been constructed, and they should in all cases give preference to houses having glazed pipe drains. The size of drains is again of much importance. [illegible] This must be remedied. I have seen pipe drains from 3 to 6 inches diameter which have been in use for a number of years quite clean, and which had never become choked up; while other drains of 9 and 12 inches diameter, in similar circumstances, were nearly filled with filth, and when these have been cleansed [illegible] stopped. Mr. Leslie, of Conduit-street, has a drain from his house [illegible] has been in use for many years. I examined it the other day, and found that it had kept itself quite clean. Glazed pipe drains of from 4 to 4 inches diameter are of ample size for small houses having four to six rooms; 6 inches diameter for houses from six to ten rooms; and nine inches diameter for larger houses and mansions. The stupid and absurd Buildings Act, however, prevents house drains from being smaller than 9 inches diameter, and thus in this case it is an unsanatory statute; this anomaly should be removed.

I am, dear Sir, yours very truly,

JOHN PHILLIPS.

H. Doulton, Esq.

*From Mr. John Roe, Surveyor to the Holborn and Finsbury Commission of Sewers.*

Sewers Office, Hatton-garden, August 24th, 1847.

Dear Sir,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

JOHN ROE.

Mr. H. Doulton.

The Builder.

No. CCXXXIX.

SATURDAY, SEPTEMBER 4, 1847.

THE Railway is the marvel of our day. The rise and progress of the system within our own memory, its present position, surprising results, and probable effects on society all over the world, cannot be paralleled, and offer matter for consideration of paramount and increasing importance. How, from a laughed-at idea, the possibility of applying steam as a moving power became an established fact, and the means of using it were changed and improved by succeeding minds, is, indeed, a wonderful story, almost passing belief, and which cannot be read without advantage. Sir John Barrow, in his "Autobiography," quotes a letter from Madam Marion de l'Orme to her husband, the Marquis de Cinq Mars, which, if genuine, will give us a touching illustration of one part of this progress. The lady had been doing the honours of Paris to the Marquis of Worcester, of inventive memory:—

"We went to the Bicêtre," she writes, "where he pretends to have discovered in a madman a man of genius. Had he not been raving, I verily believe your marquis would have asked his liberty, to take him to London. In crossing the court where mad people are kept, more dead than alive from fear, I observed, on the other side of a strong barrier, an ugly face, screaming out, 'I am not mad! I have made a discovery that would enrich the country that should carry it into effect.' 'And what is his discovery?' I asked the keeper. 'Ah!' said he, 'you would never guess: it is the vapour of boiling water. His name,' continued he, 'is Salomon de Caus. He came from Normandy, four years ago, to present a memorial to the king, of the wonderful effect of steam for turning machinery, driving carriages, and a thousand other wonderful things; but the cardinal *drove him away without listening to him.*' From that time he has pursued the cardinal wherever he went, so that he ordered him to be shut up in the Bicêtre as a madman, where he has been three years and a half. He has written a book on his wonderful discovery, which I have here.' Lord Worcester is ravished with it; and, after reading a few pages, 'This person,' said he, 'is no madman, and in my country, instead of shutting him up, they would heap riches upon him. (?) Bring me to him, I wish to question him.' He was taken to him, and returned sorrowful and pensive. 'At present,' he said, 'he is very mad. Misfortune and captivity have for ever estranged his reason. You have made him mad; but when you threw him into this prison, you there buried the greatest genius of your age.'"

Let this be genuine or not (and we are unwilling at once to divest the marquis of all credit for the discovery he claims for himself in his "Century of Inventions,") it gives a truth-like picture of a man before his age, possessed by the one idea which none would then regard. The fore-seer of steam in its usefulness, in the beginning of the 17th century, was imprisoned and made insane. The idea was realised, but succeeding prophets met with little better reception. And when in our own century, only a score of years ago, Thomas Gray, a crotchetty enthusiast, as his best friends called him, suggested that a general system of iron railways might be and ought to be laid down, whereon locomotives should run, and devoted his whole mind and heart to making clear the practicability of the scheme and the great advantages that would result to the nation from it, a leading review merely expressed the general opinion when it said, that "Gray was a madman, and ought to be put into Bedlam."*

The system has grown and grown. From most small beginning has come a mighty ending; which after all by the way, is but the ending of the beginning, much more being to follow. The snail took up the thread, the thread raised the whipcord, and the whipcord pulled up a rope strong enough to do all that was needed.† The course is now smooth, and English coal and iron, worked with English energy, are bringing the ends of the world into close and profitable connection. Thousands of miles of rail have been laid in the old world and the new, and the Iron-horse rushes on through mountain and through valley, over morass and over city, dispensing knowledge in the Saxon tongue, and forming a chain of civilization never to be broken.

"It matters not," says the remarkable Elihu Burritt, "where he is stabled or harnessed for his mission—whether to thunder through Siberian wastes with a ukase of Nicholas; or from Cairo to Timbuctoo, with a message from Ibrahim Pacha; or from Thibet to Calcutta, on a commercial errand—he will shew his Saxon pedigree, and his Saxon groom and rider. Where he goes, there will go the English language, and the genius of the English race. From the far, still, depths of Central Asia he will bring, Londonward, letters in the English tongue—letters to English churches—and then to English manufacturers and bankers;—and then new furnaces and forges will illumine the hills of Wales with their midnight glow—and the tall factory-chimneys of Lancashire and Yorkshire will thicken to a forest—and labyrinths of busy, bee-winged machinery will be added to the looms and spindles plying now. And the iron horse will shake the sombre solitudes of barbarism with his giant tread, and call strange tribes of men to come out of their dens, and caves, and forest lairs, into the sunlight and sympathy of civilisation, and to change their beast or bird-skin garments for those of fine-spun wool, or cotton. And at every place where he halts for fuel-food, he will leave a Christian missionary, and teachers of the English tongue; and returning, he will bring in his saddle-bags more letters for Bibles, and for bales of cloth and clothing:—the irresistible genius and the propagation of the English race are fast Anglicizing the world."

In England, railways are working changes not calculable; old powers are being destroyed and new ones created; the landed interest pales before the railroad interest, and corporations have been created with a patronage equal to that dispensed by the Government; new classes of men have been formed, and new towns are being built.

Railroads have not done for architecture what might reasonably have been expected. The architects were shelved by the engineers in the first instance, and having once got them down, they have carefully kept them there. Taste has been for the most part neglected, and in too many instances convenience also; it is to be hoped, however, as alterations become necessary, and they are becoming more so every day, that a different system will be pursued, and that art will be brought in to add its advantages to science. There are several points on which it behoves us to speak and to continue speaking. The design and arrangement of stations, the necessity of the greatest care and skill in constructions involving the safety of hundreds, proper provision for the hordes of men occupied in the formation of lines, are all matters in which we have the greatest interest, and to which we shall take an early opportunity of referring technically.

We are amongst those who would cheer on the iron horse with hearty zeal, and at the same time would inquire if his road could be improved and his course made even more universally beneficial than it is.*

* In 1835, the *Quarterly Review*, too, thus ridiculed the notion of certain engineers—Telford am ngst the number—that a railway engine could go eighteen or twenty miles an hour:—"The gross exaggerations of the powers of the locomotive steam-engine, or, to speak English, the steam-carriage, may delude for a time, but must end in the mortification of those concerned. * * * We should as soon expect the people of Woolwich to suffer themselves to be fired off upon one of Congreve's ricochet rockets, as trust themselves to the mercy of such a machine, going at such a rate." In that year, the common belief was, that railways were altogether delusions and impositions. The Liverpool and Manchester Railway was opposed in Parliament with every form of invective. One nobleman, in 1825, declared his opinion "that a railway could not enter into successful competition with a canal. Even with the best locomotive engine, the average rate would be but three-and-a-half miles per hour, which was slower than the canal conveyance." "Let us be just," says C. Knight, "to what we have been accustomed to decry as the dark ages. Let us be tolerant to those who imprisoned Galileo, and rewarded Columbus with chains. If there be a reality in any discovery—in anything, and not a sham—if there be strength, or utility, or beauty, in any work of mind—it will live and flourish, whatever cavils, or cruelties, or ordeals, or inquisitions, or even kings, may do to crush it. And so it is with railways."

† The story referred to was given by the *Quarterly* from Lockman, and it tells of a vizier, who, having offended his master, was condemned to perpetual captivity in a lofty tower. At night his wife came to weep below his window. "Cease your grief," said the sage, "go home for the present, and return hither when you have procured a live black beetle, together with a little *ghee* or buffalo's butter, three cloves, one of the finest silk, another of stout pack-thread, and another of whip cord; finally a stout coil of rope." When she again came to the foot of the tower, provided according to her husband's commands, he directed her to touch the head of the insect with a little of the *ghee*, to tie one end of the silk thread around him, and to place the reptile on the wall of the tower. Seduced by the smell of the butter, which he conceived to be in store somewhere above him, the beetle continued to ascend till he reached the top, and thus put the viner in possession of the end of the silk thread. Then he drew up the pack-thread by means of the silk, the small cord by means of the pack-thread, and by means of the cord, a stout rope capable of sustaining his own weight,—and so at last escaped from the place of duresse. Great results may follow small beginnings.

## STYLE IN ARCHITECTURE.

PRESENT STATE OF STYLE ACCOUNTED FOR—EXCELLENCE IN ARCHITECTURE REQUIRES UNITY OF STYLE.

To inquire into the origin of styles of architecture; to trace their development and declension; to discover in their examples evidences of the habits, state of education, and opinions of nations of whom no other records may survive, is a field for investigation, affording materials for history, of which the richness has been reserved for discovery in our own days. Former ages have been distinguished for their cultivation of art; have left works of which we seek only to catch the reflection; history has borne the impress of only the least important features in the progress of nations, and the historian has compiled from documents and archives, the narration of changes of kingdoms and governments. Imperial rule, ecclesiastical supremacy, contention between nations, anarchy in republics, the vices and the virtues of individual rulers, and all that belongs to the picturesque and the dramatic of history, have been sent along the stream of time by the labours of careful chroniclers. But, those conditions of society, which it should be the chief object of the historian to elucidate, could be examined to no adequate extent without such a minute knowledge of the changes and progress of architecture, which reflect the thoughts and the manners of past generations, as can hardly be anticipated by those who have not entered deeply into the study of the history of the art.—Such knowledge it has been reserved mainly for this epoch to attain; for though at no preceding period in the history of art, has there been any parallel with the present state of style in architecture, certainly at no preceding period has the knowledge of previously existing styles been so accurate. During the days of the empire, the Romans knew something both of Egyptian and of Greek art; but, though they employed foreign artists, as a nation they do not seem to have investigated the peculiari-

* Reports of failures still reach us. We have before us notes of the fall of a portion of the tunnel on the Liverpool and Bury line, shortly after the centres of a 16-feet length had been struck. The earth followed, and lay fifteen feet deep on the floor of the excavation.

The formation of a "Railway Club" is again being agitated, and a meeting has been held, at which a committee was appointed to carry out the intention of the founders.

ties of either style with any thing resembling that minute analysis, within a late period devoted to both. The Italians, too, assiduously examined and delineated the remnants of the greatness of their Roman ancestors; but surely that knowledge, acquired also by the moderns, is more than paralleled by our acquaintance with the works of our own ancestors. Thus, whatever be the comparative merit of this century in *art*, it unquestionably ranks foremost in investigation and knowledge of styles, and in the *data* which it accumulates for the future historian.

Therefore, very few years may elapse ere historical writing may be classified of two kinds, of which one, like topographical, will enter into minute peculiarities, as those in the works of architecture, and discover therefrom the condition, habits, and religious belief of nations, whilst the other, though it may not afford to continue to neglect such *data*, will chiefly record and trace to their causes and results, the great changes which appear more immediately to affect the permanence of empires.

Yet, in the examination of these data, there will be difficulties, and none perhaps greater than will be found in the architecture of the last sixty years, and the historian may experience the danger of hasty general conclusions, and receive many erroneous impressions, till he has discovered the fact of the concurrence of different styles. Neither the co-existence of different systems, nor the imitation of previously existing styles are peculiar to this age, but it may safely be admitted, that the common assertion as to the remarkably imitative tendency in the present day has not over-rated it. Now there is much in this peculiar state, which deserves a more philosophic investigation than it has yet received, an investigation taking into account the whole of the causes and tendencies of this present state of art. That it results mainly from the inquiring spirit, characteristic of the day, which has been so far occupied in collecting materials, as to leave insufficient time for considering the best means of using them, might be hazarded in solution of the question; and the opinion is gradually gaining importance, that these materials must be examined and sifted on rules, yet to be discovered, not peculiar to systems and styles. An inward conviction is present to every one; whether stickler for one particular style, or tolerant observer of all, that the present state, eminent as it may be in some respects, is unsatisfactory in others. Whether, as seems to be considered by some, it is our chief end in architecture to leave the impress of the manners and history of the age, may be conceded or not,—although it may be capable of proof, that architecture at *all* epochs does so reflect the thoughts and condition of its producers. But, the object of the art of architecture is, like that of the art of music, the production of delight, and all other objects follow in rank so far removed from this, that no practical advantage will necessarily result from their consideration, although it can be shewn that they are best advanced by concentrating the attention upon that main object. Intrinsic beauty may be discovered in the work that has proceeded from the hand and taste of the *artist*, during any era, and in any country, and this presence of art admitted—as it can hardly be perhaps in works, which are rather stuck together at random than moulded in the workshop of the mind—particular style is comparatively unimportant towards the object,—which is the production of delight. But, that this emotion should be capable of being excited, it is esential that those in whom it is intended to create it, should be prepared for its expansion. To those who have become deeply imbued with the requisite sensibility, the emotion will be great, compared with its state in those who look for the first time, upon a work entirely opposed to previous ideas. Surprise may proceed from the latter, but the chief delight will be excited in those whom previous knowledge has made keenly susceptible. Magnitude or cost produces the emotion of one observer, but beauties not discovered by him are open to the other.

— It would scarcely be a premature conclusion to assert, that advantages of different styles for particular purposes, advantages of exhibiting greater variety in buildings, and all others whatever, are secondary to the one great advantage, by which alone the full amount of delight can be called into existence, namely, perfect unity of style, continuing, changed not by fashions which may last but a year, but only by such influences in the condition of states and nations, as we discover to have been at work in centuries past. For there is scarcely any fashion in architecture, that has arisen during the last sixty years, that, if rendered permanent, and conducted to the point, before which art can scarcely be said to commence, would not have reached its culmination in a state of art, worthy to be compared with that which we now venerate and adopt. The eye that becomes accustomed to Greek, Italian, or Gothic architecture, as the case may be, will under-estimate the beauties of any other system: when several different styles are practised, it is not likely that all will be appreciated in accordance with the beauties which may have been imparted to them.

Thus, it is not uncommon to hear Grecian and Italian condemned by those whose attention has been absorbed by another style of architecture; the beauties which may really belong to several works of those styles in England, are unseen, or no longer recollected, shewing either that there must have been a great mistake and waste of money in raising buildings in such styles at all, or which is more probable, that there is a great error in taste, and a loss in the true end and aim of art in suddenly departing from any style which has been domiciled amongst us. No sooner are the principles of a style mastered, and originality ready to work with the salutary advisers of rule and example, than another style comes in, which again has to be learnt, and any real beauties of the former method are forgotten or despised.

Unity of style will yet be the great regenerator of art. It will concentrate the attention of the architect upon the real means of producing long-continuing impressions of beauty, in place of the indecision resulting where different styles prefer rival claims to selection, and it will make the architecture of this century and country, what hitherto architecture has always been, a union of originality of design with the guidance of rule and example, an art exciting emotions of delight, and reflecting the manners and the thoughts of the people who exercise it.

## NEW BUILDINGS IN BRUSSELS.

The city of Brussels, besides its extension beyond the Boulevards, has recently received great improvement in her external communications by the erection of covered passages, like those of the "*Galeries vitrées*" of Paris, leading from the end of the "Rue de la Montagne" where it joins the "Marché aux herbes" opposite the fountain, to the Rue de Dominicains, near the principal theatre. These galleries are dedicated to St. Hubert, and the three divisions are named as that of the King, the Queen, and the Princes. The two first are of ample width with shops on each side, and dwellings of two stories over them. They are decorated with red veined marble pilasters highly polished, and with statues and busts at intervals. Each gallery is covered by skylights down the centre of the roof for the whole length. This is a great drawback on the architectural features, as it gives the idea of a long green-house, which would have been obviated if the light had been divided into compartments. The galleries form a slight angle at the crossing of a small street, where a covered passage, supported by columns, leads from the one to the other. These two galleries are about 600 feet in length, and comprise eighty shops with habitations; several large apartments, adapted for cafés or restaurateurs, are also part of the erection. The third small gallery called "des Princes," is a transverse passage of lesser width leading into the Rue de la Fourche.

The ancient hospital of St. Jean, near the Grande Place, has been demolished, and on the extensive plot of ground it occupied, a handsome new street is now in course of erection, leading from the upper part of the "Rue Madelaine" to the "Rue du Marais St. Jean."

The old messagerie building of Van Gend in the Rue Madelaine, is being taken down, and on its site a market is intended to be constructed. It was here the treasure was discovered that occasioned so much excitement at the time. The value of it was about 50,000 fs., or 2,000*l*. The municipality rewarded the integrity of the workmen who found it, by settling the interest of the same on them by way of annuity for their lives.

The Hotel d'Angleterre, in the same street, has been converted into rooms for private literary and other societies; on the ground occupied by the courtyard, an elegant concert room, capable of containing 800 persons has been completed. It is divided into three aisles, and supported by Corinthian columns. The "Societé de Grande Harmonie," hold their concerts here.

In the "Quartier Leopold," outside the boulevard, which is opposite the palace of the Prince of Orange, a new church, dedicated to St. Joseph, is nearly completed. The architecture is of the Italian style, the principal front is decorated with two campanile towers. M. Suys is the architect of this work, which presents some elegant details.

On the Place Royale, the pedestal is now constructing where it is intended to place the bronze equestrian statue of Godefroid de Bouillon, cast by the sculptor Simonis.

The restoration of the fine tower of the "Hôtel de Ville" is proceeding; the "fleche" is finished, and the snowy whiteness of the stone allows the profusion of ornament it bears to be discovered with facility. The same labours are continued on the south side of the collegiate church of St. Gudule, which is being restored to its primitive freshness. The chapel of the Miraculous Sacrament looks painfully bare to those who recollect the gorgeous canopy which was designed by the immortal Rubens, and so shamefully sold by the conservators of the church, to save the expense of regilding. As it now remains in London unsold, some effort should be made to preserve it: every thing connected with the talent and genius of so great an artist deserves to be preserved entire, and not distributed, piecemeal, among the brokers' shops in London, as it is likely to be, unless rescued by some true lover of art.

## CARDIFF TOWN-HALL COMPETITION.

Tired of the same story of either ignorance or wrong-doing on the part of committees assuming to decide on the relative merits of architectural designs, we had allowed the decision in the case of the Cardiff Town-hall competition to pass without record or comment. The result is, half-a-score of letters, condemnatory of the town council, and complaining of our omission. Suffice it to say, in brief, that having limited the competitors in the sum of 8,000*l*., the council have awarded the first premium for a design by Mr. H. Jones, of London, marked *arbitrio bono viri*, which, according to the architect's own shewing, cannot be carried out for less than 11,690*l*.!! The second premium was awarded to Mr. Heals.

One correspondent says:—"The whole affair has been managed in any but a straightforward way, for the committee received, with the other drawings under mottoes, one design, bearing the name in full, of a London architect, and another from the town surveyor of Cardiff, sent in openly, and designed for quite another site. Surely in fairness to those whose names were concealed, these should at once have been rejected by the committee, as not complying with their advertisement. [Perhaps they were.] But their final decision is the most unjust of all, as they actually adopt a design which the architect himself says, will cost little short of 12,000*l*., when the advertisement stated that the sum at the disposal of the committee did not exceed 8,000*l*.! How very different would have been some of the designs had all the competitors known they could spend half as much again on the building!"

Modern 'Bulls' for Building Churches in Spain.—The papers say, that—"The Duke of Veragua has offered several bulls of his famous breed gratis for *fights*, the proceeds of which are destined to animate the languishing works for the new church of the suburb of Carabanchel!"

## FEES PAID UNDER THE METROPOLITAN BUILDINGS ACT.

At the close of last session, Lord Morpeth obtained the order of the House of Commons for a return, "for the years ending the 31st day of December, 1845, and the 31st day of December, 1846, of all sums of money received for salaries, or by fees, or from any other source, either by the registrar, official referees, clerks, district surveyors, or by any other person employed in the execution of the Metropolitan Buildings Act, for what purpose, and for what duty or business the same has been received, and by whom received, during the said periods;—and also, return for the like period of all payments made, and all expenses incurred, during the said periods, in the execution of the said Act; also, of all or any sums of money owing to or by the departments of the Metropolitan Buildings Office."

From this which is now before us we abstract the following important particulars:—

The monies paid (or to be paid) by the Woods and Forests on account of the salaries of the referees and registrar for the year 1845 and 1846, amount to 6,005*l.*

The payments made (or due) by the registrar on account of office staff (a surveyor, registrar's clerk, entering clerk, two surveying clerks, and a messenger), and expenses of the office, amount in 1845, to 1,544*l.* (we shall omit the shillings in each case); and in 1846, to 2,125*l.* These sums are chiefly met by the office fees received by the registrar, which amount in 1845 to 1,579*l.*, and in 1846 to 1,212*l.*

The fees received by district surveyors in 1845 (or due) amount to 16,515*l.*, and in 1846, to THIRTY THOUSAND THREE HUNDRED AND THREE POUNDS!

We subjoin a list of the fees received and due, in each of the several districts, in the year 1846, where the sum exceeds 300*l.*

| | Received. | Owing | Expenses claimed to have been incurred |
|---|---|---|---|
| City, Northern Division .. | £478 | £22 | £42 |
| Stratford and Poplar..... | 464 | 74 | 63 |
| Mile End Old Town..... | 352 | 80 | 30 |
| Bromley..... | 356 | 94 | 113 |
| Hackney..... | 1,165 | 231 | 276 |
| Bethnal Green ..... | 447 | 344 | 119 |
| Whitechapel ..... | 346 | 60 | 20 |
| St. Leonard, Shoreditch .. | 843 | 233 | 107 |
| Islington..... | 1,517 | 435 | 216 |
| Clerkenwell ..... | 357 | 38 | 67 |
| St. Giles and Bloomsbury.. | 497 | 63 | 75 |
| St. Pancras ..... | 1,424 | 238 | 150 |
| St. Marylebone..... | 816 | (no ret.) | 265 |
| Paddington ..... | 907 | 952 | 137 |
| Chelsea..... | 857 | 466 | 179 |
| North Kensington..... | 534 | 178 | 80 |
| South Kensington..... | 635 | 175 | 124 |
| St. Margaret, Westminster .. | 488 | 129 | 84 |
| St. Martin-in-the-Fields .. | 340 | 91 | 93 |
| St. George, Hanover-square | 552 | 637 | 137 |
| Newington, central division of Lambeth, and north division of Battersea..... | 899 | 510 | 194 |
| St. Saviour, Southwark, and north division of Lambeth ..... | 370 | 117 | 87 |
| Lambeth, south division .. | 556 | 563 | 162 |
| Camberwell ..... | 500 | 519 | 181 |
| Bermondsey..... | 402 | 284 | 165 |
| Lewisham ..... | 302 | 243 | 92 |
| Greenwich..... | 528 | 107 | 162 |

One result to be obtained from the return is, that for the working of the Buildings Act during the years 1845 and 1846, no less a sum than FIFTY-SIX THOUSAND FIVE HUNDRED POUNDS has been expended in the metropolis, exclusive of costs paid by builders and owners to their own surveyors and solicitors, in cases before the referees.

METALLIC ADDRESSES.—The Birmingham newspapers speak of a novel mode of advertising the names of tradesmen, introduced by Mr. S. Hiron, of that town. By a peculiar mode of stamping, this gentleman has been enabled to produce address cards of metal, and which according to the desire of the tradesman for whom they are made, bear the insignia of his profession, his address, and whatsoever recommendation he may think proper. As the material and work give them a degree of value, they are more prized than cards, and form a standing advertisement. The die is also available for stamping letter paper.

## AWARDS OF THE OFFICIAL REFEREES.

### ADDITIONS TO BUILDINGS.

WITH regard to certain fourth-rate dwelling-houses recently commenced in Albert-street, in the district of St. Pancras, the builder, Mr. Dunsmore, had kept the two lowermost stories open at the back, with a brestsummer, built in and resting upon a pier on each side, with the view of making an addition which would increase the rate of the said houses to a third-rate.* The district surveyor wished to have the legality of this mode of proceeding determined, and a joint requisition was sent.

The award was, "that inasmuch as the Metropolitan Buildings Act requires as to the external walls of buildings of whatever class, that every such wall must be carried up of its full thickness to the under side of the plate under the roof, and excepts only all requisite openings for doors and windows and recesses in the walls under certain conditions, and inasmuch as the wall marked 'back front' is not so carried up as required through the story, the surface of the floor of which will contain the greatest number of squares at or above the principal entrance, such wall is not to be taken to be an external inclosing wall of the building for the purpose of ascertaining the area of the building, nor is the proposed 'addition' to be taken to be such an addition as may be made to any building without affecting the rate of the building, but is to be taken as part of the area of the building to be measured in determining the rate of the building; and we do hereby determine and award, that the 'addition' is a part of the area of the building, and that if by such 'addition' the area of the said building (being a building of the first class), will exceed four squares, but will not exceed six squares, such building is of the third-rate of the first class, and not of the fourth-rate."

### MAKING GOOD PARTY WALLS.

In the case of certain workshops proposed to be erected against a building in Freston-place, Oxford-street, in the district of Marylebone, the district surveyor was of opinion that the party-wall, or part of it, was improper and insufficient for the purposes of the building proposed to be erected. The upper part of the wall had been rebuilt of proper thickness a short time previously, and the builders referred the matter to the referees, and requested them to determine whether it would be contrary to the Act to allow that part of the wall to remain, "provided all that part and portion of the said party-wall below such portion as may have been lately rebuilt, be taken down and rebuilt, in conformity with and agreeably to the several provisions made and provided for the respective class of building" under which the premises may be respectively classed.

At a meeting it was explained "that the upper story of the present building was fitted up with looms, hung against the party-wall, upon which there are expensive carpets in progress of manufacture, and that to pull down the whole of the wall would cause the occupiers great loss and inconvenience."

The referees determined, "that it will not be contrary to the Metropolitan Buildings Act to remove the lower part of an existing wall, and restore the part removed with new brickwork in mortar or cement, so that the upper part which remains be sound and be not damaged by the removal of the work below, and so that the whole wall, when finished, be in accordance with the rules of the Metropolitan Buildings Act applicable thereto; and we are of opinion that in the present case the district-surveyor will be justified in allowing the parties to proceed in the manner proposed, upon the express understanding that if, upon the completion of the new work, the upper part of the wall be found to be so damaged by settle ment or otherwise, as in his opinion to require to be taken down and rebuilt, the same be forthwith done to his satisfaction."

THE MINARETS OF CAIRO were considerably shaken by an earthquake on the 7th ult., and rents were produced in buildings instead of by them.

* The addition was 8 feet in depth, and the whole width of the house.

## THE GAS MOVEMENT.

"Coming events cast their shadows before them."

IN the conclusion of our last article on this important subject of popular and increasing interest, we took the liberty of directing the attention of gas companies to the frequent experience of Government in effecting great and wide-spread benefits to the public, without the slightest disadvantage—nay, with positive advantage—to the revenue, by immense reductions of taxation on articles in general use. But we might have appealed to their own experience as a class—experience thrust on them *per force*, indeed; but not the less instructive on that account. We shall now, however, before proceeding to other and more hopeful topics, just adduce one single case, well-authenticated, in the shape of evidence led before the Parliamentary committee on the Liverpool gas question, recently published. From that evidence, it appears that since 1834, when the maximum price of one of the companies was 45s. per 1,000 feet, which the other brought down to 15s, "the price has been [further] *pulled down* from 15s. to 12s. 6d., then 8s., then 7s., when it was said that it was *utterly impossible* to have gas made at a lower price; then 5s., when there was another deliberate dead stop, as it was declared to be a losing price,—then, finding it in vain any longer to resist the determination of the consumers that the price should be [still further] reduced, they consented to take something less than a losing price, or 4s. 6d. as the maximum." Now as to these very sweeping reductions,—thus administered, like wholesome physic to a restive child, by nasal compulsion,—how are they viewed or esteemed in the present day by those very parties with whom the reiterated pullings down had gone so greatly 'against the grain?' With any thing like the eloquence in their favour with which the 'chief clerk' of the company's own statistical admissions plead,—even taking them at what they are worth,—we cannot pretend to cope; and we shall, therefore, as we fairly may, adduce his evidence verbatim, as an index to the present feeling of his constituents on this interesting and important subject.

Cross-examined:—And your object is to reduce the price [to 3s. 8d.], in case you can have an extension of your capital?—Yes.

Now, then, seeing that the reduction to 4s. 6d. has been a *losing concern*, and seeing only a gleam of sunshine from having borrowed 23,000*l.* from your bankers, on the security of your outstanding accounts,—*is not that an inducement the other way.* Is it not a ground for raising the price to 5s. 6d., instead of reducing it to 3s. 8d.—*Certainly not.*

Just explain how you make that out.—I make it out in this way: that the increased consumption [*to follow* on the reduction] will make up for the deficiency in price.

How is that?—For instance, I shall go back to the year 1842, when we reduced the price to 7s. In that year the income was 17,576*l.* The following year the price was the same, and the nett income was 18,234*l.* The following year we had nine months at 7s., and three months at 6s., and these were the three summer months, consequently only one-sixth of the whole period, and the annual supply of gas; and the income was 19,148*l.* In June, 1845, the price was nine months at 6s., and three months at 5s., and the nett income was 19,361*l.* Therefore we were as well off in 1845 with the price at 6s. and 5s. as in 1842 at 7s; the reason being that [in consequence of the successive reductions] the demand was materially increased, and we were [further] enabled [or rather compelled] to make these reductions in the price.

And all this time, be it specially noted, the price of the raw material,—coal,—was rising:—

"What was the average price in former years? In 1842 it was 12s. 1¼d. (per ton); in 1845 it was 12s. 9½d.; in 1846 it was 13s. 8¼d.; and the present price is 15s.!"

And then as to the temporary 'deficiency' itself, while awaiting the beneficial result of the *last* reduction with so much and such just confidence in the public demand thus produced; that alleged deficiency is found to have been made up even ere it was sustained:—

"You were not able to pay your dividend [the restricted maximum of 10 per cent.] out of the profits? No: it fell short of the amount of the dividend by 2,661*l.*; but in the month of June, 1845, we had a surplus of 2,665*l.*; and then the

year following a deficiency of the same amount, and that set us about right."

Moreover, since the date of these statistics, we find that at the half-yearly meeting of the company, held the other day, there "being *an excess of nett income* over the year ending 30th June, 1846, of 3,730*l.* 5s.," the directors "recommended that the usual dividend at the rate of 10*l.* per share per annum [the restricted maximum] be now declared;" and after the chairman had stated that "the proprietors had *every reason to congratulate themselves on the condition and prospects of the company*," it was announced that "by the increase of the consumption of the company's gas a [further] *reduction* in price [below the maximum of 4s. 6d.] might be expected;" this, too, in the face of a further rise of coal to "16s. or 17s.!"

Now it is well worthy of remark, that notwithstanding an increase in the production and sale of gas, in consequence of these reductions, to the extent of no less than 100 per cent.,—"in many instances persons having doubled their lights since the price was reduced," besides freely consuming double the quantity of gas, or nearly so, in the lights previously used, while in instances still more numerous, the use of gas has extended to a lower and still lower class of houses in exact proportion to its reduction in price,—yet even at the present day, with all this vast compensatory diffusion, 40,000 inhabited houses, out of 54,000, still remain to be supplied with gas! which, however, is "coming into operation even in the very poorest houses," so that the capability of increase in the diffusion, according to the reduction in price, has still a vast and almost illimitable field of operation over which to expand itself.*

A more instructive precedent, either for the guidance of our great metropolitan monopolists, the Liverpool companies themselves, or the manufacturers of gas in general, cannot well be conceived. But it appears from the very evidence now adduced, that these parties in general stand doggedly and determinedly in their own light [proof of which, even from their own recognized organ, we shall offer anon], and that there is a very great prejudice amongst them against the introduction of even the ostensible means of cheapening the manufacture of their gas, about which they care as little, apparently, as do our water companies about ostensible means of cheapening the 'manufacture' of their water,—a fact, in explanation of which but one satisfactory reason can be offered, and for which we refer our readers to our last article.† But so inveterate is this 'prejudice' that an engineer, "connected with a *high-priced* gas company in London," who was somewhat strangely and unfortunately appointed to act as a Government commissioner on the claim of the Guardian *cheap* Gas Company, and who, accordingly, 'damnified' its prospects without compunction by an adverse report, and endeavoured too, much more officiously than officially, but by good fortune unsuccessfully, to prejudice the Taunton Gas Company against the *cheap* schemes which they had adopted,—is said to have acknowledged, on being previously requested to act as consulting engineer to this very Guardian Gas Company, that "*it would be much to his detriment if he undertook* ANY *scheme for the making of* CHEAP GAS!" We cannot in justice, however, refuse the credit of much more boldness and good sense, to the following significant appeal of the *Gas Gazette* of 10th ultimo, to its constituents, the 'powers of darkness' rather than of light, solemnly warning them to 'set their houses in order.'

"Were we inclined to flatter *the interests which we profess to uphold*, we might send up shouts for victory and safety [for what, does not satisfactorily appear, and would be indeed to flatter the interests so upheld]; but we have a more serious, and far less agreeable duty to perform. 'The times are out of joint,' and we dare not sleep at our post. The reports of some of the Government surveyors have created, universally, an uneasy feeling, and there is an up-heaving of the whole body-politic on this subject, which betokens a movement, compared with which the storm just passed, was but as the 'half-gale,' of the temperate zone, compared with the hurricane of the torrid, or even with the earthquake itself. 'Coming events cast their shadows before them,' and our position enables us to see and observe these 'shadows,' and we pledge our reputation as public journalists to the fact, that in making this announcement, we do so on good and sufficient ground,—that *we are not 'fighting with shadows,'* but acting the part of faithful watchmen; and as such we would say, *woe be to those whom the coming storm finds unprepared.* * * * *'Put your houses in order.' Make gas cheap and sell it cheap;* HAVE NO SECRETS. * * * MAKE YOUR CUSTOMERS YOUR FRIENDS. * * * But if no sufficient precautions be taken, if sagacity, forethought, justice, good management, and good feeling be thrown to the winds, we say it deliberately,—*annihilation* will follow,—*the vessel will founder.* We say emphatically, do not be lulled into false security; take steps in advance! nothing can be so false or so fatal, as to be *compelled, forced*, into any given course of action; and yet, until lately, *what but this has been the history of every gas company in the empire*, with some, very few, brilliant exceptions?"

Yes, the watchman *is* faithful to *his* duty; but will his sleeping charge awake? Will their downfal to the level of the public expectation be arrested, as he desires, by some snug little eminence within convenient reach of their present high-tower tops? We doubt it much; but however deaf and dormant *they* may be to the warning voice of a friend,—that the public, at least, are now wide awake to the approach of a new and bright, though artificial, *day*, the rapidity and the multiplicity of the diffusion of all our exposures of the secrets of the gas-house, through the ever-watchful press, abroad over all the length and breadth of the land, and beyond the mere limits of England, abundantly attests; as even also does the popular 'gossip' of the metropolis itself, so pleasantly detailed in many of our provincial papers, as the following from 'the *Albion*' will instance, while it will also perhaps assist in rousing up the sleepers themselves to a sense of what is due to that public who, they may depend on it, will now be satisfied with *nothing short* of what is proved to be within the *actual* bounds of *possibility* towards the establishment of a vast and unobstructed distribution of that light and heat which art and science, as well as nature, have presented them with, to cheer their gloom and to cherish and comfort their frame.

"An object of fierce agitation among the middle classes promises to be the reduction of the price of gas, towards which end a sort of league is being tacitly formed in London and various parts of the provinces, their grievances and determination finding able utterance in the columns of THE BUILDER, whose number of to-day discloses data connected with the selling and the cost price of the commodity, calculated to astound the Liverpool Guardian Company themselves, with whom the movement originated, and whose example is inciting so general imitation. Talk of 4s. 6d. and 3s. 9d. per 1,000 feet on a *large* consumption. What do you say to 5¼d. being the cost price of supplying a *small* consumption! Of course this will be laughed at as a monstrous piece of nonsense in your neighbourhood; but, before the facetious individuals indulge in too uproarious a degree of risibility, they would do well to turn to page 396 of the periodical just mentioned, and, under the head of "The Gas Movement in the Forthcoming Parliament," they will, perhaps, find something calculated to moderate their cacchinatory predilections, and give them something to think about. This same gas reformation is likely to be urged on the Government during the approaching session as pertinaciously as the Health of Towns' question, of which, indeed, it is an integral and essential portion, and ministers will hardly shrink from affording it all necessary consideration."

In fact, the first fruits of this great movement may be said to have been already reaped, and to have already afforded good promise of future abundance. The general 'Gas Act,' of 23rd April last, prescribing or restricting the limits of the distributed profits to 10 per cent. per annum, was the first fruit. Then followed the determination of the Parliamentary committees, even while affording the present companies a last chance of redeeming themselves in the public countenance and favour, to bind them down to certain acts of partial justice to the public such as excited the 'uneasy feeling' so plaintively alluded to; and the seeds of further fruits have been already sown in the new Parliament by the expurgation of committees from all parties interested, and by the *empressement* of the growing public opinion, and the accumulations of fact and reason in the present movement, both on the Government and on the Legislature.

We shall take an opportunity to call attention to the *sort of gas* dispensed by some of the companies, and the improvement that may, in this respect, be effected.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Examination for State's Architects and Engineers in Bavaria.*—If Europe gazes with complacency, nay admiration, at the structural creations of Bavaria, which now, by the Ludwigs canal, &c., have entered on the domain of public utility, we must not think that such has been done by enchantment and magic. Moreover, a Klenze—a Gärtner, would have striven in vain to put their fancies (*Ideale*) into tangible shape, unless a number of *inferiorities* had been extant, to execute, and properly execute, their designs. Thus, the Bavarian *Gazette* (Regierungsblatt) of 15th of June contains a government notification "of the theoretical examinations, in 1847, for the *State's buildings service*." The programme contains Latin, algebra up to the equations of the second degree, plain and descriptive geometry, drawing, mapping, and planning, the *elements* of natural history and chemistry, *physics* (mechanics, hydrostatics, &c.), with the usual branches of architecture, history of architecture, &c. It is to be observed, that most of these branches are taught regularly at the Munich University, where our professionals are entered like any other students of the learned professions. The ulterior and more immediate branches, then, and the practice, are taught at the Royal Academy of Fine Arts and the Building Institution. (*Bauschule.*)

*Comte Laborde on the Palais Mazarin.**—It is the great question of the rebuilding of the Paris library, which has been the cause of the above publication, of which the following is a brief outline:—

In the times of Cardinal *Giulio Mazarini*, the present Quartier Richelieu presented a very different aspect from what it has now, and was indicated on plans by the usual signs of fields and farms. The Palais Royal, which then was no continuous range of buildings and porticos, was quite close to the *petits champs*. It was from the window of the palais, that Mazarin saw, beyond the little fields, a hôtel of fine appearance, which then belonged to President Tuboeuf. After being made the property of the premier, its appearance soon changed. Venice sent there its large mirrors, the Levant its huge carpets, China furnished porcelain, while dogs and horses were imported from England and Spain. After divers vicissitudes, the regent ordered the transfer of the royal library to the Palais Mazarin, where it has remained ever since.

In speaking on this individual palace, Mr. Laborde enters into a variety of disquisitions on

* Le Palais Mazarin et les grandes habitations de ville et campagne, au 17me siècle. Paris, 1846, gr. in 8vo.

those of the same epoch. Mirrors were so dear then, that Mazarin bought one for 20,000 frs. and still, the finest did not exceed 42 inches by 26, and even glass was so dear, that portraits were covered with plates of talc for preservation. As the use of bells in houses was not known, a hundred domestics crowded the halls and corridors of the rich. The description which our author gives of the streets of Paris, makes one believe, at last, that *we* have attained a little civilization after all. They were narrow, dark, most dirty, and covered with impurities of all sorts.

*The Suez Canal.*—The engineers of the Lloyd Austriaco, who had been in Egypt to study the locality, where the intended canal has to end in the latter country, have returned home. The Pasha gave them the assurance, that the views of England, France, and Austria were in accordance on this subject: he would go to work. As, however, the embankment of the Nile is to be completed first, nothing can be done with the canal for at least the next three years.

*Posthumous Honour to Gaertner.*—The Committee for rebuilding the large theatre at Pesth, lately destroyed by fire—thought that the competition designs for the new house would be best judged if submitted to the examination of the *first talent* of the age, wherever it might be found. They therefore addressed, with the sanction of the Supreme Board at Vienna, letters of invitation to Messrs. Gaertner and Schickler, at Munich, to proceed to Pesth for the examining of the plans. Unfortunately the great architect was no more, when he was thus honourably distinguished, but Mr. S. (on whom the judging of the internal decoration devolves) has already proceeded on his journey.

*Art News from Bonn.*—The restoration of the Minster has been completed as far as present means will permit. Still, the fine cloister, ruinous in many places, waits for a restoring hand, which is wanted not only for the lower vaults, but also for opening the galleries of the first floor, which a subsequent age has disfigured with their stupid patchwork. Most art-friends had wished for a restoration of the old Ramersdorf Chapel, at its original site near the *Comthurey*; still the conveying of several columns and consoles to the Bonn churchyard, for the erection of a similar building there, is at least preserving a faint memento of this plastic monument.—The Bonn churchyard conceals many interesting cenotaphs, such as that of the widow and son of Schiller. The tomb also of Niebuhr, erected by his pupil, Fred. Will. IV., of Prussia, deserves notice. It is an original looking construction of grey freestone, with a marble medallion portrait of the historian. The grave of Rehfues, the illustrator of Italy, is also remarkable—and Schlegel's tomb will hereafter impart yet a greater interest to this cemetery. Still all our modern mortuary monuments cannot be set on a par with those of mediæval, far less of classic antiquity; if it may not appear altogether, that the Christian system of the world (*Weltanschauung*) be incommensurate to a proper seizing of memorials for the departed. Nevertheless, mediæval sculptors and stonemasons were more successful than we are.

## THE ALTERATIONS IN WESTMINSTER ABBEY.

Sir,—Touching your remarks on the projected alterations in Westminster Abbey, will you allow me to make a few suggestions on a published letter on this subject, addressed to the Dean and Chapter, by "A Clergyman of the Church of England." Every one who knows any thing of such matters, must join with the writer of that letter in deprecating the proposal of placing the congregation in the transepts—though, by the way, one benefit I see likely to result from such a move, would be the destruction of those hideous heathenish monuments which now disfigure them, and which would certainly prevent any thing like devotion.

His other position is equally strong, viz., that it is a most dangerous principle to admit that the necessity of providing room for the congregation, sanctions the violation of ecclesiastical precedent. Though he does not seem aware that not only at St. Patrick's, but "in this country," the sad effects of such a principle are visible, for at one cathedral (Bristol) a parcel of red-legged schoolboys are to be seen every Sunday, crowded round the altar, on the very sacrarium, and close against the east wall.

His general idea of making the nave available for worshippers, not of the choral body, is undoubtedly the right one, but there are some points in his plan which seem open to very grave objection.

The first of these is placing the stalls and choir under the lantern, and so marring the whole plan of the church as regards the chancel, transepts, and nave. Surely the stalls cannot with any propriety be placed further eastward than the easternmost piers of the *nave?*

Another objectionable point in this plan seems to be, that a passage of only four feet is left from the western door to the choir, whereas five feet is the least that should be allowed even in a parish church, and six feet would not be more than enough where bishops and dignitaries may walk in procession, as at the recent consecration of bishops.

As Westminster Abbey is not the only collegiate church where fresh arrangements are contemplated, any step which is taken there will be of vast importance, not only as regards Westminster, but as a precedent for other cathedrals.—I am, Sir, &c.,

An Ecclesiologist.

August 26th, 1847.

## THE SPIRIT THAT SHOULD ANIMATE OUR ARTISTS.

Sir,—In reading the first of the excellent papers on the "Positive Science involved in the Fine Arts," I was much pleased with the following observation: "Let us exert ourselves in the capacity of humble pioneers of progress—content to bow at the altar of pure truth rather than indulge a morbid craving after popularity."

I had intended sending you a few thoughts of my own upon the last part of this observation, but prefer, for obvious reasons, to forward you an extract from a sermon preached by Archdeacon Hare, in Trinity College Chapel, at the annual commemoration, December, 1829. That the spirit breathed throughout the whole of that sermon may be more and more the language of our architects especially, as well as of all who play a prominent part in this our modern drama, is the ardent wish of, Sir, your obedient servant,

Φιλος.

After speaking of the law of self-sacrifice, as equally binding on the poet, the Archdeacon proceeds, "I can merely hint at the manner in which the same truths are exemplified in the history of the arts. Whether the artist has hewn out his ideas from the bowels of the earth, or has borrowed the pencil of the sun to express them, nothing in either art is truly admirable unless we lose sight of the *artist* in his *work*—unless he has suppressed his own personal consciousness, and has partly a sort of transmigration into the person he was portraying, or the idea he was embodying. When our attention is called aside from the beauty of the work to wonder at the skill of the artist,—when we thus hear the voice of the prompter, we see that the whole is a trick, and turn away in disgust. For admiration is never given readily except to those who do not challenge it: they who would take the first place are bid go down to the last. Thus selfishness is the parent of that affectation, which is the besetting sin of modern art, and from which our artists find it almost impossible to disenthrall themselves. It is somewhat singular that when a work is free from such affectation we call it natural; as it were from a lurking consciousness,—awakened by looking at that which is ideal, and which therefore should represent us as we ought to be,—that selfishness is not man's real and primary, but only his artificial, secondary nature, a coating of smoke and dirt, the fumes and dregs of our souls, whereby the beauty and brightness of the original picture has been grievously defaced, and in most cases well nigh destroyed. If any one asks, how it comes to pass that works entitled to the name of natural were so much more abundant in ancient times than they have been in modern, an answer may perhaps be suggested by the consideration, that the spirit of the individual merged in that of the citizen much more completely in ancient days than it has ever done since; and, with reference to the bulk of mankind, much more completely than it has ever done in the spirit of the Christian. Added to which, a national spirit always tends to foster whatever will heighten the nation's outward glory; whereas Christianity, at least, since the reformation, has rather drawn men's minds away from that which is merely symbolical, and led them to seek for more immediate spiritual expressions of their ideas.

While self-consciousness has become more vivid in all, those in whom it has been transfigured into a higher consciousness have sought to manifest Christ by more direct methods than those of the arts. Before the Reformation, however, it was the Christian spirit swaying and overruling the spirit of the natural man, that gave birth to whatever is most excellent in modern painting and architecture.

In both, the aim of the artists was not to set forth their own glory, but the glory of God, according to their view of what would contribute to it: and so entirely had the selfish principle been subdued in the great architects who built our cathedrals, that they did not even take thought to have their names preserved. They were content to live, and they do live, in their works. Hence, we see that true genius necessarily implies a moral struggle and a victory, a struggle against the principle of selfishness, and a victory over it; and this affords a higher ground and sanction for the admiration which all nations have entertained for genius, while, at the same time, it helps to explain the irrepressible feeling that there is a latent bond of union between genius and virtue."

## MAN *versus* TIME.

The following lines were suggested by a well-known verse of Byron.*

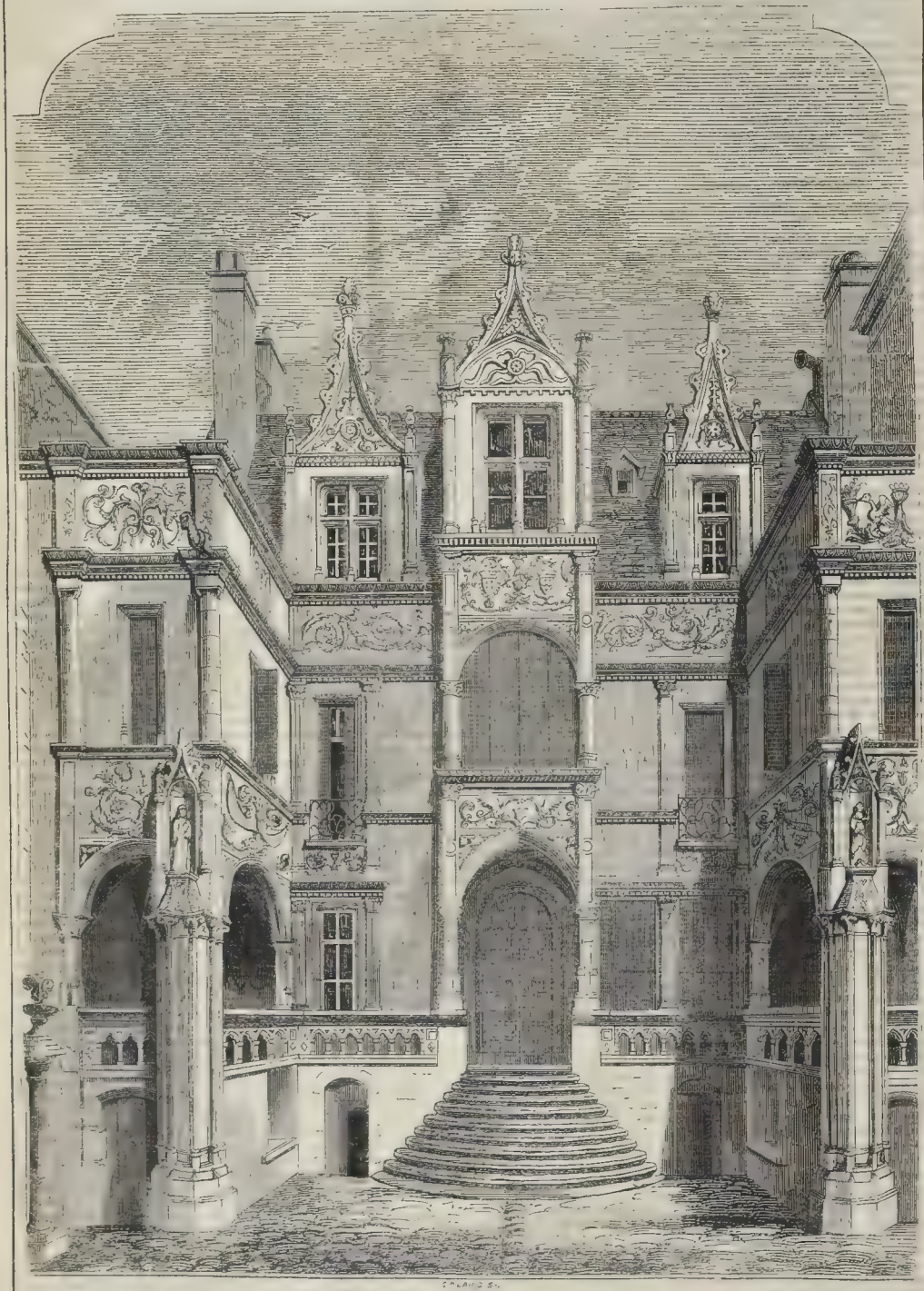
Many a column and many a stone
Have been by the hand of man o'erthrown,
And many a pile would now remain
Where we sigh and regret o'er their ruins in vain,
If left unto time; but the spoiler, man,
Swift as time flies, still keeps in the van,
And palace and fane, and dome and hall,
Thus swept from the face of this earthly ball,
Leave scarce a stone or a column to tell
Where kings in their pride have loved to dwell.
Then out upon man! who anticipates time,
As witness the cities destroyed in their prime:
Agrigentum, Nineveh, Balbeck and Rome,
Carthage, Palmyra,—Oasis and Home,
By barbarous man, a frail creature of clay,
Broken, dashed down, and swept away,
Whilst Time creeps on with his scythe and his glass,
And sighs o'er the ruin that hath come to pass.
Then out upon man, and not upon time,—
What will not man do in passion or wine?
Out upon man! who for ever will leave
But enough of the past for the future to grieve.

Otha M. Alderson.

Nuremberg.—The restoration of the church of St. Lawrence, remembered by all who have visited this most interesting of foreign cities, is nearly completed. A correspondent of the *Athenæum* says:—The painted-glass windows are undergoing the last touches: but though the finest and most cunning artists have been employed, the celebrated Volkamer window remains, as it ever was, unrivalled. The depth and brightness of the colours in this window are almost without parallel. The houses—which constitute, after all, the real glory of Nuremberg—are in admirable condition; great pains being taken to preserve the stone carvings from the wearing hand of time. The subterranean passages, which extend under the streets and houses here of more than half the town, are very curious: they were constructed to afford the magistrates the means of security and escape in case of a sudden rising of the populace. As a bit of fine-art gossip, it may be mentioned, that the king of Bavaria is at Aschaffenburg, superintending the building of his Pompeian villa.

* "Two or three columns, and many a stone,
Marble and granite, with grass overgrown!
Out upon Time! it will leave nothing new:
Of temples and palaces, levelled with earth!
Out upon Time! who for ever will leave
But enough of the past for the future to grieve.
What we have and these walls still show,
Remnants of things which have pass'd away:
Fragments of stone reared by creatures of clay."

RENAISSANCE HOUSE AT TOURS.



## RENAISSANCE HOUSE AT TOURS.

The house of Monsieur Gouin, banker, at Tours, is situated on the northern side of the Rue de Commerce, in that city, and stands in a court-yard, inclosed by a wall and gate from the street. The date of its erection is about the middle of the sixteenth century, of which it is a very elaborate specimen, remarkable for the prodigality of ornament it displays, and the mixture of Gothic forms, with cornices and entablatures of the Renaissance style. The interior has not a single feature of interest, the whole having been swept away some years ago, to adapt it for the banking offices and a habitation for the family, according to the then prevalent notions of plainness.

Our engraving gives a representation of the front, from a sketch made on the spot by Mr. H. Mogford.

## THE TEMPLE OF JUPITER, AT ÆZANI.

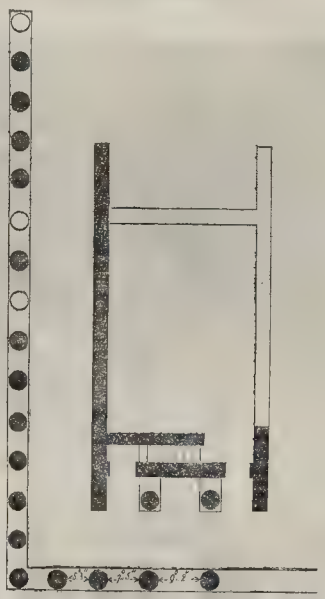
About thirty-five miles west of Kutaya, is situated the miserable Turkish village of Tchevdour Hissar. Geographers and tourists till lately were alike ignorant of its existence. In the time of Hadrian, however, there here stood one of those rich and populous cities which then studded the important provinces of the Lesser Asia. In the year 1824, Lord Ashburnham (then Viscount St. Asaph), in the course of his travels happening to pass that way, discovered among the huts of Tchevdour the stately remains of a temple, a theatre, a stadium, three bridges, and other remarkable monuments, which he determined to belong to the ancient city of Æzani.

Perhaps on account of the unfortunate loss by Lord Ashburnham of the notes of his journey, no notice of Æzani was given to the public, and hence this discovery did not attract any attention. In 1827, Dr. Hull, in 1829, the Hon. George Keppel, and in 1830 Messrs. Caillé, Stamate, Meredith, and, I believe, also Mr. D'Israeli, visited Æzani; but although thereby the existence of these ruins became more extensively known, it was not till the appearance of Sir Charles Fellows' Journal, in 1839, that public attention was turned to the importance of them. This very popular writer and enthusiastic traveller introduced two views of the temple into the first volume of travels which he published, and these, so far as I know, are the only illustrations of Æzani which have been given to the public. Subsequently to Sir Charles Fellows's journey, Mr. St. Leger, during a tour in Asia Minor, passed through Tchevdour, and made several sketches of its antiquities. In 1841, Viscount Eastnor, with whom I travelled as private physician, spent four days in Tchevdour, and thus had an opportunity of completing several drawings of the temple, which, from his lordship's great proficiency as an artist, it is to be regretted have remained unpublished. It was during this visit that I was enabled to obtain the measurements given below, which, although not quite so complete as I could have wished, may not, I hope, be devoid of interest to professional architects.

Since the appearance of Sir Charles Fellows's book, not only has Tchevdour become known to the world, but its predecessor, Æzani, has been restored to ancient geography, and its monuments laid open to the examination of succeeding travellers. Of the numerous capitals and famous cities that have been the boast of the various dominant races in Asia Minor, few now have aught to shew of their former magnificence save prostrate columns and huge substructions; but Æzani, though formerly unknown to fame, can, at the present day, exhibit more perfect specimens of Greek architecture than any other place, except Athens, and not even the city of Pallas herself presents so complete a specimen of Ionic art as this comparatively obscure Phrygian town. Though not to be compared in point of style to the Erectheum, the temple of Jupiter at Æzani must be regarded as one of the purest structures of Asiatic Greece, where, indeed, originated the Ionic order.

The temple is not extensive, being only 125 feet in length, but from its high finish it seems to have been a building of great excellence. In style it is what Vitruvius calls a pseudo-dipteral octostyle temple, having a single range of columns in the flanks, and a complete exterior peristyle of forty-four columns. According to this author, the pseudo-dipteral style was the invention of Hermogenes of Alabanda, and he cites as examples of it the temple of Diana at Magnesia, and that of Apollo at Mnestes. In regard to the disposition of the columns, the temple at Æzani does not quite agree with any of those described by Vitruvius. It has much in common, however, with his favourite eustyle, which he says had two diameters and a quarter in all the intercolumniation except the centre one of both fronts, which were equal to three diameters of the columns. But the intercolumniations of the flanks and angles of the fronts, in the Æzanian temple, have hardly more than one diameter and a half, and the centre ones two and two thirds; the intervals next on either side having an intermediate width, namely, about two diameters and a third. The intercolumniations of the flanks approach nearer to the sistyle, or perhaps the Picnostyle, than the eustyle of Vitruvius; but the disposition of the columns of the pronaos and posticum correspond very nearly to those of the latter.

PLAN OF THE TEMPLE OF JUPITER, AT ÆZANI.



The walls of the cella are on a line with the third column from the angle, so that the width of the platform, or ambulatory of the peristyle corresponds to two intercolumniations and one diameter, the antæ of the pronaos being parallel with the fourth column of the flank, from the eastern angles, and those of the posticum with the third column from the western angles. The portico thus had a triple range of columns, and the posticum a double range, counting the pillars between the antæ, which were opposite to the two central columns of the front. The ground plan of the remaining portion of the temple will afford the most correct idea of its peculiarities of intercolumination and general proportions.

Twelve columns of the northern flank remain, five of the posticum (counting the corner columns twice), and the two internal pillars between the antæ of the western front, with the two corresponding walls of the cella, namely, the northern and western. In the posticum the internal columns are of the Corinthian order, and of course proportionately more slender than the external Ionic pillars. There is a very peculiar ornament at the top of the fluting of the latter columns, namely, a little vase, introduced so as to appear suspended in the groove, like a scarabæus carved in the marble. This gives a richness to the upper members of the column, which produces somewhat of the effect of the ornamental band that is found in the capitals of the columns of the Erectheum. The torus of the pedestals is ornamented with imbricated scales, like a pine-cone. The pedestals are destitute of plinths, as is the case in all true specimens of Greek Ionic, although Vitruvius would make it appear that the plinth was a very essential part of the pedestal; but the truth is, that Vitruvius appears to have had no actual knowledge of the monuments of Greece, his notions of them being evidently derived from earlier Greek writers, and his own experience being limited to Italy, where the Ionic order never flourished. His description of that order in the instances of Priene and Teos, as we know by comparison with the scanty remains of their temples, is at fault in several particulars.

Solid blocks of marble, the whole thickness of the walls, are the materials of which the cella is built. The stones are clamped together with metal (no cement being used), and the edges of each are finished with a delicate moulding. On the outer sides of the walls of the cella, at the bottom, is a plinth of the same height as the pedestals of the columns. Eight feet seven inches above the plinth is situated a sort of projecting ledge, like a cornice, one foot six inches high; and between this ledge and the plinth there runs an ornamental fret, a foot broad. It is in the upper of the two divisions formed by this band, on both sides of the northern pteroma of the portico, that are placed the inscriptions given by Sir Charles Fellows, which inform us that the name of the city was Æzani, and that the temple was repaired in the reign of Hadrian. There are two doors in the posticum; they are situated in the space between the antæ and the internal columns. The one on the northern side leads to the vaults in the substruction, the other to the interior of the cella. As Vitruvius says that the pseudo-dipteral temples had only one entrance, which was placed in the portico, it is probable that this entrance in the posticum served as a back-door for the exclusive use of the priests, who, by means of the adjoining door, could thus have ready access to the chambers underneath the temple. This would require them to pass outside of the building in going from the cella to the vaults, but in such cases a partition of wood

was erected, stretching between the antæ, in order to divert the public gaze.

*Measurements.*

| | Ft. | In. |
|---|---|---|
| Extreme length of temple .. .. | 125 | 6 |
| Extreme breadth .. .. .. | 72 | 5 |
| Length of chamber of cella .. .. | 45 | 3 |
| Width of ditto .. .. .. | 31 | 3 |
| Thickness of wall of cella .. .. | 3 | 0 |
| Thickness of transverse wall of ditto .. | 3 | 0 |
| Thickness of basement wall of peristyle | 4 | 2 |
| Length of pteroma of portico .. | 16 | 8 |
| Length of ditto posticum .. | 7 | 6 |
| Height of floor of ambulatory of peristyle above external ground .. | 6 | 0 |
| Height of pedestals of columns .. | 1 | 10 |
| Diameter of ditto at corona .. .. | 4 | 0 |
| Height of shafts of columns .. .. | 26 | 4 |
| Diameter of ditto including lower astragal .. .. .. .. | 3 | 8 |
| Diameter of ditto at bottom of fluting | 3 | 5 |
| Diameter of ditto at centre .. .. | 3 | 6 |
| Diameter of ditto at top of fluting .. | 3 | 3 |
| Height of architrave .. .. .. | 2 | 5 |
| Height of freize .. .. .. | 2 | 5 |
| Depth of fluting at top of shaft .. | 0 | 1½ |
| Circumference of internal columns of posticum .. .. .. .. | 9 | 8 |
| Thickness of basement wall of ditto .. | 4 | 2 |
| Projection of plinth of walls of cella .. | 0 | 6 |
| Height of plinth of ditto .. .. | 1 | 10 |
| Length of partition wall of staircase | 21 | 1 |
| Thickness of ditto .. .. .. | 2 | 2 |
| Width of stair .. .. .. | 3 | 10 |
| Width of doorways of posticum .. | 6 | 1 |
| Breadth between doors .. .. | 17 | 4 |
| Centre intercolumniation of posticum | 9 | 2 |
| Intercolumniations next to centre .. | 7 | 5 |
| Intercolumniations of flanks and angles of fronts .. .. .. .. | 5 | 3 |

Æzani was the chief town of the district of Æzanitis, which was one of the subdivisions of the province of Phrygia Epictetus, bordering on Bithynia. This district occupied the western extremity of that extensive table-land which stretches between the northern and southern mountains of Asia Minor, having Mount Olympus on the north, and Mount Messogis (an off-shoot of Taurus) on the south. It is a region of lofty plains—the great water-shed of Asia Minor—diversified by prominent isolated hills, which are the summits of the mountains that appear as ranges from the lower country. From the immediate vicinity of the territory of Æzanitis, many of the most celebrated rivers of Asia Minor take their rise, as the Sangarius, the Rhyndacus, the Caicus, the Hyllus, and the Hermus. The second of these flows through Æzani, an insignificant stream. Standing on the seats of the theatre, which in a Greek town always commanded the finest view the place afforded, the conical peaks of Morad Dagh and Ali Dagh form very conspicuous objects, especially when the sun, sinking over the yellow plain, clothes their ample sides with a mantle of intense blue. The *Cyri Campus*, the *Peltenus Campus* and the *Cillanius Campus* of ancient geography were all situated in this corner of Phrygia—a circumstance which sufficiently indicates the character of the country.

To this region Turkey is indebted for some of her most valuable and peculiar products. In the vicinity of Æzani is the opium district. Scammony, a drug of still higher price, is produced somewhat further to the east; and there also are found several important gums, as well as yellow berries, madder, and other dye-woods. The flocks are peculiarly fine, and the physical circumstances of the whole table-land make it particularly well adapted to wool growing. Angora, in its silken-coated cats and goats exhibits the capabilities of the climate.

J. B. Mitchell, M.D.

## NOTES IN THE PROVINCES.

About eighty almshouses, it is rumoured, are to be erected at Brentwood, on a site near the railway, by 'one of the most opulent societies in the kingdom.'——The first stone of a new Wesleyan Chapel has been laid at Poplar. The building is to be erected by the Messrs. Curtis, after a Gothic design by Mr. Wilson, of Bath—'Jacobo Wilson de Thermis Architecto,' as future antiquaries are rather equivocally informed in the inscription deposited along with the coins. Accommodation will be provided in the chapel for 1,500 persons. Mr. Green, the ship builder, who laid the first stone, has contributed 500 guineas, Mr. Snook, 100*l.*, and others 3,000*l.*——A statuary marble bust, on a marble plinth, executed by Mr. Thurlow, junior, of Saxmundham, has been placed in Aldeburgh Church, with the following inscription:—

To the Memory of
GEORGE CRABBE,
the Poet of Nature and Truth,
this Monument is erected,
by those who are desirous to record
their admiration of his Genius,
in the place of his Birth.
Born December 24th, 1754.
Died January 29th, 1832.

——A meeting of the Southampton board of guardians was held on Monday week, to consider the offer of a site of land for building a new workhouse, or the propriety of enlarging the present one, when a tender of architectural designs was made to the meeting. A similar communication, the chairman said, had been previously received from another architect, but no notice could be taken of either. We would quote a sentence from Vitruvius anent this, if we had time to refer.——An appeal has just been made to the public on behalf of the restoration of Sherborne Abbey Church, and the report of an architect on the subject put into circulation, wherein it is proposed to scrape and clean the entire fabric, remove the galleries, and such internal portions of the edifice as mar the general effect of it, and substitute uniform pews in place of the present irregular and inharmonious constructions. The estimated cost of these alterations is 5,000*l.*, and a meeting, to take the subject into further consideration, is to be held.——The new church at Merthyr was to be consecrated on the 8th inst. by the Lord Bishop of Llandaff.——The laying of the first stone of the Sheffield Athenæum and Mechanics' Institution by the Earl of Arundel and Surrey, was announced for the 1st instant.——The Earl of Ellesmere has given a site and has consented to bear the whole expenses consequent upon the erection of a new and spacious church at Walken Moor, near Worsley, Eccles, Lancashire. The foundation-stone was laid a few days since with the accustomed ceremonies by Lady Brackley.——The subject of a new union workhouse at Bradford, says the *Observer*, was discussed at a meeting of guardians on Friday week, but the discussion ended in nothing.——"How many a Long Acre is to be found on both sides the Tyne," says the *Gateshead Observer*. "Gateshead, with the exception of a few hundred yards, is one entire Long Acre—an immense preserve, as it were, in which the sports of King Death may be carried on with impunity. Yes! and may not the ratepayers who would rather that the doctor and the undertaker visited their doors than the collector of a sewer rate, be considered the very best gamekeepers in his grim majesty's service?"——The ruins of Hulne Abbey and the gardens of Alnwick Castle have been thrown open to the public at stated periods by the Duke of Northumberland, and the benefit appears to have been gratefully acknowledged by numerous visiters.

## BURIAL IN TOWNS.

While Mehemet Ali is suppressing cemeteries in the interior of towns, and transplanting the burial places of his people to the high grounds at a distance from their cities and villages, as well as filling up marshes, draining, and erecting model villages, it is rather humiliating to witness the efforts, so long unavailing, towards the like ends, in this, the very central focus of civilization. Yet we are glad indeed to perceive that in a cause wherein we have the honour to rank ourselves as old pioneers, better prospects and more respect and attention appear to be afforded to that cause than when first and for so long we, almost alone, cut out the way for the advance guard, now in the field. A 'very crowded and influential meeting' was held on the 27th ultimo, in the theatre of the Scientific Institution, Leicester-square, Mr. W. A. Mackinnon, M.P., in the chair, to consider the evils of burying the dead in the churchyard within the limits of the metropolis; when many sickening details were recapitulated, such as those so long since exposed in The Builder; and befitting resolutions were unanimously passed, and Mr. Walker's recent services duly acknowledged and approved. But we regret to perceive something like an endeavour to establish a new or second association, and thus to divide the interest and the efforts that ought now rather to be resolved into unity for the more hopeful furtherance of the end in view in the forthcoming Parliament. However, the chairman's exhortation to the middle classes residing in the crowded districts of the metropolitan churches, to unite together, in order to obtain legislative interference to put an end for ever to the degrading and loathsome practice, may be susceptible of a better interpretation, which we sincerely hope it does. A copy of the resolutions was to be forwarded to each of the new members of Parliament, to elicit his sentiments, and solicit his support.—Mr. Walker is still engaged in fighting the good fight, and battling with corruption in its most loathsome form. On Friday week, he delivered a fourth lecture on the subject, full of statistical and other details, too well adapted to harrow up the feelings and excite the disgust and shame, as well as indignation, of his auditors at the continuance of such practices by "vested right" in the very metropolis of the world, though banished as such "centres of infection" have been in all the cities of civilized Europe besides. It is not in the metropolis alone, however, that putrid fevers and general and insidious infection and disease still prevail from this very cause, as witness Axminster and Minchinhampton; but it is some consolation to observe that the movement is extending right and left throughout the provinces also. At Oldham, for instance, the Committee of Health, the other day, brought a series of resolutions, condemnatory of the practice of interment in the parish church-yard, under the notice of the churchwardens and overseers, and of a public meeting subsequently held, but not so well attended, certainly, as it ought to have been; and a committee was then appointed to take steps for the establishment of a new and spacious burial ground, in a proper situation, in the neighbourhood of the town.

## DECORATIVE ART SOCIETY.

June 30.—The second portion of a paper "On Heraldry," was read by Mr. Partridge. Referring to remarks offered in the first part of his subject, he observed that heraldry would be found intimately blended with the general history of the middle ages, with the biography of eminent persons and families, with manners and customs, with poetry and polite literature, and moreover, that it affords a key capable of explaining correctly the meaning of many mysterious and important forms, prevalent in embellishments during the feudal period.

The reader then directed attention to those heraldic figures called "Supporters," such as the lion and unicorn of the royal arms, and he subsequently noticed the analogy existing between heraldic and natural forms. Supporters, it was said, came into use when tournaments and feudal chivalry assumed a scale of splendour requiring a system of distinctions; and it became a practice for nobles and knights each to hang his helmet and shield, richly emblazoned with heraldic insigna, on the front of his tent when in the field. Two attendants or esquires, dressed in armour or in a fanciful costume, imitative of certain characteristic animated beings, were placed to guard or support them, and also to receive such challenges as might be offered. Under such circumstances, it was argued, it is absurd to represent supporters as lying down, walking away, or half asleep, while the heraldic attitude *rampant* should be invariably maintained. He observed, that frequent instances may be seen even in St. James's-street and Pall Mall, as well as on the *Gazette* and *The Times*, in which the supporters of the royal arms are represented as crawling in mean-spirited positions, instead of *rampant guardant*, as set forth in the blazonry. He remarked, that he had not been able to detect an abuse of this kind, occurring before about the commencement of the present century, and the supporters are never found in any other position than rampant, either in architectural remains or in old works upon heraldry. He attributed this infraction in a considerable degree to a volume of peers' arms with sup-

porters by Mr. Catton, R.A., who being a skilful painter of animals, but quite ignorant of the science of heraldry (many of the arms it was said are incorrectly given), gave the supporters every variety of attitude, so as to contribute to a novel and pleasing pictorial effect. This course was much calculated to mislead many who possessed some knowledge of drawing, but were ignorantly indifferent to the correct heraldic expression and meaning.

The lecturer contended, that if one person may change the attitude of supporters for the sake of pictorial effect, another would be equally justified in changing colours or in making still greater deviations. Heraldry, he asserted, mainly consists of imitations of natural forms, but which are nearly always made amenable to symbolic and conventional treatment. In cases such as a stag, horse, or eagle "*proper*," nature may be, in many respects, faithfully copied from natural bodies, but it will be found that each of these is frequently placed side by side with a symbolic form, such as a wivern, dragon, &c., which must be depicted according to the laws of heraldry. Instances in illustration of these views were offered. The Duke of Devonshire has for supporters "two stags proper," in which case, colour, and form may be true to nature, but the attitude remains heraldic. The Duke of Northumberland has one gold and one blue lion, which, if painted green, belong to the Earl of Roseberry; or, if red, to the Duke of Bedford. Several similar cases were cited. Regard to proportion or relative size, Mr. Partridge observed, would also tend to produce anomalies, and thus went far to prove that they were never intended as pictures of natural history, but as symbolical distinctions, treasured by their possessors from feelings of high honour. Examples were adduced of beings of unequal sizes, which are brought side by side in arms, as a falcon and an elephant, a lion and a cock, for supporters, and others were named as applying to crests, quarterings, &c.

It was explained, that supporters are attached to all arms of peers, and that, with a few exceptions, they do not pertain to those of commoners. The lecturer then noticed the opinions sometimes held, that the extravagant forms of animals used in architectural decorations, as well as in heraldry, are efforts during a barbarous period, when the persons employed could do no better, and which, therefore, ought not to be followed in the present advanced state of manipulative skill; but he argued that this is an erroneous view, and that the human figure and animals were depicted with great fidelity, *together with no small knowledge of symbolical art*, upon ancient embroidered vestments, stained glass, and illuminated missals. He considered that the apparent eccentricity proceeded from causes unfelt at the present day, and that many forms were devised to be repulsive of evil spirits and demoniacal influences. The form and size of shields, with some other features in heraldry, were pointed out for the purpose of illustrating its importance historically, referring to Winchester School, Eton College, and other buildings, as well as to stained-glass windows at Chenies, Bolsover, and St. George's Chapel, Windsor. As an example of family history executed in the present century, a view was exhibited of the Duke of Bedford's dining-room, in which Mr. Partridge decorated the panelling with shields, bearing arms descriptive of all the marriages in the Russell family. He also mentioned that he had been employed by Mr. Macready to emblazon correctly the arms of each personage in Shakspeare's play of "King John."

The paper concluded with some useful suggestions for the appropriate introduction of heraldric ornament; and stated, that before now, a shield bearing arms, placed on the frame to a portrait, had in itself formed an important link in establishing a perfect chain of legal evidence.

This being the last evening of the session, the meetings were adjourned to October next.

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COMPETITION.—Designs are wanted for a workhouse for the City of London Poor Law Union, to accommodate 1,000 adult inmates, classified according to rule; the architect of the first selected design to carry it into execution, and those of the second and third to have premiums of 100*l.* and 50*l.*

## WHO BUILT THE BATALHA.

SIR,—The correspondent of the *Athenæum* quoted by you, in his observations on the church of the Batalha, says, "I believe Murphy in his work *endeavours* to shew that this abbey was the design of an English architect," an opinion, he adds, at variance with "Portuguese critics" and "the archives." Now I have examined pretty closely the sixty-one folio pages of Murphy's work, and find there is no mention of the country or name of the architect, except in these general terms, "He (the king) invited from *distant* countries the most celebrated architects that could be found," &c.

There is, however, an "additional note" at the foot of the last page (list of subscribers) furnished to Mr. Murphy by the Rev. Herbert Hill, chaplain to the British factory at Lisbon, quoting from Luis de Suisa and others that "the architect was an Irishman named David Hacket."

It may be desirable to state, that nearly forty pages out of the sixty-one of Murphy's work, are a translation from the work of *de Suisa*.

Taking this translation and Mr. Murphy's drawings of the church together, the inference can be clearly established that either English or Irish men were employed at a very early stage of the work. In page sixty, I read as follows:—"Near the entrance of the church are the names of the following workmen who are there interred:" "First, master workmen for the windows;" there are five names given, the fifth is thus quoted:—"*Mester* Whitaker, a stranger."

Now this name is common both to England and Ireland. In plate 2, figure 37, are drawn characters, which Mr. Murphy "found engraved on different parts of the church of Batalha." One of these characters is of this form IWI or M.W., which without any unreasonable stretch of conjecture, may be taken to denote the mark of "*Mester* Whitaker."

I am, Sir, &c.,

Gorey, 24th Aug., 1847. JOHN KELLY.

## VALUE OF THE BRITISH MUSEUM.

BY some, the Museum is looked upon as a great plaything or playhouse for the people. Be it so; we should be willing to take the matter on that footing, for it is no mean thing to furnish pastime for a people. Among the chief duties of a government, are to provide for the amusement of the people; and if men who are hard-worked in their several callings, can have a day's pleasure in a museum, and can have given to them new thoughts, which shall fill their minds in many days of toil, this is a great thing. Discontent is one of the greatest evils which any government has to withstand, even where bodily evil, hunger, and want are not felt. The gloomy sway of the Independents broke down mostly from this cause; and the people hastily changed a good government for a bad one at the Restoration, because they were deadened and disheartened by the want of their accustomed pleasures. The playhouse, the bear-garden, and the fair were closed, the fiddler and the ballad-singer were put down, holidays were forbidden, and although plenty reigned at home, and glory crowned our arms abroad, the people were sullen and unhappy. In times of want, workmen are ever open to be led astray by mob orators and agitators, to whom, when in full work, they will not listen. As it is with one, so it is with many; when the mind is heavy and the heart faints, the man himself gives way to a trifling sorrow, and sinks from bad to worse; whereas, where he but upheld, he would overcome every hardship. More or less, the same thing is to be seen at all times, and we feel sure that we are always doing good when we are yielding pleasure to the old or to the young. Happy feelings are the mainspring of good deeds. As it has been acknowledged by the greatest statesmen, that it is desirable to find pastime for the people, so it should be given usefully. The bloody shows of gladiators, or the beastly games of the bear-garden or the prize-ring, will give pleasure to those who are called enlightened Romans or enlightened Englishmen; the gambling cock or quail fight or horse race may prove still more enticing, but no one good feeling is awakened or strengthened, and no bad one weakened or quelled. The love of the good, the true, the great, and the beautiful is that which should always be kept before the people, from their childhood to their death, in all outward forms and shapes. It should never be thought that education is the time of schooling in boyhood, but it should be remembered that in its rightful meaning of "bringing up" a man, it is being carried on at all times, in all places, and by all means. The eye, the ear, the touch, the taste, the smell are always on the watch learning something,—and if not good, they are learning evil. Thus habits, which cannot be shaken or undone, are shaped slowly and unknown, and fetters are welded which chain the mind in the doing of good or evil. If mankind are to be thoughtful and careful in their deeds and thoughts, it is becoming that in every thing we should keep sight of goodness, of truth, of beauty, and of greatness, for the Almighty maker of all has done this in every thing, from the smallest being, hardly seen by Ehrenberg under the most powerful microscope, to the great bulk of the mastodon or the most dreaded beast which ever walked the earth. If mankind are not to be taught to think, at least we should take all means of giving them right habits.—*Civil Engineers' Journal.*

## WESTMINSTER COURT OF SEWERS.

A SPECIAL court of sewers was held on Friday last; Capt. Bague in the chair.

*The Sanatory Improvement of the Parishes of St. John and St. Maryaret, Westminster.*—Mr. Phillips, the surveyor, presented a report on the state of the above districts, from which we take the following:—

"The drainage of Whitehall, of the great offices of state in Downing-street, and of the several streets between Whitehall and the intended new Victoria-street, is in the worst condition, the sewers being very old, in a ruinous state, and, consequently, choking up with filth. Previously to any effective steps being taken to remedy the many evils in drainage of the above localities, or for affording a proper outlet for the new sewer proposed to be built along Victoria-street, which sewer will be the base for the improvement of the drainage of the many almost undrained streets, courts, and alleys, abutting on, and communicating with, the said intended street, it is absolutely essential to carry up a new main line of sewer from the Thames to and through the localities named above. From the depth at which it is proposed to be put in under low-water mark, I consider that carrying it along the front of Richmond-terrace will be far the best and most practicable route for its discharge into the river Thames, as that place presents a more direct, wide, and open thoroughfare than any other in the neighbourhood. The proposed sewer should be a circular one of 5 feet 6 inches in diameter, and one brick in thickness, from the river to Tothill-street, being a length of about 2,400 feet; and I estimate the cost at little short of 5,000*l.* As the proposed sewer is for the drainage of a district, the greater part of which is below the high-water level, it will be necessary to provide a complete system of penstocks and self-acting tide valves, to be fixed near the outlet.

Flushing sluices for scouring the sewer should be placed at distances of 500 feet apart. There is a great objection to the outlets of sewers discharging their contents openly on the banks of the river. Filthy deposits and mud banks are thus formed, and noxious effluvia exhale from them. It is proposed to continue the covered sewer for a distance of about 200 feet from the base of the present embankment of Richmond-terrace, under the bed of the river into the main low-water stream of the tide, so as to discharge under low-water mark." The report further suggested, that the line proposed, as it passes through crown property at Richmond-terrace, should be communicated to the Commissioners of her Majesty's Woods and Forests, and that their assistance in carrying out the proposed improvement of the drainage should be sought for without delay.

Mr. Willoughby wished to know whether the Government had agreed to the plan of the proposed Victoria-street. This court, before moving, ought to be first assured that there was an intention to carry the street on the plan proposed. Mr. Hertslet (the clerk) said, some time since a letter had been received from Mr. Abrahams, the architect to the Westminster Improvement Commissioners, stating that they were unable to proceed with any definite plan until the arrangements as to drainage had been made. It was then agreed that the report should be printed, and that a copy of it, with plans, should be transmitted to her Majesty's Commissioners of Woods and Forests, to obtain their sanction to the works proposed.

*Proposed New Sewers in Kensington.*—A deputation of inhabitants of Church-street, Holland-street, &c., Kensington, attended the court this day, to support two memorials presented by them in opposition to the works proposed to be carried into effect in the above parish, in pursuance of the recommendation of the surveyor. Mr. Rainham, a solicitor, of Fenchurch-street, appeared for the memorialists, and stated that the opposition of the inhabitants of this district rested mainly on two grounds, viz., that they at present possessed a very efficient drainage; and, secondly, that if the plan proposed by this court was adopted, a well, which supplied a great number of the inhabitants with a pure and abundant supply of water would be entirely destroyed. He contended that the report contained statements altogether erroneous, for a better drainage could not exist, and as a proof of it, he would mention a fact, that one of the sewers at present used by them had not required cleansing for the last twenty years, and he would prove that fact by the evidence of the parties resident on the premises.

Mr. Russell, Mr. Lawrence, Mr. S. Bird, and others, were then examined, to prove that there was at present a very efficient drainage.

Mr. Willoughby wished to know whether, because the witnesses were satisfied with the present mode of drainage, that was any reason the court should depart from the scheme laid down? No doubt parties could be found who were very well satisfied with things as they were, as was the case with parties in Watling-street, in the City, who had gone on for years with cesspools in every house: they, it was true, found it rather inconvenient at first, but at last got used to the stench arising therefrom. He hoped they would not be deterred by considerations of the nature here presented, from carrying on the work if they were satisfied it was for the benefit of the district at large; that no considerations of individual injury should deter that court from doing its duty in carrying out such measures as were for the general benefit. He concluded by moving that the recommendations of the surveyor be confirmed.

Other commissioners took the same view of the case.

Mr. Gunter said, so bad was the drainage of the district, that a short time since it was necessary to open the tomb of a near relative of his in Kensington old churchyard, when it was found more than three parts full of water, and the coffin was floating! He was in favour of the proposed plan.

Mr. Hawkes said he had listened attentively to the hon. commissioner near him (Mr. Willoughby), and argument more arbitrary or tyrannical he had never heard in his life. Not the slightest inconvenience had been experienced by any one, and the report was entirely false. Without rhyme or reason, without the slightest pretence for their interference, they were about to inflict the greatest possible injury, without the most remote chance of good. No one was suffering, the people of Kensington sought not their interference, and they would confer no public advantage, and he trusted their first step under their increased powers would not be one of cruelty and tyranny.

The chairman having requested any commissioner who had interest in the question to retire during the voting, the last speaker withdrew, and the motion was carried unanimously.

## New Books.

*The Epochs of Painting Characterized; a Sketch of the History of Painting.* By Ralph N. Wornum. Cox, King William-street, Strand.

Under this title the essay on painting in "The Pictorial Gallery of Arts," to which we have already alluded, forms two of "Knight's Shilling Volumes for all readers." It may be safely recommended as a clear and well-written sketch, necessarily brief in parts, as it comprehends a review of the progress of painting in every country where the art has obtained a cognizable degree of development, extending over a period of nearly 3,000 years, and including biographical notices of many of the most eminent painters. It displays an intimate knowledge of the subject, and considerable learning. The following view of art in Germany, which concludes the essay, may be advantageously quoted.

"There is now every prospect of a third great development of art, which will certainly happen much within the term of two thousand years, the interval between its first and second periods. Germany has already assumed a high position in the sentiment of art; in France the technical development is perfect; and for England likewise the dawn of a great future is appearing. Germany has long taken the lead in the sentiment of art, though unfortunately its sentiment is alloyed with convention and affectation. Asmos Jacob Carstens was one of the earliest artists of Germany who forsook the mere mechanical routine of his time and entered earnestly into the utmost capabilities of art. Carstens was followed by a still more remarkable man, Friedrich Overbeck, who has had a surprising influence upon the German artists of his time. A style, however, so purely conventional as Overbeck's can have but a transient reign, though as a means of conducting the artist from a mere academic mechanism to a contemplation of the real capability and destiny of painting, it has performed a valuable service. This style is more representative than imitative, is symbolical in its motive, and symmetrical in its outward development or external form. It appears to owe its peculiar development partly to the notion that to attain to the excellence of the great *cinquecento* masters at the commencement of the sixteenth century, a restoration of the *quattrocento* style is necessary (though with Overbeck the style is doubtless final), inferring that, as the *quattrocento* immediately preceded the *cinquecento*, and in so far led to it, it is the only road to that high development of art: such a fallacy requires no refutation. Some theorists maintain the *quattrocento* to be a higher development: it is nothing more than an incipient state of art, which requires a certain amount of knowledge; and when the barrier which lies between it and the more complete development is once surmounted, its use is accomplished. If a higher degree of knowledge is once attained, a perseverance in the restoration of such a form of art is to retrograde. This position has been practically illustrated by some of the most ardent advocates of this sentimental revival. The case of Erwin Speckter is sufficient. This painter originally a devoted admirer of Overbeck, and indeed wholly absorbed by his style while living in his native district in the north of Germany, and during the whole period of his career, previous to his residence at Rome, experienced, upon his intimate acquaintance with that capital of the arts, a perfect revolution in taste, and wholly changed not only his style, but his very subject, so great was the reaction in his mind from the artificial thraldom in which it had been enveloped. The essential attraction of art, as an embodiment of nature, gradually drew him from the abstract conventional system that he had identified himself with, in which art was only secondary to a peculiar sentiment independent of it, to the art itself and for its own sake. And Speckter's transition from convention to nature is far from being singular in the history of modern German art. Overbeck's style however is but one form of the great present development of painting in Germany, though it more or less characterises the style of many of her greatest artists; but the purely historic art has likewise its votaries: as a school that of Düsseldorf is the most *sentimental*. To this school belong Bendemann, Lessing, Stilke, Sohn, and many other eminent masters in various departments of art, as Hübner and others, among whom the landscape painters are very conspicuous. Cornelius, Schnorr, Hess, and Kaulbach, all painters who owe much to the patronage of the truly royal munificence of Ludwig I. of Bavaria, are each in themselves a host, and sufficient to confer dignity in their respective walks on any school whatever. May the recent movement of the British Government in the cause of art prove the harbinger of a great future for this country!"

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*A Handbook for Visiters to Oxford.* Oxford: J. H. Parker.

A guide-book of very superior pretensions, illustrated by a hundred beautiful wood-cuts of all the principal buildings and monuments in time-honoured and most picturesque Oxford. It contains, likewise, a plan, shewing the relative position of every building. Those of our readers who have not visited Oxford have a delightful excursion in store, and will find their pleasure increased fourfold if they take with them Mr. Parker's guide.

## Correspondence.

### GEOMETRIC SYSTEM OF THE ANCIENT ARCHITECTS.

Sir,—In your journal of the 24th ultimo, I observed a letter from Mr. John Browne, drawing-master, of York, which I did not suppose was a prelude to the attack he has made on me in your last number [but one].

I must beg to trouble you with a short reply, in justice to myself as an architect, having been, from 1807 to 1814, under articles to the late Sir John Soane, and having erected many public and private works long before Mr. Browne was introduced to me, about 1828.

In 1829, during a few hours passed in York, after the conflagration of the cathedral choir, he shewed me a MS. and a diagram described by me, *which, he repeats*, "consists of a circle, four right angles, and three vesicas" (*if three, the last was mysteriously withheld*), and all I could make of his explanation was, that it appeared an ingenious hieroglyphic of the *Creed of St. Athanasius*,* of which his letter breathes the exclusive spirit, of times happily gone by. Since then I have seen little more of my *friend* Browne than for a few minutes during my casual visits at York, (being a subscriber to his work, so favourably mentioned in my paper read at the Royal Institute of British Architects, on the 14th June last), and have had no leisure to receive "instruction" from him.

When I told him I thought I had discovered the practical use of the spherical triangle, he referred me to Mr. Kerrich's "Essays in the Archæologia," which I had not seen, and though many years before that I *had* seen Mr. Hawkins's work, I did not recollect his notice of Cæsarianus, nor the diagrams you allude to, nor did Mr. Browne either name him, or hint at his "interview with Mr. Kerrich."

Mr. Browne arrogates too much, and though he may claim to be Mr. Kerrich's "instructor," I deny his accusation of my having "*persisted in obtaining, both directly and indirectly, such hints from*" his "*working scheme*" (for all his communications are carefully veiled in impenetrable mystery), and I had much better employment than to endeavour to understand his impracticabilities; he may with equal justice claim to be the fountain of all intellect, and bring the same charges against Professor Cockerell, Messrs. Cresy, Wallen, Billings, Griffith, &c., and monopolize all geometric principles at once.

"L'état, c'est moi," said Napoleon."—"L'Oracle de Science, c'est moi," saith Browne.

The diagram of the intersecting equilateral triangles within the circle, generated by the radial divisions, first struck me as an infallible system of proportion, during a ramble amongst the glorious mediæval structures of Belgium in 1839, but for two or three years afterwards, I could rarely find leisure from my professional avocations to test its properties. Subsequently I have applied it to plans, elevations, sections, and details of buildings, some published, others measured by myself; and my preliminary essay of the 14th of June last resulted from my labours, but to be fully understood all the diagrams should have accompanied its publication.

Although Mr. Browne has seen and heard me speak of my diagram (very different to what I remember of *his* wild scheme), he never so much as hinted that he claimed to be my "instructor," and the "track" which (he says) he "pointed out" to me, made so little impression as to be wholly obliterated from my memory, nor can I accuse myself of having gained one single idea from his vaunted "instruction." His scheme should have been given, with the extract from his letter, or he otherwise may appear to have an advantage over the heretic friend whom he attacks, and who may justly exclaim "save me from my friend."

Without yielding one jot to Mr. Browne's views in 1829 or his vagaries of 1847,

I remain, Sir, &c.,

R. Dennis Chantrell.

Lincoln's-inn-fields, 23rd August, 1847.

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### BUILDERS' TENDERS.

Sir,—As I believe the insertion of builders' estimates in your valuable paper must have a tendency to restore that business to a more

* His scriptural meaning.

healthy state by exposing the follies of many of its members, I beg to forward you a copy of five tenders for finishing thirteen houses at East Surrey Grove, Peckham, opened on the 16th inst., in the office of Mr. F. Lett, architect, and in the presence of all the parties.

| | |
|---|---|
| Wilson | £997 |
| Climer | 997 |
| W. Harding | 972 |
| Macey and Son | 958 |
| Hetherington | 570 |

I am, Sir, &c., C.

Another correspondent forwards the enclosed tenders, delivered for forty-eight detached houses, intended to be built on the Noland estate, forming St. James's-square. Quantities where supplied. The three first may not be correct to ten pounds.

| | |
|---|---|
| Hicks | £48,900 |
| Trego | 48,430 |
| Lock and Nesham | 47,240 |
| Stringer | 40,640 |
| Scissons and Co. | 39,340 |
| Atkin | 29,830 |

And a third sends the following for a shop front with mahogany sash and door pilaster, entablature, plate glass, and mahogany fittings, in Mount-street, Westminster-road.

| | |
|---|---|
| Casson | £490 |
| Hard | 448 |
| Tombs | 283 |
| Wilson | 269 |
| Stevens | 259 |

## Miscellanea.

The Iron Trade.—There is a movement in the trade itself, says *Aris's Birmingham Gazette*, which cannot be looked upon otherwise than with distrust, and that is, the mania now prevalent for increasing unlimitedly the quantities produced. The same is the case in the districts in the North, among the Welsh, and among the Scotch, as if each party were instigated by the demon of ambition to outvie his neighbour, and write himself the greatest ironmaster in the world.—As to the Scotch, it does not appear that some of the masters have the power at present, whether they have the ambition or not; for their workmen are still unsettled, and it is a remarkable fact, says a recent correspondent of the *Times*, that notwithstanding this, and that the stocks of pig-iron are very small, the price has continued to decline ever since the strike commenced, and the announcement of so many failures lately causes buyers and consumers to act with extreme caution. On 26th ultimo, the price is declared to be quite nominal, but though even so, had sunk to 67s. 6d. for 3-5 No. 1, and 2-5 No. 3, not cash, prompt, and free on board; but market quite inanimate. On 28th, the nominal price was declared to have fallen to 67s., with an utter want of either confidence or buyers.

The Improvement of Slough.—There is a plan on foot for establishing a general market at Slough. The committee appointed by the inhabitants, &c., to carry it into effect, are in treaty about some land at the Salthill end, on which to erect the necessary buildings. It will be carried out by shares of 10*l.* each. A correspondent informs us that the Market-place, 60 by 58, and hall, 60 by 28, with room for the Mechanics' Institute, will cost about 2,500*l.* The plans were prepared by Mr. W. H. Wigginton, jun., of Slough, and are in the Italian style. The opening lecture of the Mechanics' Institute (which is thriving) was given by the Rev. W. G. Cookesley, of Eton College, in April last. The railway from Windsor to London is about to be commenced at Datchet. The contractors engage to finish the line by May 31st, 1848. New galleries, the same correspondent says, have just been erected in that modern monstrosity, Upton New Church. When it was first purposed to take up the seats in the body of the church to convert them into pews, the curate (Rev. H. C. Knox) opposed it. When the pews were commenced, the bishop ordered them to be taken down, and the church restored to its former state, but the works were nevertheless completed. The bishop, it is said, has again interfered, and a vestry was to be held on Thursday, to lay his letter before the parishioners.

Projected Works, &c.—Tenders have been called for by advertisement for the erection of a district church at Walker; the repair and re-pewing of the parish church of Kirby, Muxloe; the rebuilding of premises in Bloomsbury; various works in the erection of a house and offices at Casterton, Westmoreland; taking up the woodwork and slatepaving the footways of Worcester-bridge, and repairing the quay and side walls; making alterations and erecting two rooms at Blything Union Workhouse; repairing farm steading at Oldhamstocks; erecting several buildings for Government Laboratory Establishment at Gosport; erecting a farmhouse and farm buildings near Ferrybridge, Yorkshire; repairing four old houses near New Bond Street; extending 1,050 feet of sewer, and arching 2,048 feet and 850 feet of sewer (separate tenders and contracts) for Tower Hamlets Court of Sewers; sinking a well near Gosport; also for the execution of the whole works on Cameron's Coalbrook Steam Coal and Swansea and Loughor Railway; for a supply of cast-iron sluices, cocks, pipes, and other metal works for the Bristol Water-works; and for a supply of ironmongery for the East-India Company.

The City of Wells.—Wells is a unique little city—fair in itself, fortunate in its locality; but if there is one spot in this busy England of ours which sooner than another I should select, did I want a long sleep, it is Wells, on ordinary occasions. Sunny and drowsy in summer, wet and silent in winter, it is quietude in itself, with its solemn and monastic cathedral close, its swept but stirless streets, its smooth-faced houses, closed hall doors, and polished brass knockers. Its very neatness hushes you; there is always one eccentric man to be seen in the street, but sometimes, even in noon day, not a second; and such is the repose usually in the place, that the only sound you sometimes hear—and that you can hear from one end to the other—is the splash of the public fountain that supplies the centre. I thought myself I could often recognise this sound, as, on some sultry summer's day, I descended the steep of Mendip, and looked down upon this picturesque place of slumberers. Wells, indeed, seems as if it had sprung up, cathedral and cross, and houses, all in one day in the olden time, and never changed since. The oldest inhabitant, I believe, does not recollect a house built there; there is a neat, stationary, and antique air about it—it ought to be the place of archives for the laws of Medes and Persians, that altered not. When the face of the whole country is tattooed with railways, and winding and twisting and turning lines find out the most lonely villages, Wells is an *urbs intacta* in this respect; all projects, at least projects that have been carried into practice, turn aside from it, so that you might, at this moment, as easily start for Tadmor in the desert as for the cathedral city of Somersetshire, so far as the possibility of reaching it by a public means of conveyance is concerned. There is no coach between Bristol and it, and perhaps no necessity for communication either, unless when some prebend gives a dinner, and is compelled to send here or to Bath for a salmon and shrimps. Yet with all this quiet, the old place, with its palace, its cathedral, its cross, is poetry itself; it is full of the memories of old —monuments of heroic and great times for the church—and all toned down by rustic softness and repose.—*Bristol Times.* [At the risk of losing some of this quiet, we should advise all who are interested in Wells to stir themselves quickly in obtaining more ready means of communication. It is at present cut off from the world.]

A Hint to the Owners of Hot-houses.—"Give me air, or I shall die!" is an exclamation which most people have heard occasionally, but which a gardener might listen to every hour of his existence, had he the skill to interpret the language of plants. "Give me air, or I shall die!" is incessantly repeated by every leaf in ninety-nine hothouses, greenhouses, conservatories, hibernatories, and pits in a hundred, all over Europe. But the voice is unheard; the pale looks, the feeble frames of the sufferers are disregarded; heat is offered as a substitute for air, and the duties of horticulture are thought to be fulfilled when a blanket is wrapped round a patient perishing of suffocation.—*Gardeners' Chronicle.*

Construction and Position of Bedsteads.—A French surgeon states, that by fitting bedsteads with glass feet, and isolating them about 18 inches from the wall of the apartment, he has cured the patients sleeping on them of many nervous affections. Suspicions are beginning to arise too, that our well-being may be affected by sleeping parallel to, or at right angles with, the line of the terrestrial magnetic current. The house in which we live has a considerable influence on our sensations sometimes little suspected.

Guernsey Memorial Competition.—A correspondent states, that the premium offered for a design for this memorial was awarded to Mr. Colling, whose design was to be erected according to the advertisements, for 1,500*l.*, but that the lowest tender sent by builders is just 3,000*l.* He alludes to it as another instance of injustice to competitors.

## TO CORRESPONDENTS.

"*H. G.*"—The mysteries of a chimney that will not draw are too abstruse to be dealt with by us at a distance. Conveying the smoke under ground without good pre-vision was ensuring a failure.

"*E. J.*"—Apply to a solicitor.

"*Subscriber*" Houghton.—"A number of arches over a village for the purpose of carrying water," are properly termed an "aqueduct."

"*Y. L.*"—Chepple and White, Millbank, once did some for us very well.

"*J. W. L. L.*"—We incline to the use of freshly-made mortar from unslacked lime; in frosty weather unquestionably so.

"*C. K.*"—Consult, through a member of the Institute, the report of committee on charges.

"*Subscriber*" (N. B.)—Connect the lightning conductor with the vane. The conductor need not "be perfectly isolated from the building by a non-conducting substance."

"*J. P.*"—The letter scarcely seems necessary. Enough has perhaps been said.

*Received.*—"Indian Ink," "Looker on" (Cardiff), "Member of the Council," "F. and G." "Competitor," "Anti-humbug," "J. G.," "J. F." "Mr. D." "C. H." "The Tradesman's Book of Ornamental Designs." Part IV. (Orr, Paternoster Row). "Dollman's Magazine" for September. "View of the Church and Schools, St. Paul's, Bermondsey; also of Schools, St. Michael's, Pimlico." Mr. S. S. Teulon, Architect. "Caldwell's Musical Journal." Part III. Caldwell, Waterloo place. Orr, Amen Corner. A remarkably cheap publication, well deserving of success.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond-street Works, late Sir F. Chantrey's foundry, Eccleston-place, Pimlico.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only. 70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from Ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

THE most perfect DRY GAS METER in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 10, Hampstead-road, in conjunction with his old-established premises, 67, St. Martin's-lane, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, by time, or by injurious gas. He invites attention to the fact of many of his large meters being in successful action at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club-houses, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

LESLIE'S PATENTS.—GAS CONSUMERS guaranteed the following important sanatory and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These plutosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, ANNOYANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light-producers, and not Smoke-producers: these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES:—Upright Burners, with Conyngham Spring Glass Holders, with either sized glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 9d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and firs places.

Offices and Manufactory, 59, Conduit-street, London.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

TO BUILDERS, CONTRACTORS, &c.

**GREY STONE LIME of the best quality** will be delivered alongside any wharf in London at 7s. per yard of thirteen baskets. Parties can be accommodated with a moiety of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT.—WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**BATHSIDE CEMENT WORKS,** established to supply a genuine quality of ROMAN CEMENT. THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts.—Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

**PORTLAND CEMENT is the only Cement** for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Seel street, Liverpool.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON having completed extensive** alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL-WALL, POPLAR, enables him to execute orders on an enlarged scale. He therefore solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one part of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for moulding and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted for internal walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years [illegible] [illegible] It may be used with the cheapest [illegible] It [illegible] substance, even to Wood, Iron, [illegible] It [illegible] larger proportion of Sand than any other [illegible] [illegible] [illegible] [illegible] [illegible] The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above named extraordinary and valuable advantages [illegible].

Architects and Builders who have used this Cement have declared [illegible] universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, [illegible] lane, Queen street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT STONE COLOUR STUCCO PAINT, [illegible] exterior Walls of Houses that have been [illegible] with Roman or other Cements and [illegible] It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT has [illegible] [illegible] weather and [illegible] [illegible] no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

TO BUILDERS, MASONS, AND OTHERS.

**FOR SALE, 50,000 feet sup. of New Common** tooled York Paving, at 44s. per 100 feet sup., on the Wharf, or delivered within three miles at 46s. per 100 feet; also a quantity of thin-tooled Paving at 42s. per 100 feet. Terms, Cash on Delivery. PRATT and SEWELL, Albert Wharf, New Wharf Road, Battle Bridge.

**MOSAIC PAVEMENTS.—SINGER'S** PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental Pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall bridge, Surrey side.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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**SAMUEL CUNDY begs to inform Architects** and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the roads or carriage.

Box Chimney pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

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**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

**ANSTON QUARRIES.—Messrs. Wm.** WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining those of Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected (in preference to all other in England, by the Commissioners of Woods and Forests) for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

Application to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

**SLATE SLABS.—The Finest Slabs pro**duced in WALES, of amazing strength, pure in texture, and free from spots, may be had of Mr. MAGNUS, at the PIMLICO SLATE WORKS, Upper Belgrave-place, planed both faces at the price that inferior Slabs in the rough self-faced are currently selling. These reduced prices are also subject to a very large trade discount. These Slabs have been extensively used at Buckingham Palace, Strathfieldsaye, the Royal Naval and Military Schools, Deptford, the Model Prison, Pentonville, the Goulston-square Baths and Washhouses, on most of the Railways, and are specified for by the most eminent architects. Where cargoes supplied direct from Mr. Magnus's Works in Wales planed both faces, at very low rates. Slate Tanks, Fittings for Dairies, Larders and Wine Cellars, Landings, Cantilevers, Chimney Pieces, &c. &c.

By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS.—To be had of EDWARD BAILLIE, Glass-Paint and Stainer, 12a, Cumberland Market, Regent's park, London. Their extensive and successful application to Public Offices, Bed rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

**DR. ARNOTT'S CHIMNEY VENTI**LATOR.—F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description.—Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS. NO CURE, NO PAY.

Twenty five years extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them [illegible] through the paint.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither [illegible], and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

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AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assort**ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ⅝ inch to 1½ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

**ALFRED ROSLING begs to inform the** Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship. Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

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SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

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N.B. Estimates given for Sawing and Planing.

TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or groving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

**WOOD and MARBLE SAWING MILLS,** Commercial-road, Pimlico.—PREPARED FLOORING. J. HOLMES begs to call the attention of Consumers to the extensive stock of Prepared Flooring at the above Mills, thoroughly dry, and fit for immediate use, and at prices that must give satisfaction. Also Dry Mahogany, Honduras, and Spanish, for Handrails, &c. And about 500 stacks of well-seasoned wainscot, of the finest quality, ¾ inch thick, and upwards.

MARBLE in SLABS or BLOCKS.—The largest stock in London of vein, statuary, and other Marbles, in Slabs of various thicknesses and sizes to select from, sawn perfectly smooth and even. Hare Hill Slab in any quantity, also Portland Paving, Landings, and Sinks. York and Portland Paving, and Slate rubbed with dispatch.

Marble, Timber, Deals, &c., for Sawing, fetched from the docks, and delivered on the shortest notice.

SPACIOUS DRYING ROOMS, for Seasoning Floor Boards, &c. Sawing estimated for, if required.

N.B. The strictest attention shall be given to all orders.—Apply to J. HOLMES, on the Premises.

**SIR W. BURNETT'S PATENT for pre**venting the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dock yards. Vide Parliamentary Debate, April 13, 18[illegible]. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square rigged vessels can lay alongside the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

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WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater durability and compactness to the material, all of essential importance for floors, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

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**SELLING OFF, at reduced prices, in** consequence of a Dissolution of Partnership, at the Mahogany-yard, in Little Windmill-street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 2,000 feet wainscot planks, running from 1¼ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.

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| Best Patent Cut Clasp. | | | | |
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| 3d | 4d. | 6d. | 8d. | 20d. |
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Best Sheet Floor Brads 1s. per cwt.
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Self acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
2 ft., £3 3s. 3 ft. 6 in., £5 12s. 6d. 4 ft., £4.

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Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
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| £1 6s. | £1 12s. | £1 16s. | £1 | £4 10s. |

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| 6 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
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Best Register Stores, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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**JOHN GRICE** most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

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Bright Jacks, with Black and Bright Bars, 3d. per in. and upwards.
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BAKERS' OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

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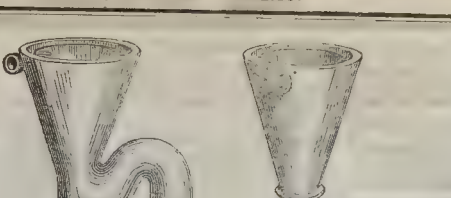
**PATENT METALS for Bearings.**—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One set for bearings and engineering purposes generally, will be found equal for quality and cheaper than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any of brass brass.—Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,

WITH SECRET AND SECURE FIXINGS.

**THIS CHEAP** and USEFUL ARTICLE, obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturer, Messrs CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr JOHN FAULKNER, Ironmonger, 62, St. Martin's-le-Grand, London, opposite the new Money Order Office.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR** WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their CLEANLINESS AND CHEAPNESS.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-RUBBER HOSE PIPE** and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines, Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LYNE HANCOCK, 6 Swell-mews, 6 Swell-road, London.

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**PUMPS of Superior CONSTRUCTION**, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories Squares Market Places, Roads, Gardens, and for Liquid Manure. BRICK MAKERS' PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

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TO BUILDERS, TIMBER MERCHANTS, CONTRACTORS, ENGINEERS, &c.

**LATEST Improvements in Circular Saws**, Mill-saws, Files, Patent Machine Plane Irons, Machine Grooving and Moulding Irons, Cutters of all sorts, Millpicks, Chocks, Railway Springs, &c., manufactured by BLAKE and PARKIN, Meadow Steel Works, Sheffield.

CHUBB'S IRON DOORS AND FIRE-PROOF SAFES.

**C.** CHUBB and SON having just erected a Steam Engine and extensive Machinery to meet the increasing demand for articles of their Manufacture, they beg to inform Architects and Builders that they are now enabled to manufacture Wrought Iron doors for strong rooms and other purposes, and Fireproof Safes at a great reduction in price, and of very superior quality. All their Iron Doors and Safes are fitted with C. CHUBB and SON'S best DETECTOR LOCKS.
57, St. Paul's Church-yard, London.

TO ARCHITECTS AND SURVEYORS

**C.** CHUBB and SON having ascertained that some builders are in the habit of substituting inferior and insecure Iron doors for strong rooms, when "CHUBBS MAKE" are ordered, they call the attention of Architects to the subject. In all specifications where it is intended to have the articles manufactured by C. CHUBB and SON, they respectfully request that Architects will specify "Iron doors manufactured by C. CHUBB and SON, of St. Paul's Church-yard," and to require on the completion of the work, a certificate from C. CHUBB and SON that the doors are of their manufacture.

PRO BONO PUBLICO.

**CAUTION. To Purchasers of Locks, fire-proof Doors, Safes, &c.** JOHN LEADBEATER, many years manufacturer for Chubb, LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c. that he can supply them with his IMPROVED DETECTOR LOCKS for the purposes of STRONG WROUGHT IRON FIRE PROOF DOORS, SAFES, and CHESTS, &c. on the most improved principles of security against FIRE and THIEVES, without the aid of "secret springs or any lumber," which is employed by a once inexperienced maker, but must be paid for, at prices 25 per cent under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved Detector Locks or latches. Some Noblemen's and Gentlemen's strong room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience, during which he has adapted every possible improvement to real security, enables him to challenge competition with any other house in London. A large assortment on sale and made to order. A pair of extra strong wrought-iron fire-proof folding doors with ventilating gates, well adapted for a banker's strong room, may be viewed at his manufactory. Strong wrought-iron doors for party walls, with wrought iron rabbited frames, and secured by the BEST DETECTOR LOCKS IN ENGLAND, 6 feet high by 2 feet 3 inches wide and upwards, price £10 each, always on hand at LEADBEATER'S MANUFACTORY, 125, ALDERSGATE-STREET, LONDON.

PATENT COPPER WIRE ROPE LIGHTNING CONDUCTORS, for the Protection of Churches, Towers, Chimney-Shafts, &c.

**SMITH and ENGLISH**, Princes-street, Leicester-square, London, beg to inform Architects, Builders and others, that the above form of Lightning Conductor has been most extensively applied, and is now the greatest satisfaction, it proving considerably cheaper first cost, much simpler of application, will be as many to the building, than any other kind, and they can refer with great satisfaction to eminent architects and others, who have adopted it in preference.

as also their much improved Revolving and Panelled Iron Shutters,

PATENT DOUBLE ACTING DOOR SPRINGS,

PATENT CASEMENT FASTENINGS AND SHOT BARS,

Patent Copper and Iron Wire Sash Lines,

IMPROVED FLOORING CRAMPS, &c. &c.,

which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

ZINC WORK.

**MESSRS. F. and J. HARLAND** beg to call the attention of Builders and others, to the following list of prices, for cash:—

2-inch Pipe .....per foot 4½d. | 3½-inch Gutter....per foot 4½d.
3½ ditto ..... „ 5d. | 4-inch ditto ..... „ 6d.
Including fixing

Flats Covers and Cisterns Lead from 4d to 6½ per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Almshouses

N.B. Orders by Post punctually attended to.



**H.** MORRELL'S FINE PREPARED DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the East India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the properties for the most highly-finished drawings.

Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

**SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES**, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth. A stock of elbows, sink-traps, and various shapes always on hand.

PATRONISED by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster

**WILLIAM NORTHEN**, Inventor and Original Maker of Salt Glazed Brown-stone Socket Drain Pipes, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to his extensive stock now on hand, which for quality, p rfectibility, and price is unequalled. The following unsolicited Testimonial is respectfully submitted:—

Sewers' Office, 1, Greek-street, Soho, July 20, 1847.

Mr. —

DEAR SIR,—Should you at any time be in want of Stoneware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. North in, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them. I am, dear sir, yours truly,

JOHN PHILLIPS, Surveyor.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN & BARR and Co., Palace row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY James Smith, Esq., of Deanston, chairman, invite attention to their IMPROVED BRICK and TILE MACHINES which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr Robert Scrivener, who has been appointed manager on the farm of Mr John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway, also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr WILLIAM PHILLIPS, Secretary, at the office of the Company, London Pier, Piccadilly, Manchester.

These Machines may also be seen at Mr. SLIGHTS, Lothbury, Edinburgh; Mr. LAWRENCE, Dublin; Messrs. BOSS, Glasgow; Mr. ROBERT CHARLES, Millhill, Leeds; Messrs. PENNY and PINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction, can confidently recommend them with their simplicity and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the utmost facility by a single apprentice, and the machinery, their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear it will be used for such shutters only. Have it removed, and the shutters made to draw up in any part of the premises, with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

The PATENTEES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters as secured by this Patentee is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement, enables them fearlessly to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with plain convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, they fitted with their patent rising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Bevelled Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

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Steam engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

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**BIELEFELD'S IMPROVED PAPIER** MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Hon. arable Commissioners of Works, by the highest of the nobility, and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c. also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Design prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff, price £1.—Works, 15, Wellington Street North, Strand.

**IMPORTANT to BUILDERS.**—Our Books at all times afford numerous Particulars of BUILDING GROUND TO BE LET in all parts of London and the Suburbs, most of which can be had up in very favourable terms, with Liberal advances. Every information afforded free of charge. A list can be had by post, on including two stamps. Our offices also afford peculiar facilities for quick disposal of Houses and Estates, which Builders generally will do well to avail themselves of, as they will be subject to no charge whatever unless a sale be effected through our means, and then only the usual moderate commission. BECKWITH and SALMON, Estate and Land Agents, 25, Bucklersbury.

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TO BUILDERS.

**AN eligible Site for Building a Terrace,** with an uninterrupted Frontage on the river Thames, and a considerable depth for Gardens in the rear, TO BE LET, in the rapidly improving parish of Hammersmith, or in Plots for one or more Houses, to Responsible parties. A Plan may be seen, and particulars obtained, at 5, Serampore-terrace, Hammersmith, or at the offices of Messrs. GARLAND and CHRISTOPHER, Architects, Hanover Chambers, Buckingham street, Adelphi.

BUILDING LAND FOR TWENTY-FIVE THIRD-RATE HOUSES.

**TO LET, at very moderate Ground Rents,** a very eligible plot of ground for close houses, in Clifton-road, near Hamilton-road. Also several plots for detached and semi-detached villas. The roads and sewers are made. Apply to Mr. ARMSON, Carlton-hill, Hamilton-terrace, St. John's Wood.

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**TO BE LET, on Building Leases, several** Plots of Land, in a most desirable situation, commanding extensive views over Essex and the surrounding country.—For particulars, and plans, apply to Mrs. WIGG and POWNALL'S Offices, 7, Bedford row.

TO CARPENTERS AND OTHERS.

**TO BE LET, about Twelve Miles from** London, in Middlesex, an OLD-ESTABLISHED BUSINESS, of CARPENTER, UNDERTAKER, and WHEELWRIGHT, which has been carried on by the present proprietor and his family for many years, who is about to decline the same in consequence of ill health. The premises are very convenient, and the stock, which is to be taken at a valuation, not extensive. Any young and active person will find the concern worthy of notice. For further particulars, apply by letter, post-paid, to Messrs. PEUGH and Co., No. 13, King street, West Smithfield, Snow-hill.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c., suitable for a Builder.

**TO BE LET OR SOLD, in the vicinity** of Dorset-square and the Regent's-park, a very excellent Residence with capital back Premises, Workshops, Saw-pits, Stabling, Machinery for Sawing and Planing, &c. To view, apply upon the Premises, No. 19, Dorset-place, Dorset-square. For terms and particulars of Mr. H. BIERS, 15, Carlton-villas, Edgeware-road. Written applications cannot be attended to.

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**TO BE LET OR SOLD, several Plots of** BUILDING LAND, in a very desirable situation, commanding extensive Views of the Sea. For Particulars, apply to Mr JOHN MAJOR, Folkstone; or to Mr. EDWARD NICLIFTON, Architect, 9, Tokenhouse yard, London.

TO CARPENTERS AND BUILDERS.

**TO BE DISPOSED OF, with Immediate** Possession, an OLD-ESTABLISHED BUSINESS in the above line in a good neighbourhood with a good connection, with workbenches, tools, and cramps, and every other requisite to carry on the business, to be parted with a great bargain on account of the advertiser having another business to attend to.—Inquire at T. M., at Mr. Clark's, 81, Blackman-street, Borough.

STANDARD FACTORY, No. 13, Wharf Road, City Road.

**TO BE SOLD by Private Contract, under** Power of Sale, valuable Planing and Moulding Machinery, in full work and good working order. For Cards to view apply to Messrs. OVERTON and HUGHES, Solicitors, No. 25, Old Jewry.

## SALES BY AUCTION.

TO STATUARIES, MASONS, BUILDERS, SCULPTORS, AND OTHERS.

**MESSRS. EVERSFIELD and HORNE** will SELL by AUCTION at the Marble Wharf, near Waterloo-bridge, Belvedere-road, Lambeth, on TUESDAY, September 7th, at 10 for 11, by Order of the Proprietor, about 150 Tons of Italian and Foreign Statuary, Vein, Dove, Black, Bardilla, Black and Gold, and other Marble in Block, Scantling, and Slab.—May be viewed three days previous, and Catalogues had on the premises, and of the Auctioneers, Coal Exchange, or No. 1, Little Smith-street, Westminster.—N.B. Approved bills at six months.

IN BANKRUPTCY.—To Members of Building Societies, Small Capitalists, and Builders. Ten pairs of Cottage Residences at Brixton.

**MESSRS. BROWN and ROBERTS** will submit for ABSOLUTE SALE, at the Auction Mart, opposite the Bank of England, on THURSDAY, Sept. 9th, at 12 o'clock, in Ten Lots, by order of the assignees of James Ullathorne, a bankrupt, with consent of the mortgagee—the remaining portion of the BERKELEY VILLAS, being Nos. 11 to 16, and 19 to 23, which comprise TEN PAIRS OF BRICK BUILT RESIDENCES, desirably situate in Loughborough Park, contiguous to the main road leading from Brixton Church to Denmark Hill, Camberwell, one of the most healthy and picturesque situations near the metropolis; the whole of the houses are in a forward state, and will require but a small outlay to complete. Containing ample accommodation for respectable families with walled gardens and fore courts, and for the convenience of those purchasers that may require it, the sum of 200l. on each lot may remain on mortgage or other approval security, at 5 per cent. for seven years. May be viewed, and printed particulars had, at the Royal Veteran, Coal Harbour Road; of P. JOHNSON, Esq., Official Assignee, Basinghall street; of Messrs. JERKINSON, SWEETING, and JERKINSON, Solicitors, 29, Lombard-street; at the Mart, and of Messrs. HENRY BROWN, and T. A. ROBERTS, 22, Throgmorton-street.

## SALES BY AUCTION.

BUILDING LAND, CROYDON, SURREY.

**MESSRS. DAVIS and VIGERS** will SELL by AUCTION, at the Mart, opposite the Bank of England, on THURSDAY, September 16th, at Twelve for One precisely, Fourteen Valuable Plots of Building Land, at Croydon, o'clock Fourteen Valuable Plots of Building Land, at Croydon, in a delightful and healthy situation, on a dry gravelly soil, adjoining Haling Park, and the Downs, near to Duppas-Hill, on the direct road to Carshalton, Sutton, and Epsom, a picturesque spot, adapted for the erection of villas of a superior class, well screened from the north and east winds by forest trees of luxuriant growth, and enjoying fine views; each plot is closed by a park fence, with lodge at entrance, only a quarter of a mile from the church, and within a mile from the stations of the Croydon and Brighton Railways. To be viewed.—Particulars and conditions of sale to be had at the Lodge; at all the principal inns in Croydon; of Messrs. WOODROFFE, Solicitors, 4, New-square, Lincoln's-inn; and the Mart and Auctioneers' Offices, 3, Frederick's-place, Old Jewry, London.

TO BUILDERS, RAILWAY CONTRACTORS, AND OTHERS.—Important Sale of Building Materials near ASHFORD Railway Station, KENT.

**MR. H. BIERS, by direction of Mr.** Grissell, will SELL by AUCTION, without reserve, on WEDNESDAY, September the 15th, and following day, the contract being completed with THE WHOLE OF THE SURPLUS MATERIALS at the LOCOMOTIVE WORKS, ASHFORD RAILWAY STATION, KENT, comprising a large quantity of TIMBER, DEALS, BATTENS, and PLANKS, IRONMONGERY, BARS of NAILS, Rod, Bar, and Sheet Iron, several TONS of RAILS and CHAIRS, Capital Scaffolding, about one Thousand SCAFFOLD POLES, BOARDS, PUTLOCKS, and CORDS, Mortar Boards, BLOCKS and FALLS, CHAINS, ROPES, HORSE, CART and Harness. Four temporary TURN TABLES, Trucks, Barrows, CRAB and OTHER ENGINE PLANT, PUG MILLS, PUMPS, BORING and BRICKMAKER'S PLANT, PUG MILLS, PUMPS, BORING and WELL SINKING Tackle, Plasterers' Laths, Drain Tiles, GRAVELLING and PAVING Implements of SHEDS, SHOPS, OFFICE and COUNTING-HOUSES, and SAW-PITS. Also several Fathoms of FIREWOOD.—Catalogues are preparing, and when ready, on application, will be sent to any part of the kingdom.—13, Broad-street, Golden-square.—Approved Bills at three months.

TO CABINET MAKERS, BUILDERS, COACH MAKERS, RAILWAY ENGINEERS, AND OTHERS.

**FOR SALE BY AUCTION, on the Pre-**mises, 190, Bunhill-row, Chiswell-street, Finsbury-square, on WEDNESDAY, 8th, and THURSDAY, 9th, and FRIDAY, 10th September, 1847, at Eleven for Twelve o'clock precisely, by the direction of the Proprietors removing to Baltic Wharf, Lambeth, in order that the premises may be cleared before Michaelmas, the yard being level.

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| 10,000 | Feet St. Domingo Mahogany, in Dry Plank and Board. | |
| 30,000 | " Honduras | ditto ditto. |
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| 2,000 | Yellow Pine Plank and Battens. | |
| 5,000 | Yellow Battens. | |
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Also the Saws, Screw Jacks, and Utensils in Trade. To be viewed two days previous to, and on the mornings of sale. Catalogues may be had on the premises, and of

JOSEPH EDWARDS, Mahogany Broker and Auctioneer, 4, Railway place, Fenchurch street, London.

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This Publication is intended to supply to the public in general, but especially to those Trades in which a knowledge of Ornamental Design is required, a correct, simple, and copious guide in that beautiful art. The Work is issued in Large Quarto, and will consist of Twenty-four Monthly Parts, each containing Four Plates, engraved on copper, and beautifully printed from transfers on stone.

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It commences with the description of the land required for the Establishment of a Railway, and practically enters into every point bearing on the construction of the same until its completion, with estimates, specifications, cost of materials, and practical remarks, together with examples of works executed by Brunel, Stephenson, Rennie, McNeill, Locke, Braithwaite, Gee, and others.

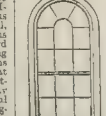
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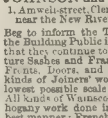
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of Sashes and Frames, and Joiner to the Trade, 123, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



**SHOP FRONTS, SASHES AND FRAMES, DOORS, &c.** MADE FOR THE TRADE.

**JOHNSON and PASK,**

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Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other Kinds of Joiners' work, on the lowest possible scale of prices. All Kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.





**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUPER. and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

**THOS. MILLINGTON, 87, Bishopsgate-**street Without, has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

**FOREIGN WINDOW GLASS, superior** to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., 200 feet cases, at 2½d. per foot. Not less than one can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

**COLOURED WINDOW GLASS, equal** to the Ancient.

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**PLATE GLASS.—Architects, Builders,** and the Plate Glass Trade generally, are solicited to inspect the quality and substance manufactured by the UNION PLATE GLASS COMPANY Warehouse, 99, Hatton-garden, Holborn.

N.B. Rough Plate Glass supplied one-fourth, three-eighths, one-half, and three-quarter-inch thick.—H. CHRISTIE, Agent.

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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 240. | SEPTEMBER 11, 1847. | Price ..... 3d. Stamped ..... 4d.


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Union Office, 35, Cannon-street, August 28, 1847.


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Lingfield, Aug. 27th, 1847.

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WILLIAM HOARE, Clerk to the said Commissioners.

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IMPROVED FLOORING CRAMPS, &c. &c.

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**LATEST** Improvements in Circular Saws, Mill-saws, Files, Patent Machine Plane Irons, Machine Grooving and Moulding Irons, Cutters of all sorts, Millpicks, Chisels, Railway Springs, &c., manufactured by BLAKE and PARKIN, Meadow Steel Works, Sheffield.

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TO ARCHITECTS AND SURVEYORS.

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By Her Majesty's — Royal Letters Patent.

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WITH SECRET AND SECURE FIXINGS.

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B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, BUILDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

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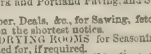
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Railway Earth Waggons, Barrows, Three Wheel Carts, &c., and Contractor for every article in Timber for Railway purposes. Also general Agent for the following:—

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Lancewood Shafts and Bent Timber.—Poulterers' and Butchers' Blocks of all Sizes.—Timber purchased.

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**BIELEFELD'S IMPROVED PAPIER MACHE,** which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grosvenor Hall, &c., also at the British Museum, at Pantheon Bazaar, where it has been extensively used for some years, and as inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Design prepared for the decoration of ceilings, panelling, walls, &c. A volume of enrichments, containing more than 150 designs of the papier mache ornaments, with a tariff, price £1 1s. Works, 15, Wellington Street North, Strand.

The Builder.

No. CCXL.

SATURDAY, SEPTEMBER 11, 1847.

KNOWLEDGE is power, wrote the great Lord Bacon. Knowledge is power, complacently exclaimed a dandy the other day, when, strong men having failed, he released a lap-dog from the teeth of a huge mastiff, by quietly administering to the latter a pinch of snuff! As knowledge even in one department spreads, so will crime be lessened, human suffering prevented, happiness be increased, and existence lengthened. Ignorance in matters sanatory slays its sixty thousand victims a year in the United Kingdom;—more than ten thousand of whom are taken from this wealthy, boastful, and enlightened metropolis alone; and knowledge, very simple knowledge would save them. Ignorance, besides, gives illness to 700,000 persons every year; and who will calculate the amount of sorrow, distress, waste of money, crime, and misery, which inevitably follow this death and sickness?* And all this will be prevented by knowledge, very simple knowledge. Knowledge is indeed power!

We say, *will* be prevented, for surely when once men know and are satisfied that life may be lengthened and misery spared, by avoiding one course and pursuing another, they will not fail so to act. It takes a weary long time to make knowledge general. The fact that cleanliness, light, and pure air are essentially necessary for healthy life, has always been known to the few, but disregarded and not believed by the many. Precise evidence was wanting, and the way to obtain it was not seen. General statements went for nothing. Bad air is not visible; its results are not immediate and tangible, and might have proceeded from other causes. When Clarendon said that, on his return to London with the court after the plague of 1665, he missed very few of his friends and acquaintances who had remained behind, "the ravage having, in a great degree, been confined to the lowest orders of the people, who, in that age, lived in circumstances of great filth and foul air," it led to no general alteration, nor did a thousand similar general statements made before and since, as although incontrovertible facts, they carried no conviction with them, nor could their utterers give it.

During these last six years, evidence of a different kind has been systematically obtained: the truth is apparent, and all that is needed is to make this truth universally known and understood. There is evidence enough and to spare,—evidence unshakeable. In certain districts where the drainage is bad, cesspools abundant, the houses dark and confined, fresh air not to be had, out of every 300 beings ten die every year; in another, where the circumstances are better, in the same number only six die.† Improve the drainage of the first, make such arrangements as shall give the inhabitants better air, and to the extent to which this is done the rate of mortality is made to approach that of the second. This is no hypothesis: the fact is established.* When once it is brought home to all the world, much will have been done towards a remedy, but even this will not suffice to effect it wholly. Pecuniary interest, and the willingness men have to take the chance that *they* specially may escape, will war against it, and can be overcome only by the interference of Government. A well considered bill of health it is to be hoped we shall have directly the new Parliament meets, with such other legislative enactments as are necessary fully to obtain the desired end, as, for example, the repeal of the abominable window duties (that tax on light, *health*, and MORALITY), the repeal of the duty on bricks, and a revision of the Buildings Act.†

Lord Morpeth when he withdrew his bill last session said, "he could not conclude without expressing his confident assurance, that the subject had taken such deep root in the convictions of the country, that, notwithstanding the difficulties inherent to the question or the imperfections of the individual by whom it might be introduced, it must command its own success."

And there is no doubt it would. But it will require, in order that we may not be forced to wait till time has overcome selfish objectors, and removed the webs spun over men's eyes by the spider prejudice, that it be framed with ability and care, carried forward with zeal and determination, and persisted in to the last. Let Lord Morpeth nail his colours to the mast, inscribed "Delivery from Disease," and the people will not be slow in rallying round them. To use the words of a writer in *Fraser's Magazine*,—"The intelligence of the country is already arrayed in favour of sanatory reform—the press is unanimous in its support—a respectable fraction of the medical profession is embarked, heart and soul, in the cause—the clergy, who are always cautious in committing themselves, are beginning to exert their powerful influence—associations and branch associations are multiplying on all sides—and everywhere the feeling is spreading and strengthening that all delay in this matter is a crime, and that the health and lives, the comfort and the well-being of the people, have been too long the sport of ignorance and incompetence. Those only who have made the public health a study are in a condition to realise the vast results, physical, moral, and economical, which must inevitably flow from a large, comprehensive, and practical measure of sanatory reform; they alone can catch a glimpse of that better and happier future, of which the faint dawn is visible on the horizon, when all orders of men released from the bondage of physical corruption, and made large partakers, for the first time, in the pure elements which God has provided for the sustenance, health, and vigour of their frames, living in the midst of unwonted abundance, enjoying complete freedom of person and action, shall dwell in security and peace under the gentle sway of a benevolent and paternal Government."

It must be a broad bill and a practicable bill, and it will be THE measure of our times, and will place those who perfect and pass it amongst the best benefactors of the human race.

We are ourselves old labourers in the field of sanatory reform, and have watched with no common anxiety the increase of the interest manifested in this subject by the public. The ignorance, however, which still prevails is immense, and the societies organized for the promotion of sanatorial measures must in no degree relax their efforts to remove it.

Speaking of the recent death of a child in Hayes-court, Whitechapel, poisoned by the effluvium from the want of drainage, which has in that same place destroyed many lives, a leading journal said,—"It is hardly credible that in a metropolis like London, where labour, skill, and capital are all immediately at command, human life should be positively sacrificed for *want of a drain*. Such, however, has been the case within the present week, as will be seen from the report of an inquest in our paper of yesterday."

*One* life? Why hundreds of lives have been sacrificed for want of a drain. And why should we say have been, alone: hundreds are now being destroyed in like manner,—though more silently and slowly, no less surely. Last week three men, going into a sewer at South Shields to clear it out, were thrown into a state of stupor by the gases in the sewer, and one was killed. A few days ago two men, employed to remove some night soil in Russell-street, Brighton, were overcome by the bad air, and were both taken out dead. These, and several similar instances, all within a fortnight, the public can understand; they can *see* here the work of deleterious gases; but they do not understand, or they pretend they do not, that these same are also more or less destructive of health, though diluted with air something less impure; and under existing want of arrangements these are inhaled by thousands.* Typhus fever, which ought not to be known in England, is one of the results, and carries off thousands annually. Cheap and efficient sewerage, suppression of all cesspools, ample supply of water, the widening of alleys, provision of healthful dwellings for the industrious classes, means of carrying off the products of combustion and vitiated air from all apartments, and of obtaining a good supply of pure air, are desiderata of the utmost consequence to all classes of society. Until we remove some of the enormous physical evils which the want of these involves, we cannot hope greatly to improve the morals or refine the taste of the people.

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THE GOVERNMENT SCHOOL OF DESIGN.—The turmoil here still continues; Lord Colborne, the president, the two vice-presidents, Mr. Cockerell, and Mr. Etty, have resigned their seats in the council, so that a *quorum* can scarcely be obtained. The statement by some of the papers that the director had resigned his appointment, is, we believe, incorrect.

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* "One-sixth of the total waste of life and health which takes place in the United Kingdom occurs in the Metropolis. Now, waste of life includes unnecessary sickness, widowhood, orphanage, funeral expenses, inability to labour, medical charges—it also includes the cost of the increased relative proportion of births, which is found to result from a high rate of mortality, and likewise increase of poor-rates, additional calls on public and private charity for the support of hospitals, dispensaries, and asylums, for the sick and infirm. If an estimate is made of the money value of the losses from a neglect of sanatory measures in London, and if a detailed estimate of Dr. Lyon Playfair, for Manchester, is proceeded upon, it is found that 3,204,53*l.* are wasted every year."—*Report of Health of London Association.*

† We are able to tell why the rate of mortality in London is 1 in 39, while in Liverpool it is 1 in 30. We are able to trace the startling difference to its source. In one of the reports of the Registrar General, it is stated that the metropolis is divided into three groups of ten districts each, under the title of the healthiest, the medium, and the most unhealthy districts. The result is as follows:—Ten healthiest, with an allowance of 202 square yards to each person, have a mortality of 1 in 46. Ten medium, with an allowance of 102 square yards to each person, leaves a mortality of 1 in 41. Ten unhealthiest with an allowance of 23 square yards to each person, leaves a mortality of 1 in 36. Again,—the Rev. Mr. Clay, of Preston, makes four classes of streets:—Well conditioned, mortality among children under 1 year, 15 in 100; moderately, 21 in 100; ill, 30 in 100; worst, 44 in 100, or three times as much as the first; and then we learn from Mr. Chadwick, that in St. George's, Hanover-square, the average age at which the better class die is 45; labourers, 27; St. Giles's and St. George's, Bloomsbury—gentry, 40; Liverpool, working class, 17. Such facts as these must speak to all.

* It is stated that in twenty streets in Chorlton-on-Medlock, Manchester, the mortality fell from 110 to 63 per annum, in consequence of the streets being properly paved and drained. In certain streets in St. George's district, Manchester, the deaths in 1838-1839, amounted to 495; but in 1841-1842, after the streets were paved and sewered, the deaths were only 439, being a diminution of 53, or about one-eighth.

† Our recent suggestions for the immediate institution of some specific and determined measure for sweeping away the obnoxious window and brick duties, have been reprinted by our contemporaries all over the country. A pile of letters prove to us how strong the general feeling is against these great obstacles to safety, comfort, structural improvement, cleanliness, and health.

* "It appears that decomposing animal refuse gives rise to three distinct gaseous products, each of which may exert injurious and fatal influence. They are sulphuretted hydrogen, hydrosulphuret of ammonia, and nitrogen. The former two are exceedingly deleterious. They may exist either in combination or separately in the soil of privies and cesspools. When combined they differ little in their effects from those of sulphuretted hydrogen.

Although there are no decided experiments by which we can determine the smallest proportion of this gas which, when mixed with atmospheric air, will destroy life, yet we know that when respired in its pure state, it is almost instantaneously fatal, and that when allowed to remain in contact with the skin, even although a pure air be respired, it will speedily prove fatal. Thénard has found that 1-600 of its volume would destroy a dog, and that one volume in 250 sufficed to destroy a horse. Most certain it is, that an atmosphere, even when only slightly impregnated with this gas will, if long continued to be respired, seriously injure the health of an individual, and cause death."

## A TRIFLE FROM BRIGHTON.

THOSE who can remember Brighton as it was five-and-twenty years ago, may well lift up their hands now with astonishment, and cry, "prodigious!" Such an extent of large showy residences next the sea, *three miles* of them, if we mistake not, and such an esplanade, can be found no where else. It is true, little can be said of their architecture. One is constantly reminded of Colman's "Prig-architect,"—

> "—— Where, still greater lengths of taste to go,
> He warps his tenements into a bow;
> Nails a scant canvas, propt on slight deal sticks,
> Nick-named veranda, to the first-floor bricks;
> Before the whole, in one snug segment drawn,
> Claps half a rood of turf he calls a lawn;
> Then, chuckling at his lath and plaster bubble,
> Dubs it the Crescent, and the rents are double."

Even in the most recently erected houses, the taste displayed is far from the purest; and the absence of professional assistance, except in some few instances, is strikingly and painfully evident. Architects, as a body, receive a vast deal of abuse for matters in which they are in no degree concerned. With the tasty crescents which the rhymer, quoted above, ascribes to "prig-architects," they had in truth very little to do. Indifferent, however, as the architecture may be, the amount of capital and convenience which has been accumulated here in a short time is enormous, and must excite the astonishment of those foreigners who visit the place.

What is to be done with the "Pavilion," that quaint offspring of extravagance and bad taste, seems still uncertain.

> "A palace, of course, you must have for your king,"

wrote Mr. Planché, in his "Aristophanes,"—

> "Nothing easier is 'neath the sun done;
> Only if you would build the right sort of a thing,
> Don't look for a model in London."

And it might be echoed, as every one knows and admits, with still greater force,

> "Don't look for the model in *Brighton*."

Nevertheless we should be sorry to see it taken down, as, apart from the curiosity of the thing, it may serve as a warning to succeeding sovereigns; singing in a powerful voice,—

> "Still follow sense, of every art the soul."

The appearance of the town on approach, instead of being injured by the railway, as was asserted would be the case, is immensely improved. The effect of the curved viaduct for the Lewes line, with its twenty-seven lofty arches, threading the Downs, with the clustering houses seen behind, is exceedingly striking,—in some points of view even magnificent. The buildings on the Brighton line, by the way, with the exception of the main station there, are beyond criticism. If but a small portion of the enormous sums that were wasted in preliminary struggles had been applied under tasteful direction to the adornment of the line, good seed would have been sown in the district through which it passes, and would have produced fruit in due time.

The Brighton council will do well to keep the improvement of the town, and the improvement of the *appearance* of the town, constantly before them, not merely seizing all opportunities to effect it that may occur, but diligently seeking them. Money laid out with this end in view, will return good interest. Above all things, when they do expend money in decorations, or are concerned in the erection of public buildings, let them obtain good professional advice. The gawky and ungraceful fountain on the Steyne (which, like most English fountains, seldom plays, and when it does, in a shy, heavy way, as if ashamed of being caught at it), is one of the most recent instances of the want of such guidance. In many respects Brighton seems exceedingly well governed, and what we have said is not intended in ill part, but suggestively.

Church room appears to be much needed, at all events, during the greater part of the year. A new church is rising near the "Ship," of considerable size, but others would seem to be required. Moreover, a better mode of obtaining the contribution of chance visitors to their maintenance than is now pursued in some of them, is greatly to be desired. We were pained on entering the *Chapel Royal*, last Sunday (the strangest looking apartment, by the way, architecturally viewed, that ever boasted such a title), to be stopped *in limine* by a money taker, who demanded one shilling each from our party, and gave us a check, in playhouse fashion, which ought to have procured us seats, but did not, until, with strict adherence to the model, seemingly followed, the pew-keeper had been personally *satisfied* that it was right to keep the promise virtually made by the proprietors at the door. Our business is more with the church architectural than the church ministrant, if we may use the word, but a proceeding of this sort, which raises feelings incompatible with the purpose of the day, really concerns us all.

The railway has opened several easy and pleasant excursions, in which resources Brighton was formerly deficient. A very short ride behind the iron-horse brings visiters or residents, anxious for leafy trees and a rural ramble, to several charming retreats. To the more inquiring, and to our archæological readers in particular, *Lewes*, beautifully situated in a valley amongst hills, offers many attractions. The castle, where the ruins are clean swept and garnished; the priory, though

> —— "scatter'd lie
> The wrecks of this proud pile 'mid arches gray,
> Whilst hollow winds through mantling ivy sigh,
> And e'en the mouldering shrine is sent away;"—

Southover Church and Gundreda's tomb, a beautiful piece of Norman carving; the much talked-of remains of Gundreda and her husband (discovered, as our readers remember, not very long ago); some curious old houses; and Malling Church, whereof the first stone was laid about 1628, by the accomplished John Evelyn, the author of "Sylva," are the most prominent.

On the other side, at the Shorehams, old and new, are two very interesting old churches; and, to go a little farther, *Chichester* and its cathedral may be visited without difficulty, and will amply pay for the journey.

None of our readers, however, who visit Brighton, should omit seeing *New Shoreham Church*; as, besides being full of interest, it is a study of great practical value. It belongs, as all our architectural readers know, even if they have not been there, to that period when the early English style was gradually superseding, or growing out of the Norman. It was originally a cross church of very large size, with a massive square tower at the intersection of the transepts, but the nave, with the exception of one compartment, has been destroyed, and the transepts and choir now form the parish church. The foundations and parts of the nave walls remain, so that the whole plan may be clearly seen; the walls consist chiefly of flints and beach stones. It was commenced wholly in the semi-circular style, but before the church was finished, the pointed arch was introduced, and in the choir obtained predominance. Various alterations followed, and during the perpendicular period (the fifteenth century), windows of the style of that time were inserted. Around the inside of the walls of the choir is a very interesting semi-circular arcade; and in the early pointed work, which followed, the same ornament that appears in the arch of the arcade was adopted, and shews a continuance of progress which is instructive. The early English triforium of the choir is very elegant. The font is Norman. At the east end of the south side of the choir is an "aumbry," and in the north transept is an early English piscina.

The transept and tower retain all their Norman characteristics, but in the top story of the latter, externally, the pointed arch is seen on all four sides canopying semi-circular openings. The exterior of the east end of the church is engraved in Pugin's "Specimens" (Vol. I.). The lower story has three connected semi-circular headed openings, with short columns, and the upper story an elegant early English triplet, with a quatrefoil ornament in the string beneath the cill, of singular design. In the gable above the triplet is a circular window, of the early wheel-form, with semi-circular arches, and small shafts converging to the centre,—out of which grew the magnificent rose-windows of a later period.

The church at *Old Shoreham* is also a cross church of Norman foundation, and has been recently restored, the outside with flints and blue mortar. The chancel is pointed; there is a piscina on the south side, and the rood-screen remains. The arches under the tower are decorated with zigzags and other Norman ornaments. The tower is crowned with a low pyramidal roof.

*Bramber Church*, only a short distance from Shoreham, is peculiar in having the tower over the chancel. The castle, near it, is a pretty object.

*Steyning Church* is another curious Norman edifice close by, and has some valuable details. It was formerly much larger. The nave is lofty, and has massive cylindrical columns and enriched arches. The east end is of later date. The tower presents externally alternate squares of ashlar and flint-work. We will not attempt however, to name all the old churches to be found within an easy distance from the town;—we have not even alluded to the *mother church* on the hill, with its curious font, *Chalk Church* down in the valley, wherein there are some interesting mural paintings, discovered a few years ago, and figured in "The Archæologia," or *Hove Church*, which lies in the road to Shoreham. Our memorandum has been pencilled between the "Sad sea wave," and London-bridge, literally and to a greater extent *currente calamo* than Latin ever dreamt of, and pretends to be nothing more than "a trifle from Brighton" with good intent.

## PROGRESS OF BUILDING AND PUBLIC WORKS IN PARIS.

THE quantity of building going on in Paris at this moment, whether on the part of the French government, the municipal authorities, or of private individuals, is immense. One cannot go into any quarter of the town without being struck with the amount and variety of works doing, and the activity with which they are pushed forward. Here are whole quarters rising above the ground; stone being piled upon stone, and brick upon brick, as fast as they can be carried, while new streets are cutting here and there, houses demolishing to widen others, and paving and gas-lighting, after the most approved methods, introduced into the dullest and apparently most impassable localities. In the meantime, works and edifices of public utility are being proceeded with, which will be both a benefit and an ornament to the city; and renovations, decorations, improvements, and reconstructions are going on as if in rivalry of each other. The gay capital of fashion, taste, and elegance seems to be rebuilding,—to be rising anew out of the ashes of that old Paris, whose dark, dirty, narrow streets,—whose quaint, crazy-looking houses,—whose dull antiquated hotels,—formed so striking a contrast with the splendour and magnificence of some of its public buildings.

In the old time, all works of importance and all buildings of an extensive or gigantic scale were performed on the account of the government, or perhaps, rather at the will of the sovereign. At the present day, although the authorities have immense works in hand, yet in point of fact, far more is now doing in quantity and utility, a far greater amount and share of work is being performed in one year at the will and pleasure of the new sovereign, the people, than was accomplished during many years under the old system. Moreover, whatever public works are carrying on, or buildings erecting by government, have in these days a more direct and positive object of usefulness.

The movement, then, which we have indicated in Paris, is a movement of moral and material progress highly interesting, and presents evidences of prosperity among the people, and of refinement in the appreciation generally of beauty and of art. For not only is there a very general desire for better habitations, and a disposition to remove from the narrow unhealthy quarters to wider and better streets, manifesting itself of late years among the working classes, but the majority of the constructions got up by private enterprise are

indicative of a taste for ornament and decoration, which, in the richer quarters of the town, are lavished with a profuse hand on the exterior of the houses inhabited by the middling classes.

We have works enough giving us exact and beautiful drawings and descriptions of the many public buildings with which the capital abounds; we should like to see one devoted entirely to describing the elevation and ornament of private hotels and houses. These are so numerous and so diversified, that it would be as useful to the builder and architect, as interesting to the amateur. As many as seven thousand new houses are said to have been erected in the capital in one year. The number is very considerable, when we bear in mind, that the majority of the houses are inhabited each by several families. Of these the most richly ornamented are to be found in the centre of the town, often in the midst of dark and narrow streets, standing back from the old ranges of building on the lines laid down in the regulations for the general improvements of the public thoroughfares.

The amount of work thus doing yearly for the material comfort of the population is, as it will be seen, very considerable, and if taken in the mass, of a much more gigantic character than the creations of vanity and pride, and although the materials used may not be, taking them separately, so wonderfully long, and broad, and heavy, as those which toiling slaves by thousands dragged up to their resting-places at the bidding of their royal or priestly masters, some of those daily placing side by side, and piling end on end, are by no means to be despised, and would be worthy corner-stones of greater undertakings than mere private edifices.

The value of the property thus erected is very considerable; and, divided among many proprietors, infinitely more beneficial to the working classes, inasmuch as employment is more regular and certain, and wages have a greater chance of keeping up at a fair rate—a matter of great importance to continued national prosperity. At the same time the labourer can afford to pay better rent, and the builder, confident in the solvency of his tenants, *can afford* to risk more money in constructions better suited for human habitation. All these little matters form, as it were, a wheel within a wheel of prosperity, just as much and as surely as the unprofitable laying out of money, or its too great monopolizing in few hands, becomes a leading source of uneasiness and unhealthiness in the every-day relations between the different classes and interests.

The progress of works of public utility under the direction of the authorities is also very considerable, although for various reasons, not always so active as with us. Where the Government directly interests itself there, every thing goes on rapidly enough, and no money or efforts are spared to accomplish most fully and perfectly objects in view. Public buildings therefore are well and spiritedly carried out. But when the interests of parties and companies are brought in to bear upon enterprise, the jealousy and contentions arising out of them have the effect of retarding public works, and causing considerable loss to the nation. Hence, the progress of works connected with railroads has been slow, although their benefit has been recognized by men of all classes and opinions. Rival interests in existing undertakings, such as canals, public conveyances, &c., and their rivalry between the companies themselves, are among the causes of delay.

A building of considerable extent, and likely to be of much architectural beauty, is now gradually rising by the side of the hotel of the President of the Chamber of Deputies. It is to be the future residence of the Minister of Foreign Affairs, and has attached to it some of the most extensive and best arranged offices that any administration can boast of. The hotel, at present occupied by that department of Government, has been found so inconvenient, that for many years a suitable building has been sought for, or a site, whereon to build one fitted for the purpose, and worthy of that important branch of the public service. The splendid palace on the Quai d'Orsay, built partly of the materials collected by the Emperor Napoleon for the palace of the King of Rome, was found to be too ill-arranged and too extensive for the minister "des Affaires Etrangères," — the minister of "strange" affairs, as a Frenchman, proud to speak a little English, once remarked. It is now devoted to the Cour des Comptes, which had been equally long on the look out for a "locale," and had to be re-arranged and cut up to such an extent, that the majority of its once splendid rooms form now only so many little wooden offices for the employés of the establishment, while the immense mass of archives, documents, and valuable papers belonging to the court, through which pass all the accounts of the kingdom, are piled up in a mass under the extensive roofs of the palace.

On the death of the unfortunate Duke de Bourbon, the palace of the Chamber of Deputies, and the extensive property and buildings attached to it, became the inheritance of the Duke d'Aumale, and were finally bought for the state at, it is said, the pretty little sum of 100 millions of francs! At the same time, immense sums were voted for the construction of a hotel for the Minister of Foreign Affairs, and for the enlargement of the palace of the President, the original residence of the Condés. The works of both hotels have been pushed with the utmost activity, so that the President may occupy the one in the course of next year, and the minister the other in the year following. Already the masonry of the foundations and of the basement story are executed, the walls of the hotel of the Minister of Foreign Affairs being already 25 feet above the ground, and presenting an extent of front of some 300 yards. The palace (for such it is in reality) will present a rich colonnade towards the Seine; and some opinion may already be formed of the imposing character of the edifice and the grandeur of the style, although only now arrived at the height of half way up the first story. The offices extend along the Rue de Téna and the Esplanade of the Invalides; they are at this moment as high as the third story above the ground-floor. Their length towards the street is some hundred and twenty yards. It may be said to have two fronts, one towards the street, and another towards the court and garden of the palace, with two grand entrances, or *portes-cochères*, from the street. There are six-and-twenty windows in a line, opening upon the front, and twenty-four upon the court. Turning the corner into the Rue de l'Université, we come to that portion of the building intended for the archives, or records of the administration. It is a simple yet massive-looking erection, without any windows apparently towards the street: the works are very far advanced. Massive walls between the garden and the court of the offices, to the extent of sixty yards, are completed; and also a portion of the wall of separation between the offices of the Chamber of Deputies and the new hotel. Already two considerable divisions of the Esplanade of the Invalides have been occupied by the workmen; and it is now said that the Minister of War is about to grant permission for the use of another, upon which they may deposit the materials necessary for the works, and erect workshops. In short, nothing is spared to facilitate the progress of the constructions.

The Hôtel of the President is terminated, in so far as the heavy work is concerned: plasterers, carpenters, and decorators have now to do their part, and complete it for habitation. The original hotel had but one story; another has been added to it, and a roof, covered with zinc, containing rooms for domestics. It presents a range of thirteen windows towards the river. A beautiful gallery has been constructed between the hotel and the Chamber of Deputies, to form a passage for the president. The edifice has now a much more imposing aspect than it had formerly, without any great pretensions to architectural beauty, or to boldness or originality of design. A balustrade runs round the top, concealing a portion of the roof, while vases and groups of small allegorical figures ornament the angles, and add not a little to the elegance of the façade. When all these constructions are terminated, the sum of money spent by the country within these fifty years upon this palace and its dependencies, will scarcely amount to less than two millions sterling.

It appears that a depôt is constructing for the archives of the Cour des Comptes, to which we have already alluded, within a short distance of that building, but it will not be finished before the end of 1848, or beginning of 1849. A stamp and registering office are also preparing, and are expected to be ready about the same period.

The Sainte Chapelle is progressing rapidly, and is expected to be entirely completed in 1849. A public exhibition of stained glass windows, intended for it, is now open at the Palais des Beaux Arts. Some of them are of a very elegant character, and of beautiful effect.

It is useless to give a description at the present moment of all the works in progress on public buildings; they are too numerous—we will merely mention a few more:—The Palace of the Institute is expected to be finished in 1849; the works at the Chamber of Peers scarcely before 1850; at the Ecole des Mines in 1852; at the Ecole Royale des Beaux Arts, the amphitheatre of anatomy is constructed; the Ecole Normale nearly finished; the Bibliothèque Sainte-Geneviève is advancing; the masonry will be completed about 1850. The enlargement and restoration of the Conservatoire des Arts et Métiers will be completed in 1850; the works at the Royal Observatory, in the course of this year; those of the Archives of the kingdom in 1849; those of the Ecole des Ponts-et-Chausées in the course of this year, &c. &c.

One of the great arches of the Salle des Pas-Perdus has been lately propped up, owing to its shewing signs of giving way, a rent of a considerable extent having manifested itself, as already mentioned in THE BUILDER; workmen are also perched up on the historical tower of the Palais of the Conciergerie, overlooking the river, for the purpose of repairing and restoring it.

## THE PAST FORMS OF ARCHITECTURE.*

It may be considered as a kind of traditional opinion to derive the origin of architecture from the construction of the first hut. As to the mechanical parts of architecture this may be right, but surely not, if we consider it as an elegant art. The efforts directed to the satisfaction of a merely external want may gradually produce comfort, nay luxury, but not a fine art. Art is the child of enthusiasm, and when once sprung to light, she produces enthusiasm in every feeling heart.

Therefore the architecture of every people becomes not art till it is devoted to religion. But when it takes a certain character, totally agreeing with the spirit of the religion it serves, it displays itself,—rises to the highest pitch with the display and rise of the worship to which it is devoted,—and falls with it, when, giving room to a purer religion, this worship sinks down into dust.

In this way the resemblance of the different architectures of the pagans, which is yet so embarassing to the inquirer, will be clear of itself. It was in the main the same idea which these different nations strove to realize in their architecture; therefore it resulted that the principal forms of their buildings were the same.

How various soever be the particular systems of religious ideas among the different pagan nations, they all agree in these two points; that their notions of the Supreme Being and future life are only earthly, and in no respect passing the limits of sensual conceptions.

The correlate of the idea of the Supreme Being is in architecture the temple, and that of future life the sepulchre.

Therefore not the habitations of the living but the habitations of the gods and the habitations of the dead bear the first marks of a dawning taste in architecture. Not before this taste has grown to a certain height, is it imparted to the habitations of the kings, the gods of earth, and then, according as nations advance in civilization, it is imparted to all other buildings which are not merely instrumental to the satisfaction of vulgar necessities.

In this manner, if we trace the first marks of a taste in architecture, we find among all heathen nations at first the form of the pyramid, as well for the temple as for the sepulchre. Its form is to be found as well in the buildings of this name in Egypt, which fill the whole world with the report of their greatness, as in the huge barrows or cairns of the north of Europe, in the terraced edifices of the Babylonians and Persians and the pagods of the

* From "System Eines Neugermanischen Baustyles." F. W Horn, Architekten. Potsdam, 1847.

former Hindoos; it appears in the gigantic Morais on the island of the South Sea, as well as in the Teocallis and monuments of Mexico and North America.

Thus, wherever in the primitive time the conception of man breaks at first from the ordinary appearance of things to represent a higher idea, the pyramid is the form of such a monument. It belongs to no determined age, but it indicates the first beginning of art among all nations. It is the rough but vigorous expression of a new-awakened internal life, the true image of a mind which has become capable of a higher strain. It roots with its broad base in the earth, as the natural man, how much soever he elevates his mind, is not able to break from the earthly world to which he is bound by a thousand chains; it terminates after the immense start it takes soon in a petty point, not nearer heaven after all than before, as paganism, even in its highest ideas, does not attain the really divine. Their interior is, like the heart of the heathen, narrow and dark, and almost totally filled with earthly matter. But one idea is expressed in these venerable monuments of the infant ages which elevated them to the rank of art in their time, and secures them this honour in all times,—the idea of the aspiration to a higher world.

As the ancient inhabitants of the plain countries approached the sublime nature of the neighbouring mountains with their industry, they were overwhelmed, as it were, by the sense of their impotency, and, therefore, gave up the attempt to form the exterior, but only to devote the more energy to interior form. The bare hollow in the interior of the pyramid, till then unheeded, now gained such an importance that, stripped of its covering shell (of the pyramidical form), it became the subject of a new strain, and gave rise to a new style of architecture. It grew to the organized structure of the rock-temples, while the exterior of the pyramid was replaced by picturesque rocks.

As architecture in the pyramid style grounded her form on the earthly substance, so now she begins a struggle against it. If the building rooted there with its large base, as if it was yet a part of it, so it now operates with a repulsive power. Though quite inclosed by the earthy substance, she now produces a separation in it, pushing back the walls and raising the upper side, the weight of the mass (we may compare it to the labours and sorrows of earth) rests no more on earthy ground, but is resisted by pillars which energetically rise, breaking from the connected mass of the bottom, a beautiful image of the aspiring power of the spirit in opposition to the downward tendency of an earthly mind.

Totally shut up from the outer world, this peculiar architecture displays an admirable greatness. On approaching the entrance, often hidden, often visible but bare, the uninitiated will not fancy what a splendour will be disclosed in the interior of these rocks. Thus awakes in the mind of the natural man, hidden from the outer world, the first motion of the spirit; it opens in his soul a new, higher, intellectual world as much as the rock of the earthly mind is broken. Not till this new architecture has got her accomplished form, she reappears in the outer world; first, I might say, with a certain coyness, but afterwards in a very decided character.

First, we find an indication of the inner system in light outlines on the even hewn surface of the rock at its entrance; afterwards, the mere outlines are replaced by projecting mouldings, corresponding with the interior architecture, till at last the interior structure, by removing the surrounding masses of the rock, presents itself in its most important parts totally as an open building.

But by this step rock architecture deviates from her peculiar character, and advances irrevocably to her decay. But she has bred the germ of a new shape of architectonical forms: she has brought to light the *pillar*, which becomes the principle of a new system, *column architecture*.

While in the excavated temple the massy pillar performed the mean duty of a bearer, it now becomes, in the nobler form of the well-proportioned column, the ruling character of the architecture of antiquity. Stone columns of more slender proportions, erected in a harmonious order, support the covering structure of beams and plinths, or plates of the same material; surrounded by walls, the whole yet totally shews the character of the former rock architecture in its interior, though its proportions are much nobler and lighter, while the exterior, by the convergence of the walls, though nobler by approaching the vertical line, bears yet a slight resemblance to the primitive form of architecture.

One people alone was able to ennoble these forms to the highest point, to give them that perfection of which the expression of earthly beauty is in any way capable. While other people, in forming the proportions of column architecture, indulge in the most unprincipled extravagance, we see in Greek architecture how the fine taste of this people has traced the bounds which none can safely transgress.

Now a new extraneous element, the semi-circular arch, enters the decaying system, serving the worn forms as a strong support. Of obscure origin, and in her first youth only employed in the meanest services, this form appears even here in the shape of a servant. Resting on its own piers, which give the necessary addition of strength to the weak columns, the strong back of the arch itself bears the entablature, crowning a structure incapable of supporting itself by its numerous columns.

All the systems of architecture we have hitherto considered belong to paganism. They all have a common characteristic, that of being equally productions of a mind who studies to give sublimity or beauty to architectural forms merely by their impression on the senses alone. This characteristic is particularly evident, when we observe, that in all these systems the ceiling is horizontal, or where this simple construction will not be sufficient to cover a room of some extent, it is superseded by leaving an opening. It must be owned, already in very ancient rock temples, treasure houses, doors, &c., we find forms of the covering parts which very conspicuously approach the form of vaults, and in this manner presage a much later phase of architecture; yet in this work of so remote an antiquity, our interest is excited only by the appearance of the form, laboriously produced either by taking away a part of the solid mass, or by horizontally projecting layers of stone. But there is nothing but the form, not the higher principle, originating in an inherent necessity, not the idea which elevates the vault to a peculiar organized system of architecture.

## MANUFACTURE OF PLATE GLASS.

In promotion of a plate glass company, recently established, Mr. Howard has published some additional details as to the manufacture of plate glass in 1819 and 1847, shewing the reduction in price, and the increase in the quantity sold produced by taking off the duty.

In 1819, when the rate of excise duty was 98s. per cwt., and average selling price per foot 20s. to 25s., the number of feet sold per week was about 3,000; in 1827, duty 60s. per cwt., price 10s. to 12s., the quantity was 5,000 feet; in 1836, duty 60s. per cwt., price 8s. to 9s., the quantity was 7,000; in 1845, duty 63s. per cwt., price about 6s., quantity 23,000 feet; and in 1847, duty free, price is about 5s., and the quantity 70,000 feet.

The number of hands employed in 1836 was estimated at 2,500; it is now 12,000.

The continental manufacture of this article is chiefly carried on in France, Belgium, Bohemia, Bavaria, Prussia, and Russia. That of France ranks next the best English make, both in colour and brilliancy; but the productions of Belgium are not in any respect equal to the French; and the Prussian also is much inferior to the latter in both these points, as is also the Russian, which is of a very dark colour, and of a more imperfect character generally than any of the others. The Bohemian and Bavarian is blown glass, which, from the nature of the process it undergoes, cannot be rendered so perfect as that which is cast. It is also limited in size and very thin, and is, therefore, unsuited to the general purposes for which plate glass is chiefly used in this country, as well as elsewhere.

For some years the English plate glass has been considered the best manufacture of the kind in Europe, both in colour and brilliancy, and it can be rendered much superior in finish to any now made. The entire remission of the excise duty, which is no longer permitted to fetter native industry with obstructive restrictions, will now enable the British manufacturer successfully to compete with the foreigner, even in his own market.

It will be seen that, while from 1827 to 1847 the reduction in price was from 12s. to 5s. per foot, or about 60 per cent., the increase in consumption has been from 5,000 to 70,000 per week, or 1,400 per cent.! This fact ought to speak trumpet-tongued to many besides plate-glass manufacturers.

## THE CONSTRUCTION AND PRINCIPLES OF TIMBER BRIDGES.

The knowledge of the principles of pontine architecture, and the various methods of construction applicable in bridges of stone, iron, and timber, has perhaps at no period been so frequently called into exercise, as during the time of our immediate recollection. Always important amongst the public works of nations, bridges have, since the invention of railways, been the occasion of an amount of skill in design and labour in construction, with which no previous epoch can be assimilated. Great as may have been the difficulties of construction in many remarkable works in mountainous districts, and where the fury of sudden floods, such as are hardly known in England, has to be anticipated, it is perhaps within late years only, that bridges have had to be constructed, with so little means of escaping from difficulties which it should be the object of the architect never needlessly to encounter. It is desirable, in commencing any bridge, to select carefully the point for crossing, where the stream is least liable to swell with sudden floods or tides; to cross at right angles; to allow no other consideration except stability and freedom for the streamway and navigation, to interfere with the number and size of the piers and the form of the arches. These have till lately, been generally matters for consideration; but in railway bridges, the position, direction, level, and almost every other similar adjunct, are requirements which allow no opportunity for choice; and the consequent frequent employment of iron bridges has induced many remarkable inventions in that species of construction.

But it is not only in the materials of stone and iron that the construction of railways has led to important improvements in bridge building. Some of the most ingenious works on several lines are their timber bridges. Long viaducts are constructed of timber, where at the commencement of railway construction they were usually of stone, and the material is now so well framed and protected from the influence of the weather, that its durability does not suffer so much as might be expected, from a comparison with stone, whilst in cheapness, it has, when a considerable number of bridges have to be executed, of course very important advantages. It is found more advantageous to make such repairs as a timber bridge may occasionally require, and gain the interest of money, than to expend a large sum upon a stone bridge, which may last many years with but little attention. In America, where timber is plentiful, such considerations have more importance than in England, and many new principles of construction have been employed there with great boldness and skill. One modification of a familiar principle of framing, which we believe has not hitherto been seen in this country, forms the subject of our illustration, for which the drawings were procured expressly for this journal. The bridge, of which the elevation shews one span, crosses the river Richelieu, a branch of the St. Lawrence, at Chambly, near Montreal, in Canada, and was erected at the expense of Mr. John Yule, of that place, to whom we are indebted for the particulars subjoined. But before describing the construction of this bridge, it may be useful if we give some general particulars of the history and principles of timber-bridge building.

In bridges of timber, besides the variation which may be made in the arch, or framing supporting the roadway, there are two important distinctions in construction. Either the piers may be made of stone, as they are in the example we have engraved, or of timber-framing, as in Battersea-bridge, and in several others over the Thames. These bridges are,

however, not to be adduced as examples for imitation, being of that description, in which excess of material supplies the place of calculation and knowledge of the strength of materials. Timber piers should never be employed where it can be avoided, for the alternate moisture and dryness to which they are subjected, renders them in a constant state of decay. Some saving is effected by driving separate piles, the heads of which can be always beneath the surface of the water, and erecting the piers upon them; thus, repairs can be conducted with much greater facility, and there is no occasion to remove the piles, which are preserved by the constant immersion. But it is at best an objectionable method, and the piers are also subject to injury from ice and the passage of vessels, though precautions may be always taken for protecting them from these latter injuries.

The bridge of Sublicius, which existed at Rome in the reign of Ancus Martius, about 500 years before the Christian era, is the oldest wooden bridge of which we have any account. It is said to have been put together without iron or nails, and could be taken to pieces. Cæsar's bridge, erected in ten days for the passage of his army across the Rhine, is described in his "Commentaries," but not with sufficient clearness to admit of a satisfactory restoration of the design. Alberti, Palladio, and Scamozzi have all made the attempt, but their representations are very different. Trajan's bridge over the Danube, from the representation upon the column, would appear to have been of a more advanced system of construction. Each arch, believed to have been upwards of 100 feet span, was formed of concentric curved ribs of timber, connected by radial pieces. The piers appear to have been of stone.—During the middle ages, timber bridges were frequently employed. They were built on piles, which were so numerous, as to oppose considerable resistance to the current, so that, notwithstanding the means taken to protect them, they were not unfrequently carried away by floods. According to Tredgold, who has devoted considerable space, in his work, to this branch of carpentry, Palladio was the first architect who made any important improvement in the construction of timber bridges. In his treatise on architecture, he first illustrated the principles of several methods of construction, upon which some of the most important works of modern times are merely modifications. He is also considered to have been the first who made the important changes in construction by which a considerable number of piers could be dispensed with. In the bridge which he erected over the Cismone, near Bassano, there is but one span, which is 108 feet. It is a modification of the ordinary queen-post truss. To him is also attributed the system of construction, in framed *voussoirs*, an arrangement of diagonal tracing, acting in similar manner to the voussoirs of a stone bridge. In the bridge over the Brenta, which has four piers, and is in length 194 feet, the principal support is given by struts butting upon the ends of one horizontal piece, in the same way as the principals and collar of a queen-post roof. The bridge, like many in Switzerland and Italy, is covered, having a colonnade for the support of the roof. It has been doubted whether covering a bridge increases the durability sufficiently for the additional outlay; but apart from the advantage of such protection for the passenger along an exposed situation, it can hardly be questioned that in mountainous countries, and where avalanches are to be expected, a roof may often prevent the way being impeded, if not frequently the entire destruction of the bridge. Of later methods of construction, applicable to timber bridges, the most important is that in which curved ribs form the support, and which was first recommended by Price in the "British Carpenter." He proposed to make the rib with a rise of about one-sixth the opening, dividing it into any convenient number of pieces, each rib, for a bridge of 36 feet span, consisting of two thicknesses, each three inches in thickness, keyed together with wooden keys and "breaking joint." A further modification, lately used for large viaducts in the north of England, is that so frequently employed by Wiebeking, in which, instead of forming the curved ribs of short lengths, pieces of considerable length, bent to the form of the curve, are employed. The ribs are usually composed of several thicknesses, bent over each other in concentric curves, keyed or bolted together. A further improvement for large spans, is by employing two of these ribs placed some distance apart, diagonal bracing being inserted.

The variety of forms in which the different principles of framing are found in timber bridges, in all parts of Europe and America, is very great, and we shall perhaps best dismiss this part of our subject by referring our readers to Mr. Cresy's "Encyclopedia of Civil Engineering," where considerable space is devoted to this branch of architecture. In that work, and in Tredgold's "Principles of Carpentry," some of the methods in use, and the gradual eduction of one from another, are clearly elucidated. They may be thus enumerated:—First, omitting the simplest form, in which the span is so narrow as to require merely timbers laid over the opening, we have the form noticed first as used by Palladio. In this, a tie is the important characteristic, consequently, it can be used without much provision for abutment: struts radiating from each end of the tie, support a corresponding continuous timber above, from which depend timbers or rods for the support of the tie. Many bridges have been built on this principle in Switzerland, where carpentry is well understood. That at Schaffhausen, constructed in 1757, by a village carpenter, had two spans, one, 172 feet, and the other, 193 feet, with a stone pier in the middle; the construction displayed remarkable skill, nevertheless it proved that the oak beams which rested on the masonry of the pier and abutments, had not been sufficiently seasoned, nor disposed so as to admit of a circulation of air round them. They became rotten, so that it was necessary to raise the whole structure by means of screw-jacks, and to replace the decayed timbers with others of sound quality. It has been considered to be a defect in this bridge, that all the principal supports are so dependant upon each other, that no portion could be removed without great difficulty; still, and although, as it has been stated, "a man of the slightest weight felt it almost tremble under him," it remained forty-two years, until it was burnt by the French army, without requiring any other repair than that already mentioned. When the immense outlay required for the maintenance of a bridge such as that of Westminster, commenced little more than one hundred years since, is considered, it will not be thought, that the lighter material contrasts unfavourably with stone. The next variations in construction are when the abutments are adequate to resist the thrust. One of these, also used in Switzerland, is where struts are inclined from the abutments, parallel to each other, to support the roadway at the centre, and intermediate points. These struts are strengthened and supported at intervals, from the roadway, by perpendicular timbers. This principle, however, requiring long timbers, which are sometimes obtained with great difficulty, has had frequently to be modified on the principle of butting timbers end to end, adopted by Palladio in the bridge over the Brenta. Other modifications of that principle are when the arrangment of the supporting combination is in four or five pieces instead of three. The arrangement has, however, great objections, and is little calculated, by reason of the difficulty of giving sufficient strength at the joinings, to resist a variable load. The bridge at Walton, and that at Sault, on the Rhone, which failed, the first in twenty years, and the latter in thirteen years, would argue against the use of this kind of framing.

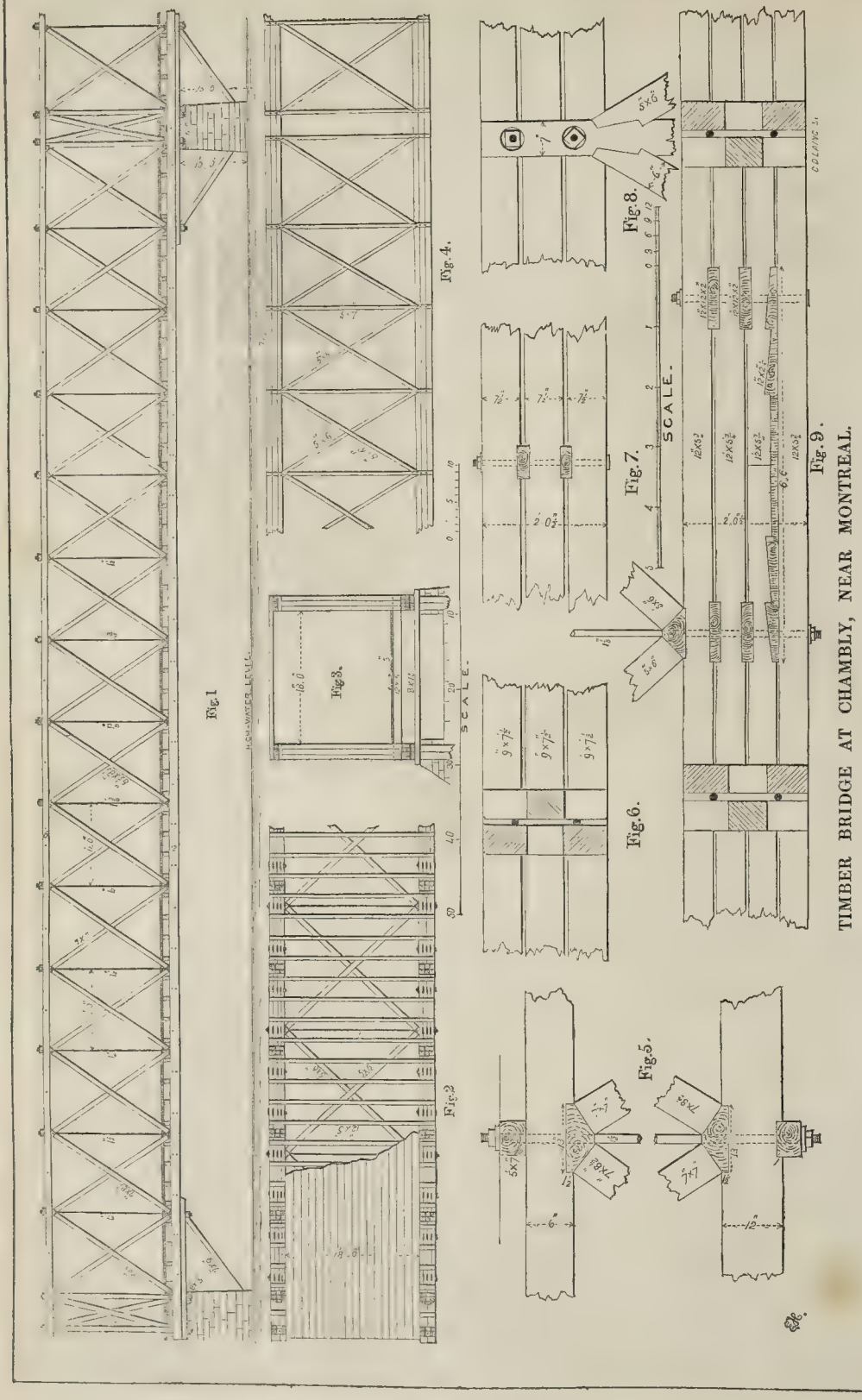
But the use of curved ribs, arranged in either of the methods already mentioned, does not possess the disadvantages to be found in beams which merely abut end to end. Of the bridges constructed by Wiebeking, that at Bamberg, on the Reignitz, in Germany, consists of one arch of 208 feet span, with a rise of 16·9 feet, and the description of this bridge and others erected by the same architect, should be read by all who are engaged in the construction of timber bridges. The bridge at Bamberg was built in 1809. The joints of all the parts, built into the abutments, were well soaked in hot oil, and also covered with sheet-lead. In the bridge at Freysingen, small gutters were made at the lower end of the curved ribs and braces, to cause the water to run off instead of settling in the joints, and to all the principal timbers, two coats of pitch and tar were applied. It is to be regretted that many of the bridges by Wiebeking are boarded over and painted in imitation of stone-work, which, whilst it is a most unsatisfactory attempt at deception, is of very doubtful efficacy in preserving the timbers from decay.

The use of diagonal bracing framed between concentric ribs of continuous timber, seems to be the method of construction in most cases entitled to the preference over others.—Amongst other kinds of bridges are those in which the arched rib springs from the level of the roadway, which is suspended from it, a method which has many advantages, where it is difficult to form abutments, or when it is necessary to keep the roadway as low as possible. Several of the new iron bridges on the railways are on this principle. In foot bridges the requisite strength is often gained by trussing the railing on each side the roadway. Iron has been frequently employed with great advantage for suspension in timber bridges, either various modifications of the ordinary principle, or in long beams requiring no other support, as a truss beneath them.

It is in America that the greatest novelty has been displayed in timber bridges. These are frequently constructed of arrangements of diagonal bracing, and have great strength without lateral thrust. In what are called lattice bridges, from their appearance resembling lattice work, a span of 150 feet can be covered without difficulty: materials of small scantling are required; the lattice framing for a span of 80 to 150 feet, being formed of fir planks about three inches in thickness and 12 inches wide, arranged to cross each other at right angles. The points of intersection are united by oak tree-nails, 1¼ inch in diameter. The depth of the lattice-work in bridges of 78 feet span is about 9 feet 6 inches: the roadway is supported along the top by a longitudinal rib at each side; these ribs are connected by cross timbers and diagonal bracing. The greatest care is requisite to have the timbers well seasoned. Such bridges have been constructed of great extent; one on the New-York and Haerlem railway is said to be 736 feet in length and has only four stone piers. Long's American bridge, which bears a nearer resemblance to the one we have engraved, has, like it, an arrangement of diagonal bracing with upright posts, framed between string-pieces, each formed of three timbers. It differs however, in some important details, from that at Chambly.

The inventor of the method of bridge building represented in the illustration, is Mr. Howe, of Springfield, Massachusetts. He obtained a patent for the United States, which he disposed of to Messrs. Boody, Stone, and Co., who erected the bridge at Chambly, and have built a number on the same plan for railways of much greater span. The original design in this case, was for a bridge of 960 feet in length, having five piers and two abutments, but an error having been discovered in the measurement of 77 feet, there are actually six piers, one of the spans being 77 feet. The piers and abutments have also been raised three feet higher than as at first intended, which has been done by adding masonry beneath the chords, or string-pieces, as shewn in the transverse section, fig. 3. The piers are all in the water, which extends from bank to bank; the river is seldom flooded, but the current is swift, and substantial masonry is of course necessary to resist the ice. The specification required the masonry to be laid in courses, between 12 and 24 inches thick, so as to form a solid mass, in hydraulic cement, in the proportion of two parts of sand to one of cement. The piers to be 6 feet wide, by at least 23 feet long at the top, exclusive of a triangular ice-breaker, and are battered one inch to the foot, on all sides except on the cut-water, where the batter is four inches to the foot. The up-stream end of the piers was specified to be dowelled one stone to the other above and below it on the ice-breakers, and five or six feet past the angles. The dowelling to extend to high water, including the foundation course, which was to be dowelled, in like manner, to the rock in the bed of the river.

The superstructure was to be framed in spans about 154 feet to 160 feet: the trusses to be 18 feet high from top to bottom of the chords, and 22 feet 1 inch wide from outside to outside. The carriage-way to be 18 feet in the clear between the trusses, and divided in the centre by a timber, 5 inches by 8 inches,




TIMBER BRIDGE AT CHAMBLY, NEAR MONTREAL.

running lengthwise, fastened to the floor-beams by treenails. The dimensions of the main timbers are given as under:—

For the bottom chords—4 pieces, 5¾ inches by 12 inches each.
For the top chords — 3 pieces, 7½ inches by 9 inches each.
For the main-braces—2 abreast, 7 inches by 8½ inches each.
For the counter-braces, 7 inches by 7 inches each.

These braces are bolted at the point of intersection. The chords were to be coupled together, perpendicularly, with screw-bolts, which were to be of these dimensions:—

| | |
|---|---|
| On the piers and abutments .. | 1¼ inch. |
| In the first five spaces, counting from the piers and abutments .. | 1⅛ do. |
| In the remaining three spaces of each span .. .. .. | 1⅜ do. |

All these were to take their bearings on oak cips or transoms, the size of which was to be 5 by 7 inches. The posts and braces on the piers and abutments were specified 6 by 8 inches, and the floor-beams, 5 by 12 inches. The whole of these timbers were to be of the best white pine. The floor-plank, 3 inches thick, was to be of good hemlock. This kind of timber is inferior to pine; it splinters, and does not last so long. The trusses were further specified to be coupled from side to side with screw bolts of 1¼ inch diameter, and braced laterally with timbers of 5 by 5 inches and 5 by 6 inches, and tied, at the top, with oak timbers, 5 by 7 inches, and there braced, laterally with timbers 5 by 5 inches and 5 by 6 inches. The 5 by 6 timbers were to be of full length, but the others were to be cut off at the intersection, and attached by dowels. The several pieces of the chords were to be coupled together with ⅞ inch bolts, 2 feet 2 inches long, as shown on the plan, giving the "upper side view of top chords, &c.," fig. 7. Vertical keys were also to be inserted in the spaces between the timbers, those keys to be 1 foot square and 2½ inches thick, as shown on the plan, giving the "top view of bottom chord, &c.," fig. 9; also an oak coupling clamp, 6½ feet long, to be inserted at the ends where the two timbers meet (the notches to be 1½ inch deep), to prevent the chords from gliding. Suitable plank was also specified for protecting the trusses from wheels, and directions were given for the returns of masonry at the abutments.

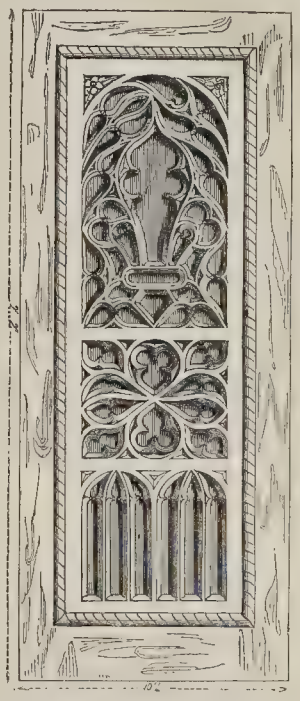
The long spans of the bridge have a camber of 8¾ inches. No method has been taken to preserve the timber, but it is to be roofed over shortly, which it is expected will have the effect of preserving it. We believe it is intended to try the asphalted felt. The bridge will also be boarded up on the outer sides, to within 2 or 3 feet of the top chord, and the roof made to project considerably.

It will thus be seen that the bridge is a piece of construction in timber, which might call to mind Mr. Stephenson's project for the Britannia Bridge, at least in its appearance, when passing over it. The section, fig. 3, and the plan, fig. 4, show that it is braced over head, along the whole length of the bridge.—It may be necessary to mention that the pieces which receive the ends of the girders, are merely blocks extending across each chord, and not from one chord to another. In fig. 5 the timber at the top figured 5 by 7 is the end of a continuous timber; the corresponding piece at the bottom is merely a block through which the bolt passes.* To our inquiry as to the composition to be used for the flooring, we have been informed that gravel and tar are to be tried. In most countries timber bridges are paved on gravel, or covered only with broken stones or gravel, in all which cases means of conveying off the water should be carefully provided. Sufficient moisture will, however, always pass through the covering to rot the planking, and in many bridges it has been thought better to lay a second layer of planks, which would in that case be transverse, to prevent the feet of the horses sliding. When the planking is left uncovered, longitudinal planking, as in the bridge at Chambly, will, however, be found most economical, as those planks which are most worn at the horse-track and the course of the wheels, can be replaced, whilst the other portions which are not worn, can be made to last several years. We subjoin a list of the diagrams.

Fig. 1. Elevation of one of the trusses; span, 153 feet.
Fig. 2. Plan of bottom chords and bracing, with a portion of the planking of the roadway removed.
Fig. 3. Transverse section of the truss.
Fig. 4. Plan of top chords and bracing.
Scale of the above figures, one-sixteenth of an inch to the foot.
Fig. 5. Elevation of top and bottom chords.
Fig. 6. Underside view of top chord.
Fig. 7. Upperside view of top chord, shewing keys.
Fig. 8. Upperside view of top chord, shewing bracing.
Fig. 9. Top view of bottom chord, shewing bracing, keys, clamp, and blocks.
Scale of the last-mentioned figures, half an inch to the foot.

* Some trifling omissions in the drawing forwarded from Canada have remained uncorrected. The lines of the bracing above the top-chord, and the blocks beneath the bottom-chord, should have appeared in the elevation. They are shown correctly in Fig. 5. There is a 1¼-inch bolt close to each perpendicular timber, over the piers, and the braces have bolts at their intersection, as described. In all other respects, the engraving is perfectly accurate.

## FONT CASE, TICEHURST, SUSSEX.



British Lying-In Hospital.—The governors of this institution have obtained a site contiguous to the hospital, in Endell-street, Long Acre, and are about to rebuild it. At a recent meeting, it was resolved that the plan of the building submitted by Messrs. Fuller and Gingell, architects, of Bath, should be adopted. The elevation is to be in the Elizabethan style, and the cost is estimated at 4,000*l.* The price asked for the land, which they have taken on lease for eighty years, at 40*l.* per annum, is 1,200*l.*

Granary Floors.—A correspondent of the *Bedford Times* remarks, that while wheat on brick floors may be infested with weevil, the substitution of fir or larch will effectually keep out insects. That it is the resinous odour emitted by the wood that does so seems evident, as turpentine has been found to produce the like effect, and resinous boughs of thurga (pine or larch) and Virginian cedar thrust into sheaves of blighted wheat, will cause the weevil to rush out and seek other refuge.

### CARVED FONT CASE, TICEHURST, SUSSEX.

Above, we give a representation of part of the Font Case, at Ticehurst, in Sussex, a very elegant and curious example of panel tracery. The great variety, and yet conformity, to be found in the tracery of the Gothic artists appears at first sight extraordinary, but ceases to be so when the principles on which it was constructed are understood. Geometry regulated it wholly, and made the operation of design an easy one.

### SHORT TIME MOVEMENT.

MEETING OF OPERATIVE CARPENTERS AND JOINERS.

An assembly of between 600 and 700 workmen, with a sprinkling of their employers, met on Tuesday last, at dinner, in Cremorne Gardens, to celebrate the success of their peaceful movement; or rather, with the still more commendable and grateful object of "recording, by a public vote of thanks, the sense of respect they have for those employers who came forward so readily to grant the four o'clock privilege." And certainly the sentiments of the speakers, and the enthusiasm with which those sentiments were responded to by the numerous and most respectable and orderly assembly, rang in our ears as something very different indeed from any thing we had ever heard of, or witnessed, in the exhibitions of the dogmatical advocates of the *striking* system of former days.

The business of the meeting was opened by the chairman, Mr. Bates, an operative carpenter, who congratulated his fellow workmen on their meeting in so strong a force for a purpose, to promote which, he believed, the trade had never before congregated together, namely, for the promotion of good feeling between employer and employed. Of course it was not to be expected that the immense number of persons connected with their trade in the metropolis could all be present, but he could

assure them of the best sympathies of the absentees.

A list of more than 100 masters who had already granted the privilege of leaving work at 4 o'clock on Saturday afternoon was then read over by the secretary, Mr. Carter, of course in the midst of great applause; and two or three letters, out of a number received from the masters themselves, were read, in order to shew that in this meeting, to celebrate so peaceful and harmonious a movement, they had the best wishes and cordial approval of their employers. A brief retrospect of what had been done was also reported, and the resolution of the evening was then moved by Mr. Carter to the effect, that "This meeting, fully appreciating any measure that tends to promote a good understanding between employers and employed, do accord a vote of thanks to those who have so generously granted the 4 o'clock privilege." They had not assembled, he observed, to celebrate a triumph, but gratefully to testify their respect for, and to do all in their power to promote a good understanding with, their employers as a body, as well as to promote that principle of conciliation which was so important to the interests not only of those present, but of all the members of every trade throughout the country. Any reflecting man must see that the organization which had effected this improvement had grown out of the general spirit of progress throughout the whole of society, —that spirit which had already given rise to our athenæums, our mechanics' institutions, our baths and washhouses, our benefit and building societies, and our associations for other desirable purposes. He was glad to see that they moved with the spirit of the times,— that they had cast aside the old trades' weapons,—that the spirit which generated strikes and brought them enemies instead of friends, and misery instead of advantage, was now passing away like the spirit of war, while a better spirit was coming over them. They now saw that strikes were a great evil, and that besides the moral evil and the pecuniary loss arising from them, they were a source of constant antagonism and hostility between those whose interest it was to work to one another's hands, instead of in a way which was most prejudicial to both. After eulogizing those few influential masters who had first granted the privilege, and had thus materially promoted its further progress, the resolution moved was seconded by Mr. Cassidy, and carried by uproarious acclamation.

Mr. Gray, master-builder, acknowledged the vote of thanks for himself and for others, who had authorized him to do so. The feelings of the employers towards the employed, he assured them, were tempered to a great extent with kindness. They were sensible their interests ought to be identified. They wished by all means to promote what the operatives had here met to celebrate. Their earnest desire was to see their common interests identified in future.

Mr. Gray was followed by Mr. Jarvis, foreman to Messrs. Baker, who also assured them of the kindly feelings of the masters towards the men, when applied to in a proper manner, such as had led to the present successful issue.

'Prosperity to the Trade' was then proposed by the Chairman, and was responded to by Mr. Bamber, who said they were now entering on the beginning of a new era in the history of trades, not only of the metropolis, but of all England, and even of the world at large. The peculiarity of this movement was that it claimed for itself a distinctive force and a new character, as greatly opposed to previous modes of procedure as the free-trade movement was to the old system of monopoly. They were as yet but at the beginning of the beginning of a system, which was capable of yielding them all they required for the complete moral, political, and intellectual regeneration of the trades. One prominent feature of this new system was the absence of every thing like compulsion, threat, or revengeful feeling, recourse to strikes, or any thing having the remotest connection with physical force. The importance and the capabilities of this new principle, indeed, in its influence on the future destinies of the trades were not yet appreciated as they would be. It was yet but in embryo. But it would be a powerful instrument in the production of results sought for in vain by other means, by which they never could be accomplished. If they looked to the movements in progress for the improvement of the public health, and the recent speeches of Lord Morpeth and others in high and influential station, at Sheffield and elsewhere, they would be more and more convinced that they were entering on a new era, capable of realizing the most Utopian ideas ever dreamt of by thinking visionaries.

The secretary trusted that this meeting would be a sufficient assurance to those masters who might have otherwise continued in doubt as to the spirit which is now beginning to actuate the working classes. He hoped the masters would give their workmen the frequent opportunity to prove themselves faithful, by trusting in their good intentions; and that having thus proved faithful, they should be more and more trusted. He could not help instancing with gratitude the exertions made by some masters for the good of their men, and in particular by Mr. Thomas Cubitt, who had subscribed 100*l.* to found a library for his workmen, and 20*l.* a year for its increase, and who had established the most perfect arrangements for the comforts of those whose best interests, he clearly perceived, were inseparably identified with his own.

After "the Press" had been proposed, as the advocate of justice to all classes, a vote of thanks to the leaders of the present peaceful agitation was proposed by Mr. Richardson, who reprobated strikes, in which immense sums had been swallowed up without any of those real advantages which they might have otherwise yielded. One strike of cotton-spinners had cost 600,000*l.* and after all, brought only defeat. A sum of 2,000,000*l.* had been thrown away upon half-a-dozen strikes a few years since, nearly all of which were unsuccessful, even in the attainment of their more immediate object.

The meeting was finally addressed by Mr. Palmer, another master builder, who expressed a hope that this was indeed only the beginning of a new movement for the mental and moral as well as physical improvement of the industrious classes. The scrupulous care of public property by these classes, when thrown open to them, had been alluded to by a previous speaker. He hoped that they would exert themselves to secure the opening of the British Museum, the National Gallery, and other national institutions, on the only real holiday they had,—namely, Sunday. Despite of counter assertions, he was convinced that a beneficial moral influence would thus be produced.

## THE PREBENDAL HOUSE, THAME, OXFORDSHIRE.

"This ancient ecclesiastical building is situate at a short distance north-west of the church, and, from the style of the earliest part of the architecture, it appears to have been erected about the same period in which the prebend was founded by Grosteste, Bishop of Lincoln, in 1241, who endowed it with the impropriation and advowson of the church of Thame."

At the dissolution of monastic establishments this fell, with others, into decay, and ultimately was appropriated to agricultural purposes. About Edward the Sixth's time the estate passed into the hands of the Williams' family, and thence to the Wenmans', in whose descendant it was vested in 1835 or 1836, when a portion of the property was divided into lots, and offered for sale.

At this time (1836) Mr. Charles Stone, a native of the town, having realized by honest industry a competence, returned, after an absence of some years, to the "seat of his youth," and was struck with the idea of making it a residence. It was then used as barns, stables, and other farming purposes, and was surrounded with hovels and sheds.

The original character of the place may be seen by referring to "Skelton's Oxfordshire," in a vignette at the head of Thame Hundred.

His friends ridiculed the idea of such an "auld houlet haunted biggin;" but the architect whom he consulted having told him, in the words of Brown, that there was a "capability," he purchased the premises, with about fifteen acres, in spite of jeers and owls and "ghaists that haunt auld ha' or chamer," and in 1837 proceeded to convert it into a residence, with the assistance of Mr. H. B. Hodson, architect.

The buildings consisted of what was once a chapel, with a beautiful triple lancet-headed window of the early English style, and two ranges of dwelling apartments, in one of which was a large hall or refectory, with a handsome window at the end, and probably

> "Jolly friars tippled here
> Ere the abbey walls had tumbled."

This part, too large for use, was taken down, so as to isolate the chapel; the remainder of that range, which has a handsome old porch, was converted, by dint of some ingenuity, into a convenient dwelling-house, and the other range into stabling and domestic out-offices, leaving the end of the refectory, with its "ivy mantled" window, as a picturesque ruin. Care was taken to preserve as much of the old work as possible, and to assimilate the new with it.

Mr. Charles Stone, unfortunately, did not live long to enjoy it; and on his death, about three years ago, it was sold to a gentleman of the same name, who now resides in it.

The property is bounded on one side by the Thame, a small stream which separates Oxfordshire from Buckinghamshire, and gives its water and its name to the more celebrated river, into which it flows near Dorchester.

The antiquarian and archæological tourist may find an interest in visiting this place, and also the church of Thame, which is a handsome old massive cruciform structure, and contains several fine and curious monuments, particularly those of the Williams and Quatremaine families. This church has lately been fitted up with new pews and seats, and otherwise repaired and decorated, much to the credit of the vicar and the parishioners.

## RESTORATION OF WESTMINSTER ABBEY

Sir,—Perceiving by your columns that *important alterations* are now in progress at Westminster Abbey, I venture to offer a few remarks on that building.

It has often been a matter of surprise to me, that while nearly all our fine old cathedrals have undergone, or are undergoing, a process of restoration, Westminster Abbey should still remain in such a deplorable state. However, I trust that under the auspices of the present eminent dean, we may hope for better things, and more particularly as such extensive improvements are in contemplation in the neighbourhood of the Abbey.

In a few years there will be the new street and the monument to Caxton in close proximity to the cathedral, and if Mr. Barry's grand scheme is carried into execution, we shall have a new bridge in place of the present incurable structure; one side of Bridge-street will be demolished to make way for the new Parliament Houses, as also the Law Courts (which are proposed to be re-erected in the neighbourhood of the inns of court), so that the restoration of Westminster Abbey is, as it were, imperatively demanded, in order to keep pace with the times.

Every one will doubtless admit that "what is worth doing at all is worth doing well," and every one who has seen the abbey must surely also admit that its restoration is required. What has been done of late years, I consider as worse than useless, and in order to do the thing properly it must be commenced afresh, and that, I contend, on a grand scale. And firstly, as to the monuments, the chief of them are, as you have often said, very inappropriately placed to the great detriment of the architectural appearance of the abbey, and should be remedied by the erection of a suitable building in the neighbourhood of or adjoining the abbey, for the reception of the greater portion of the monuments.

The stone columns, which are in a wretched crumbling state, should be replaced, and at the same time the iron bars at the springings of the arches might be removed. I would remodel the two existing towers, and complete the third, which was commenced by Sir Christopher; and the *whole pile of building* should undergo a process of restoration in the most substantial manner.

The objection to what is here proposed, would naturally be want of funds. To this I would reply,—if the matter is taken up vigorously and energetically, with the intention of fully carrying it out, there is not the slightest doubt but that the requisite funds

would be forthcoming. The Government of course ought to bear a portion of the expense, and if all our architectural, antiquarian, and archæological associations, metropolitan and provincial, will come forward nobly with their share of the expenses, not only as societies, but *individually*, and if the dean and chapter will open their purse-strings, there will soon be enough and to spare of the "wherewith."

As a worthy consummation to the restoration, I would admit the public free of charge.

AN OBSERVER.

## THE GOVERNMENT SCHOOL OF DESIGN AT SHEFFIELD.

THE annual meeting for the distribution of prizes was held on Thursday week: Lord Morpeth in the chair. His lordship, who was received with great enthusiam, after congratulating the friends of the institution on the promising aspect of its affairs, presented in the report of the committee, from which it appeared that the number of regular pupils had increased from forty-six to ninety-one, proceeded to address himself to the more extensive and opulent manufacturers of Sheffield on the advantages of such an institution to art in all its forms.

"Let them rest assured," he said, "that even the very humblest of their workmen—the men comprised among the class which I am glad to find furnishes so many pupils to this institution—the anvil-makers, the cabinet-makers, the joiners and builders, the carvers and gilders, the chasers and etchers, the die-sinkers, the coach-makers, the engravers, the fork-makers, the gas fitters, the glass-painters, the masons, the modellers, the moulders, the painters and decorators, the saw-makers, the silversmiths, the surgical instrument makers, and the type-founders,—depend upon it the very humblest of these, when he shall be instructed in the knowledge of drawing, and in the perception of form, when he shall have acquired accuracy of outline, and correctness of taste and judgment, will be able, even in the minutest portions of his work, by some apt touch, by some ingenious finish, to give to the whole production grace and attractiveness which it could not otherwise have acquired. You would do well to guard yourselves against the notion that expensiveness is any necessary ingredient of excellence. Indeed, an excess of ornament often mars its own design, and a cumbrousness and superfluity of decoration often detract from that very beauty, which is best attained by simplicity of form and of outline, and more by abstinence than by a superabundance of decoration in its details. As an illustration of this, I might ask you merely to compare the outlines of such an artist as Flaxman, in his illustration of the Iliad—and those of you who are acquainted with classical literature will understand the allusion—compare the Briseis of Flaxman with the Angel of Bernini—the severe simplicity of the one with the frippery and foppery of the other. Now, comparisons of this sort should teach you to pay a proper reverence to the simplicity of real beauty. While we must congratulate both this town and the country at large upon the increase of this and similar institutions, and while we have reason to be pleased with the many symptoms multiplying around us of the increased attention which has been given to art, and the increased love of it which seems to prevail among the masses of our people, yet, we shall find, generally, that there is scarcely any advantage, or any subject of congratulation not accompanied by some counteracting risk. Human tastes and wills are still more devious than the planets, and have not always the same regularity of centrifugal and centripetal forces to keep them in their course; so that we shall perhaps find the multiplication of schools of design and art unions, and similar institutions, have some of this counteracting risk attendant upon them. We are happy to see an increasing love of art among the people; but it is not the design of such institutions to make all the lovers of art artists. That is not the scope and aim of such institutions. We admire the painting of portraits when in the hands of such a noble artist as Titian. We admire the painting of landscapes, when in the hands of such an artist as Claude. But we do not, on that account, wish all the pupils of schools of design to occupy their time in painting cauliflower-looking trees, or the chubby and unmeaning faces of all their relatives. Our object is to make skilful designers, and not to turn out so many finished ready-made Raphaels and Corregios. Though, at the same time, if these Raphaels and Corregios do exist, I think it no mean advantage that such institutions give them an opportunity of developing their hidden faculties, and to expand them into genial light of public recognition and patronage."

The Earl of Arundel and Surrey followed his noble relative as the mover of the first of a series of business and other resolutions, and expressed his great interest in the improvement of the variety and beauty of the designs appropriate to the arts peculiar to Sheffield, and in the establishment of a kindly feeling between the designers and artizans and their masters. Mr. Heywood, M.P., in seconding the same resolution, regarded the scholars of such schools as the very *élite* of the working classes, and those most likely to distinguish themselves in their situation, and become masters themselves, and he suggested the establishment of a national exhibition of art in the metropolis, in which the Sheffield scholars and those of Manchester, Birmingham, and other important towns, might be allowed to exhibit their beautiful specimens of art. Mr. J. Abel Smith, M.P., in moving another resolution, and alluding to the superiority of England in her various productions, as one of intrinsic utility and excellence rather than of beauty either of form or colour, remarked that,—"It is no doubt equally true, with regard to beauty of colour, that it has been a question whether other countries have not enjoyed peculiar advantages; but with regard to beauty of form, I have never believed, and I do not now believe, that we are not in this country able to compete with any other country in the world, if our artisans are properly instructed, and their attention be devoted in a proper way to the end to be attained."

Mr. R. Solly, after regretting that the female class had not yet been a successful one, intimated that—"In the Glasgow Institution there were 111 pupils in the drawing class. He had been in Paris, and found that there were 1,800 pupils in the School of Design studying various arts. In Antwerp, a town smaller than Sheffield, there was an Academy of Arts containing upwards of 600 pupils; but every institution must have a beginning."

Colonel Thompson, M.P., then addressed the assembly. "One object," said he, "ought to be the ornament and the improvement of the world in which we are placed; and nations in general have an increasing spirit of anxiety and brotherhood, leading them to persevere in a friendly contest, by which we shall all, in the end, be benefitted. * * * Depend upon it, the forms which nature has given to us are more beautiful than any imagination can invent. The error of the dark ages, I believe, has generally been, that they desired to increase beauty by the invention of monstrous combinations of what there were no examples set before their eyes. On the other hand, if we see what has been the progress of those civilized nations of antiquity which excelled on the earth, we shall see that, as they inflexibly adhered to the copy and improvement of the object set before them, in respect to the "human form divine," they caught their inspiration. It is true the ancient artists flourished in "sunny climes," where they were freed from many incumbrances which affect modern artists; and the consequence is, that wherever we look for the perfection of the human form in sculpture, it is to the ancient masters we refer. It has been observed by Sir Martin Arthur Shee, president of the Royal Academy, that in those forms which are not derived from the immediate copying of any natural object, in the forms of their vases and instruments, both useful and ornamental, the ancients adhered to the form of the ellipse, but it may be I am referring to the alphabet of some of those who hear me."

Mr. James Montgomery said:—"There is one name which has not yet been pronounced in this room, but I will mention it—Chantrey. I remember him when a poor boy, as poor as any pupil now present; yet he rose to the highest eminence in his class of art. The motto of your institution ought to be, "Francis Chantrey." Through greater difficulties than those experienced by any now present, Chantrey pushed his way, and rose to eminence. His earliest instruction in the art of drawing was received from an itinerant player, of the name of Halpin, who visited Sheffield; and his first lessons in modelling were from a humble artist of the name of Taylor, who executed the two small figures on each side of the door of our General Infirmary. With such humble instructors, and with the help of Providence, he availed himself of the opportunity of improving himself by going to London, where he certainly rose, by his own exertions, to the head of his profession. On the occasion, I have been told, of an exhibition at the Royal Academy of the model of the two children, sculptured for the Lichfield Cathedral, this specimen of sculpture attracted the attention of every mother and every mother's son who visited the place. While the splendid monuments of the classical performance of his contemporary were passed over by learned and critical judges, yet every one who could feel and knew what nature was, hung in silence over Chantrey's. Colonel Thompson has made a remark respecting nature as the best model to copy. What was it that made Chantrey and other great sculptors? It was following nature, and making the 'human face divine' to appear as it really is, from the hand of its Maker."

In returning thanks for the last resolution, the noble chairman, in conclusion, said, "I assure you it has been a source of great gratification to me at being able to take part in these proceedings. I am not sure, however, that I do not expose myself to the charge of presumption in so doing, because I well know, that though I have a sincere and cordial appreciation for art, yet I hold myself as very little competent to give any opinion on matters of art, inasmuch as I should find it difficult to form a straight line, and if I should attempt to delineate a circle it would be more round-about than round. I should have been very glad if competitors from a female class had presented themselves to receive those prizes to which they would have been entitled. I think in this way we should better come up to that description of a public building given us by one of the most refined and distinguished poets, who says:—

> 'Firm Doric pillars should support the base;
> The light Ionic crowns the upper space;
> Thus all below is strength,
> And all above is grace."

I shall be happy if the future history of the Sheffield School of Design enables us to graft on the more solid foundation below the ornaments it would derive from its female pupils above."

## RAILWAY JOTTINGS.

A STEAM whistle, with a gamut or scale of shrieks, on which a code of signals is proposed to be founded, has been invented by a Mr. Doull. A concert of steam-whistles, says a contemporary, would be a rather startling novelty of the rail for the ensuing season.——The number of passengers who travelled by first-class, on sixty-three British lines, in 1845-6, according to a parliamentary return, was 6,160,354; by second class, 16,931,065; by third class, 14,559,515; by parliamentary class, 3,946,922; by mixed, 2,193,126: total, 43,790,983. The amount of receipts from passengers was:—first class, 1,661,897*l.* 19s. 10½d.; second class, 1,937,946*l.* 19s. 11d.; third class, 738,474*l.* 4s. 11d.; parliamentary class, 293,732*l.* 7s; mixed, 93,164*l.*: total, 4,725,215*l.* 11s. 8½d. The amount received for goods, cattle, &c., was 2,741,200*l.* 16s. 6½d. Grand total, 7,466,416*l.* 8s. 0½d. It thus clearly appears, that the inferior class carriages, compared with the first class, are really the superior, in amount of returns, by nearly double the sum yielded by the first class; and that the second class, of itself alone, here exceeds the first by nearly 300,000*l.* Surely, then, the inferior class passengers are entitled to a little more respect and accommodation than the following circumstance, not by any means a singular one, proves them to receive at the hands of those into whose pockets they thus actually transfer millions of sterling money out of their own hard-earned gains. A poor man complains, in the *Times*, that merely because it appears, that the Act anent parliamentary trains does not compel it, the accommodation and respect represented by the munificent ad-

junct of a penny, or even a halfpenny, candle, during the transit of trains at night, was denied to a carriage in which he was a passenger, amongst upwards of forty other persons of both sexes, paying, in all, at least 16*l.* 3*s.* 4*d.* to the Company (the South-Eastern), who, he was coolly assured, while complaining of the inconvenience, disrespect, and moral impropriety, of the thing, nevertheless really 'could not afford it!' He, at the same time, but quite as ineffectually, urged the risk, which all run, of being roasted alive by the firing of the combustible female dresses from the flicker of an unprotected candle, provided by one of the passengers,—richer or more generous than the *company* collected together under the auspices of the *other* 'Parliamentary Act,'—for behoof of all, and placed upon the floor for want of a more proper or safe receptacle. If the object of railway companies be to disgust the poorer classes, and prevent them from presumptuously riding by rail at all, by such a disregard of the comfort, the safety, the life, or even the common decencies of the humbler classes, we could help them to a much more effectual scheme than that—a scheme which was once most effectually adopted in the evacuation of certain 'classes' by a chemical professor in the modern Athens, we remember, on occasions when the occupants were induced to remain in the voluptuous enjoyment of cheap but fascinating odours elicited in the course of the professor's experiments in organic chemistry,—and which, by the way, we would recommend as attractives towards first-class carriages, whilst the professor's succedaneum—sulphuretted hydrogen—would be found in practice a much more expeditious evacuant of the classes of inferior or less desirable grades than the mere negative, darkness, and *against* which, we will venture to say, the 'Act' no more specially provides than against the darkness itself.——The 'Oxford, Worcester, and Wolverhampton' bridge across the Stour, at Stourbridge,—*the* Stour *bridge* of the new order of things, in short,—is about to be commenced, and will be one of the 'stupendous' structures of the railway era, as the line is to be carried across the valley at an elevation of ninety feet: the embankment and bridge will be nearly a quarter of a mile in length.——The architect of the South-Western has been instructed to design a 'superb refreshment-room' at Southampton, and other alterations, the cost of which will be 5,000*l.*——The completion of the permanent way of forty miles of the Caledonian line from Carlisle to Beattock, was lately announced, "and it was believed, on the part of both engineers and contractors, that every difficulty had been overcome, and that the line would be ready for public use in a day or two, without let or hindrance. The embankment at Mossband, however [whose 'foundation is a spongy and unsettled morass'], played them false; for, ere noon, it slipped, or sank down, to the extent of some six or seven feet. About a hundred men were immediately set to work to repair it, and before the evening they had restored one set of rails; but, in spite of every exertion, as new material was brought upon it, it gave way in the evening, and it was only by a succession of relays during the whole night that it was rendered passable for the engine which was expected to bear the inspector over it on Wednesday. Under these circumstances, it was considered advisable to delay the formal inspection till Saturday, when it is expected the embankment, which has hitherto proved so treacherous, will have fairly settled down."—This untoward intelligence, following directly on the heels of an almost equally recent detail of the enormous quantities of *heavy materials* thrown into the gulph, just affords a reiterated justification of what has been so repeatedly noted in THE BUILDER, though still declared to be 'an accident which no human foresight can prevent.' Sufficient experience surely has been acquired at Chat Moss, Stowmarket, and elsewhere, to be now turned to some better account by men of ability and ingenuity, than to the mere denunciation of the weakness or insufficiency of 'human foresight.' Notwithstanding these evidences of possible future risk unless the restoration has been carried out efficiently on the principle already so well established elsewhere, we observe a subsequent announcement of the opening for public traffic on the 10th instant throughout, from Carlisle to Beattock, and of course across this same embankment, which, as a portion of the forty miles, was declared by the engineers, *previous* to its subsidence, to be 'now completely in thoroughly good condition.' Surely a little more time should be allowed for contingencies such as those that have already occurred. The opening of the remainder of the main line from Beattock to the junction with the Wisbaw and Coltness Railway depends only on the finishing of 20,000, out of the 430,000 cubic yards of summit cuttings, which, though all rock, will be accomplished, it is calculated, in about two months. Most of the mason works are completed, or nearly so.——The bridges on the Cumnock branch of the Ayrshire line, at Kilmarnock and Irvine (one of twenty-four and the other of seven arches), contracted for by Messrs. King and Sands, are in an advanced state.——MM. Fournel and Fisher, engineers of the Northern (continental) Railway, have been condemned by the Correctional Police, to pay each 1,000fr. fine for each of two contraventions of the law committed in allowing three new locomotives to be run on the line, without having been previously examined and tested, and two others to be used without being furnished with steam-gauges. The Company were also condemned to a conjoint responsibility for the fines.——Our Metropolitan Telegraph Company have announced the opening, during the ensuing three months, of the commercial and general system of telegraphic communication between their central station in Lothbury, now rapidly approaching completion, and fifty of the principal towns in England, a list of which, pretty much the same, we think, with that already given in THE BUILDER, the Company have now published by advertisement. On Saturday last the conducting pipes opening the communication with all places south of the metropolis were being laid in King William-street and Princes-street.

## THE USE OF LEAD PIPES AND CISTERNS.

SIR,—But for your able and proper reply to "Vox" (p. 412, *ante*), his letter might have had an injurious effect, by blinding the public against important facts, or, at least, in preventing public attention being directed to the subject in question, which has been found absolutely necessary in many parts of England.

Should "Vox" be in doubt as to the corrosion of lead, and the solubility of corrosive matter formed by free carbonic acid, atmospheric oxygen, &c., I shall be happy to give ample proof.

It is an erroneous opinion that lead has been used for centuries without causing any deleterious impregnation of water. I would ask, if necessary investigations have been made in all parts of the country? and, if the origin of every disease has been discovered? How many have fallen an early sacrifice after a long and painful illness, without the cause having been known?

There is less danger in drinking water when kept in leaden tanks, than when it has passed through pipes, because the gases which usually form the most soluble corrosive matter are confined within the pipe, whereas, in open cisterns, the gas is more liable to escape. I have found carbonic acid in water which corroded lead rapidly, when corked up in a bottle or confined in a pipe (the pipe leading from the pump to the well is of course always full of water), but when a slip of lead is introduced into a glass of the same water, the metal is scarcely acted upon, owing to the gas escaping. When hydrochloric acid * is contained in water, which I have lately discovered in several localities, the lead is acted upon with great energy in open vessels, and the water is strongly impregnated with the chloride of lead.

Six years' daily experience enables me to speak with confidence on the subject; but I by no means wish to cause any unnecessary alarm; there are, however, many persons besides myself who have found that precaution is absolutely necessary for the preservation of health.

I examined some water a few months since, which contained lead in solution, and the pipe had been laid down about fifteen years; but notwithstanding that the solid contents contained in a pint of the water amounted to ten grains, and were composed of chlorides and sulphates, *they afforded no protection by forming an insoluble crust*, otherwise the lead would not have been found in solution.

It is generally believed that Roman cement will not adhere to lead; but I am informed by a gentleman that he had a leaden tank covered with a thin coating of good cement about three years since, which is perfect to this day. If this simple plan were to be generally adopted, no risk, as regards the tanks, would be incurred: an occasional inspection, in order to see that the cement had not chipped off, is all that would be required.—I am, Sir, &c.,

HY. OSBORN.

Southampton, Sept. 3rd, 1847.

* The mode of detecting the presence of this acid in water, I published in the *Pharmaceutical Times*, last May.

## NOTES IN THE PROVINCES.

A 'GAS, Water, and Sewerage,' Committee has been appointed at Hadleigh, for the supply of the town 'under one system of management.'——Lakenham church has been re-opened after a thorough cleansing, painting, and repair.——From the accounts of the Southampton Commissioners for paving, lighting, and improving the town, it appears that during the past year a sum of 10,280*l.* odd has been expended on the extension, and repair, &c., of sewers; 918*l.* odd also, including 190*l.* of salaries, have been expended on the maintenance and cleansing of the streets, roads, and highways, and in lighting, &c., 523*l.* odd.——The church of Kingston Deverill, Wilts, recently rebuilt in the early decorated style of end of 13th century, by the Longleat family, from designs by Messrs. G. P. Manners and Gill, of Bath, Architects, was consecrated on Tuesday week.——The restoration of Othery church, near Bridgewater, is so far completed, that it is intended shortly to re-open it. Much further repairs are still required did the funds permit.——St. Peter's church, Cheltenham, the erection of which, for the accommodation of the populous districts of the Tewkesbury-road, has been so long talked of, has been at length commenced. The first stone was to be laid on Monday week by Sir W. Jones.——St. Mark's Church, Tewkesbury-road, erected, from designs by Mr. F. Niblett, architect, since 26th March last, when the foundation-stone was laid, was consecrated on Tuesday week. It is a plain and simple edifice, in the early English style, with a nave 67 feet by 18 feet; two aisles, 56 feet by 12 feet each; and a chancel, 24 feet by 16 feet; a high-pitched open roof and tall lancet-shaped windows, the east one filled with painted glass. A tower 112 feet high springs from the south-west corner of the nave. The seats are open and free.——Something like an honourable recognition of the services of a professional man was made the other day at Cheltenham, where a new road was inaugurated by a 'master of the ceremonies' with a 'libation of wine,' under the name of the surveyor, Mr. C. Hale, who had formed it.——The new town hall at Dudley is so far completed that the petty sessions were to be held in it on Monday last.——The new Church at Cookley, near Kidderminster, is to be erected, it is said, from the designs of Mr. Perkins, architect, of Worcester. The edifice is intended to be in the decorated style of architecture, and to accommodate 400 persons, without galleries.

THE BRONZE STATUE OF SIR EDWARD BARNES, late Lieutenant-General, and Governor of Ceylon, was inaugurated at Colombo on 25th June last. From an article in the *Colombo Examiner* on the subject of road-making in Ceylon, it may be inferred that his efforts to form good roads have been of great service, and are worthy of being imitated by his successors. He is said to have thus laid the foundation of the prosperity of Ceylon, and to have changed the island from a military garrison to a large exporting and importing colony.

ANCIENT CARTHAGE.—The *Journal des Débats* announces the discovery, at Tunis, on the 14th ult., of an object most interesting to all artists and antiquaries. Some workmen employed to quarry stone near the inner harbour of ancient Carthage, discovered, about 30 feet underground, a colossal bust, in marble, representing a figure of Juno, so wonderfully well preserved as to have the appearance of having been sculptured only the day previous.

## THE UNION OF LABOUR WITH BEAUTY.

At a *soirée* in Sheffield last week, on the occasion of laying the first stone of the Athenæum and Mechanics' Institution there, of which we have already spoken, Lord Morpeth made an eloquent address, as indeed he always does. In the course of it, speaking of poetry and fiction, and with apt reference to the place in which he was, his lordship said:—Those of you who have the opportunity of consulting the old legends and classical mythology are aware, that among the fancied deities with which they people their world, one more especially was regarded as the god of labour and of handicraft, Vulcan by name, who was always represented as employed in huge smithies and workshops, hammering huge anvils, blowing huge bellows, heating vast furnaces, and begrimed with soot and dirt. Well, ladies and gentlemen, for this hard-working and swarthy-looking divinity they wished to pick out a wife. And they did not select for him a drab—not a person, taken herself from the scullery or kitchen, but they chose for him Venus, the goddess of love and beauty. Now pick out for me the moral of this tale, for I believe that nothing ever was invented,—certainly nothing by the polished and brilliant imagination of the Grecian intellect—which has not its meaning and its moral. I have no doubt that all the legends of our own country—that the one even of your own neighbourhood, the Dragon of Wantley itself,—has some appropriate allegory and meaning, if we only knew how to find them out. But what is the special meaning of the marriage of Vulcan with Venus—of the hard-working artificer with the laughter-loving queen—of labour with beauty? What is it but this, that even in a busy hive of industry and toil like this, even here, upon a spot which is in many respects no inapt representation of the fabled workshop of Vulcan — even here, amid the clang of anvils, the roar of bellows, and the sputtering of forges—even here, amid stunning sounds and sooty blackness, the mind—untrammelled mind—may go forth—may pierce the dun atmosphere which is poised around us, may wing its way to fresh air and purer light which are beyond, and may ally itself with all that is most fair, genial, and lovely in creation. So, gentlemen, I say, your labour—your downright hard, swarthy labour may make itself the companion, the helpmate, and the husband of beauty—of physical beauty, as I have reason to believe, from the inspection which I am able even now to command. But the beauty with which I say your labour should ally itself, is intellectual beauty—the beauty which is connected with the play of fancy, with the achievements of art, and with the creation of genius,—beauty, such as painting fixes upon the glowing canvas, such as the sculptor embodies in the breathing marble, such as architecture develops in her stately and harmonious proportions, such as music clothes with the enchantments of sound. Now, it is the perception and cultivation of the beautiful in these departments that I look for in your schools of design, and your concerts; and many of the lectures which you hear from able and gifted men, may be made most agreeably subservient; and I strongly advise you, and I advise the members of this Mechanics' Institution, and I strongly advise its well-wishers and promoters, to show a discriminating and generous support of these tasteful and humanising pursuits.

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Furnace Improvements.—A patent has been granted to Mr. George Grundy, of Manchester, for a peculiar arrangement of furnace and flues, so as to form a continuous fireplace from end to end supplied with air from parallel air flues, thus allowing the heat to be conducted from end to end, or from end to centre repeatedly, and for a peculiar form and construction of tile or fire-clay tubes, cylinders, or retorts for generating gas, to be made in pieces strengthened with imbedded metal hoops, jointed with fire-clay, and made to extend to any length, or from end to end of the furnace, with exit-pipe at both ends for the issue of gas, and the means of removing coal tar from it, and creating a draft through it so as completely to remove the carbonaceous deposit. Four of these retorts may be mounted in one furnace.

## Correspondence.

### CARDIFF TOWN HALL COMPETITION.

Sir,—In the last number of The Builder my name is mentioned in connection with this competition, in a manner which, I think, calls for some notice on my part. Amongst other observations, you state that, "having limited the competitors to the sum of 8,000*l.*, the council have awarded the first premium to me, my estimate being 11,690*l.*"

The advertisement for designs, after stating the accommodation required, ended thus,—"The means at the disposal of the committee are calculated at 8,000*l.*," and I do not conceive that there is any thing here which renders it imperative on an architect to limit his estimate to that precise sum if, in his opinion, the accommodation indispensably required could not be provided for the money. The question is, has *any building* containing a town-hall, two courts of justice (of size adequate to the population of Glamorganshire), together with police court, rooms for magistrates, grand jury, clerk of the peace, court-keeper, &c. &c.,—ever been executed for 8,000*l.*, or anything like it, even where building materials are as cheap as at Cardiff?

My design was conceived on as economical a scale as I deemed admissible, and I reported that which I believed a fair and honest estimate, and at which sum I should have no objection to guarantee the execution of the work. Your journal teems with letters and remarks on the,—to use the mildest term,—error of reporting false or inadequate estimates, and I certainly did not expect to see in The Builder, which has always striven to rectify this abuse, hasty strictures on the acceptation of an apparently honest estimate. In this very same number, is an instance in point, where it is stated that the lowest tender for the Guernsey memorial was double the amount of the estimate; such an occurrence I have made it a rule to avoid to the best of my ability, and in my report accompanying the design, I candidly stated, though at the risk of losing all chance of success, that I did not think the required accommodation could be procured for 8,000*l.*: and in all probability the council may have come to the same conclusion, from the result of former experience as to the adequacy of estimates generally.

Trusting I shall be excused this vindication of myself from being the object of what your correspondent is pleased to term "a decision the most unjust," and apologizing for taking up so much of your valuable space,

I am, Sir, &c., Horace Jones.

16, Furnival's-Inn, September 6th, 1847.

*** The remarks in question contained no charge against Mr. Jones even by implication. The objection was to the proceeding of the committee, and that remains still in full force. The second premium was awarded to Mr. Christopher Eales.

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### GUERNSEY MEMORIAL COMPETITION.

Sir,—Your correspondent's statement relative to the Victoria Tower, Guernsey, is erroneous; permit me, therefore, to set him right, and to offer a few statements of my own by way of explanation.

1st. The lowest tender was 2,664*l.* 18s. 6d., and not "*just* 3,000*l.*"

2nd. This tender was made upon drawings showing a tower of greater height than was absolutely required by the conditions of the competition.

3rd. The building will be erected for the 1,500*l.* without any deviation from the sketch selected by the committee from three or four I sent to them as a competitor.

4th. Previous to the builders' competition, I prepared the committee for an excess over the 1,500*l.*, and they have explained to me that the greatness of such excess arises from the fact that the extensive government works progressing in the neighbouring island of Jersey have tended to advance the price of both labour and materials to a very considerable extent. It is a fact, moreover, that there were only three tenders delivered.

I am, Sir, &c.,

William B. Colling.

London, Sept. 8, 1847.

## Miscellanea.

Lectures on Architecture.—At the Collegiate Institution, Liverpool, Mr. T. L. Donaldson has delivered a course of lectures on architecture. The second, given on Friday in the week before last, related to the architecture of the Greeks. The lecturer said:—The highest styles of ancient architecture were shewn to have their origin in the simplest and most primitive structures. The original type of the Grecian temple was the wooden hut. (?) Architecture, in fact, comprised a complete system of relations, proportions, and laws, which had their basis in nature itself. The Doric order was a thoroughly well-conceived and highly-wrought production of the Greeks, unimproved by any subsequent efforts. It was happily and successfully carried out in some of the public buildings of Liverpool, as the chapel of the School for the Blind, and the oratory at St. James's Cemetery. The Ionic order was next described. Generally, the distinctive feature of an order was the capital, but of the Ionic order an essential part was the base. The shaft contained twenty-four channelings, and the flutes, instead of coming to a sharp edge, had a fillet between each two. The capital was marked by spiral volutes. The Doric order was invented in Greece proper; the Ionic in Asia Minor. The Corinthian order differed essentially from the others in its capital. The base was much the same. The story of its origin was interesting. Whatever dependence was to be placed upon the fact, the moral of the story was good. It shewed that if an artist wished to find any thing new, he must go to nature, and he would be sure to produce something graceful and elegant. It was not merely one part of a building that constituted character: the type must be followed out in the smallest details, otherwise there would be a harshness and irregularity for which no amount of beauty in the individual parts could make amends. In treating of Grecian temples, and particularly of the Parthenon, which was cited as a proof of what the Greek mind could do in true art, the lecturer observed, that when architecture was alone she was defective. She required the aid of painting and sculpture, and did not acquire her true majesty till all these were concentrated in one great building. Here it was that we fell short. We did not adequately embellish our buildings, consequently, they were inexpressive and passionless: they did not elevate the mind or move the imagination. In the new Houses of Parliament, however, we were likely to have a structure that would vie with the finest productions of ancient times.

The Rescue of the Great Britain transatlantic leviathan steamer is regarded as one of the greatest triumphs on record of the engineering talent applied to the raising of a stranded ship, not even excepting the floating of the *Gorgon* steam frigate at Monte Video. Although the engineer who first undertook the task was Mr. I. Brunel, jun., who caused a peculiar breakwater to be erected seaward, to which Captain Claxton added an outward row of elastic greenwood;—by the Messrs. Bremner, father and son, of the north of Scotland, was the task of rescuing her chiefly accomplished. "Mr. Bremner," says the *Liverpool Times*, "has been singularly successful in all his undertakings of a similar kind. He has now raised no less than 200 submerged vessels. Some time ago he succeeded in saving a cargo of Swedish iron belonging to Messrs. Jevons and Sons, of Liverpool, from on board a vessel sunk in deep water on the coast of Scotland." Several other gentlemen are entitled to participate in the credit of the achievement.

Irish Marble.—We find, says the *Morning Post*, that a vessel, just arrived in the river from the port of Galway, has brought the large quantity of 32½ tons weight of marble, the production of the county of Galway. This is the same quarter from which the arrivals of last year took place, and which was at the time spoken of as being of a very beautiful description.

Demand for Labour in Australia.—The rate of wages paid in April last, was—Blacksmiths, 30s. to 35s. weekly; carpenters, 6s. to 6s. 6d. per day; bricklayers, 6s. to 6s. 6d. per day; masons, 6s. to 7s. per day; labourers, 15s. to 25s. per week. Most of the trades, it is said, can find good employment at the prices fixed.

THE CHURCHES OF LONDON.—Passing down King-street, we face the interesting church of St. Margaret's, Westminster, standing beneath the shadow of the magnificent abbey. I think it is Smollett who indignantly observes, that England is the only country in the world where a stranger is not made welcome to the house of God. The neglected and disgraceful state of many of the London churches; the exaction of *twopence* as the price of entering the great cathedral of St. Paul's; the necessity of feeing a pew-opener on a Sunday, and, on a weekday, of sending to an ale-house or an eating-house, for the attendance of a sleepy or drunken sexton with his keys, is indecent and discreditable in the extreme. Putting the higher consideration of religion entirely out of the question; putting aside the miserable disfigurement of our many beautiful churches by pews and galleries, and the invidious aristocratic and unchristian-like distinction which is now made between the rich and the poor,—the public have at least a right to exact from the English clergy the same boon which is granted in every Christian city in Europe—namely, a free admission to the church which they support out of their daily means. London is rich with numerous churches, replete with interesting monuments, historical associations, and architectural beauty; but whether we seek ingress to them from purely devotional feelings—whether with the feelings of an artist, a poet, or a devotee they alike engender emotions which advance us in the dignity of thinking beings, and consequently ought to be freely opened to the public. We are yearly throwing open the doors of palaces and museums to the lower orders, free of expense, and yet the doors of the house of God are still closed against them. As an Englishman and a Protestant, I could not accompany a foreigner or a Roman Catholic to any one of the interesting churches of London without a blush!—*Jesse's Memorials of London.*

CHURCH STRUCK BY LIGHTNING.—The parish church of Welton, Lincolnshire, was struck by lightning on the Sunday before last, when one person was killed and many others injured. It appears that the lightning first struck the south-eastern pinnacle of the tower and threw down a portion of the battlement. It then passed into the tower, and melted an iron rod connected with the clock. Here the current of electricity was divided, one portion having descended on the exterior, and entered the earth, while another portion descended inside, and having perforated the stone-work of the door into the interior of the church, and thrown down the clock dial inside, passed along the north aisle. In this part of the church were suspended three small brass chandeliers, which served as conductors for the electric fluid downwards, as all the persons standing underneath them were injured. On the floor of the pew being inspected, it was found to be perforated with thirty or forty small holes. In passing from the north aisle into the chancel, it went out by five different holes in the east window, and perforated the stone wall, upwards of two and a half feet in thickness, in two different places.

VALUATION OF PROPERTY IN MIDDLESEX.—At a meeting of Middlesex magistrates on Tuesday, a report was received from a committee appointed two years ago to collect evidence as to the increased value of property within the county, and to revalue the same. The report stated that the committee, after examining witnesses from upwards of 100 parishes, declared the present annual value of the landed and tenement property of the county to be 7,754,330*l.* The rental, according to the old valuation, amounted to 6,367,317*l.*, thus shewing an increase on the new valuation of 1,387,013*l.* The assessment of late years had amounted on the average to 3½*d.* in the pound; but the ensuing assessments when collected (presuming them to be made upon the new valuation) would probably not exceed 2½*d.* in the pound.

THE LAKES.—Mr. Wyld has published a map of the Lake District, which will be found useful by all who intend visiting this beautiful portion of England, embracing Lancashire, Cumberland, and Westmoreland.

PREVENTION OF INTRA-MURAL BURIAL.—A meeting will be held next Wednesday evening, at the Crown and Anchor Tavern, to petition Parliament on this subject. Mr. B. Bond Cabbell, M.P., will take the chair.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the whole or portions of the works to be done in taking down and rebuilding the north aisle of Stowe Church, Lichfield; building the new district church at Walker, mason and joiner work, &c. to one person; erecting a new Grammar School at Kidderminster; painting the Cambridge Corn Exchange; taking up and relaying with new 4-inch granite paving, the carriage way, pavement, and other work in part of Duke-street and Tooley-street; repairing the foot and carriage pavements and lighting with gas at Saffron-hill; making sewers, 550 feet and 2,267 feet for Westminster Commission; supplying 2,000 feet of Aberdeen or Guernsey granite curb, 12 by 8, dressed, &c., at Woolwich; executing the works on Cameron's Coalbrook Railway; lighting with 15 gas lamps part of the parish of Edmonton; and supplying 5,700 tons of wrought-iron rails, 2,200 tons cast-iron chairs, and 75,000 larch sleepers to the Shropshire Union Railways and Canal Company.

ANTIQUITIES.—In pulling down the deanery at Lincoln, two very ancient open fire-places and chimneys have been discovered, which are conjectured to be part of the original building of Dean Gravesend in 1254. Both are of wrought stone, with tiled backs, and have been made for the burning of wood upon the hearth; and each chimney forms the half of a four-sided pyramid, with the apex ending in the ceiling of the rooms.

## TO CORRESPONDENTS.

"*J. F.*" (Manchester).—On referring to the communication in question, it does not appear to us that "B. B." arrogates to himself any merit. The trap is claimed by several. We will take an opportunity to give that part of the letter which relates to our correspondent's own proceedings.

"*J. H.*"—The instrument, of which a sketch was inclosed, is for the purpose of guiding the pen in ruling in curves.

"*S. C. W.*"—The width of the shadow would be the same as the extent of the projection.

"*J. A. P.*" next week.

"*J. H. C.*" We are not acquainted with the gentleman in question.

*Received.*—"E. J. C." "J. L." "A. B." (Brick Duties). "C. R. C." "R." "Ex-M. P." "W. H. T." "Vindex." "J. W." (Great Malvern). "C. J." "F. and G." "J. S." "Ground Plan of the Actual State of the Temple of Minerva at Athens," by George Knowles. Bell, Fleet-street. "Observations on Lime, Calcareous Cements, Mortars, &c." by Major-Gen. Sir W. Pasley; Second Edit., Part I. Weale. "Chart of Ancient Armour, from the Eleventh to the Seventeenth Century," by J. Hewitt: Bell, Fleet-street.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ERRATUM.—"To obtain heights which cannot be measured."—An error accidentally crept into the paragraph thus headed (p. 403, *ante*), which requires to be corrected. Instead of—"as the distance between the rods is to the height of the long rod over the short one, so is the distance of the *long* rod from the building to the height of the building,"—read, "so is the distance of the *short* rod," &c.


## ADVERTISEMENTS

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the district of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**JAS. COVINGTON and SON,** Licensed Lightermen, No. 8 Wharf, City Road Basin, and No. 1, Warkworth-place, Limehouse, London. CONTRACTS TAKEN FOR LIGHTERAGE of every description of goods to any extent. N.B. Heavy castings, &c., craned under Twenty Tons. Goods landed and carted.

**WILLIAM PETERS** (late Poynder and Medlicott), LIME WHARFS, Great Scotland Yard, Charing Cross, and Paddington Basin.

TO BUILDERS, CONTRACTORS, &c.

**GREY STONE LIME** of the best quality will be delivered alongside any wharf in London at 7*s.* per yard of thirteen baskets. Parties can be accommodated with a moiety of a freight. Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**FIRE BRICKS.—WARD & HART,** Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S** Patent Transparent Slide Valve VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12*a*, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

**DR. ARNOTT'S CHIMNEY VENTILATOR.**—F. EDWARDS, Stove Maker to her Majesty, 20, Poland street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description.—Prices from 7*s.* 6*d.* to 20*s.* each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

ZINC WORK.

**MESSRS. F. and J. HARLAND** beg to call the attention of Builders and others, to the following list of prices, for cash:—

2-inch Pipe . . . per foot 4½*d.* 3-inch Gutter . . . . per foot 4*d.*
3½ ditto . . . . . 5*d.* 4-inch ditto . . . . . 6*d.*
Including fixing.

Flats Covered and Cisterns Lined from 6*d.* to 8*d.* per foot superficial; Cornice Gutters, 3*d.* to 7*d.*—No. 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Almshouses.

N.B. Orders by Post punctually attended to.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them coming through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Farming houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

TO ARCHITECTS, BUILDERS, AND OTHERS.

**ENCAUSTIC, VENETIAN, BATH,** and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained of MINTON and CO.'S Warehouse, 9, Albion-place, Surrey side of Blackfriars' Bridge. Also, an assortment of Plain and Ornamental Door Furniture, Slabs and Tiles for Fire-places, &c.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GRIEVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. P. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Richard Scrivener has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 138, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Millhill, Leeds; Messrs. PENNY and PINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

EMBOSSED GLASS.

**EDWARDS and PELL,** 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8*d.* per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

PROVISIONALLY REGISTERED.)

**THE ALBION PLATE GLASS COMPANY.**—CAPITAL, £100,000, in 4,000 shares of £25 each.—Preliminary deposit, 2*s.* 6*d.* per share, until complete registration.

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Cornelius Smith, Esq., Gracechurch-street.
Edward Smith, Esq., Old Broad street.
Frederick Young, Esq., Bromley, Middlesex.

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AUDITORS.
William Bacshaw, Esq., Coleman-street.
John Adams Carter, Esq., Leadenhall-street.

BANKERS.—The Commercial Bank of London.

SOLICITORS.—Messrs. Shearman & Slater, 83, Great Tower-street.

SURVEYORS.—John Norris, Esq., 58, Fenchurch-street.

SECRETARY.—Henry Shearman, Esq.

In the year 1836, the manufacture of Plate Glass in Great Britain was about 7,000 feet per week. The Sales are now about 70,000 feet per week, exclusive of Foreign. The demand is increasing beyond all precedent, and although some of the houses are working night and day, the supply of good quality is still inadequate for Home consumption alone.

From 1837 to 1847, the reduction in price has been from 12*s.* to 5*s.* per foot, or 60 per cent.

From 1837 to 1847, the increase in consumption has been from 5,000 to 70,000 feet per week, or 1,400 per cent.

This Company has been formed to afford a better, and, if possible, a more equal supply, and thereby to revive and encourage the Export trade in this article, which might be carried to an enormous extent, but which in the present state of supply and demand is grievously neglected.

The profit now realised in this manufacture in England is about 20 per cent., but the present Company, by a superior application of Machinery and the adoption of important scientific improvements (to be patented for their especial benefit) will be enabled not only to construct their works at little more than half the cost of similar undertakings, but also to carry them on at a decreased permanent charge. And thus this Company will be placed in a position of vast superiority over any existing establishment.

Freed as this rising trade now is from excise restrictions, and looking at the extraordinary results that have already arisen, it is impossible to foresee either the extent to which this manufacture may be carried, or the full amount of advantage to be derived from its more extended employment. Nor is it unworthy of remark that in this country alone of the finest plate Glass may be produced at a cost considerably below that of statuary marble.

The locality of London presents peculiar advantages, arrangements have been made for the Purchase of an Eligible Site of Freehold Land on the Banks of the Thames, and other important steps are taken whereby the Works may be completed, and in full working operation within Twelve Months.

This undertaking is brought forward not only as a safe and extremely Valuable Investment for Capital, but also as one which the Public Interest imperatively demands, and a large Amount being already subscribed, the remainder will be apportioned to respectable Parties, who may apply to the Secretary, at the Offices of the Company, No. 4, Railway-place, Fenchurch-street, where, or of the Solicitors, No. 83, Great Tower-street, Prospectuses and and any further information may be obtained.

# THE BUILDER.


CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King street, Baker-street, Portman-square.—Cash only.

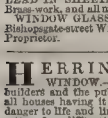
PLATE GLASS.—Architects, Builders, and the Plate Glass Trade generally, are solicited to inspect the quality and substance manufactured by the UNION PLATE GLASS COMPANY, Warehouse, 92, Hatton-garden, Holborn.
N.B. Rough Plate Glass supplied one-fourth, three-eighths, one-half, and three-quarter-inch thick.—H. CHRISTIE, Agent.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian Plate and Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

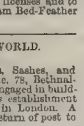
WINDOW GLASS, LEAD, VARNISH, COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopsgate-street, Without. Lowest prices charged. Please inquire them.
Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the most reasonable terms.
FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.
Coloured and Ornamental Glass, Plated Crown, and Sheet Plate, for shop-fronts, Show-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.
Ground and Dry and Good Colours of the best quality; Brunswn. Dryers, and every article used in the Trade Warranted.
VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water-closets, Basins, Brass-cocks, and all materials used by Plumbers.
WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 87, Bishopsgate-street Without, London; THOMAS MILLINGTON, Proprietor.

HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sunblind; all simple, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Ringgate-street, London.



TO THE BUILDING WORLD.
H. BANKS,
Manufacturer of Shop Fronts, Sashes, and Frames, and Joiner to the Trade, 73, Bethnal-Green Road, London. Parties engaged in building, will find the charges at this establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.
N.B. Glazed Goods securely packed for the Country.

CHAS. WM. WATERLOW,
MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 181, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.


CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts:—Three Cranes Wharf, 66, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.
N.B. Plaster of Paris and Bricks at reasonable prices.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.
JAMES WESTON having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL-WALL, POPLAR enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.
Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.
CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—
1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface which may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put on by a mason.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.
For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.
For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantages over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 126, DRURY LANE.
Agent for Liverpool and Manchester, Mr. R. PART, 26, Canning-place, Liverpool.

ATKINSON'S CEMENT.—WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Lime and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.
Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c
Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

GREAVES'S LIAS LIME and CEMENT, RUTTY and VEREY, 2, South Wharf, Paddington.
LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works in which its valuable qualities being superior to Roman Cement.
As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.
LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.
Metallic Sand on hand.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.
JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—
It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone coating to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.
Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.
Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had.
JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and inthe finish producing a pure stone-like effect, producesble by no other Paint whatever. It is cheap in its application—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

EMERSON'S PATENT CEMENT PAINT.—Arrangements are completed for the introduction of this VALUABLE and ECONOMIC PAINT. It is PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be requisite, with water.
The surface to which it is to be applied NEEDS NO PREPARATION, but to be clean and free from dust. It matters not whether the walls be wet or dry, its adhesiveness being such that it will cling to any surface—BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT, and may be made of any TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of a light creamy or stone colour.
To ROMAN CEMENT it may be applied the day after it is put on the walls, an 1 one small cask will cover a moderate sized house.
It is particularly calculated for COTTERY HOUSES, VILLAS, &c., for its PERMANENCY and PLEASING EFFECT; also for LODGES and ENTRANCES, as it does not absorb moisture, and consequently will never vegetate, and will PRESERVE the walls as effectively as any cement.
T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as more efficient and economical.
THOS. JNO. CROGGON, 8, Laurence Pountney-hill, Cannon street, London.

Price .. .. 28. 6d. per cask of 1 cwt.
18s 0d. " " 2 cwt.
An allowance to the trade.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 9 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

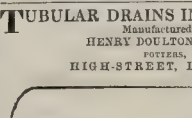
PATRONISED by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster.

WILLIAM NORTHEN, Inventor and Original Maker of Salt Glazed Brown-stone Socket Drain Pipes, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to his extensive stock now on hand, which for quality, perfectibility, and price is unequalled. The following unsolicited Testimonial is respectfully submitted:—

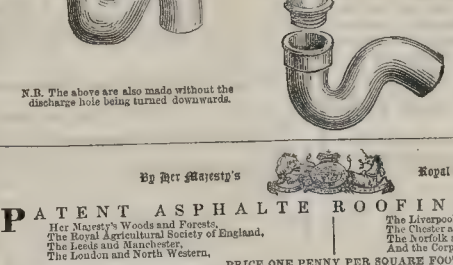
Sewers' Office, 1, Greek street, Soho, July 30, 1847.

MR. ——
DEAR SIR,—Should you at any time be in want of Stone-ware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly,
JOHN PHILLIPS, Surveyor.

TUBULAR DRAINS IN STONE WARE,
Manufactured by
HENRY DOULTON AND Co.
POTTERS,
HIGH-STREET, LAMBETH.



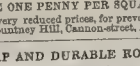
The only Efficient Mode of Drainage is by Tubular Drains; from their form they give every facility for a perfectly free passage.
The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.
They can be laid down with more ease, and at less expense, than common brick drains.
Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.
These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.



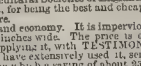
N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH.
LONDON,
Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.
They are of the most durable ware, and are recommended, in preference to iron, on account of their
CLEANLINESS AND CHEAPNESS.

By Her Majesty's  Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by
Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinbro'.
PRICE ONE PENNY PER SQUARE FOOT.
Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London

CHEAP AND DURABLE ROOFING.
By Her Majesty's  Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by
HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.
And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.
Its advantages are lightness, warmth, perfectibility, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in fully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW LONDON.
Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

WANTED, within Three-quarters of a Mile of the Royal Exchange, EXTENSIVE PREMISES for MANUFACTURING PURPOSES, having Light Workshops and convenient Yards—A letter by letter, stating terms, to HILL and JONES, 29 Bishopsgate-street, London.

DESIRABLE GROUND TO LET, for Building Three or Six Six-roomed Houses, at Islington, 16 feet frontages by 70 feet depth, and in an excellent part of a Ninety-nine Years' Lease, and moderate Ground Rents.—Apply at Mr. MEADUS, Baker, No. 12, Copenhagen-street, Caled man-road.

A PAIR of Well-built, Full-sized Third-rate VILLA CARCASSES TO LET, at a Ground Rent, together or separately, situate in the most eligible part of, and being Nos. 1 and 2, Albion-road, Queen's-road, Dalston.—Apply to Mr. TURNER, 5, Devonshire Cottages, Green-lanes, Stoke Newington.

TO BRICKLAYERS AND CARPENTERS

CARCASSES TO BE SOLD OR LET, at a Ground Rent, or taken out in Bricklayer's or Joiner's Work, near the Camden Town Station. Also, GROUND TO LET, on long Leases, for Fourth-rate Houses. Bricks may be had on the ground.—Apply on the premises, No. 1, Weedington-street, bottom of Ferdinand street, Hampstead-road

BUILDING LAND BRICKS AND MONEY ADVANCED.

GROUND TO LET, for Third-rate Villas, in pairs and three's, at Islington, fronting the High-road, for Ninety-nine Years, and at very moderate Ground Rents. Bricks are very much required in this immediate locality.—Apply to Mr. TURNER, No. 5, Devonshire-cottages, Green lanes, Stoke Newington-green

BUILDING LAND FOR TWENTY-FIVE THIRD RATE HOUSES

TO LET, at very moderate Ground Rents, a very eligible plot of ground for close houses, in Clifton-road, near Hamilton-terrace. Also several plots for detached and semi detached villas. The roads are made.—Apply on the ground, Mr. ARMSON, Carlton-hill, Hamilton-terrace, St. John's Wood.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c. suitable for a Builder.

TO BE LET OR SOLD, in the vicinity of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw-pits, Stabling, Machinery, &c. Entry by the 24th of June, and may be viewed upon the Premises, No. 12, Dorset-place, Dorset-square. For terms and particulars, of Mr. H. BIERS, 13, Carlton-villas, Edgeware-road. Written applications cannot be attended to.

TO CARPENTERS AND OTHERS

TO BE LET, about Twelve Miles from London, in Middlesex, an OLD-ESTABLISHED BUSINESS of a CARPENTER, UNDERTAKER, and WHEELWRIGHT, which has been carried on by the present proprietor and his family many years, who is about to decline it same in consequence of ill health. The premises are very convenient, and the stock, which is to be taken at a valuation, not extensive. Any young and active person will find the concern worthy of notice. For further particulars, apply by letter, post-paid, to Messrs. PEUCH and Co., No. 13, King-street, West Smithfield, Snow-hill.

TO CARPENTERS, UPHOLSTERERS, AND OTHERS.

TO BE DISPOSED OF, an Old-established BUSINESS, situated at the West End of the town. To be disposed of, on account of the Principal, a HOUSE, full of good Lodgers; rent cleared by the above. Benches, Tools, &c. to be taken on moderate terms.—Address, M. B., 3, Johnstreet, North, New-road, London.

ISLINGTON.—TO CARPENTERS, PLUMBERS, PAINTERS, GLAZIERS, AND OTHERS

TO BE DISPOSED OF, an Old-established BUSINESS in the above line, situate in one of the best parts of Lower Islington. The Shop and Premises are well adapted for any other Business, with a good Dwelling-house and Private Entrance. Coming in moderate. For further particulars apply at 2, Canonbury Cottage, near the Thatched House, Lower-road, Islington.

SALES BY AUCTION.

TO PAPERHANGERS, BUILDERS, HOUSE DECORATORS, AND OTHERS.

MR. BRAY, Jun., will SELL, at his Rooms, 293, High Holborn, on WEDNESDAY, 15th Sept., at Twelve, upwards of 40,000 PAPERHANGINGS of excellent workmanship and modern design; including drawing and dining-room papers in rich crimson and other flocks, scroll damask, sating, Elizabethan; parlour and bed-room papers in chintzes, trellis, bouquet, and others; hall and staircase papers in granites, Sienna, hand, and other marbles.—May be viewed one day prior, and morning of sale, and catalogues had at the rooms as above

OAK AND BEECH TIMBER, Poles, Faggots, &c. to be cleared off the land for the Great Northern Railway, near Beech Hill Park, Hadley, Middlesex, by

MR. RICHARDS, on the land, Hadley Folley, on MONDAY, September 20, 1847, at Eleven o'Clock precisely, without reserve, by Order of the Great Western Railway Company, 300 large Oak Trees of excellent quality, 20 Beech, Birch, and 20 Timber trees, Hard and Swing Faggot roads, on side of railway, Hadley Common, a short distance from the Cock, at Cock Forsters; also about 800 large Poles, 3,000 Faggots and Load Tails, the quantity of Top Wood, Stack Wood, &c. &c. May be viewed. Catalogues had of Mr COULSON, Folleyhouse, Hadley, Place of Sale; and of the Auctioneer, Tottenham.

TO BUILDERS' RAILWAY CONTRACTORS, AND OTHERS.—Important Sale of Building Materials near ASHFORD Railway Station, KENT

MR. H. BIERS, by direction of Mr. Grisell, will SELL by AUCTION, without reserve, on WEDNESDAY, September the 15th, and following day, at 12 for 1 precisely, on account of the number of Contracts being completed, THE WHOLE OF THE SURPLUS MATERIALS at the LOCOMOTIVE WORKS, ASHFORD RAILWAY STATION, KENT, comprising a large quantity of TIMBER, DEALS, BATTENS, and PLANKS, IRONMONGERY, BAGS of NAILS, Rod, Bar, and Sheet Iron, several TONS of RAILS and CHAIRS, Canal-scuffle Ballast, about one Thousand SCAFFOLD POLES, BOARDS, PUTLOGS, and CORDS, Mortar Boards, BLOCKS and FALLS, CHAINS, ROPES, HORSE, CART and Harness, Four tarpaulin TENT TABLES, Travelling Crane, CRAB and OTHER ENGINES, a Large Quantity of Sleepers, BRICKMAKERS' PLANT, PUG MILLS, PUMPS, BORING and WELL SINKING Tackle, Plasterers' Hair, Drain Tiles, BRATTICE, and other PAVING; the fittings of SHEDS, SHOPS, COOPERS' HOUSES, and SAW PITS. A essential Factories of FIREWOOD. The whole of the materials are most conveniently for removal, being within a few yards of the Railway. The Tonnage chargeable by the Company is exceedingly moderate. Catalogues are preparing, and when ready, on application, will be sent to any part of the kingdom.—Dorset-place, Approved Bills at three months.

The above valuable BUILDING MATERIALS, Costly Internal Fittings, and beautifully carved Oak and Antique Decorations of EASTGATE HOUSE, WINCHESTER

TO BE SOLD BY AUCTION, on the premises by THOMAS GODWIN and SON, on WEDNESDAY, September 15th, 1847, and following day, punctually at twelve o'clock the MATERIALS (the finest substantial built mansion and offices, including about [illegible] Bricks, very prime Oak Girders, and Beams, of extraordinary dimensions and perfectly sound, fine Mosaic Timbers, Mantel Oak and Valve Deal Flooring, Wainscot, Doors, handsome Marble and other Chimney Pieces, with grates, Fittings complete, a quantity of Stone Coping and Paving, stout Chain and Iron Palisading. The elegant and beautifully executed Oak Staircase, the massive richly carved solid Oak Chimney front of the Library, the chaste and elaborate Corinthian decoration of the hall, with columns, pilasters, carved cornices and panellings, doors, windows, & complete the whole splendidly out in Oak and Deal, with the handsome panellings, solid, moulded, and carved doors of the lofty dining room, and various other rooms, are worthy of especial notice of gentlemen, builders, & architects, collecting interior fittings of this valuable character. The lots may be viewed three days previous to the sale, and catalogues had of the auctioneer, Piazza Winchester.

TO BE SOLD, a number of Stout Scaffold POLES, from 32 to 38 feet long, at 4s. 6d. each.—For particulars, inquire of H. B., 49, Eastcheap.

TO BE SOLD, a Site of Ground, in the locality of Grosvenor-square, 110 feet by 146, well suited for a Chapel, Public Building, or Manufactory. There are two entrances.—Apply to KINDER and SON, Avery Row, Lower Grosvenor-street.

TO BUILDING SOCIETIES AND CAPITALISTS.

TO BE SOLD, some plots of FREEHOLD GROUND, situate in one of the most eligible parts of Brighton; also a FREEHOLD HOUSE, producing £ per cent., and Two Leasehold Houses, 80 years unexpired, producing nearly 9 per cent. For Particulars, apply to Mr. HENRY FITZGERALD, Globe-bridge Wharf, Regent's Canal Mile End Road.

LEASEHOLD HOUSES.—Land-tax Redeemed.

TO BE SOLD OR LET for Finishing, the remainder of the Valuable EIGHT-ROOMED HOUSES in Carcase, at Newington, Surrey; also TWO Well finished Houses in Union-square, Newington, let to respectable tenants; part of the purchase-money may remain out for a short time.—Apply to F. POUGET, Esq., Architect, 69, Trinity-square, Southwark.

POWERFUL LANDING CRANE.—A Sixteen Tons Improved Cast and Wrought-iron Landing Crane To be SOLD, within three miles of 600 feet, Also a large quantity of thin tooled Paving at 42s per 100 feet. Terms, Cash on Delivery.—PRATT and SEWELL, Albert Wharf, New Wharf Road, Battle Bridge.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low prices, and the work guaranteed.—Apply to JOHN PILKINGTON, BOLACRAEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

MOSAIC PAVEMENTS.—SINGER'S PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental Pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foo of Vauxhall-bridge, Surrey side.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up for Annual Shipments from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other kind of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to size from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 15s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces at the Works.

Estimates given for building generally.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining those of Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE, so celebrated for its durability, colour, and texture is well known, having been selected in preference to all other in England, by the Commissioners of Works and Buildings for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

Application to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

SLATE SLABS.—The Finest Slabs produced in WALES, of amazing strength, pure in texture, and free from spots, may be had of Mr. MAGNUS, at the PIMLICO SLATE WORKS, Upper Belgrave-place, planed both faces at the price that inferior Slabs in the rough half-faced are currently selling. These reduced prices are also subject to a very large trade discount. These Slabs have been extensively used at Buckingham Palace, Strathfieldsaye, the Royal Naval and Military Schools, Deptford, the Model Prison, Pentonville, the Goulstone-square Baths and Washhouses, on most of the Railways, and are specified for by the most eminent architects. Whole cargoes supplied direct from Mr. Magnus's Works in Wales, planed both faces, at very low rates. Slate Tanks, Fittings for Dairies, Larders and Wine Cellars, Landings, Cantilevers, Chimney Pieces, &c. &c.

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M. COON having discovered a new method of Lithographing Designs and Plans of every description, in about half the usual time, begs to inform Architects and Contractors that they may have plans of contracts lithographed by this method for about the ordinary price of tracings. Estimates for any number of copies will be given on inspection of a plan, &c. All orders, whether in town or country, promptly attended to.—Lithographic Printing Office, 15, Cheapside.

TO THE BUILDING PUBLIC.

FIRST-RATE ORNAMENTS in ROMAN and other CEMENTS, and PLASTER OF PARIS, at reasonable prices, consisting of Vases, Ballusters, perforated Panellings, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Gothic and other Chimney-shafts, Soffits, Bead-mouldings, Pateras, &c., &c., 36-inch Centre Flowers fixed complete, 24s. each, smaller in proportion. An assortment of Shop-front Trusses always ready for fixing.—JOHN HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane.

W. HUGHES and Co., ORNAMENTAL PLASTERERS, ARCHITECTURAL MODELLERS, &c., Manufacture every description of CEMENT and PLASTER ORNAMENTS for Internal and External Decorations; have a large variety of Trusses and Consoles always ready. Trusses, Vases, Flower Stands, Fountains, Animal, and other Figures for Gardens and Pleasure Grounds, Pediment Scrolls, Ballusters, Trusses for Shop Fronts, Cantilevers, Capitals for Columns and Pilasters, Ballustrading for Balconies, Terraces, &c.; Centre Flowers, Soffits, Friezes, Bed Mouldings, Brackets, Pateras, &c., for Interior work. Builders and the Trade may be supplied with all kinds of Ornamental and Plaster Castings in the shortest notice and the most moderate terms, by applying at the Workshops, No. 1, Brewer-street North, near Sadler's Wells, St. John-street-road, Clerkenwell, London, where specimens can be seen.—Residence, 116, Goswell-road.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the Public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office. By the Court,

STABLE and LUSH, Clerks.

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| 12ft. 9in. 11in. | 12ft. 3in. 9in. | 12ft. 3in. 7in. | 12ft. 2½in. 7in. | Per load. |
|---|---|---|---|---|
| 20 | 15 7 9 | 12 14 6 | 10 12 1 | 3 0 7 |

Thus, if 12ft. 3in. 11in. Plank cost £20 0 0
120 12 „ 9 „ would be.... 12 7 8
120 12 „ 7 „ „ .... 12 14 6
120 12 „ 2½ „ 7 „ „ .... 10 12 1
This is equal to per load ..... 3 0 7

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It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone coating to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires to be painted to colour it. It will keep fresh and well in the room in an hermetically closed number of years. It is the only Cement that can be relied on for use in the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and full on the back of this Label. The Material does not exceed that of the cheapest Cement now in use, but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used it a Cement have declared that it requires but to be known to be universally preferred.

Specimens may be seen, and a Pamphlet fully describing the Cement and its mode of application together with a volume of Testimonials from every part of the kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., Stone AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, Manufacturers of Scagliola, &c. &c. &c.

JOHN'S and CO'S PATENT STONE COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty, and disfigured. It is now the better suited for this purpose than White Lead Paint, worth 40 per quarter, one of its flakes, being proof against any action with Cement; whereas MESSRS JOHNS and CO'S PATENT PAINT having an affinity for Stone, but not with it, supports the action, thereby rendering the weather proof against weather, and the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

TO ARCHITECTS, BUILDERS, AND OTHERS.

**ENCAUSTIC, VENETIAN, BATH,** and other PATENT TILES, and MOSAIC PAVEMENTS, both to obtained in great variety at MINTON and Co.'s Warehouse, 3, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire. — N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GRIVE and DEBELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY. James Smith, Esq., of Deanston, chairman, invite attention to their IMPROVED BRICK and TILE MACHINES, which have been at work at Alperton, and at the Company's office, 193a, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles off the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193a, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. LIGHTS, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penuridge, Staffordshire; and Messrs. DRUMMOND and SONS, Dublin.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

**PERSONS** requiring **LOANS** by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor at the above address.

N.B. To expedite the proceedings, personal application at the office would in all cases be better the party bringing with them the abstract of title, plans, &c.

**LONDON and PROVINCIAL JOINT** STOCK LIFE INSURANCE COMPANY.—The Directors invite the Public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and striking advantages offered by this Office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE FOURTHS of PROFITS divided.—For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No. 18, Nicholas-lane, Lombard-street.

**THE LIVERPOOL AND LONDON** FIRE AND LIFE INSURANCE COMPANY, Established in 1836. Empowered by Act of Parliament. Offices, 8, WATER-STREET, LIVERPOOL; 3, CHARLES-STREET, MANSION-HOUSE, LONDON. The Directors beg to acknowledge the steadily increasing support which this Institution experiences, and to assure the public that, whilst the numerous and wealthy proprietary enables them to offer ample security for the fulfilment of the Company's engagements, the confidence and preference manifested towards it by the assured, for the last three years, is strongly evinced by the fact, that the Premiums, Interest, and Bonuses have been paid by them promptly, liberally, and punctually to the assured, and by liberality and promptitude in the settlement of claims.

BY THE FIRST Act OF PARLIAMENT obtained by the Company, it is expressly conditioned that the liability of the shareholders under the policies shall not be restricted by special contract with the assured.

INSURANCES AGAINST FIRE

Are undertaken on property of every description in the United Kingdom, the British Colonies, and in Foreign Countries, the rates of premium may be known on application.

LIFE INSURANCE.

The Directors continue to receive proposals for the sale and purchase of Annuities, Endowments, Reversions, and Contingent Interests, and for Insurances on Lives. No entrance or admission fees are required, nor is any additional premium charged to officers in the Army or Navy, unless called into actual service. The following are some of the advantages held out by the Company.

TWO SCALES OF PREMIUMS, ONE LOWER THAN THOSE OF MOST OTHER COMPANIES, the other exhibiting GUARANTEED ADDITIONS, or entitling to GUARANTEED REDUCTIONS in the FUTURE PREMIUMS, on a plan, entirely new, and peculiar to this institution.

Specimen of the Rates for an Insurance of 100l. on a Single Life, and of the Reduced Premiums on Policies taken out on the Bonus Scale:—

| Age when Insured. | FOR WHOLE OF LIFE. Without Bonus. Yearly. | Half-yearly. | With Bonus. Yearly. | Half-yearly. | Reduced Premium instead of Bonus. |
|---|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 30 | 2 2 8 | 1 1 11 | 2 8 5 | 1 5 6 | 1 12 9 |
| 35 | 2 8 6 | 1 5 0 | 3 0 6 | 1 6 9 | 1 17 4 |
| 40 | 2 18 4 | 1 9 9 | 3 5 5 | 1 14 8 | 2 2 9 |
| 45 | 3 9 4 | 1 14 2 | 3 17 2 | 1 19 9 | 2 13 0 |
| 50 | 3 19 8 | 2 1 0 | 4 12 7 | 2 7 9 | 2 19 1 |

Specimens of the Addition to the Sums Insured in the case of Policies of 100l. each, to be taken out at the Bonus Premiums:—

| Age when Insured | First Three Annual Payments. | Then Annual Bonus | By the addition of the further Decennial Bonus the amount payable in case of death will be, after 20 Years. | 30 Years. | 40 Years. |
|---|---|---|---|---|---|
| | £. s. d. | £. s. d. | £. s. d. | £. s. d. | £. s. d. |
| 30 | 30 8 4 | 9 0 10 | 127 3 6 | 1342 10 0 | 1904 9 4 |
| 35 | 34 11 8 | 9 9 2 | 128 13 0 | 1487 0 0 | 1945 16 8 |
| 40 | 101 13 4 | 10 3 4 | 1305 0 0 | 1610 0 0 | 2000 0 0 |
| 45 | 107 1 8 | 10 14 2 | 1321 15 0 | 1632 10 0 | 2000 0 0 |
| 50 | 112 12 4 | 11 13 4 | 1350 0 0 | 1700 0 0 | 2000 0 0 |

The Scale of Reductions which are guaranteed ranges from 33 to 52 per cent. on the amount of Premiums, and the Bonus continues not only on the continuance of the life double the amount of Policy.

NO LIABILITY OF PARTNERSHIP, these reductions and additions are derived entirely from Profits.

POLICIES are issued in the Half Premium system, and on an ascending scale.

SURRENDERS or POLICIES are accepted on very liberal terms; and claims are paid within three months after satisfactory proof of death.

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The Directors are prepared to receive applications for Policies, which, though available for many other purposes as well, will have the effect of rendering property held under the lease for years equivalent to Freehold for the purposes of mortgage or investment. The following Table will afford

Specimens of the Annual Premium for the Insurance of 100l. payable after the lapse of a given number of years:

| Years. | Rate. | Years. | Rate. | Years. | Rate. | Years. | Rate. |
|---|---|---|---|---|---|---|---|
| | £ s. d. | | £ s. d. | | £ s. d. | | £ s. d. |
| 50 | 1 15 8 | 75 | 3 17 6 | 60 | 6 10 0 | 40 | 3 17 6 |

A Table is also prepared for the purpose of Annuities for Agencies in Towns and Districts in which appointments have not yet been made. Any applications will be attended to unless accompanied with unexceptionable references.

SWINTON BOULT, Secretary to the Company.

BENJAMIN HENDERSON, Resident Secretary in London.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. Therefore, from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King street, Baker-street, Portman-square. Cash only.

**ORNAMENTAL WINDOW GLASS.**—GEORGE HUDSON begs to inform the Trade, that he can supply them with the ORNAMENTAL EMBOSSED WINDOW GLASS at very reduced prices; and all orders intrusted to him will meet with his best attention, both as regards execution and punctuality. G. H. is constantly adding new and decorative patterns. The Glass Emblazoned to any design, at Goswell street, opposite Wilderness row.

TO THE NOBILITY, CLERGY, GENTRY, ARCHITECTS, &c.

**ORNAMENTAL, STAINED, FIGURE,** and EMBLAZONED GLASS and ENCAUSTIC TILES, by new processes, for Domestic, Ecclesiastical, and Public Edifices.

GEO. WALKER, Paradise-street, Rotherhithe, Stained Glass Painter, respectfully solicits patronage, as he is prepared to execute orders to any extent, and every pattern in Glass, the most opaque Tiles, unaffected by the atmosphere, at the low quotation of 1s. per square foot for Glass, and for Tiles equally low per square yard, according to the colour of ground and the ornament.

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**EDWARDS and PELL,** 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8d. per foot run. Arabesque and Medallion Centres, of the most tasteful patterns, on terms which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**PLATE GLASS.**—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the Thames Plate Glass Company. Liberal discounts allowed on glazing qualities. London Warehouse, 89, Hatton-garden, Holborn. PHILIP CHISTLE, Agent.

N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one half, and three-fourths of an inch thick.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Circy Companies, Paris. The attention of Architects, Builders, and the Trade in general is respectfully solicited to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be had in any dimensions. Applied in for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 28, Soho-square.

**WINDOW GLASS, LEAD, VARNISH,** COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopsgate-street, Without. Lowest price charged for cash.

Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the most reasonable terms.

BRITISH CROWN. BRITISH SHEET.

PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop fronts. Show cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

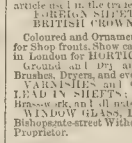
Ground and Dry and Oil Colours of the best quality. Brushes, Dryers, and every article used in the Trade Warranted.

VARNISHES, Linseed, NUTTALL'S WHITE LEAD, RILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water Cocks, Brasses, Brass cock, and all materials used by Plumbers.

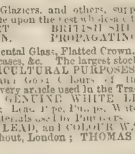
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**CHAS. WM. WATERLOW,**

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of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, sweet prices.—Upwards of 40 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed quoins, well packed for the country. Steam-struck Mould ings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



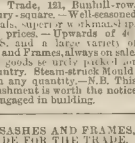
SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

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Beg to inform the Trade, and the Building Public in general, that they intend to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Plain Glazed and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12a, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Patent.

**DR. ARNOTT'S CHIMNEY VENTILATOR.** -F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventiliation of rooms of every description.—Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

The Builder.

No. CCXLI.

SATURDAY, SEPTEMBER 18, 1847.

IN April, 1844, ten commissioners were appointed by Government to inquire into the most eligible situation for a harbour of refuge in the channel,* and in the month of August in the same year, they reported in favour of Dover. In the following year the constitution of the commission was slightly altered,† and they took further into consideration, amongst other important points, the mode of constructing the proposed harbour, and the materials to be used. The commissioners examined many witnesses, and at the commencement of 1846, recommended, in respect of the points we have named, that the inclosure of the proposed harbour should be formed by *a wall nearly upright*, and said masses of brick in cement might be used for it below low-water mark, with granite or hard stone above. The following are the words of the report:—

"Practical illustrations, together with the weight of evidence bearing on the subject, lead us to an unhesitating recommendation of a wall nearly upright, to form the inclosure of the harbour proposed to be constructed in Dover Bay.

With respect to the description of material to be employed, we have had to consider the very serious difficulties arising out of the want of stone of a suitable quality in the neighbourhood of Dover. If granite could be procured of the required dimensions in sufficient quantity, and with ordinary facility, it would undoubtedly be the proper material to use.

Portland and the Channel Islands have been pointed out as the places from whence supplies of stone may be obtained; but both are at a considerable distance from Dover; and the delay that might occur in the supply will be obvious. Several of the engineers have in consequence recommended concrete in blocks, or masses of hard brick in cement, as substitutes for stone; the former on the supposition of its cheapness.

We think, however, there is not sufficient experience of the use of concrete, to warrant its adoption for the faces of works to be constructed in the sea.

We are of opinion that, if stone cannot be readily procured, masses of brick of a proper quality, laid in cement, may be used for all purposes below low-water mark, with perfect confidence in the strength and durability of this material; but that above water, granite or hard stone will be necessary.

We do not enter into any detailed specification of the plan and dimensions of the piers, which will be the duty of the engineer who may be employed. Their breadth will have to be determined by the space required for quays, coaling stations, and for general mercantile convenience. We consider that the interior or hearting may be composed of rubble and concrete; and we would strongly recommend that the work be commenced at as many points as practicable, at the same time."

Two of the commissioners, Sir Howard Douglas and Sir William Symonds, refused to sign this report; the first on the grounds, amongst others, that he considered the building of an *upright* wall in the open sea, in seven or eight fathoms water, was a proposition novel in theory and not proved in practice, on any scale to warrant its adoption, and was decidedly opposed "to the employment of any artificial or inferior material, as a substitute for stone, from mere considerations of pecuniary economy;" those, he thought, should have no place in a great national undertaking, "which, if not to be constructed on sound and well-tried principles, with materials of the best and most enduring descriptions, should not be attempted." He was of opinion, that a breakwater of the proposed elevation and magnitude, rising, with an upright face, from the depth of 42 feet at low water, would be far less capable of resisting the violence of seas than a sloping breakwater, formed in a manner similar to that which has been completed in Plymouth Sound.* The second objector concurred in both these grounds of dissent, and, further, was opposed to Dover as the site of the harbour.

This large work, if carried out, would involve the expenditure of some millions of money, and the efficient execution of it is necessarily a matter of great moment. It is not our present purpose, however, to discuss the soundness of the recommendations contained in the report. The reasons of the dissentients have been printed, by order of the House of Commons, and the matter must of course receive further and most serious consideration. The question of building an upright wall in lieu of a sloping breakwater, must be discussed more profoundly and severely than has yet been done, before the work be attempted.

Throughout the evidence are scattered opinions and information on the subject of concrete and other materials used in construction, and our present object is, simply to abstract these for the benefit of our readers. We take the evidence in the order in which it stands, accompanying the report of January, 1846.

*Capt. Denison, R.E.*, the first witness, in reply to the inquiry—"In the letter written by Colonel Jones and yourself to the Admiralty, you allude to the experience of other nations in the use of concrete for centuries. What are the particular works which afford this length of experience?"—said,—"In answer to that question, I think I had better refer the commissioners to the prize essay by Mr. Godwin, upon the nature and properties of concrete, and its application to construction up to the present time, which was published in the Transactions of the Institute of British Architects. In this work many instances are recorded where concrete was used by the ancients: Vitruvius is quoted, and a variety of others, who have written upon the subject, all of whom testify strongly in favour of this material.

Can you briefly mention the places, and what the works were?—At Richborough Castle, in Kent, many of the walls, which are of Roman workmanship, are filled in with concrete. The foundations of Salisbury Cathedral are laid in concrete; that of the north transept of Westminster Abbey the same; and the walls of some of the fortresses in Spain bear strong evidence to the solidity which a mass of concrete can attain in time; they were found more difficult to breach than walls built of stone, and may be said to have required to be pounded to pieces. Belidor, in his Architecture Hydraulique, strongly recommends this material for foundations."

"Do you know any instance of masses of brickwork, with cement, being used for submarine works in exposed situations?—No, I do not know an instance; but I do not see that there can be any difficulty in constructing them.

And, in fact, you consider them as substantial and as good for the purpose as concrete, except the expense?—Yes: the difference in the cost is my only reason for preferring concrete to brickwork.

(*Sir William Symonds.*)—What is the specific gravity?—The specific gravity is rather less. Concrete weighs about 140 lbs. to the cubic foot, and brickwork about 110.

What is granite and Portland stone?—Granite weighs from 160 to 170; Portland stone about 150 lbs. to the cube foot."

(*Sir Howard Douglas.*)—"You propose to build a perfectly upright wall from the bottom?—Yes.

With concrete *blocks* up to low-water mark?—Yes.

And you have no doubt that concrete will resist the action of the water below, and that it will not be undermined nor worn away by the shingle which would roll along the foot of the wall?—There is no rolling with a vertical wall.

You have no doubt that it would not be undermined by the action of the current, but that it would stand; and you would bring up the concrete wall to low-water mark?—Yes; and above that I would build it with granite.

You have no doubt of the power of concrete to bear that immense superincumbent weight?—I have no doubt, both from my own experience and the experience of others.

You are prepared, as an engineer, to recommend this use of concrete?—I am.

What are the ingredients?—I think the best material we can have is the gravel with sea beach, if it contains a sufficient quantity of sand; this should be mixed with the best hydraulic lime we can get, in the proportion of ten or twelve of gravel to one of lime; and with the view of causing it to set more speedily under water, a proportion of puzzolana should be added, varying in quantity according to its quality; half the quantity of puzzolana that there is of lime will make very hard sound concrete, which will set rapidly; and in cases where it is desirable that it should set very quick, the quantity may be increased till it equals that of the lime.

Those are pretty nearly the proportions of the ingredients that have been used for some time?—Pretty near; there is an increase in the shingle; there is less lime in proportion to the shingle, and a proportion of puzzolana is added."

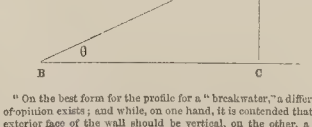
The concrete wall at Woolwich had bearing piles, "because the foundation was mud and peat. The sheet piles were 10 feet apart, and were connected from distance to distance by iron ties. Concrete was then thrown in on the soft mud; it was thrown in *en masse*, till it came up to the level of the wall, and upon that foundation the blocks of concrete were built, and concrete again filled in in the rear of them. That wall is now quite hard. The foundation part, which was thrown into the water, is quite hard. I had occasion, three or four years ago, to cut into it, and I found it quite hard. I have built a large chimney, 210 feet high, at Woolwich. The weight on the foundation is at least 3,000 tons; the foundation is a stratum of concrete upon chalk, and the weight is fully three tons upon the foot superficial."

"With reference to this wall (Woolwich), I did doubt its durability; I thought it was soluble in water, that the constant action of the water would act chemically on the mass, and wear it away.

* Admiral Sir Byam Martin, Chairman, Lieutenant-General Sir Howard Douglas, Bart., Rear-Admiral Deans Dundas, Sir J. H. Pelly, Bart., Captain Sir W. Symonds, Captain Washington, Lieutenant-Colonel Colquhoun, Lieutenant-Colonel Alderson, Captain Fisher, and Mr. James Walker.

† Captain Beaufort and Captain Brandreth took the places of Captain Fisher and Mr. Walker.

* "The application of the theory of the resistance and impact of fluids is no doubt attended with great difficulties and anomalies in this, as in many other cases connected with natural philosophy; but whatever results have been derived, either from theory or observation, they all agree in this, that the horizontal impulse of a fluid on any resisting body is increased, in a very high ratio, as the inclination of its surface (AB) to the direction (BC) of the motion increases. The fundamental theorem is, that this varies as (sin. $\theta$)$^2$ ($\theta$ representing the inclination), because the height of the breakwater continuing the same, the quantity of fluid impinging on it will be the same at all inclinations. If the height of the breakwater were variable, the whole impetus would then be as (sin. $\theta$)$^3$, because in this case, not only is the force of each particle diminished in proportion to (sin. $\angle\theta$)$^2$, but the number of particles which impinge on the plane varies as sin. $\theta$."




"On the best form for the profile for a "breakwater," a difference of opinion exists; and while, on one hand, it is contended that the exterior face of the wall should be vertical, on the other, a face inclined to the horizon is recommended. The advocates of the former construction seem to consider that such a wall is subject only to the hydrostatical pressure of a fluid at rest, or that the agitations of the water before it, take place only in vertical directions; but neither of these conditions holds good in Dover Bay, or wherever, by the force of winds and currents, the waves are impelled with violence against the shore. That loose stones constituting a breakwater, when deposited so as to form an inclined plane, should be occasionally displaced by the action of waves is sufficiently obvious; but that, with equal quantities of material, a vertical wall should resist the concussions produced by such action, as efficaciously as one with an exterior slope, is inconceivable," says the dissentient.

sandstone, about ten inches thick, chamfered on the edges, and bonded in courses into the wall. At about 4 feet above the floor, the jaumbs are corbelled out in two courses, and from these corbels the arched mantle springs. Where the jaumbs project from the wall, the corbels, in order to give it strength, are returned anglewise into the wall, as the sketch below may explain.




The entrance from the outer to the inner court is flanked by a loop-holed bartizan, and is secured by a double-barred door.

On the south side of the inner court is a building of two storys; the upper story in one apartment 29 feet by 22 feet, lighted by two square-headed windows, with tracery. The roof has been supported by a stone-arched rib, similar to those in the hall. From this there is a communication with other buildings on the south and east of the court, forming, with the two eastern towers called "Twr y Brenhin," or the King's Tower, and "Twry Ferenhines," or the Queen's Tower, a commodious suite of apartments. These towers are three storys in height, besides the cellars. The eastern end of the castle abuts upon an esplanade or terrace, about 90 feet by 50 feet, raised about 40 feet above the bank of the river, and protected by three towers and an embattled wall. In this front, the windows being comparatively out of danger, are much larger than elsewhere. In the Queen's Tower there is formed in the thickness of the wall a beautiful little chapel, with a groined roof, lighted by three single-light lancet windows, with surbase arches and sedilia round. The manner in which the lights in the multangular sides of the chapel are managed so as to harmonize with the circular form of the tower outside, is ingenious and worthy of notice.

The towers abutting on the outer court are much alike in their general arrangement. The basement story has been used either as a prison or a deposit for stores, the fastenings having been on the outside. The upper storys have been occupied as dwelling apartments, having each windows and huge fireplaces. Each tower has a commodious spiral staircase. On each landing there is a passage pierced in the thickness of the wall, leading to a water-closet, or what would now be termed such, the funnels of which discharge outside the castle walls, near the bottom. The numerous provision of these necessary conveniences is rather remarkable for the age. Even on the walls of the town there are several remains of similar structures, evidently part of the original construction of the masonry. From each staircase there is access to the battlements of the walls, which form a commodious promenade round the entire building, being carried round the inner projection of the towers on corbels. The roofs of the hall and other buildings have been on the same level with the battlements, and being flat and covered with lead, would form very useful platforms in cases of emergency.

The towers are carried up about fifteen feet above the curtain walls, finished, like the walls, with a parapet, loop-holes, and embrasures. The four towers at the angles of the inner court have the inclosure of the staircases carried up about fifteen feet higher, forming turrets or watch towers, crowned with a plain parapet and coping, supported on projecting corbels forming blank machicolations.

With the exception of the suite of apartments in the inner court, the towers and the hall are quite detached, having no communication with each other except from the court or the summit of the walls. The curtain walls are about 11 feet thick, pierced at intervals with arched recesses, with benches round and loop-holes for archery. The walls of the towers and the hall are about 12 feet in thickness.

The principal material used in the construction is the slaty rock on which the castle stands. Limestone is also introduced to some extent. The walls are rubble, but beautifully executed, the face being as smooth and true as any ashlar wall could be, the larger stones well fitted together by smaller ones, the joints remarkably close, and the stones all laid on their natural quarry beds. The curved line of the circular work is worked very true. Many of the coins, some of the arches, and the whole of the tracery, have been executed in siliceous sandstone, which must have been brought from a considerable distance, as there is none in the neighbourhood. Some of the coins are of hewn limestone. Much of the sandstone is honey-combed where exposed to the weather, though in other parts the stones still preserve their masons' marks. The mortar is of very good quality, though not so hard as might have been expected. In the interior of the walls it seems to have been applied in the form of grout, or rather of thin concrete, by the quantity of gravel with which it is mixed.

The strength of the work has been put to a severe test, by some injudicious excavations which have been permitted on the south side. One of the towers having been undermined, the lower portion has fallen away, leaving an awful chasm, whilst the upper portion still remains apparently suspended in mid air.

With the exception of the covering of the roofs, the floors, and the doors, no timber whatever has been used in the construction. The apertures are in general arched over, but with the exception of the little chapel mentioned above, no vaulting or groining is observable through the whole edifice.

In surveying the building generally, we cannot help feeling struck with the evidences of studied preparation and careful superintendence which the work every where exhibits. Every architect knows or should know, that when the details of a building—not merely the exterior but all the internal fittings—have to be carried out in masonry and built in as the work proceeds, not lined up afterwards in the manner of plaster and joiner's work, the utmost precision and the most careful forethought are required. In the present instance the details exhibit a care and accuracy worthy of all imitation.

The walls of the hall and the inner buildings generally, are not tied into the walls of the *enceinte* which appear to have been first completed, and the inner buildings carried up afterwards.

Mention is made in the guide-books of a sally-port and a subterraneous way cut through the rock and opening on the brink of the river. If such a passage ever existed, all traces of it have disappeared. There is a sunk area in the outer court, about 15 feet square, walled round and partly filled with rubbish; it has probably been a water conduit.

The plan of the town walls forms a triangle, with a small part of the apex cut off. The circuit is about two miles. The walls are of the same period, and constructed much in the same manner as the walls of the castle. Far different from the walls encircling the ancient city of Chester, the only other complete mural circuit remaining, which are a patchwork medley of all ages and constructions, the walls of Conway are uniform in their construction and design. Reparations have doubtless taken place, but in perfect accordance with the original plan. They are 6 feet to 7 feet thick, and from 15 feet to 20 feet in height, crowned with a parapet, with embrasures and loopholes. In some places where the wall is particularly exposed, the upper part is machicolated. The wall is defended by semi-circular buttress towers, about 15 feet in diameter, rising about 12 feet above the top of the wall, placed at intervals of about 30 yards. The various flights of steps for obtaining access to the walls and the pathway along the top are still perfect. The walls rise and fall with the inequalities of the surface, which are considerable; but in all cases the courses of wall-stones are set level, and are cut to the slope at the bottom of the parapet, where thin courses on the slope are introduced to form the platform.

The original entrances to the town are three in number. Port Uchaf, or the upper gate; Porth Isaf, or the lower gate; and Porth y Velin, or the mill gate. To the left of the gate the wall exhibits the machicolations above alluded to. In addition to the three principal gates, there are two or three posterns. On the side next the harbour the wall is continued along the bank of the river, and at the two extremities a curtain wall is carried out, terminated by a tower at the water's edge.

The town, internally, contains few objects of interest. There are a few half-timbered houses, and a rather large edifice of the Elizabethan period, now sub-divided into cottages, but presenting no remarkable features. The church occupies part of the site of an ancient Cistercian monastery, but in itself contains nothing peculiar. The little church of Cyffin, about half a mile outside the walls, contains some curious distemper paintings on the walls and ceiling, but in a sad state of mould and dilapidation.

The suspension-bridge over the Conway, and the new road constructed by Telford and completed in 1826, have greatly improved the facilities for travel in this direction. Of the engineering part of the work we will not speak, but in regard to the harmonious connection of the new work with the old, and the preservation of the venerable association with other times intact, too much cannot be said in its praise.

The piers and masonry of the bridge group admirably with the hoary towers of the castle, and when, sweeping round the base of the castle rock, we demand admission into the town, a grated portcullis (or a gate resembling one) under an arch flanked by an "ivy-mantled tower" opens for our admission. At the other side of the town, also, it was necessary to open a new entrance for the improved road. This has been effected under one of the buttress towers without removing the upper part of the masonry, and the arch inserted, though semi-circular in form, in detail, works in well with the old portion.

We should be extremely glad to bestow the same meed of praise on the railway works now in progress, but truth and candour will not admit of it. The piers of the intended tubular bridge were not sufficiently advanced to enable as to judge of their design, but if they are the work of the same artist who has designed the other structures connected with the railway hereabouts, we should not be very sanguine as to the result. The railway passes on an embankment over the road to Llanrwst, immediately outside the wall of the town. The bridge or viaduct is a very flat four-centred arch with square soffit, and faced with channelled rustics! A little further on, the railway pierces the wall, and enters the town under a yawning misshapen four-centred arch of most barbarous detail. The architecture is, in fact, of that delectable description known by the soubriquet of Batty Langley, or cabinet-maker's Gothic. Surely it is not necessary in the construction of a railway that taste and consistency in design should be outraged or despised.

In the erection of stations, architects have sometimes been employed, and many of our railway stations present pleasing compositions. Why should not a little of the same assistance be sought for in the designs for the engineering portions of the work? Until the architect be associated with his brother professor in extensive works of this description, we fear that notwithstanding all the efforts now in progress to diffuse the principles of correct taste amongst the community at large, they will be entirely counteracted by the equally rapid diffusion of tasteless and unsightly, though imposing and expensive objects. J. A. P.

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THE IRON TRADE IN FRANCE.—The *Moniteur* contains the following data on the produce and manufacture of iron in France:—"There is not," it says, "a branch of industry occupying more labourers than that of iron. The number engaged in the mines and works are estimated at 51,000. The other individuals employed in carrying the metal, and in various external works, being as numerous, the iron industry affords labour to at leat 100,000 men. The produce in 1845 exceeded 166,000,000 francs. To that human force must be added 2,047 hydraulic-engines, and 207 steam-engines, representing together a power equal to that of 26,504 horses. The number of steam-engines was only 109 in 1840, so that it nearly doubled in five years.

THE TOMB OF A SCIPIO.—We read in the *Impartial* of Franche-Comté, that in digging for the foundation of the Arsenal there, many remains of Roman construction have been found, and of a vast cemetery. A portion of one sepulchral monument bears this incription, "*P. Cornelius Scipio*," and has set the local antiquaries to work.

## THORWALDSEN'S LIFE—SKETCHED BY H. E. ANDERSEN.

DERIVED FROM THORWALDSEN'S OWN ACCOUNTS.

The life of Thorwaldsen unrolls one of the fairest pages of art's history, resembling the image of a triumphal procession, in which success and victory, and the full recognition of men, are blended in one fair *ensemble*. Such can be sketched either by words or forms. If we had to compass this biography within the limits of sculptured images, we would trace three distinct *medallions*—one representing a dense Danish beech forest, where King Harold Hildetand (his rich hair encircled by a thick ring of gold) receives the prophetic *omen*, that one of his grandchildren would reign from south to north, and his name be recorded in the annals of men—which, in fine, has been accomplished in the domain of art, in the general homage paid to the Danish sculptor. The intermediate medallion would represent Oluf Paa, a mighty Danish chief, whose art-taste is even praised in the songs of ancient northern bards.—Through the long lapse of generations, features and usages of men are often preserved and refulgent, and thus the mind of Oluf Paa seems to have been inherited and potentized in Bertel Thorwaldsen. And thus, we stand at the portal of a biography—whose inscription is art and complete success.

It was on the 19th November, 1770, that Bertel Thorwaldsen was born, in little Green-street, Copenhagen, not far from the Royal Academy. His father exercised the calling of a form-cutter in wood, his mother was the daughter of a parson, and the family had come from poetic Iceland; all which had its due influence on the rising thoughts and propensities of the future sculptor. The first thing, however, by which the active mind of Bertel was excited, was a rather trivial subject—we mean his mother's spinning-wheel. The Danish poet depicts, with his usual vivid colour, a scene, when the little child did not rest, until (one fine moonlight night) he had a trial at this, to him, mystical machine. A few years since, only, yet lived an old ship's carpenter, who recollected the blue-eyed, fair-looking boy, who came to his father in the carving house, at the wharfs of Copenhagen, to learn the trade. But the intelligent parent felt, from his own deficiency, the great importance of drawing, and thus the lad was sent, at the age of eleven, to the *free school* of the Art-Academy; and in two years had made such progress, that he could not only assist his father, but even correct his rough and unwrought forms. Thus, Thorwalsden's first works were the figure-heads of Danish galleons—"the ever-moving sea baptized them with its brine-waters, and a wreath of Oceanic plants was playing about them." Thus, Bertel remained six years in the free-school of the Royal Academy, mixed among the crowd of others, yet distinguished by his word-spare and intense application at the drawing-board, while his companions poured forth the poverty of their ideas in vain and idle gossip. But there was nothing severe or repulsive in this silence—mildness was in his looks, well-meaningness in his whole behaviour. When seventeen years old, he was confirmed, at which holy rite a curious incident occurred. There was nothing external to distinguish him from the other youths. But it had been stated in the papers, that the pupil Thorwaldsen had gained the small silver prize-medal at the academy, and so the dean asked him: "Is it your brother who won the prize?" to which the lad proudly replied: "It is myself." So, the Very Reverend looked at him pleasingly, and then called him *Mr. Thorwaldsen*. He often used to relate in after life, that this first title bestowed on his art, gave him more pleasure than all the distinctions, kings afterwards showered upon him.

At this time, Thorwaldsen lived in a little house in *Aabenraa*, the street which Holberg makes the abode of poor poets. The smaller gold medal of the R.A. was to be won by a pupil in sculpture—the subject, "Heliodorus expelled the Temple." It was in the Royal Palace of Charlottenburg, in a small chamber, where Thorwaldsen worked at his sketch;—but seized once by the mistrust in himself and apprehension (often the concomitant of true and sincere talent), he left his work in despair, resolved no more to return to it. "But in the life of a man of genius nothing is adventitious—the apparent trifle, the leading hand of a higher divinity." On one of the small stairs in the rear of this house, he was met by one of the professors, who speaks to him, examines him closely, admonishes him to *return*. He does so; and in *four hours* the sketch is done, and the medal won (15th August, 1791). Count Reventlow, Secretary of State, saw this work, and became Thorwaldsen's patron; he procured him employment, and put his name at the head of a subscription for procuring the young man leisure for his studies. In two years more, the large gold medal was won, and thereby a *travelling pension*. But Thorwaldsen very properly decided on going *to school* for the next year, and to acquire some of those literary attainments indispensible to an artist. His leisure time, especially the evenings, he passed convivially with men like Rahbek and Steffens, both, as himself, renowned in after life. At this period, a dog also was his constant companion, to be mentioned on the account of Thorwaldsen having preserved his memory in a marble statue.

It was in the year 1796, that he started for Rome in the frigate *Thetis*, R.N., which parting was painful on his side, as he loved then a beautiful girl. He did not see her again till many years afterwards—he, the first artist of the land, she a widow. But when the almost royal pageant of his funeral passed the streets of Copenhagen, an old lady of the tradesman's class was seen sobbing bitterly at an open window. This was *she*.

In those war-times, the voyage was a very adventurous one, the *Thetis* touching Algiers, Malta, Tripoli, and Palermo—all which scenery and imagery imparted expansion to the young artist's mind. Thus, in February, 1797, he landed at Naples. Alone, without a friend, not knowing the language, despair nearly seized him, and he sought for a ship to return home!—but he persevered, and arrived on the 8th of March at Rome, a day celebrated (wrongly), for a long time, as his birth-day. Thorwaldsen had been introduced to the Danish art-critic *Zoega*—who, however, thought him possessed only (like himself) of ordinary talent. Even after three years acquaintance, Zoega still said: "There is much to be blamed—little to be praised; and he is not even industrious." Still, this was the time of which Thorwaldsen said afterwards: "That the ice was melting before my eyes." It was especially Carsten's drawings which much illumined the young sculptor's mind. But his little *atelier* resembled often a battle-field—full of broken and scattered bodies and limbs. His inspirations came often at night, and then he modestly and strivingly destroyed again in the morning, works which would not bear the inspection of the great luminary of day.

Three years had thus elapsed, and *nothing* had been done; the period of departure approached, and the reproach, "That he had absolutely wasted his time in Rome," heavily preyed upon Thorwaldsen. In despair, he modelled "Jason *winning* the golden fleece." There stood the figure modelled in clay—many *gazed* at it—indifferently, and Thorwaldsen smashed it to pieces. He had in April, 1801, to return with Zoega home; but accidents delayed it until autumn. Still, Jason had taken hold of his whole soul; a new, a larger statue of the hero was formed—"an immortal work." But it was not until the crowd began to say: "Here is something more than usual," that he took confidence in himself; and then came Canova, at that time in the prime of fame, and said: "This work of the Danish youngster is made in a novel and grand style." This made Zoega *smile;* he ought rather to have repented.—The greatest aid, however, came to Thorwaldsen from the Danish poetess, *Friedrike Brun*, who not only eulogised Jason in rhyme, but gave the young sculptor (without funds then), money, to have his work moulded in plaster of Paris." Still, the trunk was packed, the last goblet of wine drunk at the parting feast—the vetturino at the door at dawn of day. But another *accident* (?) happened, and Thorwaldsen had to stop one day longer at Rome—but this day *decided a life*. At that period Great Britain had battered down the Danish capital, despoiled it of its fleet—but it was a Briton also, who was instrumental in making the Danish name triumphant in art. His name is *Thomas Hope*. The footman in the hotel had told him, that Canova had spoken of *Jason*, as 'Una opera grandiosa,' and thus Hope came to the lumber atélier, which Thorwaldsen was about to leave for ever. The hero was unveiled, and Hope agreed to give 800 zechines for a copy in marble, although Thorwaldsen had only asked 600. However, by some reason or other, Mr. Hope had to wait twenty-five years for his marble statue—still, Thorwaldsen was *now* a man of fame.

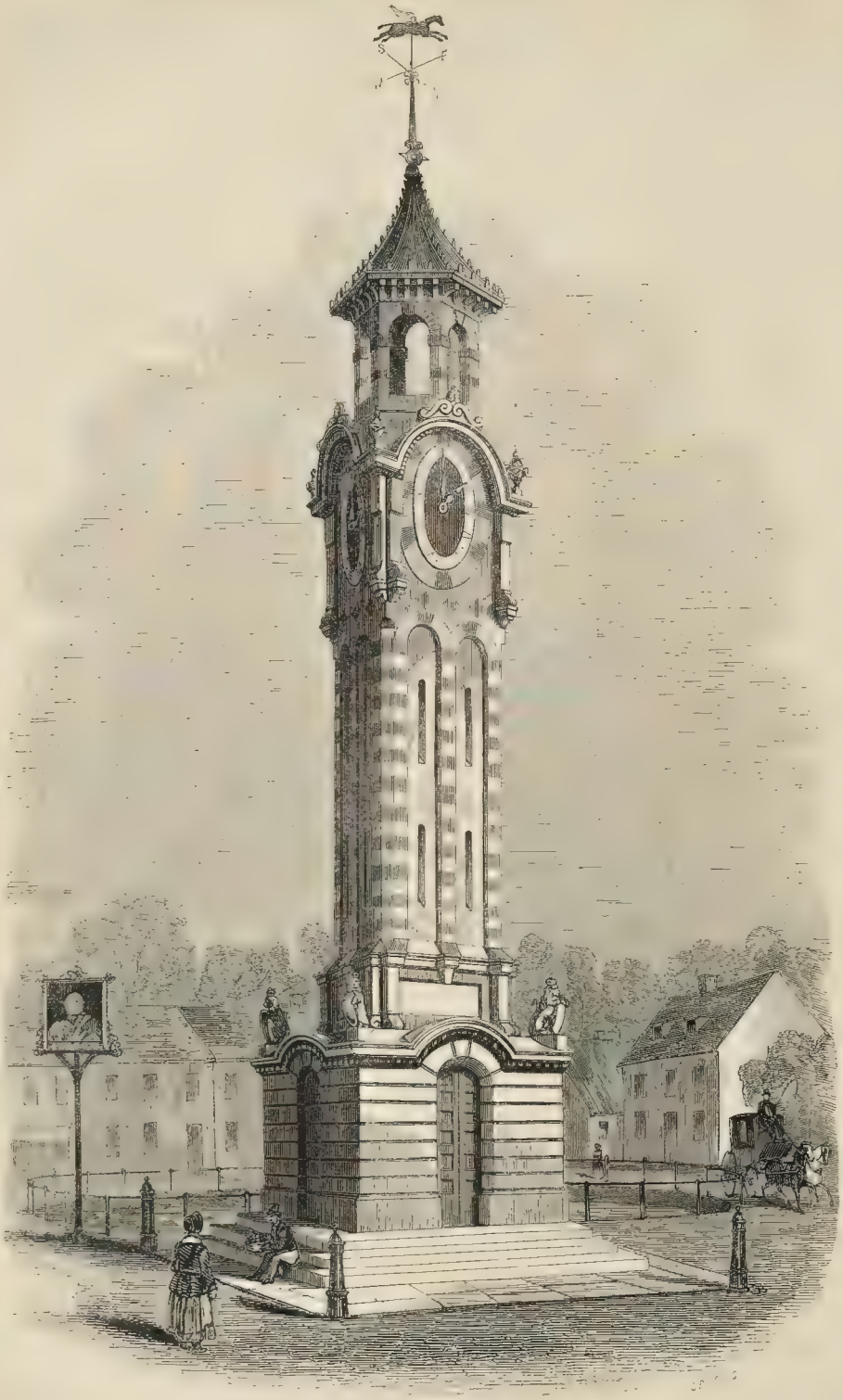
But on thus becoming the favoured of fate, his mind was at times sombre, nay *more* than that. The sun of Naples could not cure him—but finally this was done by friendship and fostering care in the fine Villa Montenero, near Leghorn, belonging to Baron Schubart, Danish Chargé d'Affaires in Tuscany. Thus, health returned to his veins, quiet in the mind, and thus his villaggiatura at Montenero is pourtrayed (and recorded for history) in the two basso-relievos: summer and autumn. Nobles and artists surrounded him here, recognition and admiration on all sides. *The Dance of the Muses*, also, was here carried out in marble—as well as *Amor and Psyche*. That group stood fully completed in the château; a hurricane rises, the lightning strikes and smashes all other figures—save Amor and Psyche. There was some omen in this! Equally favouring was the sea on another occasion—his *Venus with the apple* was saved unscathed from out of the waves, after the news of the wreck of the vessel had arrived in England, where it was destined to come. Rich years of worthy works now rolled on—orders for the royal palace of Copenhagen, the town-hall, &c. Norway being then united with Denmark, the present king (then Prince Christian), wrote in 1811, to Thorwaldsen, that a quarry of white marble had been discovered in the former country, and invited him to come and to "shape the sturdy rock into breathing form, and to pour life-like appearance into its veins." But an important work at Rome came to prevent him for a while—the intended imperial palace for Napoleon on the Quirinal Mount. There were several rooms, where, on all four walls, ample, and as it were, an especial space had been left for basso-relievos; but none thought of the Danish sculptor—about to proceed to his native home. Time pressed on, not a day was to be lost, as the emperor was expected to arrive in May following. In this position of things the architect, Mr. Stern, who conducted the whole construction, chanced to sit next to Thorwaldsen in the academy of St. Luca—and made him there the extempore proposal, to make a frieze of plaster of Paris, *twenty-nine* Danish yards long. But the condition was, that the work was to be finished in three months!! The man kept his word—and '*the triumphal march of Alexander*' issued from his atelier.*

The fame of this work spread over all Europe—in Denmark it rose to enthusiasm. A public subscription was made to obtain a copy in marble: it was ordered by Government.

Thus Thorwaldsen remained in Rome. But another syncope of inactivity (the last, after all), broke over him. Drowned in an unexplained melancholy, he walked about, a shadow of his former times. "In the morn of a splendid hesperian day, after a night spent without sleep, he sat himself instinctively before his wood-frame, placed the wet clay over it, and in an instant his famous basso-relievo, '*The Night*,' was struck out. And as he worked at this inspiration, the dark mist of his mind vanished away; it became day-clear—sun-refulgent day; a joyous serenity, which never afterwards left him." During the course of that day, a Danish friend found him cheerfully playing with his dog and cat (Thorwaldsen being very fond of these *beings*) before the completed relievo. On the same day the moulder came to take it away with him to his workshop; but then Thorwaldsen had already worked, or rather *sorcered*, at his "Day," and said to him, "Wait a little, then both can be moulded together." Thus in one day two immortal works were completed.

[Here *Andersen* concludes the narrative of the art's-apprenticeship of his late friend—that period most instructive and stirring for the art-student;—the after events of Thorwaldsen's life being sufficiently recorded in the current works of biography.]

* Of this stupendous scroll of basso-relievos, three copies were subsequently made, besides the Quirinal sketch. The Sommariva one—the Quirinal corrected and completed—and that for the Christiansberg Palace, at Copenhagen.



CLOCK-TOWER AND ENGINE-HOUSE, EPSOM.

MESSRS. BUTLER AND HODGE, ARCHITECTS.

## GEOMETRY OF THE SQUARE.

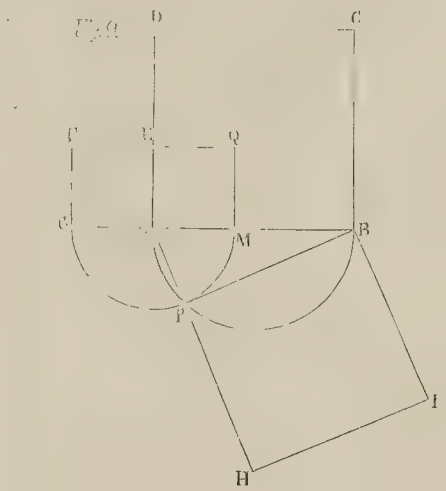



Fig. 10.

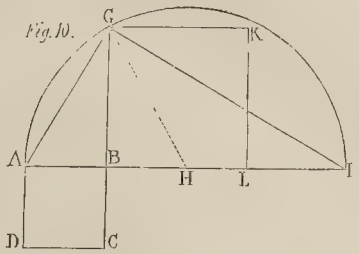
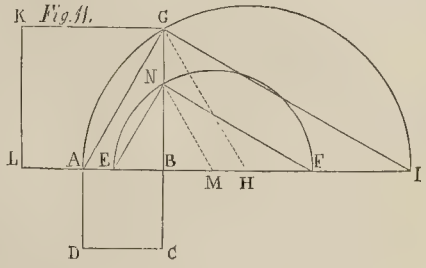



Fig. 11.




### CLOCK TOWER AND ENGINE-HOUSE, EPSOM.

On August 2nd, an advertisement appeared in our columns inviting architects to submit designs for the above. From those which were sent in the committee unanimously adopted one by Messrs. Butler and Hodge, of London, an engraving of which we give above.

The extreme height of the tower is about 70 feet, and the openings for the dials are 4 feet 6 inches in diameter. It is to be built of red and Suffolk bricks, the external faces rubbed and finished fairly. The four lions, each bearing shields charged with the arms of the principal noblemen in the locality, and the carved portions, pedestals, &c., are to be of Caen stone. The polychromatic effect of the materials and general proportions promise to make it a conspicuous and agreeable object.

We did not see the other designs.

### GEOMETRY OF THE SQUARE.*

Problem.—*To construct a square that shall be equal in area to the difference between two given squares; that is, to subtract one given square from another, and to convert the difference into a square.*

*Example.*—Let ABCD and AEFG (fig. 9) be the given squares; it is required to subtract the lesser square, AEFG, from the greater, ABCD, and to convert the difference into a square.

*Construction.*—Place the squares in immediate juxta-position with a side of each in the same straight lines, and upon AE, the side of the lesser square and within the greater, describe the square AEQM, and the intermediate space BCDEQM will be the difference between the given squares, and that which the problem requires to be converted into a square.

Upon AB, the side of the larger square, describe the semi-circle APB, in which, from the point A, inflect the straight line AP, equal to AG or AM, the side of the lesser square, and join BP; then is BP the side of a square which will contain the same area as the intermediate space BCDEQM. On BP describe the square BPHI, and the thing required by the problem is done, for the square BPHI is equal in area to the space BCDEQM contained between the squares ABCD and AEQM.

*Demonstration.*—Because the angle APB is the angle in a semi-circle, it is a right angle, and, consequently, by the property of the right-angled triangle, the square described upon the side AB, which subtends the right angle, is equal to the sum of the squares of the sides AP and BP containing it; but AP is equal to AM, and, therefore, the square of AB is equal to the sum of the squares of AM and BP; that is, the square ABCD is equal to both the squares AEQM and BPHI; from each of these equals take away the square AEQM, and the remainder BCDEQM will be equal to the square BPHI; consequently, the difference between two given squares has been converted into a square of equivalent area, as required by the conditions of the problem.

Problem.—*To construct a square that shall be equal in area to any proposed multiple, or any number of times a given square; that is, to convert a given square into another that shall contain its area any proposed number of times.*

*Example.*—Let ABCD (fig. 10) be the given square, of which the side is AB; it is required to convert the square ABCD into another that shall contain its area any given number of times—say three times.

*Construction.*—Produce AB, the side of the given square, directly forward to I, making BI equal to three times AB, or any other number of times AB, by which the given square is proposed to be multiplied. Bisect AI in H, and on H, as a centre, with the radius HA or HI, describe the semicircle AGI, meeting CB, the side of the square produced in G; then is BG the side of the required square. Upon BG, the side of the square thus found, construct the square BGKL, and it will contain an area equal to three times the given square ABCD.

*Demonstration.*—We have to prove that $BG^2$ is equal to $3\ AB^2$; and for this purpose draw the straight lines AG and IG; then, because the angle AGI is an angle in a semi-circle, it is a right angle; and since GB is perpendicular to the diameter AI, the triangles AGB and GBI are similar to one another, and, consequently, their corresponding sides are proportional; that is, AB : BG :: BG : BI; but BI is equal to three times AB by the construction; therefore we get AB : BG :: BG : 3 AB; and by comparing the products of the extreme and mean terms, we obtain $BG^2 = 3\ AB^2$, so that the truth of the construction is manifest.

*Note.*—There is another mode of finding a square, that shall be any proposed multiple of a given square, in very common use among practical men; but this method is greatly superior in point of facility, as we can obtain any proposed multiple directly, without having first determined the intermediate multiples; it is therefore recommended as being more convenient in practice when the multiple is a high number, and also as involving a principle which is not apparent by the other method.

Problem.—*To construct a square that shall be any sub-multiple of a given square; that is, to divide a given square into any proposed number of equal parts.*

*Example.*—Let BGKL (fig. 11) be the given square of which the containing sides are BG and BL; it is required to divide the given square BGKL into any number of equal parts—*say three equal parts.*

*Construction.*—On BL, the side of the given square, take BE of any magnitude at pleasure, either greater or less than BL; produce LB to I, and on BI set off as many times BE as the parts into which it is proposed to divide the square; in the present example three parts. Now since BE has been taken less than BL, the side of the given square, three times BE set off towards I will reach to F: on M as a centre, and with FE as a diameter, describe the semicircle ENF intersecting BG the side of the given square in N, and draw NE, NF; then will BE be the side of a square which contains one-third of the square upon BN. Join NE and NF, and through the point G draw GA and GI respectively, parallel to NE and NF, and meeting the straight line LI in the points A and I; then shall AB be the side of the square sought, and ABCD the required submultiple of BGKL.

*Demonstration.*—By the principle employed in the construction of the last problem, BN is the side of a square containing three times the area of the square upon BE. But the triangles ENB and AGB are similar; therefore it is, as BN : BG :: BE : BA; and for the

* See pages 369 and 279, *ante.*

same reason $BN^2 : BG^2 :: BE^2 : BA^2$; but $BE^2 = \frac{1}{4} BN^2$, and consequently $BA^2 = \frac{1}{4} BG^2$, so that the truth of the construction is obvious.

There are many practical cases in which these problems, in reference to the multiplication and division of squares, may be very usefully applied, especially by those who are not conversant with the operation of extracting the square root in numbers; but even in cases where the operator is perfectly familiar with the numerical process, the geometrical delineation is to be preferred, as being more convenient for ultimate purposes; it is therefore, in these and similar cases, that the constructions which we have given above will find their application, and when the process is performed with care and with good instruments, the results may always be obtained with a sufficient degree of accuracy for every practical purpose. And moreover, the ease and facility with which the construction is effected, is a high recommendation of this method of resolving the problems, for in every instance the whole process is performed without the slightest degree of mental exercise beyond the necessary attention required in using the instruments.

## TRIAL OF THE DEE BRIDGE GIRDER.

Our own correspondent writes from Chester as follows:—After waiting patiently for some weeks, the fellow girder to the one broken by the accident at the Dee-bridge has been tested, and the result proves the correctness of the evidence of Messrs. Robertson, Robe, and others, and the verdict of the jury.

The proof took place early in the morning of the 8th instant, and was witnessed only by the officers of the Chester and Holyhead Railway Company, no one connected with either the Shrewsbury and Chester Railway Company, or the City of Chester, being present on the occasion.

It was generally thought, from the time that had elapsed since the girder was removed from the bridge and placed upon the temporary supports on the Saltney abutment, that it was waiting the inspection and test of a Government commission (which we observe has only just been appointed by her Majesty), but it is presumed that as they entertained doubts upon the strength of the girder themselves, the proof took place on the eve of the appointment of that commission. It was accomplished with railway bars (seventy-five tons having been brought to the spot for that purpose) suspended from the girder, and the weight was gradually applied and equally distributed over the centre division of the rib (each girder, as our readers are aware, being composed of three divisions or castings), until it reached 38 tons 6 cwt. 2 qrs. 18 lbs., under which it broke. The fracture commenced at the bottom flanges, and proved clearly that it broke by tension. This experiment at once shews the fallacy and utter uselessness of the tension bars in the manner in which they were applied at this bridge.

It is a remarkable circumstance, that notwithstanding the host of engineering talent brought forward to support the theory of the *side blow* asserted with so much earnestness to be the cause of the accident, and which from the support it received had nearly carried conviction to the minds of the coroner and jury, no attempt has yet been made to protect the remaining ribs from similar calamitous *side blows*, but piles have been driven in the bed of the river Dee to support the roadway underneath, from which circumstance we will leave our readers to draw their own conclusions.

The same thing has been done at the bridges on this principle on the Trent Valley Railway. It must be admitted that the works of the Chester and Holyhead Railway are executed in a very unsatisfactory manner, for in addition to the bungling at the Dee Bridge, which "bangs Banagher," they are now taking down the girder bridge over the Chester and Ellesmere canals of 60 feet span, in consequence of some fractures being observed in the masonry at the quoins of the abutment upon which the outside girders rest. The abutments of this bridge are composed of the very soft red sandstone of the district, which is totally unsuited for works that are intended to be of a strong and substantial character, as a mere casual inspection of many of the public buildings of Chester amply testifies.

We warn the Government to see that the works of this railway are minutely inspected by shrewd practical *civil* engineers, before the opening of the line (as from these two failures we may fairly infer it is urgently required); their responsibility will be great should another catastrophe similar to the Dee bridge accident occur, and it is not a mere superficial inspection, such as generally takes place before the opening of railways, that will satisfy the public mind in this case, even if it ought to do so in others. The numerous accidents that occur from the defective works of railways, require greater vigilance on the part of the Government, if not legislative interference.

## ART FOR THE PEOPLE.

Considerable improvements are going on in Windsor Castle, and it is understood that, at the request of her Majesty, a further portion of the palace will be opened on the public days, including many fine works of art not now exhibited.—There is no doubt that the rumour which we first announced, that the paintings in Buckingham Palace will be opened to the public on certain days is correct.—On Friday last including the evening, more than 17,000 persons visited the Art-Union of London Exhibition, without the occurrence of a single accident or injury. The crowding was, of course, very great, and the officers of the society had hard work for many hours in keeping back the visitors and admitting them in detachments, as others left the rooms by another way. This would be avoided if the subscribers would avoid postponing their visit till the last week. For the first fortnight during which the exhibition was open, the rooms were comparatively clear. The various works of art have since been taken away by their respective owners, and the rooms are being fitted up for the schools of art about to be established by the Society of British Artists.

The fine exhibition of paintings in Westminster Hall is drawing to a close, and fears are entertained and loudly expressed, lest no further opportunity of exhibiting their productions should be afforded to the body of artists called into being by the proceedings of the royal commissioners. We understand that the council of the Art-Union of London have been solicited, as a neutral body associated for the promotion of the arts, to aid in organizing a biennial or triennial exhibition, with the view of preventing this.

## PRESENT STATE OF THE PARTHENON.

Mr. G. Knowles has recently published a plan of the Parthenon, on a scale of 50 feet to 3 inches, shewing its actual state with great minuteness,* and particularly the ichnographic disposition of the columns of the interior not before given. In 1842 the Archæological Society of Athens removed the mosque which, during many years, had occupied the greater part of the cella of the Parthenon, and the internal arrangement of the columns became evident by unquestionable indications on the paving. "It appears," says Mr. Knowles, in a page of letterpress accompanying the plan, "that the axes of the columns were placed upon the joints of the slabs composing the pavement, precisely according to the system observed in the interior peristyle of the temple itself. It is conjectured that the angles were supported by pilasters, as well from the evidence of a corresponding one actually existing in the south-eastern end of the cella, as from the requirement of the intercolumniation: but it must be stated, that no distinct traces of such pilasters have been discovered."

The plan gives the measurement of every piece of the pavement remaining, and all "marks and indications upon the surface of the plan of the temple, which might, by possibility, assist the future investigation of these precious remains."

Cemetery for the Army and Navy.—A grand cemetery for the officers of both services on *Shooter's* Hill (appropriate site) is talked of.

* "Ground Plan of the actual state of the Temple of Minerva at Athens." By George Knowles. G. Bell, Fleet street.

## PURCHASE OF SHAKSPEARE'S HOUSE.

On Thursday, the 16th, the long-talked-of sale of the reputed birth-place of the "myriad-minded" man, Shakspeare, took place. The lower room was crowded long before the time appointed for business, and a move was made to an apartment upstairs, where, by the time Mr. Robins entered the rostrum, every corner was filled, including the lobbies and landings outside. After the auctioneer had read the particulars and made some preliminary observations, including replies to questions which were raised first as to its being in truth the poet's birth-place, and secondly as to the goodness of the title, 2,000*l.* were bid. A paper was then handed to the auctioneer, which after some hesitation he read, containing an offer of 3,000*l.* from the United Stratford and London Committees, made, it was stated, under a feeling of the duty imposed on them, and for which amount they must look to the public, the present subscriptions being quite inadequate. After a pause, somewhat exciting, the auctioneer said the trustee, before entering the room, had reserved to himself the right of making one bid; he was now authorized to say the trustee would make *no* bidding: so after waiting a certain time, to give any individual who wished to advance the opportunity of doing so, the property was knocked down to the Committee at a quarter to two o'clock, for the sum they had offered, amidst such cheers as the "mart" had never before echoed. The visiters' books of autographs, five in number, were then put up in one lot, and the offer of 50*l.* for them was made on behalf of the Committee, but they were ultimately bought for 73*l.* 10*s.*, by Mr. Butler of Upper Clapton.

## NOTES IN THE PROVINCES.

Contracts are ready to be entered into for the erection of a spacious range of buildings at Woolwich for store-rooms, to be proceeded with immediately, on plans already prepared, with an estimated expenditure of 30,000*l.* The additional rooms and other buildings, forges, &c., for the studies of cadets in military and naval engineering, are partly built and partly in progress. Previous to the reinforcement of 4,000 artillerymen at the barracks also, the officers' present quarters are to be converted into accommodation for the men, and a spacious range of new buildings erected, from plans also prepared, for officers' quarters. ——The new marine barracks which were to have been erected by the Admiralty at Gosport, have been stopped, it is said, by the Board of Ordnance, to whom the ground belonged, and from whom it would appear to have been taken on the very reasonable principle of 'what is yours is mine' but without the indispensable ceremonial of saying 'by your leave;' whereas the Ordnance department of this 'divided house' required it for fortification. Meantime, however, other obviously assailable points, it is said, have been left for years unfortified, although a deep trench was begun in partial prosecution of a plan proposed for the more complete protection of the dockyard and arsenal by a connection of the wall and bastions of Portsmouth and Portsea, where, says a Hampshire paper, "the most inexperienced eye can detect in a moment the very defenceless situation of this part of the garrison." Here, it is said, would be ample room for spacious marine barracks, such as those proposed, were the fortification completed, and the whole thus 'rendered almost invulnerable.'——The largest riding-school in England, excepting that in Bryanstone-square, it is said, has just been completed at Southampton: length, 122 feet; breadth, 43 feet. The roof is in the style of that of Westminster Hall. The late manager of the Brighton school is the master.——The erection of a new poor-house for Southampton, say the local papers, seems now a settled certainty.——Complaints prevail of the state or nature of the water supplied to Southampton, partly from the artesian well and partly from the Northam well. It is said to contain no less than 76 grs. per gallon of various chlorides, &c., and is to some constitutions a mild aperient. The evil may probably be temporary, and exhaust itself in time, as it has of late diminished.——The Roman Catholic chapel of St. Marie, at Rugby, was consecrated last week. The founder is a Pro-

testant relative of the Shrewsbury family. The style is the decorated Gothic: it was designed by Mr. Pugin. The stained-glass windows, and the chancel fittings, were put up by Mr. John Hardman, of Birmingham, but there seems to have been no builder of the edifice itself, at least the trifling circumstance that it had a builder is quite overlooked by our authorities, more than one, who particularly note the presence of Mrs. Bennett, Lady Olivia Acheson, Mr. Bertram Talbot, *et hoc genus omne*.——The exterior of St. Paul's Church, Sheffield, says the *Iris*, has been much improved by the alterations lately effected by Mr. S. Brown, with the aid of patent spire-scaffolding.——The Phœnix Gas Company, says the *Birmingham Journal*, are having made, at Brierly-hill, an immense gasometer, which is to hold 671,498 cubic feet of gas. It will contain 28,000 feet of riveting, and will weigh 400 tons. Its mean diameter will be upwards of 150 feet, the circumference measuring 471 feet: depth 45 feet, of which 38 feet will be available.——A valuable mass of red-iron ore, with an excellent yield of iron, has been discovered at Llanharry, near Cowbridge.——The bricklayers of Chester have struck for an advance of wages, from 22*s.* to 27*s.* a week.——The 'mysterious machine,' for some time in course of preparation at Liverpool, has still a local habitation and a name, at least, if only half a reality. A witness 'attempts' to describe it, as well as he can, but he admits that he can make neither head nor tail of it. It is tubular, 120 feet long and 36 feet in girth at the broadest part, which is at one end of it,—whether head or tail deponent knoweth not. It is built of pine plank, air-tight, and free of knots. The entrance-door is at one side, and he talks of ante-room and public saloon, a winding staircase to 'a good look-out' in the roof, &c. &c., all in the belly of what appears to be so 'very like a whale' or a Trojan horse. It will take two years more to finish it in the 'superior style' in which it is being fitted up for at least 100 'passengers;' but whether through the heaven above, the earth beneath, or the waters under the earth is a mystery as yet profound as chaos itself. May not this ingenious conundrum be some new-fangled canal-boat, or a steamer for diving into smooth water under the stormy surface of the ocean, so as to insure smooth sailing—to the bottom at least—if not to insure the lives of those who are evidently expected to follow by the lot the special example of Jonah?——A new mode of paving the streets of Manchester has been substituted for the old mode of planting the broad Welsh hard sets, which led to the frequent fall of horses, while their mortar pointings were not a sufficient safeguard against the softening of the foundations. The sets are now placed 2 or 3 inches asunder, and the intervals are chocked with small gravel, through which asphalte is poured so as to render the whole impermeable to wet from above, and to afford a more firm footing for horses.——On Monday week the foundation-stone of St. Michael's Church, Mytholmroyd, Halifax, was laid. The merits of both architect and builder seem to have been completely outshone by the silver trowel and the hand that wielded it, for although both were present, neither are named in the usual chronicle of the event. The cost will be 2,500*l.*, site and investment fund inclusive.——The foundation-stone of the Lincoln Exchange was laid on Wednesday week.——The design is by Mr. W. A. Nicholson, and the scale is a spacious one, with accommodation for great public meetings, lectures, markets, &c. There will be a row of twenty-five double-fronted shops, with a covered market on one side, and a large open one on the other.——The Victoria Foundry, Dryport, Hull, lately finished, covers an area of about 3,000 square yards; and the machinery is capable of turning and casting twenty-five tons' weight of iron.——The Miners' strike in the west of Scotland still continues, and trade is almost at a stand-still by the withdrawal of wages.

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Setting Saws.—An ingenious and inexpensive little instrument for setting saws has been patented by Mr. J. Tall, and will be found very useful. A remark in our pages some time ago, on the rudeness of the present method, led the inventor's attention to the subject.

## SURVEYORS MADE IN FOURTEEN DAYS.

When the railway-projecting mania was at its height, and surveyors were being paid two, three, four, five,—any number of guineas a day, we cautioned the public against certain delusive advertisers professing to teach the art and mystery of surveying, levelling, mapping, &c. &c., in the short space of no time, or something equivalent thereto, and have reason to know that we saved the money and time of some few of our readers.

The same game, it seems, is still played, and not unsuccessfully. Last week a number of young men sought the aid of the magistrate at Worship-street against a deceptive promiser, who had set forth, in an advertisement headed "Railway Employment," that perfect practical instruction in surveying, levelling, mapping, &c., would be afforded, and employment guaranteed, at a liberal weekly salary, on a line of railway now on hand in Middlesex, and that the occasion presented a rare opportunity to persons wishing for a thorough knowledge of such occupation. Numbers of young men made their way to town from all parts of the kingdom, one even from Holland, and, on applying at the address given, Shepperton Cottages, Islington, were introduced to the writer of the advertisement, who represented himself as the surveyor to the West London extension line of railway from Willesden to Finchley (a little inquiry would have told them there was no such line), and who undertook for a fee of three guineas each to perfect them in the business in *about fourteen days*, and afterwards secure for them constant employment at a salary of two guineas per week, upon payment of a further premium of five guineas, to be deducted from their wages. The introductory fee was accordingly paid, and formal agreements were entered into by the respective parties; but beyond this, as might have been expected, they never reached. Great distress had been the consequence to some of the applicants, but the magistrate was unable to aid them: it was even doubtful if they could successfully take criminal proceedings against the advertiser for obtaining money under false pretences.

It may be laid down as an axiom, that the man who professes to make a surveyor in fourteen days, is not to be trusted any farther than he can be seen. Reiteration of this fact may save many from mortification and loss.

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## RAILWAY JOTTINGS.

A general suspension of railway works has been advocated by circular, and a metropolitan meeting of delegates from the directorial boards of the various leading companies has been proposed by the committee of the Liverpool Stock Exchange. This step, says the *Times* city article, has been adopted in consequence of 'the enormous sums which the railway companies are still attempting simultaneously to raise from their proprietors and the public.' But the dissection of so enormous a growth, though it may be as easily effected as may any enormous tumour be cut off by the rashest of surgeons, would probably lead to abnormal consequences of an equally dangerous description to the body politic, but which a skilful and gradual *discussion* of the mass by the sanative treatment of the physician would completely obviate. That this is a matter more lightly and easily plunged into and probed than prudently disposed of, we may have some slight idea, from the result of the recent cessation of operations on even a single line, the Edinburgh and Northern, in suddenly diffusing an abnormal mass over the face of the country, but too likely, even of itself alone, to be resolved, ere it can be properly absorbed, into a potent and irritant virus of social corruption. By that one consummation, 5,486 labourers, 766 masons, 384 carters, 224 miners, 160 joiners, and 116 smiths have been at once thrown destitute—a sum total of 7,366 *families* being thereby at once deprived of all honest means of earning a livelihood. Yet that is comparatively a necessary and inevitable evil. But it only shews, in connection with the sagacious project just noticed, how true it is that thousands and tens of thousands may be easily and rapidly slain by the jawbone of an ass. Is it not infinitely better that bonuses and dividends and per centages, be temporarily diminished, than that human life and morals by wholesale be permanently destroyed?——Enormous sums have been expended in the formation of many British lines compared with continental. In the construction of works and stations, the heaviest item of course, the expenditure per mile of the South Western has been 18,450*l.*, that of the Birmingham, 38,280*l.*, that of the Great Western 40,000*l.*; and that of the Manchester and Leeds, 41,400! while the Belgian cost only 10,600*l.*, and even the Paris and Rouen but 17,000*l.* The Newcastle and Carlisle was on a par in this respect with the average of continental lines, viz., 12,000*l.* For these, even the lowest of them magnificent outlays, there is something to shew; but that cannot be said of the enormous sums swallowed up in law and Parliamentary expenses,—witness the London and Brighton, 3,000*l.* per mile for mere Parliamentary expenses, though that is by no means the worst instance of pure waste of money that might be adduced. These expenses alone, however, in this case almost equal the average paid for all the land and compensation paid for on other lines.——By the way, the London and Brighton seem to be improving on the ingenious system of discouragement to cheap class passengers, alluded to in our last jottings, by the introduction of a system of terrorism as well as of pain and disgust, already quite sufficiently exposed to be now without excuse, as a palpable system of cheap class discouragement. It is evident, says a leader in *The Times*, based on the complaint of another correspondent, that these authorities have even 'left their second-class passengers exposed to the risk of being shut up in a close carriage with a madman,' under 'alarming as well as distressing' circumstances, for which the directors 'owe some explanation to the public.' Explanation! We can readily conceive the only virtual, if not actual reply to a demand of explanation.—You can take a first-class carriage,—that is not a lunatic asylum,—there alone you will be safe, and in the right box,—as we will. What they most desire probably is this very advertisement of their inferior class preventitive, which has now been accomplished to their hearts' content, and as unequivocally as if it had, in plain terms, been—'Beware of man-traps and spring-guns in *low* class carriages!'——The Eastern Counties Company may soon perhaps have the merit of reviving and establishing those common road locomotives that were at one time looked on as destined successors and extinguishers of the rail. It has been seriously proposed by a Mr. Bates, in consequence of the late unwarrantable rise of fares on the Eastern Counties line, to establish forthwith, a locomotive stage coach company with steam-coaches of an almost perfected order, which he proposes to place at their service, under the complete conviction, that 'they will run the Railway Company off its own line.' Perhaps it may be the prospect of such a consummation that has lately led to the determination of the directors to reduce their establishment at the cross road near their Kelvedon station, where there is a perpetual traffic on the cross road night and day through the company's gates, which gates the directors now design to place under the guardianship of some one wonderful *Janus*, who is to have one eye on the rail and another on the cross road without intermission, or rather with his one look out open, while the other is shut, *et vice versâ*. The trains at least run at such intervals, that as a Kelvedonite remarks "if even uninterrupted by the traffic on the cross-road, the largest period devoted to sleep *cannot* at any one time *exceed* one hour and a half,—but it is obvious that the man on duty must be *constantly* on the alert, the traffic on the cross-road being continual. That the reason why Janus had two fronts was, that he might *nod* both ways by turns while yet an ever-vigilant gate-keeper,—and that these wise men of the East have found this woodrous secret out, and mean to realize it at Kelvedon, we are now quite assured, by the flood of light which this view sheds upon a curious, and, as we erroneously imagined, a nonsensical old ejaculation of the ancient Romans, addressed to one of the phases of the twofold god, and still preserved in Latin dictionaries for the mystification of posterity.—'Jane! *Quae tu dormias?*' Janus, in short, was clearly two single gentlemen rolled into one—and the star of that *one* has arisen in the East. But the public need

have little fear of such fatal consequences as those which frequently hung on the hinges of the gates of ancient Janus, if his modern priesthood contemplate the probability of being overrun by the locomotive wheels of the new Juggernaut, by whom their sacrificial functions are about to be altogether superseded. Otherwise certainly their ears may some day soon be assailed by the ugly question, as to their 'inhuman regulations,' which the Kelvedonian has anticipated.——It is rumoured that Mr. R. Stephenson has relinquished his office of consulting engineer to the South-Eastern, and that Mr. Barlow, the acting-engineer, is to be his successor.——The viaduct of the Lambeth extension of the South-Western over the Westminster Bridge-road was begun on Thursday last. The extension to Waterloo-bridge will be completed by February next.——The time-table of the North-Western has grown into a cumbrous pamphlet, with an index to it!——The works of the Direct Northern terminus at the Fever Hospital, King's Cross, are in rapid progress.——The Birmingham and Gloucester, it is said, is to be relaid with much more durable rails, at an estimated expense of 200,000*l*.——The Caledonian line was opened, according to previous notice, on the day announced. Having on several occasions noticed the progress of the various works on this line, it is the less necessary now to give any detailed account of them. We may cursorily notice a few of the more prominent, however, and first of the general station at Carlisle. The design for this structure, produced by Mr. Tite, was carried out by Mr. Hemberow, for the contractors, and Mr. Green, for the company. It is a joint station, as already observed. The front elevation is at present obscured by other buildings, and it is still incomplete; but, according to the *Carlisle Journal*, it will form an architectural ornament to the town. The Caldew viaduct, near Carlisle, is 360 feet long. Then follows the Eden viaduct of seven iron girder arches of 41 feet span, each resting on piers of the red sandstone of which Carlisle may be said to be built, and which the journal takes care to intimate is *not* constructed on the principle adopted in the formation of the bridge across the river on which the "jolly miller" lived, inasmuch as the Eden girders are arched on narrow spans resting on solid abutments of immense strength. A few miles onwards the Glasgow road is being carried over an oblique bridge, built at an angle of forty-five degrees. Here the foundation, already bordering on the Morass, is so elastic as to be felt in the trains. The Mossband Morass embankment site is celebrated both in a military point of view and on account of its movement over the whole of a fertile plain, which it buried in utter desolation. This is the dangerous ground alluded to in our last Jottings. The line runs close by the celebrated Gretna, where there is of course a *station*. Here, too, the Glasgow, Dumfries, and Carlisle line meets the Caledonian. A little further on is a cutting of 150,000 cubic yards of hard stony clay. Passing the vicinities of Langholm and Kirkpatrick, the latter thirteen miles from Carlisle, Ecclefechan is reached, where there is a viaduct of eight arches of 30 feet span each. Beyond this is a cutting of mixed gravel and limestone, 217,000 cubic yards in extent, with a bridge 115 feet long over it. At Lockerby, twenty-six miles from Carlisle, a 'handsome station' is in course of erection. About thirty-two miles from Carlisle there is an oblique bridge with iron girders. Annan water is crossed by a viaduct 350 feet long, with a timber top and stone piers. Beatock station is another 'handsome structure.'——In the city cars of the Harlem Railway, says the *New York Standard*, the coloured people are not permitted to ride any where except upon the *platform*. Their sixpences will entitle them to ride standing, but not to sit down by the side of the "up-town" snobs and flunkies, who

> "Forget the dunghill where they grew,
> And think themselves the Lord knows who."

—— Mr. Macdonald Stephenson was to leave England the other day with an engineering staff for India, where a line of railway is to be forthwith laid out and formed above and below Mirzapore. Mr. Brees and Mr. Adams were to accompany him as managing commissioners.—— A writer in the *Mechanics' Magazine* suggests the electro-telegraphic connection of all the pulpits throughout the country, and the simultaneous dispatch of a sermon from head quarters to a reader in each. We have heard of a machine like a barrel organ for grinding off prayers by the yard; if the one of these inventions were added as a complement to the other, we should certainly have nearly all that mortal man could do to *reduce* the gospel to a mechanical *system*,—but whether second-hand exhortations and mechanical orisons like these would promote the earnest and all-important truths of the gospel, is another question.

## BURIAL IN TOWNS.

Crowds flocked to the meeting which was held on Wednesday night in the Crown and Anchor Tavern, Strand, to petition Parliament to abolish burials in towns, and were forced to adjourn from a smaller to the larger room. Mr. B. B. Cabbell, M.P., who presided, introduced the business, justly observing, it was most surprising that in a city so advanced in civilization, and remarkable for Christian feelings, such a practice should have continued so long. The evil arising from it pressed with greatest weight upon the poor, and therefore was deserving of the public sympathy. They must have been astonished, too, that when so much had been said about sanatory improvement, this subject should have been either passed over or regarded as one of secondary and minor importance. To obviate this neglect, they should take measures to bring it under the consideration of the Commission, recently appointed, to inquire "What means may be requisite for the improvement of the health of the metropolis?" He had no doubt that the interest which the public took in this matter, as evidenced by that numerous meeting, would have due weight with that commission. He then eulogized Mr. Walker for his efforts in this matter, and called on him to move the first resolution.

Mr. Walker addressed the meeting at considerable length, and detailed a number of startling facts. The effect of graveyards in producing illness was now too well known to need proof. Every adult breathed 28,000 times in twenty-four hours. It was, therefore, of paramount importance that the atmosphere should be uncontaminated. At Minchin Hampton, the earth of a graveyard had been used as a manure. The consequence was, that the rector's wife, daughter, and gardener, died of typhus fever. There were fourteen others who fell victims to the same disease, and two hundred children were attacked with measles and scarlet fever. It was a matter of enormous consequence for them to know that if the surface of the earth was corrupt, they could not have pure air. In the town in which these results took place, in fourteen years previous to the use of this graveyard earth, there had been scarcely a case of fever; but afterwards fever spread in all directions. Another case occurred at Axminster, where similar earth had been used as manure. In that town six or seven deaths had occurred of fever, and Mr. Hamon, a surgeon resident in the town, had informed him that scarcely a house had escaped its effects. He concluded by moving a resolution condemnatory of the practice.

Mr. C. Shaw, in seconding it, said, it was clear that the impregnation of the earth with deleterious and deadly gases must pollute the air, and that the inhalation of this polluted atmosphere must generate disease. This was a question which affected both rich and poor, but especially the latter. The rich could remove themselves from the infected circle, but the poor had no such means. They were compelled to remain in the vicinity of their work; they could not afford the expense of removal, and the deadly effects of this system, therefore, chiefly shewed themselves on that class.

Mr. Healey, in the course of a long address, said, there were 400 burying places in the metropolis, and they might be justly termed 400 places of conspiracy against the health of the public. They had heard that night of Enon and Elim chapel, the last being a contraction of the word Elohim. These were associated with holy things and holy ideas, but the desecration of the dead, which they now heard of in connection with these names, was calculated to bring holy things into contempt by associating them with a subterranean manufactory of death, contrived for the generation of deadly gases for those above them to inhale.

Sir C. Aldis, Mr. Stevens, Mr. Richard Taylor and others then proposed various resolutions, including a petition to the house, and a strong vote of thanks to Mr. Walker, and the meeting separated.

## BLIND BUILDERS.

### TENDERS FOR SEWERS.

The following tenders received at a special meeting of the Commissioners of Sewers for the Tower Hamlets, on the 8th inst., must "make the judicious grieve."

For extending the sewer in Cambridge-road, and Three Colt-lane, Bethnal-green, being a length of 1,050 feet. The tenders were as follow:—

| | |
|---|---|
| Scissons and Co. | £820 |
| Williams | 810 |
| Munday | 736 |
| Stuart | 732 |
| Shalders | 715 |
| Yeoman | 705 |
| Johnstone | 657 |
| Livermore | 645 |
| Coltsworth | 635 |
| Crook | 619 |
| Hill (accepted) | 595 |

For arching over 850 feet of sewer at the back of Stepney-green:—

| | |
|---|---|
| Williams | £460 |
| Scissons and Co. | 420 |
| Munday | 297 |
| Yeoman | 285 |
| Johnstone | 282 |
| Coltsworth | 282 |
| Stuart | 256 |
| Hill | 252 |
| Livermore (accepted) | 225 |

For arching over the sewer at the back of Selby-street and Pelham-street, Mile-end New-town, being a length of 2,048 feet:—

| | |
|---|---|
| Crook | £1097 |
| Munday | 795 |
| Johnstone | 748 |
| Coltsworth | 697 |
| Williams | 690 |
| Scissons and Co. | 670 |
| Stuart | 650 |
| Livermore | 636 |
| Hill (accepted) | 594 |

The following tenders, for certain parochial works in Hampstead, are worthy to keep company with the above:—

| | | |
|---|---|---|
| Turner | £60 | 0 |
| Johnson and Son | 58 | 18 |
| Stone | 44 | 0 |
| Miller | 42 | 0 |
| Poxon | 38 | 0 |
| Clowser (accepted) | 19 | 15 |

## WESTMINSTER COURT OF SEWERS.

A general court of sewers for Westminster was held on Friday, Capt. George Bague in the chair. Letters were read from several persons in the parishes of Chelsea and St. Giles, Bloomsbury, complaining of the bad state of the drainage. A long memorial was read, signed by the whole of the physicians and surgeons of the district, complaining of the frightful state of the part of Kensington known by the name of the Potteries, from the impure state of the drainage, rendering the atmosphere deleterious, and producing fever, miasma, &c. The memorial was referred to the surveyor, and at the same time a resolution was adopted, "That in consequence of the great pressure in the surveyor's department, consequent upon the increased powers under the new Act, the surveyor be empowered to employ such assistance as may be deemed necessary."

*The proposed new Sewers in Kensington.*—The court this day received tenders for the execution of works for the sanatory improvement of Kensington. They were as follow:—

For 550 feet of sewer in amended line of Gloucester-road, Kensington:—

| | | |
|---|---|---|
| Perkins | £339 | 0 |
| Scissons and Co. | 310 | 0 |
| Dethick | 310 | 0 |
| Yeomans | 295 | 0 |
| W. Weston | 288 | 15 |
| Humphreys and Thirst | 280 | 0 |
| J. & S. Williams (accepted) | 270 | 0 |

For 2,267 feet of 4½ sewer in Church-street,

Holland-street, Duke's-court, Church-court, and George-court, Kensington:—

| | |
|---|---|
| Scissons & Co..... | £924 0 |
| W. Weston ..... | 896 10 |
| Dethick ..... | 877 0 |
| Humphreys and Thirst .. | 873 0 |
| J. & S. Williams..... | 845 0 |
| Yeomans (accepted) .... | 797 0 |

The next business was to consider as to covering over 300 feet of sewer, adjoining northward to Grosvenor-bridge, King's-road, Chelsea, recommended by the committee on view of the Ranelagh sewer. A long discussion ensued upon this subject, and on the chairman giving some explanation as to how matters stood in the district, Mr. Farlar interrupted him, and said the hon. chairman was completely misleading the court. The chairman repelled the observation of Mr. Farlar, that he was influenced by a desire to mislead the court, but on the contrary, to afford all the information that lay in his power; and the resolution being put, was carried by a majority of 9 to 5.

A deputation of the inhabitants of Wells-street, Marylebone, attended the court, for the purpose of ascertaining whether parties residing there, already possessing drainage for their houses, will be at liberty to enter the new sewer constructing in that street free of expense. The question led to a short conversation, which was terminated by the following resolution being adopted:—"That the parties in Wells-street who previously had drainage, be allowed to enter the new sewer free of expense."

*The Powers of the Commission under the New Act.*—The chairman read the following notice, which appeared on the business-paper of the day:—"To consider as to the parties to whom notices should be served, under the 10th & 11th Vict., c. 70, who are in possession or occupation of property fronting upon lines of sewers built at the charge of the respective districts."

The above notice was given for the purpose of putting into operation the powers of the new Act, by compelling parties to enter the sewers, and charging the owners of property in the different districts of this commission with the expense, according to the respective value of their frontages, as in many instances, although their property has been considerably benefitted, they have refused to contribute any thing whatever to the expense. Mr. W. Unwin proposed that they should commence with the eastern division of their jurisdiction, as being the oldest, and as very extensive works had been executed there more than ten years ago. It was suggested that by serving the whole of the district with notices at the same time, it might lead to confusion, and whether it would be better at first to commence with two or three streets as a preliminary movement.

The Clerk remarked, that the three first standing in the rate book were Houghton-street, Vere-street, and Drury-lane, and that few payments had ever been made for works done in that locality. And after some conversation it was resolved—"That notices be sent to the parties owning houses in Vere-street, Houghton-street, and Drury-lane, to compel the parties who have no proper drainage, to enter the sewers fronting their premises."

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New Draining Tile Machine.—This invention, says the *Hull Packet*, consists of clay being taken from the solid earth and put into the machine, where it is tempered or manufactured into draw or pipe tiles at one operation. From 1 to 20 pipes, or tiles, can be produced at a time, without the aid of manual labour, further than wheeling clay to the machine, which is worked by one horse; consequently, hand labour is superseded, and likewise all pipe tile making by hand machines, which have hitherto been brought before the public. Stony clay is of little importance to the machine, as all stones are crushed before the operation of forming the pipe or tile, which will be the means of using some clays that cannot, although of a good quality, be brought into use. Our townsman, Mr. William Hodson, who is the inventor, is already protected by patents, and working one of the largest tile establishments in the kingdom by machinery.

An Architect suffering for Conscience' sake.—M. Bonnal, the city architect of Toulouse, in order to justify the payment of a certain sum by the municipal council to the director of the theatres of that city, was required to give a certificate that repairs which had been made were of such a nature as to prevent dramatic representations. Knowing this to be untrue, he refused to assert it: three days afterwards, he was deprived of his appointment. The occurrence is said to have caused much excitement in Toulouse.

## New Books.

*Sketches, Graphic and Descriptive, of the Decorative Painting applied to English Architecture during the Middle Ages.* By E. L. Blackburne, F.S.A., Architect. John Williams and Co., 140, Strand.

An illustrated work on the painted decorations of our ancient buildings has long been a *desideratum*,—the Institute offered a medal for the best essay on the subject some years ago, but failed to elicit a satisfactory production. The work before us promises to supply this want efficiently, so far as it goes, but to be complete, it should be extended beyond the four parts at present proposed as the limit. Two parts are already published, and deserve warm commendation. The illustrations, printed in gold and colours, are beautifully executed; and the letterpress gives evidence of much research and care. We quote the introductory portion of it:—

"Chromic or coloured embellishments in architecture have their origin in remote antiquity. The Egyptians painted their temples and habitations, as did several other of the primitive Eastern nations; and the practice descending, became common alike to the classical and mediæval ages.

In that of England, properly so distinguished, the subject more immediately of the present work, such or similar decorations occur very early. Among the Anglo-Saxons, 'Pictures of Saints,' with 'embroidered cloths,' used as hangings,—'pictas vestes,'—as they were called, and painted sculptures, ornamented the walls and altars of churches so early as the latter part of the seventh century, following a custom coevally and long antecedently exhibited throughout the adjacent continent.

At the commencement of the ninth, sanctioned by authority and example derived from this source, we find the introduction of such pictures or paintings the subject of express ecclesiastical injunction. By a Canon of the second Council of Calcuth, or Celicyth, in Northumberland, held A.D. 816, every bishop dedicating a church, is strictly required to see painted on the walls or altars thereof the figure or picture of its patron saint. As a relative illustration, it may be noted also that in a Saxon MS. of this age, quoted in Muratori Antiq., are contained (among others relating to similar arts) directions for staining glass, so as to form 'pictures of mosaic work,' with which it would seem many of the altars and shrines of this period, in imitation of the foreign glass and other mosaics similarly applied, were constructively and otherwise ornamented.

Of the extent of these and the like applications of painting and mosaic during this and the next succeeding century, little or no direct and authoritative record now exists, though indications of the adoption of such are to be traced in the descriptions of the altar Tabulæ, and other similar gifts, made to the early Saxon church. Approaching the Norman era, however, an extended use of 'picture work,' under which term both these forms of decoration were at this time included, is decidedly and distinctly established. 'Superb picture work,' intermixed with gold, is described as among the works performed by the Saxon Archbishop Aldred to his Cathedral of York in 1061, and the pictured ornaments of the Church of St. John, at Beverley, of a corresponding age, are also alluded to by the same authority. At a little later date, the second, or Lanfranc's Cathedral at Canterbury, had its ceiling 'egregiè depictum.' Subsequently, Malmesbury also notices its 'pictured roof,' and in continuation, the choir paintings at Ely, by Bishop Ridel, and the ceiling at Peterborough, may be adduced, which latter, erected according to general authority between the years 1177 and 1199, has descended (restored) to the present day.

From the period to which the above notices have reference, pictured or painted decorations of several kinds appear to have been commonly introduced, and are matters of frequent and particular account.

During the long reign of Henry III., occupying the whole of the first half of the thirteenth century, directions as to such are numerous and special, in connection with the various works ordered by this king to be performed at his several palaces and residences at Westminster, Northampton, Guildford, Winchester, and elsewhere.

In 1220, the fourth year of this reign, the king's painted chamber, 'cameram nostram depictam," in the Castle of Winchester, is referred to. In 1232, the sixteenth, the figures of the four Evangelists, with those of St. Edward and St. Edmund the king, are ordered to be painted in the Chapel of the Palace, at Woodstock. Again, in 1233, the following year, a mandatum, addressed to the Sheriff of Southampton, directs the king's wainscoted chamber 'cameram regis lambruscatam,' in the Castle of Winchester, to be re-painted with such 'histories and pictures as were previously depicted there;' and there are other further notices almost yearly throughout this reign.

In the following reigns of Edward I., Edward II., and Edward III., similar applications continue to be recorded in the descriptions of the decorations by these kings, to the Palace, the Chapel of St. Stephen, and the Abbey Church at Westminster, as well as in those referring to others performed by several of the higher ecclesiastics of this period to their palatial residences and churches. Early in the reign of Edward II., Bishop Walter Langton caused the coronation, marriages, wars, and funeral of his patron, the late king (Edward I.), to be painted on the walls of his Episcopal Hall at Lichfield, then newly built. About the same time also, Adam de Sodbury (Abbot) adorned the nave roof of Glastonbury with 'beautiful paintings;' and in 1335, 1336, and 1339, 'nova pictura' are mentioned among the works at Ely.

Henceforward it is hardly necessary to follow the order of further reference, or to recur to the numerous additional evidences that might be adduced of the continued and increasing admission of painting and colour during this and the fifteenth and sixteenth centuries. Many examples yet remain, and sufficiently exhibit both the universality of the practice throughout those periods, and its great beauty, discriminately applied, as an accessory enrichment in our ancient architecture."*

The first part contains the following illustrations:—Choir ceiling, Malvern Abbey Church; screen, Aldenham Church, Herts; tomb of Lord Bourchier, Westminster; wall-paintings, Westminster, Tewkesbury, &c.; lectern-stand, Littlebury.

The second part has six, namely,—Back of a niche, altar-screen, Lady Chapel, Gloucester; ceiling from the Deanery, Worcester; tomb, south aisle of the chancel, Maidstone; nave-ceiling, Great Malvern Church; tile pavement, Chertsey Abbey; and niche in the parvise, Harrow.

## Correspondence.

PERPETUATION OF MIDDLE-ROW, HOLBORN.

Sir,—The proceedings at Middle-row, Holborn, where four houses have been pulled down in order *to rebuild them*, have produced the utmost astonishment amongst all classes of people, as well as the deepest feelings of regret. The question which you put is continually asked, "Can nothing be done to prevent the perpetuation of this great obstruction in so important a thoroughfare as Holborn?"

I really think that Government might undertake the purchase, on its own responsibility, certain that the House of Commons would not only grant indemnity, but thanks.

Where is the "Metropolis Improvement Commission?" Will nobody make an energetic remonstrance to Government against letting slip this favourable opportunity for abolishing such a nuisance as Middle-row Holborn?—I am, Sir, &c.

An Advocate of Convenient Thoroughfares.

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A Hint from America to our Commissioners of Sewers.—An aqueduct was recently built in Boston, from Tremont-street to State, the distance of a long block, and the street repaved, all within seven days. The workmen laboured in gangs of 140, one going on at seven o'clock in the morning and another taking their place in the evening, working all night.—*New York Sun.*

* An interesting article on the early history of mural decorations by Mr. Waller, will be found in our fourth volume, p. 391.

## Miscellanea.

PLAN FOR PROMOTING SANATORY REFORM.—The commission of sanatorial inquiry which has been issued, consisting of Mr. Edwin Chadwick, Lord Robert Grosvenor, Mr. Lambert Jones, Professor Owen, and Dr. Southwood Smith, will have much to do and will need assistance from without. With a view to affording this, the *Daily News* refers to Franklin's club of twelve in Philadelphia, and suggests a similar institution here and now. "It was never allowed to exceed that number, but each of its members was encouraged to form a club of twelve in his more immediate vicinity. The members of these, when their numbers were filled up, again formed other clubs of twelve. When any useful institution, any reform in the city institutions, occurred to a member of any of these clubs, he proposed it for discussion. By means of the members common to other clubs, it was discussed by all of them in rotation, and the result of the deliberations of each was communicated to the others. In a wonderful short time the public opinion of Philadelphia was thus ascertained or prepared for any reform simply by the enlightening it and the maturing the plan by repeated discussions. Might not similar clubs for discussing sanatory reform in a quiet friendly way be instituted throughout the metropolis? Men who shrink from publicity, and have a distaste for the exaggerations of agitating orators could make themselves useful in this way in preparing the minds of their personal friends; and the general body of sanatory reformers would thus be enabled, without tying themselves to any leader, or withdrawing themselves from their industrial pursuits and calm domestic pleasures to be ready to answer "yes" *en masse* when the authors of a metropolitan sanatory police bill worthy of their acceptance ask them whether they insist upon its being carried." Our article of last week served to usher in the new commission. Mr. Henry Austin, the honorary secretary of the Health of Towns' Association, has, very properly, been appointed secretary to the commission.

PAINTED TABLETS AND NOS.—A correspondent, Mr. "Henry Williams, citizen and letter-painter, London, 1846," has sent us a "copious and diffusive" MS. treatise on "Letter Painting," which, as he defines it, "is a grand improvement in one of the departments of British Art, invented by a writer and decorative painter in the commencement of the year 1846. Its participant is the application of silica oil colours, from the very first process of the groundwork, or foundation, to the entire and final completion of the inscription thus depicted, which in appearance is on an equilibrium with enamel painting." If we understand all its definitions, axioms, corollaries, inferences, and conclusions, what this "writer and decorative painter" claims as his own invention is the application of the silica colours to the letter painting, but his meaning and object are so hidden under thick coats of 'much learning,' clearly not of silicate transparency, that even with the aid of his "vocabulary," or "concise nomenclature for the technicalities previously used," we can scarcely make it out. "The several departments in this new walk of art are imitation zinc-plate grounds with black letters, and white grounds with coloured letters, and tinted grounds with letters of various hues." A specimen sent us, with a contrast in the ordinary manner, but of a darker ground tint, certainly exhibits the figures clearly and distinctly enough, but whether "it possesses a permanent character such as will tend eventually to benefit the shareholders of railway companies at large, if adopted for those species of inscriptions, viz., names, numbers, initals, &c., not of a temporary class," remains to be seen. The inventor's own opinion of these "inscription tablets" is, that "owing their origin to a grand discovery in British Art," they "are completed with extraordinary tact as to give great energy to this present enterprising and inventive crisis."

CAUTION TO BUILDERS.—The contractor or builder of the Peebles hustings is to be criminally tried for his imperfect carpentry. In the calender of the ensuing Jedburgh assize appears the name "Alexander Dickson, for culpable neglect of duty in constructing election hustings."

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the whole or part of the works required in the erection of a church near Kidderminster; for the building of a national school, with residence for master attached, at Maryport; the erection of a temporary wooden station at Leeds for the Leeds, Dewsbury, and Manchester Railway; the various works required to be done in the erection of the station buildings at Dewsbury on same line; the execution of various works at Broughty Ferry, near Dundee, on the Edinburgh and Northern Railway, consisting of wharf walls, piers, and low water landings, with excavations; a supply of flints, whinstone, Bombay and Guernsey granite, Rockhill paving-stone, and Aberdeen granite edge curb, &c., for the parish of St. George Martyr, Southwark; also, for excavating at a mill-dam at Portsea; for gasometers, pipes, syphons, branches, lamp-irons and posts, glass lamps, &c. &c. for the Newbury Improvement Commissioners, and for lighting with gas; also for gas-fitters' work, and smith and iron-founders' work at Leeds Industrial Training Schools.

BEGGING ARCHITECTS.—The current number of the *Moniteur des Architectes* gives a copy of an amusing letter addressed by an architect to various of the *porters* in Paris, suggesting that they should exert themselves to induce their employers to engage him as their architect, and promising them a good share of the fees. The letter ends nobly with "write me a line by the post, and I will come to you immediately." The editor, after commenting on such conduct with proper severity, says,—"When will it be permitted us to drive the money-changers from the temple?"

THE FALL OF HOUSES AT SOHO.—It appears that the two fallen houses in Dudley-court, Crown-street, which formed a portion of the range of condemned buildings in course of demolition, had been already in the hands of the destroyers, who had been engaged in withdrawing the interior wood-work, so that some trouble only was saved, and nothing lost, by their downfal, which happily took place without accident to human life.

THE GLASS TRADE.—A recent influx of new patterns, particularly in the cut-glass trade, has led at Stourbridge to a misunderstanding between the operatives and their employers as to prices. The men, however, are said to display an anxious desire to settle the matter in a friendly spirit, which we should think is likely eventually to satisfy all their reasonable expectations.

TOWER HAMLETS COMMISSION OF SEWERS.—At a meeting of the Commissioners, held on Wednesday last, it was resolved to apply to the Lord Chancellor for a new commission for the Tower Hamlets, the present commission expiring in December.

REMINGTON'S AERIAL BRIDGE.—Under this title a curiously slight timber bridge is being exhibited at the Surrey Zoological Gardens, and deserves a visit.

## TO CORRESPONDENTS.

"*Cardiff Town Hall Competition*"—A correspondent on this subject, p. 418 *ante*, said that a plan "was sent in openly" from the town surveyor of Cardiff "designed for quite another site." The statement, as it relates to the plan, was not sent in competition, but as a distinct proposition.

"*C. J.*"—The quotation from Spenser's "Faerie Queene" relative to architectural proportions will be found in Book II., Canto 9, Stanza 22.

"*W. P.*," Islington.—The story in question, above the entablature, is called an attic.

"*J. P. B.*"—Our correspondent's remedy is against the contractors who are bankrupt—a last resource.

*Thirty Bats*—Any opinion on imperfect information would only mislead: take the advice of a local architect.

*Received.*—"J. M.," "W. N.," "J. G.," "J. K.," Mathematician."

*Books Received.*—"Plans and Elevations of Cottage Villas and Country Residences." By W. Pattisson, Architect. (Williams and Co., 140, Strand.) "An Introduction to the Present Practice of Surveying and Levelling." By a Civil Engineer. (Williams and Co.) "The Assistant Engineer's Railway Guide in Boring, Setting out Slopes, &c." By W. Davis Haskoll." (Williams and Co.) "Elements of Geometry; with a new Demonstration that the Sum of the Angles of a Plane Triangle is equal to Two Right Angles." By J. D. Lonsdale and Co. 1847.

"*Books, Prices, and Addresses.*"—We have not time to point out books or their prices.


## ADVERTISEMENTS

ARCHITECTURAL SUBJECTS (Outlines coloured for competition or exhibition, and embellished with landscape, &c. Buildings, Portraits, and Views of every description, lithographed in a superior manner, by GEORGE CHILDS, 13, Arundel-street, Piccadilly.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c. MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "101 Pictures and Architectural Parts, Grand, Rococo, and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield-street, Oxford-street

PATENT BELLS.—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Uranium Metal, and the bells are of very beautiful tone and clearness, and the mode of the ordinary bell metal orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

PATENT METALS for Bearings.—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort for bearings and engineering purposes generally, will be found superior in quality and cheaper, than the old mixture in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any ordinary brass. Messrs. MEARS will be happy to send any quantity, as samples, or to make any castings from patterns sent to them

WOOD and STONE.—Rough Blocks of STONE, of small dimensions, old CARVED STONE and old WOOD CARVINGS WANTED. If convenient to the first forty miles of the South-Western Railway, they would be preferred. Particulars to be sent to A. B., Mr. HODGSON, 86, Strand, London.

WOOD PAVING.—The Directors of the Metropolitan Patent Wood Paving Company, are prepared to execute orders on the shortest notice, for Paving Railway Stations, Sheds, Wharfs, Yards, Porticos, School-rooms, Gateways, Passages, Workshops, Mews's Stables, and Halls. Their system of Wood Paving is admirably adapted for the above purposes, and is much in use. Office, Belgrave Works, Thames Bank, Pimlico.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON'S ROLLED ASPHALTE PAVEMENT OFFICE, 15, WHARF ROAD, CITY-ROAD, N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allaunace. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining those of Messrs. Gresswell and Pete, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, and has been selected in preference to all oth'rs in England, by the Commissioners of Woods and Forests for building the New Houses of Parliament. Excellent stone at hand for forwarding to any part of the kingdom.

Applications to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

MAGNUS'S ENAMELLED SLATE.—Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has been introduced into Buckingham Palace, the drawing-rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from the marble by its superior brilliancy of polish, and it is not so liable to chip at the edges, than marble. The above pictures, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, washstand tops, &c. &c. Cisterns, dairy shelves, flue rings and plain slate work in general executed on exceedingly moderate terms. Ornamental slate slabs, of the finest description, at very reduced prices. N.B. The trade supplied with whole carcases, leaf-ed, or planed on one or both sides, direct from the quarries. Lists of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

By Her Majesty's — Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS, WITH SHORT AND SECURE FIXINGS.

THIS CHEAP and USEFUL ARTICLE, obviating the unsightly appearance and insecurity of the common Rim Lock, can be had of the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FALKNER, Ironmonger, 63, St. Martin's-le-Grand, London, opposite the new Money Order Office.

PRO BONO PUBLICO.

CAUTION. To Purchasers of Locks, fire-proof Doors, Safes, &c. JOHN LEADBEATER, many years manufacturer for Chubb, LEADBEATER begs most respectfully to inform Architects, Builders, &c. that he can supply them IMPROVED DETECTOR LOCKS for internal purposes, STRONG WROUGHT-IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c. possessing the most improved principles of security against FIRE and THIEVES without the aid of "expensive machinery," which is employed by some inexperienced makers, but not so well paid for, at prices 25 per cent under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can open a single detector lock or latches: some thousands of Leadbeater's strong-room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience, during which he has adapted every possible improvement to real security, enables him to challenge competition with any other house in London. A large assortment on sale and made to order. A pair of extra strong wrought-iron fire-proof folding doors with ventilating gates, well adapted for a banker's strong room, may be viewed at his manufactory. Strong wrought iron doors for party walls, with wrought-iron rabbeted frames, and secured by the BEST DETECTOR LOCKS IN ENGLAND, 8 feet high by 2 feet 6 inches wide and upwards, price £11 each, always on hand at LEADBEATER'S MANUFACTORY, 12a, ALDERSGATE-STREET, LONDON.

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1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light producers, and not Smoke producers; these will vary in price according to the duty they have to perform, from 10s. upwards

PRICES.—Upright Burners, with Cornigham Spring Glass Holders, with either sized glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 9d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent, with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire places.

Offices and Manufactory, 59, Conduit-street, London.

## THE most perfect DRY GAS METER in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, in, Hampstead road, in connection with his old-established premises, 67, St. Martin's-lane, begs to say that he can now MEET any DEMAND for METERS, from 3 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a method eight years' experience has proved to be unaffected by weather, by time, or by impure gas. He invites attention to the fact of many of his large meters being in successful action at the Houses of Parliament, the Royal Dock yards, the Thames Tunnel, Theatres, Churches, Club houses, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

## THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

## BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and L. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Sash-bead Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

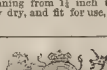
Metal Drawing and Stamping for the Trade.

Office at No. 28, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

TO ARCHITECTS, SHIP JOINERS, CABINET MAKERS, &c., REQUIRING FINE WOOD.

## SELLING OFF, at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany-yard, in Little Windmill-street, Haymarket, a choice collection of Fine MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 20,000 feet wainscot planks, running from 1¼ inch to 3 inches thick. The whole stock perfectly dry, and fit for use, requiring to be disposed of forthwith.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

## THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood, such as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licenses to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

## ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

## ALFRED ROSLING begs to inform the Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

## T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension. Mahogany, Cedar, Rosewood, Walnut, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MUIR'S PATENT



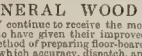
PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

## TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere road, Lambeth, near Waterloo bridge.

## THE GENERAL WOOD CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or grooving and tonguing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollow. The company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

## HOWARD'S Transparent TRACING PAPER combines the several requisites desired by architects, engineers, &c., viz.: toughness of substance; the capability of retaining ink or colour undisturbed on its surface; a high degree of transparency; and every quality, from the finest tissue to the thickest drawing paper. Prices low.

Also PATENT ADHESIVE PAPER designed to facilitate the mounting of tracings and prevent their stretching, being ready prepared on firm cloth, it requires nothing more than the application of a damp sponge, at 1½d. and 2d. per square foot.

The best shrunk WHATMAN'S PAPER ON CLOTH, at 3½d., 3½d., and 4d. per square foot. Samples of the above sent post free to any part of the Kingdom.—2, Great Russell street, Bloomsbury

ARCHITECTURAL ENRICHMENTS.

## BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Design prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff price 21.—Works, 15, Wellington Street North, Strand.

## WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, it is still in not requiring heat to be put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

## TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks, blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

## SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronized by the Right Hon. an Hon. Commissioners of Sewers for the City of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, sink traps, and various shapes always on hand.

## TUBULAR DRAINS IN STONE WARE, Manufactured by HENRY DOULTON AND Co. POTTERIES, HIGH-STREET, LAMBETH.

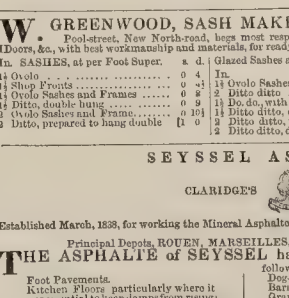


The only Efficient Mode of Drainage is by Tubular Drains; from their form they give every facility for a perfectly free passage. The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.



N.B. The above are also made without the discharge hole being turned downwards.

## CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

## W. GREENWOOD, SASH MAKER and JOINER to the TRADE, 6, Wickam-street, Pool-street, New North-road, begs most respectfully to submit the following list of reduced prices for Sashes, Frames, Doors, &c., with best workmanship and materials, for ready money only :-

| In. SASHES, at per Foot Super. | s. d. |
|---|---|
| 1¼ Ovolo | 0 4 |
| 1¼ Shop Fronts | 0 4½ |
| 1¼ Ovolo Sashes and Frames | 0 8 |
| 1¼ Ditto, double hung | 0 9 |
| 2 Ovolo Sashes and Frame | 0 10½ |
| 2 Ditto, prepared to hang double | 1 0 |

| Glazed Sashes and Frames, at per Foot Super. | s. d. |
|---|---|
| In. | |
| 1¼ Ovolo Sashes | 0 8 |
| 2 Ditto ditto | 0 9½ |
| 1¼ Do. do., with frames, lines, and weights | 1 2 |
| 1¼ Ditto ditto, double hung | 1 3 |
| 2 Ditto ditto, with lines and weights | 1 3 |
| 2 Ditto ditto, double hung | 1 4 |

| In. DOORS, at per Foot Superficial | s. d. |
|---|---|
| 1¼ 4-panel square | 0 7½ |
| 1¼ Ditto, moulded one side | 0 8½ |
| 1¼ Ditto ditt, both sides | 0 10½ |
| 1¼ Ditto, bead, butt, and square back | 0 9 |
| 1¼ Ditto, bead, flush, and square back | 0 10 |
| 1¼ 6-panel square | 0 8½ |

## SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S



PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

## THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

Foot Pavements.
Kitchens and Floors, particularly where it is essential to keep damps from rising.
Garden Walks and Terraces.
Carriage Drives.
Coach-houses and Stabling.
Dog-kennels.
Barn Floors.
Granaries.
Tun-room Floors.
Malt-house Floors.
Piggeries, &c. &c.
Covering of Railroad and other Arches.
The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.

TO STONE AND MARBLE MASONS.

A MOST Excellent Opening is now offered to any respectable man who is desirous to go into Business in the above Line at Great Yarmouth, Norfolk. A SMALL CAPITAL IS REQUIRED. For Particulars inquire of Mr H. HARDING, Sculptor, No. 466, New Oxford street, London.

A PAIR of Well-built, Full-sized Third-rate VILLA CARCASSES TO LET, at a Ground Rent, together or separately, situate in the most eligible part of, and being Nos. 1 and 2, Albion-road, Queen's-road, Dalston.—Apply to Mr. TURNER, 5, Devonshire Cottages, Green-lanes, Stoke Newington.

TO STONE CARVERS.

TWO First-rate Carvers, accustomed to perpendicular detail, are REQUIRED to go at once into the COUNTRY on a church.—Parties to call with specimens of their work on Mr CLARKE, Architect, No. 1, Lincoln's-Inn-Fields, on Saturday or Monday next, between Eight and Ten o'clock.

TO BRICKLAYERS AND CARPENTERS.

CARCASSES TO BE SOLD OR LET, at a Ground Rent, or taken out in Bricklayers' or Joiners' Work, near the Camden Town Station. Also, GROUND TO LET, on long Leases, for Fourth-rate Houses. Bricks may be had on the Ground. Apply on the Premises, No. 1, Weedington street, bottom of Ferdinand street, Hampstead road.

ISLINGTON.

ELIGIBLE Building Plots of Freehold or Leasehold Land TO BE LET OR SOLD on Moderate Terms. Bricks may be had on the ground, or takers of a large plot may make for themselves on the spot.—Apply to Mr. W. T. KING, Architect, 21, Manchester-terrace, near Park-street, Islington.

N.B. The sewers are in and roads made.

BUILDING LAND.—BRICKS AND MONEY ADVANCED.

GROUND TO LET, for Third-rate Villas, in pairs and three's, at Islington, fronting the High-road, for Ninety-nine Years, Land-tax Redeemed. Such a class of houses are very much required in this immediate locality.—Apply to Mr. TURNER, No. 5, Devonshire-cottages, Green lanes, Stoke Newington green.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c., suitable for a Builder.

TO BE LET OR SOLD, in the vicinity of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw pits, Stabling, Machinery for Sawing and Planing, &c. To view, apply upon the Premises, No. 12, Dorset place, Dorset-square. For terms and particulars, of Mr. H. BIERS, 13, Carlton-villas, Edgeware-road. Written applications cannot be attended to.

VALUABLE WATERSIDE PREMISES, GROSVENOR BASIN, PIMLICO.

TO BE LET on Lease, with possession at Christmas, a very CONVENIENT WHARF, possessing 80 feet water frontage, with good Stabling and Sheds, and the use of a very excellent crane, rendering it peculiarly adapted for the Stone, Marble, Slate, or Coal Trade. For further particulars apply to Messrs. EVERSFIELD and HORNE, Coal Exchange, or No. 1, Little Smith-street, Westminster.

VALUABLE INVESTMENT.—Leasehold Property, Brick-lane, Old-street St. Luke's.

TO BE SOLD or LET at Moderate Ground-rents, TWENTY-FOUR extra-substantially-built FOURTH-RATE CARCASES complete, held for a term of nearly 70 years direct from the Ironmongers' Company. For Particulars, inquire of Mr SAUNDERS, the Langton Arms, Wenlock-street, St. Luke's, near the Church.

IMPORTANT TO BUILDERS.

BUILDING GROUND TO BE LET in all parts of London and Suburbs, upon very favourable terms, and in many cases liberal advances. List can be had, and every information free of charge, or by post upon inclosing two stamps. Our offices also afford peculiar facilities for quickly disposing of Houses and Estates, which Builders generally will do well to avail themselves of, as they will be subject to no charge whatever unless a sale be effected through our means and then only the usual moderate commission.—BECKWITH and SALMON, Land and Estate Agents and Auctioneers, 23, Bucklersbury.

TO BRICKLAYERS, &c.

SCAFFOLDING.—TO BE SOLD, 7 dozen of Scaffold Boards, quite new, 2 dozen Poles, 6 dozen of Cords, new, 4 dozen Putlocks, 2 fifty Round Ladders, 2 Small Ladders, 2 pair Trussels, 2 dozen Mortar Boards, Carry, Hair Hook, Steps, Pails, and Baskets, 2 Screens, 3 Sieves, Bricklayers' Truck, 4 Stoves, 2 Double Hung Sashes, Glazed, 5 Sash Frames, 1 large Shop-door and Frame, 1 Sign Board, lot of Quartering and Sundries. To View, apply to Mr THOMPSON, 11, Waterloo road, Surrey.

## SALES BY AUCTION.

IN BANKRUPTCY. GREENWICH, KENT.

MR. NOBLE is instructed by the Assignees of Mr W. C. BANKS, a Bankrupt, to SELL by AUCTION, at the Greyhound Tavern, Greenwich, on TUESDAY, September 28, 1847, at [illegible] o'clock in the afternoon, all those FOUR PARTLY ERECTED CARCASES of Second rate Dwelling houses, situate in Burney-street, Greenwich, for which Leases will be had direct from the [illegible] at a moderate ground rent. Also the beneficial interest in a Building Agreement of three several Plots of Land, held for 78 years from Michaelmas next at a moderate ground-rent, eligibly situate in Burney-street, Greenwich, within five minutes' walk of the Railway Station, the Steam boat Pier, and the Park. Nearly half [illegible] Plots are built upon and leases granted at improved Ground rents, the rents rendering the remainder valuable either as [illegible] Houses in this locality are in great demand. May be Viewed and Particulars had three days prior to the day of Sale of J. IVIMEY, Esq., Solicitor, 20, Chancery lane; of Mr NOBLE, 23, Arthur h lane, City, and London street, Greenwich.

TO WHOLESALE AND EXPORT IRONMONGERS, BUILDERS, GAS COMPANIES, and Fitters, Engineers, Merchants, [illegible] By

MR. FULLER, at the Warehouses, Red Lion-street, Spitalfields, a few paces from the terminus of the Eastern Counties Railway, on MONDAY, October 18, and following days, at [illegible] o'clock each day, in lots, without reserve, an extensive STOCK OF EDGE TOOLS AND STEEL, of the best quality and manufacture, being the entire stock on hand of an eminent [illegible] in the north, removed from their works to London for sale, in consequence of the formation of a new [illegible] Mr Fuller begs [illegible] the attention of his friends and the public to [illegible] stock of so much importance, [illegible] quality, has never before been submitted [illegible].

[illegible] flat ferring, round, half-round, three-square, bastard, second cut and smooth, from 4 to 24 inches, [illegible] files [illegible] and rasps assorted, [illegible] Norfolk, Lincoln [illegible] pipe, gravel, and coal, assorted, of all sizes; 800 dozen scythes, double refined Crown, Norfolk, Briar, Canada, &c., assorted; 300 dozen hatchets, adzes, and bill-hooks, assorted; 300 gross chisels and gouges, firmer, millwrights', coachmakers', turning, mortice, socket, and cabinet, assorted; 400 dozen choppers and cleavers, assorted; 800 dozen trowels, best London [illegible] Philadelphia, Boston, slaters, moulders, and garden, assorted; 1,000 dozen chaff, hay, and thatcher's knives, drawing knives, plane irons, mincing knives, &c., top tooth, cut, [illegible] moulding, and rabbit, assorted; 300 gross garden hoes and [illegible] forks, gravel and daisy rakes, spuds, shears, edging irons [illegible] and horn handle, assorted sizes; 1,200 cavalry and sea-service swords; [illegible] Kent coopers' and plasterers' hammers, and augers; 6,000 pickaxes; 20 tons axes and hammers; 2 tons butt hinges from 1 to 6 inches; 200 dozen hoes, Carolina, West India Barbadoes, Lousiana, Demerara and Virginia, assorted; 100,000ft. wrought-iron [illegible] from three-eighths to 2 inch, crosses, T's, caps, [illegible], elbows, and nipples, assorted; 100 tons of blister, cast, double and single shear, sheet, and spring steel; a large assortment of wrought-[illegible]. To be viewed three days previous to the Sale, when Catalogues, at 6d. each, may be had at the Warehouses, and of Mr. FULLER, 13, Billiter-street, London. Approved Bills at Three Months will be taken for any amount above 15*l*.

## SALES BY AUCTION.

STOCK IN TRADE OF A BUILDER, HOUSEHOLD FURNITURE, &c., ESHER.

MR. NIGHTINGALE will SELL by AUCTION, on the Premises, Esher, Surrey, on TUESDAY, the 21st instant, the entire HOUSEHOLD FURNITURE, Stock in Trade, and other Effects of the late Mr George Sills, carpenter and builder, deceased. The effects may be viewed on the day preceding the sale, when catalogues may be obtained on the premises; also at the inns in the neighbourhood; and of Mr. NIGHTINGALE, auctioneer, Kingston-upon-Thames.

FREEHOLD BUILDING GROUND, IN THE TOWN OF KINGSTON-UPON-THAMES.

MR. NIGHTINGALE is directed to SELL by AUCTION, at the Griffin Inn, Kingston, on THURSDAY, the 23rd instant, at twelve, in 21 lots, about three acres of valuable FREEHOLD, GARDEN, and MEADOW LAND, very eligible for building upon, and divided into convenient lots for that purpose, situate in Wood-street and the Richmond-road, within three minutes' walk of the market-place and the river Thames, one mile from Hampton Court and the railway station. May be viewed. Particulars to be obtained at the place of sale; at the inns in the neighbourhood; at the Auction Mart, London; and of Mr. NIGHTINGALE, auctioneer, Kingston-upon-Thames.

LOWER TOOTING.—THIRTY-SEVEN PLOTS FREEHOLD LAND.

MR. SINGLE will SELL by AUCTION, at the Auction Mart, on FRIDAY, September 24th, at One o'Clock precisely, in Lots, THIRTY-SEVEN PLOTS OF VALUABLE FREEHOLD BUILDING LAND, eligibly situate on a new Road leading from the High Road, Lower Tooting, Surrey, close to the Castle, and a busy and populated part of the Neighbourhood. From the demand for Building Land in this part of the Environs of London, a Purchaser can buy at this Sale with a positive certainty of at once making Ground Rents.—Particulars may be had of W. S. MASTERMAN, Esq., Solicitor, 4 A, Wine-office-court, Fleet-street; of Mr. MORRIS, Surveyor, More-street, Hackney; and at the Offices of Mr. SINGLE, Surveyor and Estate Agent, 34, Coleman street, City.

TO STONEMASONS, BUILDERS, AND OTHERS.
Extensive Sale of Stonemason's and a Marbleworker's Stock, City-basin, City-road, by

MR. FREDERICK CHINNOCK, on the Premises, Regent's Stone-wharf, Macclesfield-street, South, on MONDAY, September 20, at 1 precisely, the entire Stock of Messrs. SMITH and CLUNN, DISSOLVING PARTNERSHIP; comprising several squares of York tooled, self faced, and rubbed paving, tooled kerb, and coping sills, York steps, sawn slabs, granite kerb, about 100 Portland stone sinks (various sizes), York bases, old York paving, two tons of pebbles, three tons of granite cubes, slate and Purbeck steps, a block marble ledges, large black and gold Bardilla, Egyptian, statuary, and French marble scantling and slabs, head and foot stones, eight large blocks of Portland, large York landings, a powerful crane, a crab and apparatus for raising stone, a wrought iron steam boiler, a chaise cart, stone carts and trucks, a bay horse, and effects. To be viewed the day preceding and morning of Sale. Catalogues had on the premises, and at Mr F. CHINNOCK'S Offices, 28, Regent-street, Waterloo-place.

N.B. The valuable Lease of these premises will also be submitted by Auction at 2 o'Clock on the same day precisely.

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as also their [illegible] Revolving and Panelled Iron Shutters,
PATENT DOUBLE ACTION DOOR SPRINGS,
PATENT CASEMENT FASTENINGS AND SILL BARS,
Patent Copper and Iron Wire Sash Lines,
IMPROVED FLOORING CRAMPS, &c. &c.,
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| 1 | 2 | 3 | 4 | 5 | 6 |
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

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Self-acting Kitchen Ranges, with Oven and Back Boiler
Wrought Bars and Bright Fittings.
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| | | | | |
|---|---|---|---|---|
| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
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Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

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|---|---|---|---|---|
| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
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Do. Elliptic do., at 3½d., and 4d. do.

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Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

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|---|---|---|
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# The Builder.

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

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### ADVERTISEMENTS.


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WANTED, by a Firm in good practice, an IMPROVING CLERK ; he will have every opportunity to perfect himself practically in the profession.—Address, B. and H., Mr. Laundy's, Law Stationer, Essex-street, Strand.

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A YOUNG MAN, possessing some skill in Artistic Work and Design, but who is desirous of further improvement in working drawings, wishes for an ENGAGEMENT. Favourable testimonials can be produced if required.—Address to R. S., care of John Tanswell, Esq., Solicitor, 5, King's Bench Walk, Inner Temple.

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A YOUNG MAN, aged 30 Years, wishes for a SITUATION. He has a thorough practical knowledge of building, capable of making detail drawings ; is acquainted with measuring, taking out quantities, setting out and superintending works. Address, R. F., Messrs. Ring and Conquest, Tin and Japan Ware Manufacturers, Banner-street, St. Luke's.

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A YOUNG MAN, who is a good [illegible] Draughtsman, wishes for an ENGAGEMENT in either of the above offices. Has been in the habit of copying plans, and drawing same from rough sketch, copying bills of quantities and squaring dimensions, &c., can write a good hand, and be well recommended. A small salary only required.—Address A. B., office of "The Builder," 2, York-street, Covent-garden.

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In the application, skill is not required ; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

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The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp ; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes ; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous colourless mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innocuous.

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PROVIDENT ASYLUM for AGED and DECAYED BUILDERS' FOREMEN.

NOTICE IS HEREBY GIVEN, that the Governor and Board of Directors of the Funds of this Charity will hold a GENERAL QUARTERLY COURT on WEDNESDAY Evening next, September 29, at the Bay Tree Tavern, Saint Swithin's-lane, in the City of London, where donations will be thankfully received, and at the office of "The Builder." W. ALLARD, Secretary.

BUILDERS' BENEVOLENT INSTITUTION, Freemasons' Tavern, Great Queen-street, Lincoln's-inn Fields, for the Benefit of Decayed Masters ; and also to afford Relief in case of Accident to their Workmen.

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Hugh Biers, Esq., Carlton Villas, Edgware-road.

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The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations ; and the odd Local Names, with the liberal Donations and Subscriptions appended, are highly gratifying. They beg to intimate they have appointed Mr. Edward Herbert, 42, Crawford-street, Marylebone, and Thomas Jackson, 3, Paradise-terrace, Holloway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, and the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of the Institution will shortly be printed.

CLOCK TOWER, EPSOM.

THE Committee appointed to promote the Erection of a CLOCK TOWER in the Town of EPSOM, give notice, that the design by Messrs. BUTLER and HODGE, of [illegible]-lane, Strand, is entitled to the premium awarded, and that the same will be carried into effect forthwith. They also beg to offer their thanks to all the gentlemen who have favoured them with designs, and to state that their drawings can be obtained on application.

T. TOMPSON, Chairman.


### CONTRACTS.


TO BUILDERS AND OTHERS.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for Holborn and Finsbury Divisions, Middlesex, will meet at their office, No. 7, Hatton-garden, on FRIDAY, the 8th day of October next, at One o'clock in the afternoon precisely, to CONTRACT FOR BUILDING SEWERS in the places and for the lengths undermentioned, viz., in Bloomsbury-place, and north side of Bloomsbury-square, in Holborn Division, to the extent of about 360 feet, and in Edward-street, and Wharf-road on the east side of the Regent's Canal Basin, and on the west side of the said Basin to Macclesfield-street in Finsbury Division, being a length of about 1,720 feet, conformably to plans and specifications which may be inspected daily between the hours of Ten and Three. Separate tenders for each of the above lengths on printed forms, which will be furnished at the office, are to be delivered at or before the above time of meeting, and which must contain the names and address of two responsible persons as securities for the due execution of the works. The Commissioners will not consider themselves bound to accept the lowest tenders. By the Court. STABLE and LUSH, Clerks.

ILLUMINATION of the New Theatre of the ROYAL POLYTECHNIC INSTITUTION.—Parties desirous of TENDERING DESIGNS and ESTIMATES for LIGHTING the THEATRE by Gas Chandeliers or otherwise, can have particulars at 309, Regent-street.

R. J. LONGBOTTOM, Sec.

TO BUILDERS.

THE Church Trustees of Saint Pancras, Middlesex, will meet at 3, Gordon-street, Gordon-square, on Thursday, the 14th day of October next, at Two o'clock in the forenoon precisely, for the purpose of receiving TENDERS for TAKING DOWN and REBUILDING the PARISH CHAPEL, late the Old Church. The Trustees do not pledge themselves to accept the lowest or any other tender unless approved in all particulars, and the approved tender will be accepted, subject to the approbation thereof, by the General Sessions for Kent, of the Commissioners in Lunacy and Secretary of State. Security will be required for the performance of the contract, and the sureties proposed, with their addresses and additions, must be named in the tender.—By order of the Committee of Visitors of Kent County Lunatic Asylum.

WILLIAM BEALE, Clerk to the Visitors.

Maidstone, Sept. 20, 1847

TO BUILDERS who would feel inclined to make an ADVANCE for Three Months, repayable at the expiration of that time, can immediately obtain a Contract for Buildings to the amount of between 700l. or 1,000l. Address, p.p. to Mr. ALSING, Adelaide Hotel, London Bridge.

churches is certainly very great; but more study might advantageously be given to the subject. Many of our architects appear to keep a design stereotyped, to be administered as occasion offers.

At *Ashley Down*, near Bristol, a large asylum is being erected at a cost of 10,000*l.* for a sect known as Müllerites. Messrs. Foster are the architects. In the suburbs of Bristol, building is going on to a considerable extent, and some new churches, at Kingswood and elsewhere, are talked of.

A church of Italian character is now a novelty, and travellers who see a lofty campanile of stone in that style rising in Stall-street, *Bath*, learn with surprise that it is for St. James's Church, which is being restored and enlarged. So far as we could judge of it in an incomplete state, it is not likely to aid in leading again to a more general use of the style for ecclesiastical purposes. Mr. Manners is the architect.

Bath, beautiful as ever, is not frequented as it was: houses are to be found empty in all directions. With the convenience of the railway and its own natural charms and advantages, it surprises us that it is not taken possession of by the onewhile inhabitants of Hackney, Highgate, and other places, once a journey from the metropolis, who would still keep a little distance from London.

St. Mathew's Church, at Widcombe, seen from the railway station, appears finished; and there is a new church upon the hill on the Lansdown side, St. Stephens, with a square tower.

For the curious west front of the *Abbey Church*, there appears to be little hope: the sculpture is now nearly indistinguishable. The walls of the church inside appear to be even more disfigured by tablets and incongruous monuments than when we were last there, though then there seemed scarcely room for an inch of propriety to find admittance.

The old bridge here is to be widened by iron brackets on each side, supporting a footway; workmen have already commenced the work. Report told us of a new Wesleyan chapel of pointed architecture in King-street, to accommodate 1,200 persons; and further, that Mr. Beckford's tower and the grounds around are to be appropriated as a cemetery for the parish of Walcot.

We met a man of fortune in Bath, and an educated man too, who asked us, with a serious desire to obtain information, if the Abbey Church was what we called *Ionic or Corinthian?*

Alack! alack! ignorance of even the leading principles of architecture is no disgrace.

## AWARDS OF OFFICIAL REFEREES.

### ENLARGEMENT OF BUILDINGS.

With regard to a certain building, in part coach-houses and stabling, and in other part constituting a large warehouse for furniture, carriages, and goods, in Upper Montagu-street, occupied by Mr. Dent; the district-surveyor of Marylebone considering it of the warehouse class, laid an information to the effect, that without notice to him, it had been "altered and enlarged to an extent exceeding 200,000 cubic feet, the said building having no proper divisions or party-walls separating the same into divisions less than 200,000 cubic feet, and being inclosed in part with quartering and boards."

The referees awarded, with regard to the alleged irregularity, "that inasmuch as the premises in question are used for the purposes of keeping on sale and selling furniture, carriages, and other goods, and not for warehousing, or storing, or manufacturing any kind of materials or goods, or for any other of the purposes of buildings of the second or warehouse class, within the meaning of the Metropolitan Buildings Act, the rules of Schedule D., Part 4, of the said Act, with regard to buildings of the second or warehouse class exceeding 200,000 cubic feet, are not applicable thereto; but inasmuch as the original premises of the said John Dent, belonging to the first or dwelling-house class, have been, since the said Act came into operation, enlarged and extended by uniting therewith certain other premises, not formerly in the same occupation, by openings made through the wall which formerly separated such premises, so that the premises occupied by the said John Dent do now greatly exceed fourteen squares in area, without obtaining the certificate of the official referees, that the stability and security from fire of such premises would not be endangered thereby, and without giving notice to the district surveyor, we do hereby determine and award that the works in question are contrary to the said Act, and that notice thereof ought to have been given to the district surveyor."

The owner's surveyor having submitted a plan shewing the openings that were to be bricked up, or to be fitted with iron-doors, the referees certified that if the arrangements were made as proposed, and "if the party-walls all round the premises of the said John Dent be carried up to the height required by schedule D, part 3, of the said Act, above the roofs or gutters adjoining thereto, wherever such party-walls are not now so carried up," the district surveyor would be justified in making no further objection to the works in question.

In respect of an expressed intention on the part of the occupier to convert his premises into a bazaar similar to that known as the "Baker-street Bazaar," they declared their opinion, "that any building so used, would thereby be converted into a building of the third or public building class, and as to it all the conditions prescribed in the said Act with regard to buildings of the same rate of the third, or public building class, must be fulfilled as if such building had been originally built of such class (that is to say, the rules as to fire-proof accesses and stairs, and the thickness of the walls and the security of the structure) subject, nevertheless, to such modifications as shall be sanctioned by the official referees upon special supervision thereof.

### OVERHANGING ADJOINING GROUND.

With regard to a dwelling-house in Inverness-road, Paddington, belonging to Mr. Trigg, the adjoining owner, Mr. Bernasconi, laid an information to the following effect, namely, that "the inclosing wall of the said house, which is next the premises No. 17, and belonging to the said G. V. Bernasconi, has been built partly on his ground, being (with his consent) on the site of the original party-fence wall, and such inclosing wall is in his opinion a party-wall, and he, being of such opinion at the time the said inclosing wall was being erected, objected to the same being built with an *overhanging roof*, instead of with a proper parapet against the same; but the said George Trigg, the owner and builder thereof, did not and has not heeded such objection, but has built the said house and the said inclosing wall with the eaves or cornice (which is principally of wood) overhanging the ground belonging to the said G. V. Bernasconi, whereby they are injured, and are threatened with injury."

At a hearing, it was admitted that the eaves or cornice so overhanging was formed by the wood rafters, covered with sheet iron on the soffit, and it was affirmed that Mr. Bernasconi had hitherto made no objection to the projection in question: but Mr. Bernasconi stating that he had objected at the time the projection was first put up, the official referees intimated that if they considered the question of consent important to the case, they would give the parties an opportunity to bring evidence thereon, but otherwise would make their award on the question whether such projection was or was not conformable to the Act. The referees awarded,—That inasmuch as the cornice to the overhanging roof of the house, No. 17, has been built with or added to the said house, on the face of an external wall thereof (whether such wall be a party-wall or not), so as to overhang the ground belonging to another owner, such cornice is contrary to the rules of the Act; and further that, inasmuch as such cornice is not built of the same materials as are by the said Act directed to be used for building external walls, or of such other proper and sufficient materials as the official referees may approve or permit in such situation, the same are in this respect also contrary to the said Act; and they declared, "that if the wall from which the said cornice projects has been built upon the site of the former party-fence-wall, between the premises in question, as alleged in the said requisition, the same is a party-wall, and must be carried up and remain of the height and thickness required by the said Act, in schedule D, part 3, above the roof or gutter adjoining thereto, and that if such wall be an external wall only, and stand entirely upon the ground of the said George Trigg (except the projection of its footing on one side), such wall ought nevertheless to be carried up, and remain as a parapet, of the height and thickness required by the said Act in schedule D, part 2."

## DECORATION OF THE FRENCH OPERA HOUSE.

The miscellaneous press of Paris are loud in their praises of the decorations just now completed in the "Salle de l' Opera," by M. Cambon, but some of the artistical periodicals think it necessary to object to the loud beating of drums and blowing of trumpets on the occasion. Much has been done, considering the very short time the works have occupied, only six weeks; but the result, looked at as a work of art, is simply a happy "improvisation," say they, agreeable, and nothing more. The ceiling has been entirely repainted: Orpheus presenting the celebrated musicians to the gods of Olympus, is the subject,—a happy one, all will admit, but, according to our authorities, only indifferently well treated. The fronts of the boxes are painted by M. de Zara. Sirens and garlands of flowers, on a gold ground, fill the panels of the upper tier. Gold predominates in the decoration,—too much so, for some,—yet, amidst all the glitter, ten main Corinthian columns have been allowed to remain covered with the wounds and bruises of previous campaigns, which has raised the ire of some of the critics. Want of sufficient light and the grey colour of the paper with which the boxes are hung, are also complained of. M. Rohault was the architect employed.

## GEOMETRY OF THE SQUARE.*

Problem.—*To construct a square that shall be equal in area to any proposed right lined figure, that is, to convert any given right-lined figure into a square containing an equal area.*

*Example.*—Let ABCD (fig. 12) be any given figure whatever; it is required to convert the given right-lined figure, ABCD, into a square containing an equivalent area.

*Construction.* — Place the given figure, ABCD, in a position the most convenient for the paper on which it is to be drawn, and join A and C, the opposite angles of the figure, by the diagonal, AC, dividing it into the two triangles, ABC and ADC. Bisect AC, the common base of the triangles, in the point P, and through the vertices B and D draw the straight lines NM and GL respectively parallel to the diagonal AC. Through A, one extremity, and P, the middle point of the diagonal AC, draw the straight lines NAI and BPL respectively perpendicular to AC, and extended both ways to meet the parallels NM and GL in the points N, I, and M, L, thereby forming the rectangular parallelogram NILM equal to the given figure, ABCD.

On I, as a centre, with IL as a radius, describe the circular quadrant, LmK, meeting NI produced, in K, and making IK equal to IL, so that NK is equal to the sum of the sides of the parallelogram, NI and IL, extended in the same straight line. Bisect NK in H, and on H as a centre, with HK or HN as a radius, describe the semicircle KGN meeting LI, the side of the parallelogram produced, in G; then is IG the side of the square which is equal in area to the given figure ABCD. Upon the straight line, IG, thus determined, construct the square IGFE, and it will be equal to the

* See pages 269, 273, and 347 ante.

## GEOMETRY OF THE SQUARE.

*Fig. 12.*

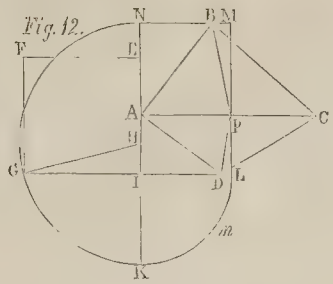
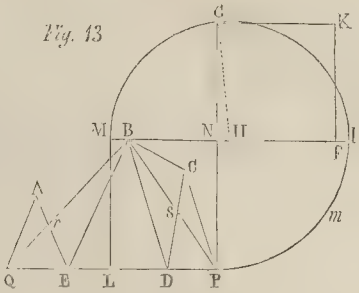



*Fig. 13*




given figure ABCD; hence the thing required by the problem has been effected.

*Demonstration.*—Because the straight line NK, which is equal to the sum of the sides NI and IL of the parallelogram NILM, is divided equally in H and unequally in I; the rectangle under the two unequal parts, NI and IK, together with the square of HI, is equal to the square of HG; but the square of HG is equal to the squares of IG and HI; therefore the rectangle under NI and IK together with the square of HI, is equal to the squares of IG and HI; take away the square of HI which is common, and there remains the square of IG equal to the rectangle under NI and IK; but IK is equal to IL; therefore the square of IG is equal to the rectangle under NI and IL, which has been shewn to be equal to the given figure ABCD; consequently the square IGFE is also equal to ABCD; hence the truth of the construction is manifest.

PROBLEM.—*To construct a square that shall be equal in area to a given five-sided figure; that is, to convert a given five-sided figure into a square of equal area.*

*Example*:—Let ABCDE (fig. 13), be the given five-sided figure, of which the containing sides are AB, BC, CD, DE and AE; it is required to convert the five-sided figure, ABCDE, into a square of equal area.

*Construction.*—Draw the diagonal BE, joining the opposite angles of the figures at B and E, and dividing the figure into the triangle ABE, and the trapezium or four-sided figure, BCDE. Draw also the diagonal, BD, joining the opposite angles B and D, and dividing the trapezium, BCDE, into the two triangles, BCD and BDE, so that the whole figure is divided by the diagonals BD and BE into the three triangles, BCD, BAE, and BDE.

Through the angles A and C, which are respectively subtended by the diagonals BE and BD, and parallel to these diagonals draw the straight lines AQ and CP, meeting the side DE, produced both ways in Q and P, and draw BQ, BP intersecting the sides of the figure AE and CD in *r* and *s*; then is the triangle PBQ equal to the given five-sided figure, ABCDE.

Bisect PQ, the base of the derived triangle PBQ, in the point L, and through the vertex of the figure at B, draw the straight line BI parallel to the base PQ, which extend both ways as far as necessary; then at the points L and P, the one being the middle point, and the other the extremity, of the base PQ, erect the perpendiculars LM and PN, meeting BI, and its production on the left of the vertex B, in the points M and N, thereby forming the rectangular parallelogram PNML, which is equal in magnitude to the triangle PBQ, and, consequently, to the given five-sided figure ABCDE.

Upon N as a centre, with NP as a radius, describe the quadrant of a circle P*m*I, meeting BI in I, and making NI equal to NP, the side of the rectangle PNML, so that MI is equal to the sum of the sides NM and NP extended out in the same straight line. Bisect MI the sum of the sides in H, and on H as a centre, with a radius equal to HI or HM, describe the semi-circle MGI, meeting PN, the side of the rectangle produced in G; then is NG the side of a square which contains the same area as the given five-sided figure ABCDE.

Upon GN, the side of the square just found, construct the square GKFN, and the thing required is accomplished, for the five-sided figure ABCDE, the four-sided figure BCPQ, the triangle PBQ, the rectangular parallelogram PNML, and the square GKFN, are all equal, being successively derived from each other, and consequently, the figure proposed has been converted into a square of equal area.

*Demonstration.*—Because the straight line AQ is parallel to the diagonal BE which joins the opposite angles B and E, the triangles ABQ and AEQ constituted on the same base AQ are equal between themselves, for triangles upon the same base and between the same parallels are equal; from these equals, take away the triangle A*r*Q, which is common to them both, and the remainder AB*r* is equal to the remainder QE*r*, so that the part AB*r*, which is cut off from the given figure by the straight line BQ, is equal to the part QE*r*, which is applied to it by producing the side DE to meet BQ in Q, and consequently, the five-sided figure ABCDE originally proposed is equal in magnitude to the derived figure of four sides BCDQ.

In like manner, because the straight line CP is parallel to the diagonal BD which joins the opposite angles B and D, the triangles CBP and CDP constituted on the same base CP are equal between themselves, for triangles upon the same base and between the same parallels are equal; from these equals take away the triangle C*s*P, which is common to them both, and the remainder B*s*C is equal to the remainder D*s*P; that is, the part B*s*C, which is cut off from the given figure by the straight line BP, is equal to the part D*s*P, which is applied to it by producing the side ED to meet the straight line BP in P, and consequently, the whole triangle PBQ thus formed, is equal to the four-sided figure BCDQ, which has been shewn to be equal to the five-sided figure, ABCDE, originally proposed; therefore, the triangle PBQ is also equal to the given five-sided figure, for things that are equal to the same thing are equal to one another.

Again, the rectangular parallelogram PNML is equal to the triangle PBQ, since it is constituted upon half the base PL, and is situated between the same parallels MI and PQ; but the triangle PBQ is equal to the proposed five-sided figure ABCDE; hence, also, the rectangular parallelogram PNML is equal to the given figure, for things that are equal to the same thing are equal to one another.

Lastly, the square GKFN is likewise equal to the given figure ABCDE, for it is equal to the rectangle or product under NM and NI, the sides of the rectangle PNML, NI being by construction equal to NP; but the rectangle PNML has been shewn to be equal to the proposed figure ABCDE, and for this reason, the square GKFN is also equal to it, for things that are equal to the same thing are equal to one another; consequently, the given five-sided figure has been converted into a square of equal area as required by the problem.

## ON THE GENERAL SIZE OF STONES IN NORMAN ARCHITECTURE.*

AN architect of the present day may make a design which may be an accurate imitation of the ancient Norman buildings, but it will be in vain that he has had recourse to the finest models, and paid attention to the most correct details of each separate moulding, ornament, &c., if he has neglected to give his builder strict injunctions as to the *size* of the blocks of stone that are employed. The improvements in modern masonry have enabled us to introduce larger blocks of stones than were used by the Normans; and the effect of this (even if it be allowed to be an improvement) is, that any person, though he may be a stranger to the rules of architecture, will at once feel that the building looks modern.

I have myself found this to be the case in a chapel for which I gave a design in my own neighbourhood. During my absence, the mason selected his finest blocks of stone, and instead of making each zig-zag of the arches a separate stone, four or five large ones have been used, by which the eye is at once convinced that it is not correctly *ancient* Norman, though the reason perhaps few would discover.

The south transept of Norwich cathedral has lately been repaired, and it is very well executed; but the depth of the stones being about 17 or 18 inches (nearly double the size of those of the old Norman buildings), the new work has a modern appearance.

I subjoin a list of the size of the stones which I have measured in many buildings, as it may better impress upon the memory a subject which I think is one of considerable architectural importance. In all the following buildings, the stones are regularly placed in horizontal courses, although each course varies in depth from six and a half to nine inches, but a very few may occasionally be found an inch more or less.

The general size of the stones in Norwich cathedral are:—

1. At the west end of the nave, from 6½ to 9 inches deep.
2. The upper part of the transept about 8 inches.
3. The centre tower (the upper part), 7 or 8 inches.†
4. St. Luke's chapel, 6½ to 8 inches; average, 7¾.
5. The dormitory (near the cathedral), from 6 to 7 inches; a very few, 7½ or 8 inches.
6. Norwich castle, about 7 or 8 inches.‡
7. The buttresses to Castle Acre, 6 to 7⅛ or 8 inches.
8. Entrance gateway to ditto, 6½ to 7¼ inches; a few 9 inches.
9. Castle Acre Priory. The nave at the west end, 7½ to 9 inches.
10. Ditto. Centre tower, 8½ to 9 inches.
11. St. Edmund's Bury. The Norman gateway, 7 to 9 inches.
12. Ditto. The Norman building in the Market-place, 7 to 8½ inches.

* From the current No. of "The Journal of the British Archæological Association."

† The lower part of the tower was repaired more than fifty years ago with larger stones.

‡ The lower part of the south side has lately been repaired in regular joints, each stone being 8 inches deep, which is not the case in the ancient Norman work.

The depth of the stones at Colchester Castle vary from six to eight and a half inches; those of St. Botolph's Priory, from five to eight inches. J. Adey Repton.

## THE USE OF LEAD PIPES AND CISTERNS.

As it has unavoidably happened, notwithstanding our desire not to be mistaken for alarmists, that the drift of the recent observations in our Journal on the use of lead has turned much more on the necessity of caution, than on the means of safety and freedom, in the employment of so convenient and variously useful an article as lead undoubtedly is, we shall now proceed to collate from standard authorities some of the most recent conclusions and advices on the mutual adaptability of lead and water to a more or less safe and innocent association and intercourse with each other; so that some of the evil fruits of ignorance on this head may be clearly seen and cautiously avoided by some of those whose business and duty it is to bring about such an association to the best of their ability and experience.

Perhaps one of the most remarkable of those conclusions to which recent chemical authorities have come is this, that the purest of all water, even were it distilled, is the most likely to act on lead, and thus become contaminated with poisonous matter. In one sense indeed this conclusion is not new, or rather some of the facts on which it has been based are of old enough date. At Tunbridge for instance in 1814, a plumber, who undertook to supply the town with water, forthwith accordingly laid a line of leaden pipes for a quarter of a mile,—redeemed his contract sure enough,—but nearly poisoned a number of the people, many of whom were seized with lead colic, while one great water-drinker in particular, a lady, lost the use of her limbs for months, until a natural alarm arising, iron pipes were substituted, and the evil ceased. Mr. Brande, the chemist, found lead in the water which had passed through the pipes, but none at the fountain head; and Dr. Thomson examined the latter, and found it *exceedingly pure*. In some cases such results were attributed to the solvent powers of carbonic acid gas, (and, indeed, it has been laid down as an axiom, that pure water, *per se*, has no action on lead,) but Christison, who adduces a number of proofs of the "danger of conveying very pure water in long lead pipes," finds reason to doubt even this. If we might presume to express an opinion on such a point in the same breath with such chemists as Christison, and Paris, and Graham, we might humbly suggest that both opinions may be in a certain sense correct. It has been proved that the purest of all water—even, if we mistake not, water newly formed from its elements, far less merely distilled water,—contains ammonia,—that, in fact, there is a tendency to the generation of ammonia in even absolutely pure water, and we remember some time since that we had occasion to note the fact in The Builder, that it was known even amongst the ancient chemists that ammonia exists in the purest of all water. Now ammonia is known to be capable in solution of oxidizing some metals and uniting with the oxides as a base with an acid. There may even be high and fragile oxides, beyond the highest usually recognized, amongst the metals, and ammonia may select such oxides as its acid. Thus it may be that though absolutely pure water would have no action on lead *per se*, the purest attainable, or at least naturally existent, water may be capable of acting on lead in circumstances where there may be no evidence or probability of the action of carbonic acid. But it is not to give our own opinions that we are at present pen in hand. We may therefore only here observe, that while there is now no doubt at all events that the purest water will act the most obviously on lead, if it have access to the air; it has been found—and Christison in particular, has recently instituted an investigation into this branch of the subject, the result of which is—"that neutral salts in various and for the most part minute proportions retard or prevent the corrosive action of water on lead, allowing the carbonate to deposit itself slowly, and to adhere with such firmness to the lead as not to be afterwards removed by moderate agitation, adding subsequently to this crust other insoluble salts of lead the acids of which are derived from the neutral salts in solution,* and thus at length forming a permanent impermeable screen through which the action of water cannot any longer be carried on." In short, he adds, "the preservation of the lead from corrosion, and of the water from impregnation with lead, is thus complete." It may therefore be a question, whether it is prudent to 'cleanse' away *such* a crust where circumstances may have been favourable to its formation, and even whether it be not desirable rather to form it artificially, when circumstances are not favourable, by the introduction of a neutral salt, such as sulphate of magnesia or of lime, into the water of the cistern, of course without rinzing or any other disturbance likely to prevent the slow consolidation of the preservative crust.

While speaking of cisterns and their preservation, we may here observe, that in Edinburgh, after it had been forced on the notice of plumbers by frequent experience that the leaden lids of cisterns were extremely liable to interior corrosion, and indeed to total destruction, while the cistern itself remained in good condition, the practice was gradually introduced of making the lids of leaden cisterns of wood. This fact affords a remarkable instance of the power of distilled water in even a close cistern to corrode lead, while no such power was possessed by the same water undistilled, or comparatively impure, and even containing carbonic acid if any really did also exist in the water distilled from it.

It has been found that the presence of vegetable or animal matters may either decompose the salts of lead, or materially alter the action of the preceding re-agents, and, as it may be, render the poison soluble—a fact which 'Vox' by the bye, overlooked—so that the utmost care should be taken that leaden cisterns be kept clear of such substances, whether deposited by the water, or casually introduced, in the shape of stray leaves, dead vermin, &c. A cistern crust, for instance, will dissolve with brisk effervescence in the product of the acetous fermentation of vegetable matter, and at once form sugar of lead.

In summing up the results of an elaborate series of inquiries on the subject of leaden pipes and cisterns, and their effects on water and on salts in solution, Christison, in his treatise on Medical Jurisprudence, suggests "that rain or snow water for culinary use should not be collected from leaden roofs nor preserved nor conveyed in lead; that the same rule applies to spring waters of unusual purity, where, for example, the saline impregnation does not exceed a 15,000th part of the water; that spring water, which contains a 10,000th or 12,000th part of salts, may be safely conveyed in lead pipes if the salts in the water be chiefly carbonates and sulphates; that lead pipes cannot be safely used even where the water contains a 4,000th part of saline matter if this consist chiefly of muriates; that spring water, even though it contains a large proportion of salts, should not be kept for a long period in contact with lead; and that cisterns should not be covered with lids of this metal."

White Lead.—Two new modes of making white lead without injury to workmen are described in the *Mining Journal*. One is that of M. Gannal, of France, who rotates granulated lead in an octagonal revolving cylinder with water till reduced to impalpable powder, when it is exposed to the air and oxidates, after which carbonic acid is introduced through a flexible tube, and converts the oxide into carbonate, or white lead, of dazzling whiteness, after two days' washing. The mass is lastly pressed on filtres, divided into pieces, and dried in stoves—into cakes, we presume; so that thus also the equally serious evils experienced in the mere turning of the dry dust or powder over, into or out of the barrels, &c., after it is made, may be obviated. The other mode of making it is that of Mr. R. C. Lotham, chemist, Craven-street, Strand, who submits lead to the action of the acid vapours evolved in the brewing process in air-tight chambers, heated by furnace until it is converted into carbonate; the workmen being thus protected from the fumes evolved during the process.

* Or "which contain," as he elsewhere says, "the acid *of a part* of the neutral salt likewise" in the water, which is precisely what we suggested as the probability in the case where larger quantities of the neutral salts—sulphate of magnesia—were present in solution through a cistern for the purpose of *removing* the scurf, on which of course it was not in that case allowed to act *slowly* and quietly, so as to produce the contrary effect of consolidation.

## FOUNTAINS.

Mr. Editor.—In your view of Buckingham-palace is figured in front "*a Fountain*," the taste of which, to my poor judgment, shews as little of intelligence in ornamental hydraulics in Mr. Blore, as the two Trafalgar-square fountains do in the taste for such things in Mr. Barry. The subject requires study in its own branch in order to render it effective.

A fountain in front of the British Sovereign's palace should be splendid, yielding in nothing to the fountains we see in other parts of Europe. And when a fountain is handsome, it forms a beautiful object for the eye of taste to contemplate, besides enlivening every place in which it finds position. But the genius of *sculpture* must be superadded to the mechanism of the stone-mason, or it will fail to be properly effective in a prominent situation. A modest *patera and jet* will do well enough in the area of a shrubbery walk, but groups of statuary are necessary in front of a palace or structure of magnitude. Besides which, the edge of the basin in which a fine fountain is, should have *a coping* of a bold handsome section, and if from this basin the water was suffered to fall cascade fashion into the lake below, the geometric and the natural would be well and clearly defined. Mr. Blore has placed some little unmeaning-looking vases, quasi *pots*, at the intersecting angles of the walks. Surely a good opportunity is here rather given for vases of classic taste, instead of such little stone deformities, that look something like Staffordshire ware *mustard pots*. The vases of *Benvenuto Cellini* indicate entirely my meaning, the taste being only transferred from metal to stone.

Not having seen any thing of the projected improvements beyond what your Builder print gives, I must be pardoned if I am too caustic in my criticism as an amateur, and remain, Mr. Editor, your constant reader and lover of true taste in all its branches,

W. Mason.

Necton-hall, Sept. 21, 1847.

## NOTES IN THE PROVINCES.

Prince Albert is expected shortly to favour Portsmouth with his presence; to lay the foundation-stone of the new hospital there. ——We regret to perceive that the national example set by the metropolitan carpenters and joiners has not yet penetrated far into the provinces, if we may judge by the recent strike of masons at the Keyham new steam-yard, near Devonport, gone into in order to compel Messrs. Baker and Son to discharge two poor fellows who cannot be forced into 'union' with the strikers. Messrs. Baker are backed by the Admiralty, who have permitted the works to be suspended, and assured them of 'protection to workmen generally in the free exercise of their judgment against dictation and tyranny.' Experience will probably teach even the Devonport masons that the right and only way to true *union* is persuasion, not compulsion.——The new custom-house at Southampton was to be opened to the public on Monday last. A portion of the old building at the quay is also to be retained for the sake of convenience.——The Newport paving and lighting commissioners, according to the Hampshire papers, are in a state of hopeless insolvency, 700*l.* in debt, and unable even to pay up arrears on their gas account; so that the gas company have actually been obliged to cut off the supplies, and plunge the town into primitive darkness. The rate-payers declare the levy of rates illegal till they 'have a voice in the choice of the men who dispense them.'——About 500 'navigators' are to be forthwith set to work on the construction of the Weymouth breakwater at 3*s.* 6*d.* a day; the quarriers want 5*s.* The contractors are said to be under a penalty of 40,000*l.*, to have the railroad completed by March next.——A new town of Portland, says the *Poole Herald*, is to be constructed on the table land between Portland Harbour and the common head land. ——The bishops are at work in giving the finishing touch of consecration to new churches recently built in various quarters—Christ Church, Portswood, for example, Sutton Waldron parish church, near Shaftesbury, Woodhall Church, near Iodine Spa, St. Phillip's

Church, Leeds, and St. David's, Merthyr Tydvil.——The alteration of the interior appearance of St. Catherine's Church, Bath, the repair of the nave and chancel, &c., are in progress.——Tenders for the erection of new vagrant wards and a hospital for the Bridgewater Union Workhouse having been advertised for, the following were received :—

| | |
|---|---|
| Critchett and Coles ..... | £1,870 0 |
| Tottle and Long ..... | 1,862 0 |
| Hurford ..... | 1,859 0 |
| Horsford, Dykes, and Jarman | 1,840 0 |
| Robertson, Bristol ..... | 1,738 15 |
| Wainwright (accepted) ..... | 1,635 0 |

The architect, Mr. Down, to have 5 per cent. on the contract, for his plan, and superintending the carrying on of the work. With reference to this enlargement, the *Bridgewater Times* objects to the appointment of clerk of the works, which, according to our contemporary, has been conferred by the architect on a Mr. Hutchings, 'an unfortunate competitor in disguise,' and, moreover, 'a guardian for the poor,' also 'a man in easy circumstances,' who is said to have offered, for the sake of the clerk's salary of 30s. a week, to 'suspend his duties as a guardian during the erection of the building,' but who 'is dismissed' from these duties. Such doings have recently occurred in the midst of the scramble for even the litter of the good things of the Irish Board of Works, but they are by no means English either in origin or example.——An 'extensive and important improvement' is about to be carried out at Plaistow, in the form of a square of 'elegant houses' in the broadway.——The water in the Severn, at Tewkesbury, is so low since the 'improvements' were carried out, that barges cannot reach it in dry seasons, and 'the greatest portion of the fine large basin there is now almost as dry as a turnpike-road.' The Avon, too, is thus dissevered from all navigable intercourse with the Severn, and even between Gloucester and Worcester the latter is only rendered passable in the midst by dredging machines.——Arrangements are now being made at Worcester for the improvement of All Saints' Church, by the removal of the houses in front of it.——St. John the Baptist's Church, Toxteth-park, Liverpool, has been reopened, after various repairs and alterations had been effected, such as the replacement of rickety pews, the substitution of asphalte floors on cast-iron sleepers, the ventilation of the underground region, and the painting of the walls. The congregation have for these purposes subscribed, according to the *Albion*, a sum little short of 650*l*.——A spacious entrance to the Victoria Market, Manchester, has been opened from Victoria-street, and the interior has been altered and repaired, and, according to the *Advertiser*, considerably improved.——A church and school, says a Blackburn paper, are now erecting near to Marsden Hall, and towards which the Misses Walton have contributed 1,900*l*., besides the sites.——A distemper painting, supposed to have been executed 400 years since, has been discovered during the repair of the chancel of St. Martin's Church, Leicester. Some 'curious monuments of the taste and piety of our forefathers' have also been uncovered during the restoration of Ditchingham Church, Norfolk, the interior of which appears to have been profusely decorated with paintings. The new seats in this church are of oak, and the pulpit is of Caen stone.——The style adopted in the new church at Banktop, Darlington, the foundation-stone of which was laid on the 10th instant, is the first pointed. There are to be neither pews nor galleries. A painted window has been subscribed for by the wife of Mr. Hudson, M.P.——At Craigmark, Ayrshire, where there are rich mines of black band iron ore and coal ready for working, nearly 100 dwellings for miners have been erected, with every attention to comfort and neatness, together with a school-house, store-house, &c. The Dalmellington Iron-works are also progressing within view of Craigmark, and a bleak and barren district is on the eve of conversion into a busy scene of industry, to which the opening of the Ayr Railway will afford every requisite convenience for crowning with success the enterprize of Messrs. Houldsworth and Hodgson.——The new 'free' church at Oban was opened on the 29th ult. The plan of this church, 'which, in its style of architecture,' says a Greenock paper, 'is, we believe, quite unique in Scotland, was furnished by Mr. Cousin of Edinburgh, at the request of Lord Breadalbane.'——The Irish National Glass Company is said to have proved a 'ruinously profitless' undertaking.

## ST. MARK'S CHURCH, KINGSHOLM, GLOUCESTER.

We mentioned the consecration of this building, which took place on the 31st ultimo. We are now able to subjoin a few additional particulars. The foundation-stone was laid by the Dean of Gloucester, on the 26th of March, 1846. The site for this church was purchased out of the funds of the Diocesan Church Building Association, for the sum of 300*l*. It is calculated to hold 600 persons, and the whole of the sittings are entirely free. The plan of the church consists of a nave internally 67 feet long by 18 feet wide; north and south aisles, 55 feet long by 12 feet wide; a tower adjoining the west end of the south aisle, thereby leaving the western gable of nave exposed to view, and which tower is internally 10 feet square, the height being 58 feet, finished on the top with a slender broach spire, ribbed at the angles, the total height together being 120 feet. The chancel attached to the nave is 16 feet by 24 feet, having a vestry on the north side 9 feet by 10 feet. The total length internally from east to west is 93 feet 6 inches; and total width across nave and aisles together 47 feet. The height of nave to point of roof is 41 feet. The walls of the church are built of white free stone, in range work pecked over, with dressed and tooled quoins, window and door jambs, mouldings, &c. The stone was supplied from three various quarries in the neighbourhood of Gloucester. The weather-stone being had from the quarries at Hampton Common and at Box, near Bath. The roofs, open sittings, and western gallery, are all constructed out of deal, and stained. The pulpit and font are of Painswick free-stone. The gangways and floors between the seats, and the chancel are paved with plain red, black, and buff floor-tiles, arranged in patterns. The aisles are separated from the nave by stone pillars (alternately octagon and round) and arches, upon which the clerestory to nave is carried. The whole of the principal roof-timbers spring from stone corbels from the side walls; and the clerestory windows are placed between each of the bays of nave roof. The eastern window, presented by the rural dean, is filled with stained glass, executed by Willement; the four lancets also, in the chancel, with stained glass, by Rogers, of Worcester, and all are the gifts of private individuals. The western doorway is another gift. The font was presented by the architect, Mr. F. Niblett. The style of the church is early English. The contractors for this church were Mr. Ashbee, builder, of Kingscote, and Mr. Matthew Cholerton, of Quedgeley.

Several beautiful embossed fragments of vases and other pottery, as well as of glass, coins, tokens (in copper), besides bones of animals, were excavated in digging for the foundation walls; these relics, now in the possession of the architect, are said to be principally of Roman origin.

St. Andrew's Church, Langton, Lincolnshire.—On Tuesday in last week, this edifice was consecrated by the Lord Bishop of the diocese. The building was commenced in March, 1845, Sir H. Dymoke, Bart., laying the corner stone; and it was opened for divine service in November last. It is of the perpendicular style of architecture, and consists of a south porch, nave and chancel, with a small pulpit and vestry turret, with a gable to the west. It has a high pitched roof, surmounted with floriated crosses. The ashlar stone is from Ancaster. The stones for the wall were dug from the ruins of Stixwold Abbey. The pulpit is of Caen stone, the gift (together with the stall heads) of the architect, Mr. Stephen Lewin, of Boston. The seats are open benches of foreign wood, stained (as is all the other wood-work) of the colour of dark oak. The east window of the chancel is of three lights, of stained glass, the work of Ward and Nixon, from a design of the Rev. C. Terrott, a member of the committee. The church was built by public subscription, aided by a grant from the Church Building Society, and all the sittings, 200 in number, are free and unappropriated.

## ARRANGEMENTS FOR THE PREVENTION OF FIRES

### IN SHEERNESS DOCKYARD.

Sir,—On perusing one of your valuable papers, The Builder, dated some months back, I observed in an article on the supply of water for extinguishing fires, that experiments were in progress at Liverpool for fixing hose and jet-pipes to a system of water-pipes, giving also an account of the water-pipes in the Dockyard at Portsmouth.

Having some months since been at Sheerness, and seen the arrangements at that establishment for the prevention of fire, that have been in use for these fifteen years, and, I believe, excel all others that have been constructed in any part of the kingdom, I beg to give you the following outline of them.

In the first place, there are two steam-engines of fifty-horse power for pumping the water out of the docks by common lift-pumps, but so arranged that the same pump-rods can be attached in about a minute to four force-pumps, capable of throwing fifteen tons of water per minute over any building in the yard, or to the top of a first-rate man-of-war's mast. The water is conveyed by a system of cast-iron pipes of twelve and nine inches bore, having double-way fire-cocks or plugs for attaching the hose to, at from ten to two hundred feet intervals, according to the locality. These lines of pipes are provided with stop-cocks, that should any part burst or give way, the water can be stopped and directed by another course, or the whole of the force or quantity may be thrown into one place, or deviated into other districts. These pipes are also provided with large air-vessels at different parts, so as not only to regulate and keep up a constant supply, but to protect the pipes from the shock or impulse, by the sudden shutting off of any of the cocks, while in operation. Some idea may be formed of the power and effect of this system, by the fact, that to allow the full force to one of these pipes, it requires the united strength of four men to hold the hose and jet pipe, and that the stream will tear off the slates on a roof, and pour the whole quantity into the house or building, while at the same time the jet may be regulated to the power of one man.

There is also another provision made, a line or system of pipes of the same dimension, and in the same courses, for the supply of water from a reservoir of 1,000 tons, over the same engine-house, 40 feet high, and which can in an instant be discharged over any part of the establishment. These pipes are more particularly for supplying fire-engines, but so contrived that, by shutting one cock and opening another, the water can be used by the force-pumps of the steam-engine.

The steam is continually kept up, and an engineer is in attendance, so that at any hour of the night, on the alarm of fire being given, the engines have merely to be started, and the water is forced to any locality the fire might be raging, whereby the delay that generally occurs, and consequently the fire increasing, is obviated. Engineers who may be engaged in the construction of such works, will save much time and study by a few hours' inspection of this excellent contrivance of hydraulic machinery.—I am, Sir, &c.,

St. Nicholas-street, Ipswich, A. M.
Sept. 17th, 1847.

Fine Arts at the London Mechanics' Institution.—An exhibition of drawings and modelling executed by the members and students of the modelling human figure and landscape drawing classes of the London Mechanics' Institution, will take place on Monday, September 27th, and remain open the whole of the week, to commence at 8 o'clock, P.M., and close at ½ past 10, P.M. We are asked to mention this as a contradiction to "those who think that the Mechanics of London have no brains to generate new forms either of beauty or usefulness, and are unable to assist those who are above them in art."

Iron Bridges on Railways.—The commissioners recently appointed to inquire into the application of iron in railway structures held their first meeting at Gwydyr-house, on Saturday last: present—Lord Wrottesley; Professor Willis, M.A.; Capt. Henry James, R.E.; Eaton Hodgkinson, Esq.; and the secretary, Lieut. Douglas Galton, R.E.

## THE EXCHANGE AT ANTWERP.



### THE EXCHANGE AT ANTWERP.

The commerce of Antwerp had been gradually increasing during the 14th and 15th centuries, and when in 1482, the quarrel between the people of Bruges and the Archduke Maximilian induced that ruler to blockade Sluys, the trade of the city of Bruges began sensibly to decline, and that of Antwerp to increase, until the latter became the great centre of European commerce. All nations traded there, and at one period, it is said, that 2,500 vessels have anchored in the Scheldt opposite this city at one time. The English merchants traded here considerably, and the house devoted to their use is still pointed out close to the Hotel de Ville. The public buildings of Antwerp shew the wealth and taste of its traders in the days of its prosperity, and sadly contrast with its present decline, which dates from the devastation of the city in 1585, by the Duke of Parma, when the Scheldt was blockaded, a restriction upon its trade never removed until 1794.

The Exchange was constructed in 1531, for the use of the merchantmen. It is in the form of an open square, with an arcade all round, and has a richly groined roof, the pillars which support it elaborately carved, each one in a different manner. A tower, containing a clock and bells, is on one side. It is an interesting pile, inasmuch as it is the earliest building of the kind, and gave the idea to our own Sir Thomas Gresham, for the construction of a similar edifice in London. Any one who examines a view of Gresham's Exchange, will see how closely he followed that at Antwerp in its construction. Before this, our traders met in the open streets in all weathers "and were content to walk about in the rain more like pedlars than merchants," until the private munificence of Gresham gave them a proper place to meet in, the ground only being given by the citizens. F. W. F.

*** At p. 51 *ante*, will be found an engraving of an interesting stone staircase of the Gothic period, adjoining the Antwerp *Bourse*, now represented, together with a short notice of the place. Some further remarks on Antwerp, with an engraving of carved woodwork in Antwerp Cathedral, will be found in Vol. IV., p. 534. In the accompanying engraving of the Bourse of Antwerp, the columns, which are very slight, are made to appear somewhat stouter than they are in reality.

## DRAINAGE OF MANCHESTER.

### CHEAP SEWERS.

Mr. Francis, who has been engaged as surveyor for the paving and sewerage of the township of Manchester for upwards of twelve years, says, that during that period they have paved and sewered about 600 streets. He writes to us as follows:—"I believe our system of sewerage was found, by the sanatory commission, to be at least as effective and economical as any they had met with. In reading the reports of evidence given before the sanatory commission, I was most struck by that of Mr. Dyce Guthrie. His suggestion of the use of tubes or pipes of burnt clay for drains and sewers, appeared to me highly worthy of consideration; but I found that his idea of forming sewers in three pieces was impracticable' at least with any material found in this neighbourhood, because the sections would warp out of shape in burning, and therefore could not be put together to form a perfect tube. I recommended the use of 6-inch and 9-inch pipes for private and surface drains two years ago. The committee adopted the suggestion, and we have used them ever since with perfect success, and thereby effected a saving in that item of forty per cent.

It was in January last, that the idea of the syphon trap occurred to me; and I claim it as my invention, so far as the adaptation of an old principle in a new material and to a new purpose may be called a new invention. Our trap is a tube of fire-brick material, the sides 1½ inch thick, with a horizontal aperture a foot square at one end, and a vertical aperture of an oval shape at the other end: over the square end is built an eye of brickwork, covered by a channel grid, forming what you call, I believe, a "gully hole." We have laid down about a score of these, and find them completely effective: they save us a pound in each case. The trap we used before was a kind of iron pan, with a cross piece dipping into the water.

Immediately after this, being so far well satisfied with the introduction of the fire-brick material into our sewerage, I again took up the idea of making *main sewers* of the same material, and the conclusion I came to, was, that the thing was only practicable by having entire tubes formed of equal lengths, the egg-shape to be universally adopted, and the sizes to graduate from 6 inches (taking the smaller diameter) upwards to the largest that could be made. The sewer being laid in lengths of

tube of 2 feet each wherever a branch drain would in future be required—it would only be necessary to take out a 2 feet tube and replace it by another which had an oval aperture formed in it while in the plastic state.

The following sizes have been already made: 6 inches, 9 inches, 12 inches, 15 inches; and I expect to be able, as experience is acquired in the manufacture, to go up to 18 and 21 inches (the smaller diameter). We have now three makers engaged in producing these larger pipes for us as fast as their other engagements will allow, and are storing them up (having engaged a wharf expressly for the purpose) until we have a sufficient stock to make a fair start, and our legal forms will allow us to use them. I am confident of ultimate success, and that we shall save by their use 2,000*l.* a year in this township alone."

## DECORATIONS IN LEATHER.

Except under peculiar circumstances, the public are a long time before they will adopt any novel mode of construction or new material: to make it known even is a matter of difficulty and cost. Mr. Leake's works for the production of the relievo leather decorations have been in active operation for some years, and yet, we will venture to say, this material is wholly unknown to two-thirds of our readers.

In various countries and from the earliest times, leather has been employed for interior decorations; and various examples of its use in England, especially of the medieval period, in the shape of stamped, painted, and gilded hangings, are to be found. Its toughness and strength, the ease with which ornamentation may be applied to it, and dust and dirt removed from it, pointed it out as a valuable material for the purpose. In its modern use, to which we would draw attention, its susceptibility of form has been taken advantage of, to a much greater extent than was formerly supposed possible, and a degree of relief obtained which, though in some degree it changes its character, widely increases the extent of its applicability. The process is simple: the leather is first subjected to the action of steam in a metal trough, which renders it susceptible of very minute impressions. The design it is to assume is formed in a metal mould, and into this the leather in its most "pliant hour" is forced by hydraulic power. When removed from the mould (and we may mention that scarcely any extent of undercutting prevents its withdrawal, in consequence of the yielding yet tenacious nature of the material at that moment) a little water-colour and varnish, it may be, bring it to the tint of either old or new woodwork: or it will receive such other painting or illumination as may be desired.

Works of considerable magnitude have been executed by Mr. Leake in the shape of *furniture*, as well as decorations, including much for her Majesty: the Ascending-room of the Colosseum (few people detect it) is fitted up in this manner; and further, the material is now being applied extensively to the enrichment of *book bindings*.

It is unnecessary for us to observe, that the material is applicable to the production of bad as well as of good ornament, and that, if it were not under competent direction, the results would be worse than valueless. Mr. Leake, however, educated an architect, evidently brings to the undertaking an artistic mind, and calls in good aid for the production of designs. Amongst a large number of patterns, we saw little to be found fault with, and much worthy of praise.

For the accompanying engravings of three friezes or borders (figs. 1, 2, and 3), a bracket (fig. 4), and a "drop" for the enrichment of pilasters or panelling (fig. 5), we are indebted to our liberal contemporary of the *Art-Union Journal*, who, in a recent number, described and illustrated the "Relievo Leather-works" very fully, and expressed a strong opinion in their favour.



*Fig.* 1.



*Fig.* 2.



*Fig.* 3.



*Fig.* 4.



*Fig.* 5.

DECORATIONS IN LEATHER.

Continental Railways.—Bradshaw's "Continental Railway Traveller's Manual," for the present month, is the most complete thing of the sort that has ever been published, including maps and information of great value to the tourist.

## RAILWAY JOTTINGS.

A MUCH more considerate suggestion than that of the Liverpool Stock Exchange gentlemen to suspend railway works at large, has been made by the *Times*, for the equalization of *projected* works with available future capital,—namely, that the *commencement* of 'extensions' rather forced on companies than spontaneously undertaken, *be delayed*, and future calls limited accordingly. The *Times* throws the whole of the foreseen difficulty on the shoulders of these Stock Exchange gentry, "who would have done well to have reckoned up the resources of the country before they persuaded their customers to lend money for works which two Great Britains could hardly accomplish. They now throw their own blunder off their own shoulders on the famine. * * * Sir Robert Peel and Lord John Russell forgot that there was a supply of fools as well as of money." All *we* have to do with the money, however, is to see that it *is* supplied, but if the fountain-heads be those of fools, one cannot but dread the exhibition of folly in turning off the stream no less than in turning it on. The railway calls for September exceed by nearly a quarter of a million the average for the preceding eight months of the year, and by nearly two millions the amount of what was claimed last month. The amount of calls due on English lines, and payable this month, is 2,536,624*l*. On Scotch lines, the amount payable is 90,000*l*., and on Irish lines 99,750*l*., making a total of calls due this month of 2,726,374*l*. The total amount called up, this year, by English, Scotch, and Irish companies, is, including the present month, 27,984,023*l*. This is exclusive of 6,238,000*l*., which has been called up by foreign lines. The amount of projected works, too, is certainly something quite enormous. "For the next four years there will probably be 1,500 miles a year to be completed, if the directors keep their word,—that is, we shall have to make in each year nearly half as much length of line as had been opened for traffic from the first mention of railways." But as to the number of miles in course of construction, viz., 6,455 [only 3,305¼ being yet completed], and the three-fourths, on these, of half a million men, or of two million mouths, dependent, in all, on railways,—equivalent, as the *Times* rather oddly regards these sons of industry and prospective profit, to an idle 'foreign army quartered on the country,'—the immensity of the numbers employed on these progressing works affords only all the stronger reason for hesitation to tamper with their only means of honestly earning a livelihood. That the drag, however, is about to be put on by the stock 'bears' in one shape or other seems but too evident. ——Meantime, the bricklayers at work on the Great Northern line in the Gainsborough district, all unconscious of the threatened brush of the sweeping besom of destruction, are wrangling with their employers for 6d. a day in addition to the 4s. 6d. which they ought to be thankful that they still obtain, and they have accordingly not only 'struck for 5s.,' but have induced 'the whole of the other workmen' to follow their example. ——A shocking 'accident' occurred at the Hadleigh station of a branch line of the Western Union on Friday last, when a hurriedly erected 'wing' wall of 14 feet in height, was blown down by the wind in one mass upon upwards of 150 passengers, who had unfortunately trusted to its sheltering wing for protection from the wind, whose melancholy 'wail' was thus but too effectually raised into a shriek described by those whose ears it rent as 'dreadful in the extreme.' Yet, strange to say, *only* 'more than sixty' were more or less injured, and not one killed—a merciful circumstance, attributed to the fall of the platform beneath the accumulated weight of wall and people together. As it is, however, fractured ribs, limbs, and collar-bones, and concussions of the brain were found among the more numerous bruises and wounds. No one is blamed, the accident being attributed entirely to the strength of the wind, and the weakness of the newly-erected wall. But surely, if the wind were so high, some warning of the weakness of the wall ought to have been given to the unfortunates who trusted to its protection.——In a verdict of 'accidental death' from the breaking of a rail, and the consequent oscillation of the coupé, which was the last carriage of the express train of seven, to which the accident near Sowerby-bridge happened on Thursday week, the jury added, that they "cannot separate without suggesting the necessity of having a luggage or break van attached to the end of each express train, as an additional security to the passenger carriages, and to obviate the dangers arising from the great oscillation of the last carriage; and they would also recommend that some mode of communication should be adopted between each carriage and the guard in charge, as the fatal result of the present accident might have been avoided if such had been the case." It is really extraordinary that nothing has yet been done towards the removal of this latter fertile cause of accident, inconvenience, and danger. Why, so crying an evil has this now become, that we find the very vocalists of the theatrical profession singing out at length against it, and prompting their 'friends the engineers' to a remedy. Mr. Paul Bedford, of the Theatre Royal Adelphi, declares to the editor of the *Morning Post*, that while travelling from Liverpool with his friend, the late Frederick Yates, on one occasion, a lady suddenly became frantically mad [by the way is there not some peculiar reason—either in the bewildering whisk and confusion of objects or otherwise—why so many predisposed persons *go* suddenly mad in such circumstances?], and that in this fearful state they were obliged to fly along for more than twenty miles, until the train stopped at a station. "I fancied," says he, "that my voice was not that of a *babby*, but I could make no impression upon the auricular organs of the officials;" and so Mr. Paul Bedford's pipe not being a railway shrieker, he recommends the substitution, in each compartment of every carriage, of "a powerful 'Porteous whistle,' such as frequently I hear at Apsley House, giving notice to open the gates, when F. M. the Duke Wellington and I happen to be going homeward at the same time—tho' not together." "The quality of the sound possessed by these whistles," he adds, "is excessively acute, and grates terribly on my musical ear; but I am told they can be heard at a great distance, and above any rumbling of a train."——But suggestions, as we have already said, are as 'rife as rowans,' and, accordingly, another happens to lie before us in the shape of a signal invented by Mr. Heinke, of Great Portland-street, but as it appears to be based upon one [indeed to be almost identical with one] suggested some time ago by a correspondent of our own, and already described, we need only here remark, that it consists of an arrangement of wires or cords, run along the tops of the carriages, with spring bells for the communication between guards and engineers. A model of it, according to the *Mining Journal*, has been submitted for inspection by Mr. Heinke, and plainly indicates that the advantages in view may be thus obtained without much cost.——The foundation-stone of the 'immense viaduct' over the Stour Valley and river at Chapple having been laid on Tuesday week with the usual ceremonies, coins were deposited, and a block of stone, weighing half a ton, was lowered down upon the deposit, so that all might be safe for the next eight or ten hundred years. But, alas! the 'schemes o' men and mice gang aft agee.' The dirty paws were withdrawn from the empty pockets 'i' the gloamin when the kye gang hame,' and then with 'the strong arm,'—not exactly of the law,—the plunderers of posterity 'lifted the lid,' and saved posterity the trouble of deciphering what might else have 'lain mouldering there,' instead of getting into brisk circulation at the 'change houses' of the ancient nineteenth century. The fortunate 'discoverers' of these 'relics of antiquity,' however, are not unknown to men of magisterial science,—Mr. William Hunt of Colchester, and Mr. William Coote of Norwich,—bricklayers, being already *noted* as the remarkable bricks who, in all probability, 'carried off the prize.'—Given, the number of coins thus deposited in the nineteenth century —to find the fractional remainder still in retentis.——The beneficial influence of railway extension is being felt in a small way at Reedham, which is 'becoming an important place,' and where there are now a 'new and elegant station,' a 'first-class telegraph station,' and other improvements.——A Birmingham 'Shopkeeper,' on the other hand, complains of the 'railway influence,' within whose greedy vortex all the 'Saracens' Heads,' the 'Blue Boars,' and the 'Pigs and Whistles' are now being whirled, since the majestic 'directors' have become 'licensed' public-house keepers; and adverting to the monopoly of strangers thus ingeniously concentrated within the four respectable walls of the respective railway stations, he asks, with a pathos enhanced by all the sweet reminiscences associated with the spirit of the departed pigs and whistles, whether it was ever contemplated by the legislature that railway companies should be 'licensed dealers in British and foreign spirits and tobacco.' Had not the 'lodging-house keepers' better look out for 'railway competition?'——The 'old river and canal navigation' between Liverpool and Manchester appears to be any thing but defunct in consequence of the stunning blow which 'railway influence' must have dealt it long ago. Fares, 1s. 4d. each for the trip of fifty miles, have been announced by a shower of placards. Can it be that railway companies are about to find, that they will be more smartly and completely relieved of their low-class passengers than even they had wished, and that the winding silvery 'snake in the grass,' which they had calculated on having well dispatched, has indeed been only 'scotched' till now that it is about to sting them?——The causes of complaint against railway management appear to be legion. They are ever appearing under some new form. Parcels take from Monday to Saturday to travel from London to Wakefield, since these omnigatherous monopolists have become ('licensed,' we suppose) as common carriers. For the smallest parcel by passenger train the cost is 2s. 11d., so that the *reason* for the delay in the first case is very clear and transparent; but the P. O. may now take the shine out of them, and bring them back again to the O. P. In Leeds, the same parcel would be delivered by a company for 9d. In Sheffield, too, the rate of carriage has been increased by these licensed carriers more than 30 per cent., as the editor of the *Iris* can feelingly testify in his own person, or pocket at least.——In a railway compensation case at Shrewsbury, a rag and bone dealer lately declared that he did business to the amount of 1,000*l*. a week. How grieved must some of the barristers have been that *they* were not brought up to such a business.

## THE STATE OF ARCHITECTURE IN IRELAND.

DEPLORING the present condition of architecture in Ireland, and anxious, if possible, to induce measures which might tend to advance it, the Royal Irish Institute of Architects resolved on an address to his Excellency the Viceroy to that effect.

A deputation of the body, headed by Sir Richard Morrison, presented it last week; and his Excellency, in reply, said:—"It is not for me, gentlemen, to analyse the causes which may have led to the state of things of which you naturally complain, however strange it must appear to me that architecture should not be duly esteemed in Dublin, one of the most picturesque cities in her Majesty's dominions, and adorned as it is by so many noble public edifices, or in a country where such magnificent mansions exist, where genius is not rare, and taste and talent abound; but if happier days, as I venture to hope, are in store for Ireland, they must bring with them that encouragement of art and science which always marks a nation's progress, and they will strengthen a conviction, now on all sides manifesting itself, that the social condition of her people must be elevated. Towards carrying out this pressing and national object, the Royal Institute of the architects of Ireland may, as it seems to me, powerfully co-operate; for when it is considered how much requires to be done towards the improvement of towns, and thereby ameliorating the sanatory condition of the people, and how little care has hitherto been bestowed upon the dwellings of the humbler classes of our fellow-subjects, that the places of religious worship, schools, hospitals, and asylums, are insufficient for the wants of the country, a wide sphere of usefulness is manifestly opened to a scientific and practical body such as yours; and I feel sure that the architects of Ireland, like the most eminent men of their profession in every country, will at all times be found ready and anxious to aid the great work of social improvement."

## MAXIMS IN CONSTRUCTION.*

1. To collect physical facts, to deduce laws, and to apply them to circumstances, such is the progressive operation of the mind in the study and application of *construction.—Lacroix.*

2. Construction has for its laws the principles which govern matter; for materials, the productions of the vegetable and mineral world; and for its end, resistance to weight, a successful struggle with the elements, and victory over decay.

3. There are three leading points of view under which to regard all construction—statical, qualitative, quantitative. Statical relates to the disposition of the masses: the two latter points refer to the quality and quantity of the materials which have a mutual relation and control as to solidity and stability.

4. It is incorrect to regard decay and destruction as entire annihilation of substance. Decay is but a species of transition from one state to another. The first elements of any substance, which is reduced to a powder, sublimated to a vapour, or converted into a gas or steam, still exist in another form, assuming a new combination.

5. Ignorance, haste, and parsimony are three great enemies to substantial construction.

6. The rot in timber germinates in damp, expands in heat, but shrinks and dies in perfect ventilation.

7. Green wood laid in peat will last for ages.

8. Expansion and contraction, the effects of temperature, are constantly operating in all construction the most solid, in all materials even the most dense. Hence a perpetual movement destructive of cohesion, and by disintegration inducing decay.

9. Water is the most destructive agent to construction. There is no quantity so small, which, if repeated, is not ultimately fatal. The softest as well as the hardest material must yield to its insidious attack. No adage more true than "Gutta cavat lapidem."

10. Our forefathers knew the connection between moisture and decay in soft material. Hence in the buildings of the districts where the soft stones prevail, the bottom courses of the walls will frequently be found to be formed of a hard and impervious stone, the strata of which are called by the quarrymen foundation-stone.—*C. H. G.*

11. Walls always above or always below water, may, under certain circumstances, be laid without mortar; when between wind and water they never should.—*C. H. G.*

12. "All the mechanical effects that tend to destroy buildings, arise from weight, which acts in an inverse ratio to resistance," says Rondolet. How important then the study of the mutual relations of void and solid, load and support, action and resistance!

13. Weight is a constant force, with which all solid bodies appear to act.

14. All parts of solid bodies fall in a vertical direction.

15. All thrust and lateral pressure, whether in a truss, a buttress, a dome, a vault, or arch, must be resolved into vertical weight.

16. Lines of pressure must always be at right angles to the joints of the beds.

17. The true strength of materials in construction depends rather upon their distribution or their application than upon their quantity.

18. Voids over voids, and solids under solids.

19. He is the ablest constructor, who, with the least surface to his points of support, upholds the greatest weight, uniting strength and economy.

20. The freemasons of the middle ages have established this principle of construction, that, with equal quantities of material, a thin wall with buttresses has greater strength and stability than a thicker wall without.

21. Piers with equal superficies of base, as a circle, a square, an equilateral, and a right-angled triangle, have the following strength approximatively: 100, 93½, 86, and 76⅔. A square is to a parallelogram as 100: 95.

22. The strength of a wall depends rather upon its stability, than upon the greater or less hardness of the materials.

23. The stability of solids diminishes in proportion to the height of the centre of gravity.

24. Strength sufficient (for the immediate purpose) is not strong enough, therefore it is better to have too much solidity than too little.

25. Nevertheless all *unnecessary* material is not only wasteful, but prejudicial.

26. No wall, nor framing, nor in fact any piece of construction, ought to be charged with more than two-thirds of the load which it is calculated to bear: in railroads, where the load is variable and concussion takes place, the law is one-third.

27. Tredgold in his essay on cast-iron lays down two leading principles—"That the measure of the resistance of a material to flexure is the only proper measure of its resistance (to a straining force), where perfect form and unalterable position are desirable."

28. And that "the measure of its resistance to permanent alteration is the proper resistance (to a straining force), where flexure is not injurious or objectionable."

29. It is not the fracturing weight which is required in practice: but that weight which will not injure the material.

30. Permanent alteration of form, however slight, is partial fracture.

31. Eaton Hodgkinson, in his supplementary part II. to Tredgold's work on cast-iron, says, "that there is no weight, however small, that will not injure elasticity.'

32. A beam will bear twice as much weight distributed over its length, as it would do, if the weight were in the middle.

* From Donaldson's "Architectural Maxims and Theorems." Taylor and Walton, Gower-street.

## POSITION OF THE ALTAR IN EARLY CHURCHES.

A REMARK in one of Mr. Donaldson's lectures at Liverpool has led to a skirmish in one of the local papers. "An Architect" writes—"Mr. Donaldson, in his last lecture at the Collegiate Institution, stated that the practice of placing churches east and west was not ancient; and, in illustration, further stated, that the celebrated church of St. Peter, at Rome, stood north and south, and that the other churches of Rome were placed according to, or accommodated to, the directions of the streets. As regards St. Peter's, Mr. Donaldson is quite wrong, that church actually standing east and west; but St. Peter's and the most important churches of Rome were either built upon the site, or constructed out of the remains of ancient temples, and therefore their position was not a matter of choice; and almost all the minor churches of Rome are of the 16th or 17th centuries. Mr. Donaldson, if he will reflect, will find that *all old* Christian churches are placed east and west, the east end being devoted to the altar, and this custom has been almost invariably followed in Great Britain down to the present time."

"Another architect" replies, "When a critic undertakes to enlighten the public, and to correct the mistakes of others, he should be quite certain of the strength of his position, or he may chance to find he is only exposing his own ignorance. A correspondent who signs 'An Architect,' in the *Mercury* of Tuesday last, finds fault with Mr. Donaldson for stating, in his last lecture, that St. Peter's, at Rome, stands north and south, and that the other early churches of Rome were placed without regard to what is called the orientation of the altar. Your correspondent maintains, on the contrary, that '*all old* Christian churches are placed east and west, the east end being devoted to the altar.'

As it regards St. Peter's, Mr. Donaldson is certainly wrong, as the building undoubtedly stands east and west, but unfortunately for your correspondent's position, the high altar is not at the *east*, but at the *west* end of the church.

With regard to the other early Christian churches of Rome, I will merely quote a passage from the historical essay of the late Thomas Hope, an authority on this subject whom none will dispute, which will fully bear out Professor Donaldson in all he asserted. It will be found in chap. 10, p. 101, third edition.

'The early basilicas were not, as later modern churches have been, directed towards peculiar points of the compass. Santa Maria Maggiore, built by Pope Liberius, who died in 366, faces the east; and at Rome, the directions of the other early churches cross each other in every sense. The custom of submitting to any inconvenience, rather than omit to turn the sanctuaries of churches due east, dates from a later era.'

The matter is in itself of no consequence, but as the Camdenists and Ecclesiologists of the present day attach such prodigious importance to trifles of this kind, it is as well to shew that the early Christian church placed no such value upon them."

## RESTORATION OF STEPNEY CHURCH.

IN accordance with a request on the part of several correspondents, we journied last week to the old church at Stepney, to learn what was being done, and found it completely gutted, preparatory to a general restoration. The galleries, which projected in front of the arcade columns, are taken down, and though unfortunately there are still to be side galleries, these are set back three feet from the columns, and supported independently. The present west gallery, which projects over the space of *two bays of the nave*, is to be removed, and a small one, projecting but a little from the tower, is to be substituted.

The old pew framing in the body of the church, which one of our correspondents feared would be put up again, is to be remodelled, being cut down to the height of 2 feet 8 inches, and to have solid capping, and be otherwise made as like the ancient mode of seating as it will admit of. The materials of the old pewing were too sound, it appears, to be wholly cast aside, but there will be a large proportion of new work. The *ceilings* of the roofs are to be removed, and the timbers exposed and stained, &c. The skylights in the galleries also, are to be taken away, the painted altar-screen to be taken down, and the east window restored and opened: in short, as far as we can learn, the church will be restored to its original state as fully as circumstances will permit. Mr. Ferrey is the architect employed.

The building appears to be in a very shaky state, and needs careful handling.

## THE PROPOSED AQUEDUCT COMPANY

### FOR SUPPLYING THE METROPOLIS WITH PURE WATER.

THE 'admitted existence of a strong necessity for improving the present defective supply of water to the metropolis' has led to the announcement of a project so comprehensive—we had almost said so vast—as actually to call forth an engineer's assurance, that the quantity of water to be ultimately withdrawn for the purpose from the Thames at Bray, would *not* affect the navigation of the river—and certainly such an assurance was more than half necessary since it is proposed to abstract, in future years at least, no less than 50,000,000 gallons out of the whole 200,000,000 at Bray—a fourth part in short,—which it is proposed to conduct into ten subsiding tanks of 5 acres each, and ten filter beds of 2 acres each to be formed as required during the increase of the supplied population, in twenty years, to 3,000,000, at the rate of twenty-five gallons per diem; and thus filtered, this immense volume of water is then to be immediately conducted through a tunnel aqueduct of brick-work 12½ feet interior diameter, based 6 feet under ground, and encased in puddle, to Hampstead-hill, where it will be perpendicularly raised by ten out of twelve steam-engines of 250-horse power each, working four and four into one central shaft of 20 feet diameter, to an elevation of 250 feet above high-water mark, into four reservoirs, holding 70,000,000 gallons, whence it will be uniformly supplied under a high pressure, through the present or other pipes, to the whole metropolis, not only for domestic and other ordinary purposes, but also for the extinction of fire [and might it not have been added, for the occasional scouring of an extended system of small-bored sewers, even rapidly and with unfiltered water, 'let on' below the filtering reservoirs, and raised into tanks for the purpose? ].

In the meantime, it is only proposed to have a sort of skeleton or miniature of this magnificent establishment, suitable however to its ultimate scale, and indeed at once supplying 25,000,000 gallons per diem, for which a revenue of 47,526*l.*, capable of yielding about 5 per cent. on the capital of 550,000*l.*, sunk on

the outset, is expected. Ultimately 7 per cent. on the maximum of 750,000*l.* is estimated by Mr. Thomas Hawksley, C.E., from whose more detailed preliminary report we gather these few particulars.

Variations or deviations, &c. of the plan are suggested, and the river Colne is proposed to be taken into contribution on any plea of injury to the Thames being urged; and it is expected that the whole scheme will be referred to the Woods and Forests, and the ensuing Parliament. The whole of the almost altogether light, simple, and inexpensive groundwork may be executed, it is said, in two years from the passing of the Act for its construction and establishment.

## RAILWAY RHYMES.

The poet Wordsworth, as readers will remember, in a moment of irritation once fired off a sonnet at an advancing railway, more remarkable for elegance than wisdom. "Is there no nook," he said,—

"Is there no nook of English ground secure
From rash assault? Schemes of retirement sown
In youth, and 'mid the busy world kept pure
As when their earliest flowers of hope were blown,
Must perish. How can they this blight endure?
And must he, too, his old delights disown,
Who scorns a false utilitarian lure,
'Mid his paternal fields at random thrown?
Baffle the threat, bright scene from Orrest head,
Given to the pausing traveller's rapturous glance!
Plead for thy peace, thou beautiful romance
Of nature! And, if human hearts be dead,
Speak, passing winds; ye torrents, with pure, strong,
And constant voice, protest against the wrong."

In an article headed, "The Poetry of Steam," the *Railway Record* offers a replication to this, and sings,—

"Scorn not the railway, Wordsworth! you have frown'd,
Because the railway threatens Windermere;
But did you live in London, 'twould be found
You would be glad to bring the blue lakes near;
To change, within an hour or two, the sound
Of Fleet-street for those wanton wood-notes clear;
The crush and crash of cabriolets and crowds
For meditation of the mingling clouds.
For us, we love the railway as a sign
And token of a world-embracing power,
Which shall in time all men and minds combine,
And creeds and systems. Pray thou that this hour
May come, and quickly, and this faith prevail;
And scorn not, Wordsworth—scorn not thou the rail!

For, even as thou hast called upon the critic to "scorn not the sonnet," because with that key Shakspeare unlocked his heart, and Petrarch and Spenser, by that medium, gave vent to their sorrows, Dante to his occasional relief from indigestion, and Milton to his indignation; so do thou, great poet of the past, teach thyself respect for an agent by which, as by a key indeed, commerce will unlock her stores; by whose medium the nations will learn to communicate with and to understand one another; ambition, and war, and turbulence be kept in subjection; colonisation develope the neglected treasures of the imperial patrimony; and knowledge, civilisation, and religion cover the earth as the waters cover the sea.

Afterwards the writer objects to the course pursued by *The Times*, and says the latter, instead of protesting against *iron*, should protest against *gold*, our system of currency being the true cause of our commercial embarrassment:—

"You rail at rails, and say the dearth of cash,
Is due not to the Bank but to embanking;
For every symptom of the impending crash
You say these railways we must straight be thanking;
Is all your wit, then, that 'there's nought like leather?'
Owe we to railways, too, this change of weather?

Cease, Boanerges! cease to be so funny;
Too well you know how John Bull's bought and sold;
For all these roads, and more, he'd find the money,
Did not you measure all his wealth by gold.
Blaming the Railway King, and Lords and people,
As Goodwin Sands might Tenterden's new steeple."

## CROMLECHS IN THE CHANNEL ISLANDS.

An antiquary has raised his voice in the *Times* in defence of the very curious cromlechs in the Channel Islands, and urges justly, "that what time has spared to us so long as a record of our forefathers (possibly little less ancient than the pyramids, and but for wilful spoilers, little less imperishable), we, their far descendants, should be careful to hand down unimpaired to our children." He gives the following facts, which require consideration:—

"1. There lately stood a cromlech on the Monteau of Herm which now stands there no longer. The literati of the Athenæum Club, and the lovers of art who subscribed to the York Column, will, I do hope, be not a little wrathful when they are told that many of the granite steps leading to that recent round tower were contributed by this poor cromlech!

2. Poingdestre enumerates 50 primeval stone structures in Jersey alone; there are now but two: the granite trade and Macadam were inexorable. But why could not those ruthless despoilers have been satisfied with hewing up the rocks that wreck our vessels, in lieu of the relics that enrich our shores?

3. The spirit of military engineering is abroad, intending wisely enough to strengthen our outworks in the Channel. Now, unluckily, these cairns and cromlechs often overlook the sea; and, accordingly, at Lancresse Bay, the 'works' have already commenced by a threatened demolition of its celebrated cromlech."

## WESTMINSTER COURT OF SEWERS.

At a general court of sewers held on Friday last, Capt. Bague in the chair, Mr. Hertslet, the clerk, laid before the court two letters received from Mr. Farlar, a commissioner, and in reference to them stated, that at the last court it would be remembered it was resolved, that notice should be served upon parties in Houghton-street, Drury-lane, &c., owning the houses, in front of which sewers have been formed by this commission, to compel them to drain their houses into the public sewers thus provided. At the same time a question arose as to the liability of persons owning houses fronting private sewers to be compelled to use them, but the court declined to entertain the question. Since the sitting of the court, however, Mr. Farlar (a commissioner, and interested in property in Chelsea) had made a personal application to the court, and obtained several blank forms of notices, which notices had been filled up, bearing an official appearance, and served upon several persons, without any authority whatever from this court.

Mr. Marriott thought that Mr. Farlar had made an unwarrantable and extraordinary use of the powers of this court, and he considered there existed a necessity for inquiry. The chairman believed Mr. Farlar had no power legally to give notices, but that they must proceed from the court. Mr. Alderman Johnson said, that in using these notices a question would arise whether the party in so doing was not obtaining money under false pretences. Mr. Unwin said that the Act of Parliament might compel parties to enter the sewer fronting their premises. In this case Mr. Farlar had claimed a portion of the sewer belonging to this court, and for which 500*l.* had been paid.

The solicitor, upon being called upon for his opinion, stated that no commissioner had power to give notices. It was an entire misconception of the Act, for by the 10th & 11th Vict. sec. 7, all works must be done subject to the approval of the court.

Other commissioners having expressed their opinion upon the question, it was proposed by Mr. Alderman Johnson, seconded by Mr. Spencer Smith, and carried unanimously, "That the subject contained in Mr. Farlar's notes be postponed for further consideration, and that the clerk do ascertain what use Mr. Farlar has made of the notices given him by the clerk, and that the parties making complaints be desired to attend the next court and lay before them the particulars."

A letter was read from the guardians of the poor of the parish of St. Mary Abbot's, Kensington, as to the drainage of certain parts of Kensington, and calling upon this court to extend their plans for sanatory improvement in that locality, by covering in several open sewers. The subject was referred to the surveyor.

Several important matters stood on the paper for discussion, but could not be proceeded with in the absence of the surveyor, who had been summoned to give evidence before the Health of Towns' Commission. Several commissioners trusted that the absence of their principal officer on court days would be prevented for the future.

The next order of the day,—"To sanction the order of court for covering over 300 feet of sewer adjoining northward to Grosvenor-bridge, King's-road, Chelsea," led to a long conversation, it being contended on one side, that if done at all, it should be at the expense of the owners of property along the line; and, on the other, that it should be done by the district, as the owners of the property would not contribute a farthing towards effecting so desirable an object. The motion, on being put, was carried by a majority of 8 to 6.

It was reported to the court that the Metropolitan Sewage Manure Company were about to proceed with their works. Mr. Le Breton thought a certain sum ought to be paid by the projectors to this commission for the sewage removed from their sewers, which might be applied towards the liquidation of the rates of the district. Mr. T. L. Donaldson believed that sewage was, in this respect, like the valuable gems found in the earth, useless where they were, and only valuable when removed. Such being the case with the contents of their sewers, he did not think this court could interfere in the proposed plan. Other commissioners concurred, and the subject dropped.

## NEW FOREIGN ARCHITECTURAL BOOKS.

### GERMAN WORKS.

*Boetticher*, C.—Architectonische Formen Schule in Ornament Erfindungen, für technische Institute und Bauschulen, Architecten. (Models of Architectural Forms in the Composition of Ornaments.) Part 1, folio.

*Details der Façaden* von den vorzüglichsten Gebaeuden aus Hamburgs Neubau. (Front Details of the best New Buildings at Hambro.) Part 1 to 4, folio.

*Geier und Görg.*—Denkmale Romanischer Baukunst am Rhein. (Monuments of Roman Architecture on the Rhine.) Part 1 to 3, impl. folio.

*Horn*, J.—System of a New Style of German (Gothic) Architecture (with English text). 4to., 8 plates.

*Kallenbach*, G.—Die Baukunst des Deutschen Mittelalters Chronologisch dargestellt. (The German Architecture of the Middle Ages Chronologically Developed.) 8vo.

———, Atlas to the above. 86 plates, folio.

———, Album Mittelalterlicher Kunst (Album de l'Art du Moyen Age.) Part 1, 4to.

*Mappe* des Vereins für Baukunde in Stuttgart. (Album of the Architectural Society of Stuttgart.) Part 1, folio.

*Ortmann*, O.—Die Statik des Sandes mit Anwendung auf die Baukunst. (The Statics of Sand with regard to Building.) 8vo.

*Romberg*, I. A.—Die Zimmerwerks Baukunst in allen ihren Theilen. (The Art of Carpentry in all its branches.) Part 1 to 8, folio.

*Runge*, L.—Beiträge zur Kenntniss der Backstein Architectur Italiens. (The Brick Architecture of Italy.) Part 1, folio.

*Schinkel.*—Werke der Höheren Baukunst. Part 2, containing the Designs of the Projected Imperial Palace Orianda. 15 plates, No. 1 to 3.

*Titz*, E.—Architectonische Mittheilungen aus der Neuzeit Berlins. (Architectural Designs of the Newest Buildings of Berlin.) Part 1, 6 plates, royal folio.

———, Architectonische Ornamente. (Architectural Ornaments.) Part 1, 6 plates, folio.

*Unger*, L., and *Voigt.*—Sammlung von Rissen von hauptsaechlich in München Ausgeführten Privat und Gemeinde Gebaeuden. (Outlines and Plans of the most important Private and Public Buildings erected at Munich.) Part 1 to 6, folio.

*Zahn's*, W.—Ornamente aller Klassischen Kunstepochen. (Ornaments of all Epochs of Classical Art.) Part 1 to 13, oblong 4to.

*Zeitschrift* für Praktische Baukunst. (Journal of Practical Architecture, edited by Romberg.) 12 parts, 4to.

Enormous Suspension-bridge in Hungary.—The Pesth suspension-bridge, over the Danube, designed by Mr. Tierney Clark, and now nearly completed, is 1,200 feet long, in three spans; the centre span being 600 feet, the side spans 300 feet each. The chains are being made in England; the granite for the piers was brought in immense blocks, some of them from twelve to sixteen tons weight each, from Linz, in Upper Austria. The contractor for the cofferdams, &c., was an Englishman, as were the principal workmen, and all the machinery has been supplied from this country. The total cost of the bridge, as we understand, will be 600,000*l.*

Shakspeare's House.—The committee having purchased the house on the faith of the feeling manifested by the public, of course look to the public to bear them harmless. We would suggest that such of our readers as feel interested in the matter, should obtain half-crown, shilling, and sixpenny subscriptions in their various circles, and transmit the amount with the names to the treasurer.

## Correspondence.

RESTORATION OF WESTMINSTER ABBEY.

SIR,—I am not fond of rushing into print, but will you allow me just a little corner to throw out a hint to the dean and chapter of Westminster Abbey.

There have lately appeared in THE BUILDER correspondents who have been trying to rake up every argument they could find in favour of the restoration of this venerable and sacred building. One thinks it ought to be done simply because it wants it. Another because of the splendid buildings rearing their heads all around it, and he fears the poor abbey will be left in the lurch. No wonder that such common-place arguments as these produce no effect.

Let the dean and chapter take the advice of one who, unlike them, has got to live by his wits, and let them repair the abbey, not for the reasons before stated, but only *to increase the attractions of the show!* and consequently the number of sixpences in their pockets. Let them follow the example of the proprietors of the Colosseum, and Covent Garden Theatre. Look how they have taken since being repaired and beautified. How much better prices these places have commanded since their restoration. If they have not the money in hand, they should start a company, and have it provisionally registered,—capital, say 20,000*l.* in 10*l.* shares, and follow up their advertisement with an analysis of the amount of "traffic returns" for the last ten years, showing how much their incomes had increased during the time. They might also profit by the suggestion of your correspondent of two weeks ago, viz., that of having a room built adjoining the abbey to place the monuments in; and follow the wake of Madame Tussaud by heading an advertisement something in this fashion:—"Westminster Abbey.—*New room! Increased attraction!* The dean and chapter beg to announce, &c. &c." They might very appropriately call it "*The Room of Horrors!*" Why, the *un*enterprising managers of St. Paul's know how to cater for the public better than they do, for the latter exhibition is being beautified.

Depend upon it, the dean and chapter's fortunes and fame would soon be made if they would only take the advice of, yours obediently, P. M. R.

Ipswich, Sept. 13th, 1847.

WHO WROTE VITRUVIUS?

SIR,—Allow me to direct attention to the following extract from the *Gentleman's Magazine* for May, 1837, p. 522, in a notice of a meeting of the Institute of British Architects, on April 17th:—"A continuation of the correspondence between Schultz and Göethe was read, the subject being the *authenticity of the work attributed to Vitruvius*; the opinion of the writer was, that the work was a compilation commenced about 970, and finished in 978, by or under the auspices of Pope Sylvester II.," to which is added the following note, by the editor,—"The literature of architecture would suffer but little by the establishment of this point. Vitruvius has often proved a blind leader to equally blind followers."

Rather severe this, but not more so than consistent with truth: more than the above on the same subject has been published, and more decisive in the result, but I cannot recal to mind the exact *locus in quo*.

As some justification of the criticism in the *Gentleman's Magazine*, let me put the question—To what extent are we indebted to Vitruvius for the Parthenon?—Ans. *Nil*,—and, to come down a step of two or three hundred years, I will venture to assert we should have had a Salisbury Cathedral, although we had never been enlightened by the labours of a Vitruvius.—I am, Sir, &c., G.

Union-street, Borough.

TREATMENT OF SECOND-CLASS TRAVELLERS ON RAILWAYS.

MR. EDITOR,—Your remarks in THE BUILDER of last week on the abominable conduct of the officers and directors of the Brighton Railway Company in placing passengers in second-class carriages with insane persons, induce me to lay before you a similar occurrence on a railway which is considered to stand much higher than the Brighton—I mean the "Great Western."

I was returning to London from Gloucestershire, on Tuesday, the 21st inst., and at the Swindon station the passengers are transferred from the Gloucester carriages into those coming from Bristol, Exeter, &c.; here I, with another passenger, was put into a carriage in which were two men, having the appearance of farmers, and we had not proceeded far before it was apparent from his conduct, that one was insane; and the other informed us he was his keeper!

On arriving at Paddington, I pointed this out to the officer who takes the tickets, that there might be no opportunity left for denying the fact, which could be further proved by a gentleman of Hereford, who was a passenger in the same carriage.

I also pointed out to the same officer, the state of the carriage, which let the rain in so fast at the roof, as to have formed a large pool on each of the seats, and run down on the floor.—I am, Sir, &c.,

A FREQUENT TRAVELLER ON THE GREAT WESTERN.

Sept. 22, 1847.

## Miscellanea.

PIRACY OF GRANITE PAPER PATTERN.—Mr. Spurway, a house decorator in Bishopsgate-street, was charged on Saturday before last, at Guildhall, with having sold, on 27th ult., a piece of splashed granite paper-hanging, being a fraudulent imitation of a new and original design, registered on 20th November, 1846, by Mr. William Gibbs, of 149, St. Mary-axe, a manufacturer of paper-hanging. After the Copyright of Designs Act, 6 Vict. c. 100, had been referred to, and a number of witnesses examined on the question of originality and novelty, a witness of the defendant, the designer of the imitation itself in fact, settled his master's case for him, by admitting, while being 'put to the torture' in cross-examination, that he had just called in upon Mr. Spurway, and asked him if he had seen 'the new style of granite?' and said he could produce something 'which would work the same,' but be different in fact; and he sketched out in 10 minutes a representation of part of a five-sided, instead of a six-sided figure, which Mr. Gibbs's was. Mr. Alderman Wood said his colleague agreed with him that a fraudulent imitation of the registered design had been sold, and they fined the defendant 5*l.*, and 3*l.* costs. Mr. Alderman Sidney nevertheless intimated that he had his misgivings of the newness of the pattern imitated, but it had not been shown to be old.

ACCIDENT TO A RAILWAY ROOF.—We learn from the *Manchester Examiner*, that at the Lancashire and Yorkshire Railway Company's end of the Victoria Station, an engine getting off the rails, on Saturday last, and coming into collision with the last of the cast-iron pillars which support the wrought-iron roof, snapped it in two, bringing down immediately that portion of the roofing which it directly supported, and causing the two pillars next to it (the space between each pillar being about eight yards) to break also, bringing down a still further considerable part of the roof, producing a very loud report as each pillar fell, and presenting—with the fallen materials and the iron and glass-work which hung midway between the top of the roof and the ground, threatening to come down every moment—a scene of ruin and desolation to the passengers who came in by the train a short time after the accident occurred. A number of men were instantly set to work to pull down the materials of the roof, as far as they appeared to be in danger of falling, which they accomplished and wholly cleared in the course of the evening. The outer compartment of the roof was propped up for the space of sixteen yards, but the extent of roofing which fell or was obliged to be taken down, was about twenty-five yards in length, and at least twenty yards wide. The amount of damage is roughly estimated at from 400*l.* to 500*l.*

THE ARCHÆOLOGICAL ASSOCIATION has been formally invited by the council of Worcester to hold their next annual congress there.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of a chapel at Edwinstowe; and of a town hall at Yeovil; the excavation, building, and completing of part of the line of conduit to the Leeds water-works, being a length of two miles, together with waste weir and other works; the building of sewers for the commissioners of the Holborn and Finsbury divisions; the construction of 73 miles of the Birmingham, Wolverhampton, and Stour Valley Railway and branch to Dudley; and of 3 miles 11 chains, 2 miles 5 chains, and 7 miles 29 chains of extensions and alterations of the Midland line, and the erection of a station at Mansfield; also for painting and repairing the Brighton terminus of the London and South coast line, including offices, sheds, master's house, &c., and for the erection of a station at Cook's Bridge, near Lewes, on the Keymer branch.

FALL OF LANERCOST ABBEY CHURCH ROOF.—We regret to state, says a contemporary, that a very considerable portion of the roofing of this venerable structure has at length fallen in. On Tuesday, the 4th inst., in the night, and owing to the decayed state of the rafters which supported the roofing at the east end of the chancel, many yards gave way, and bursting through the ceiling, destroyed in its descent everything with which it came into contact. Judging from the dilapidated condition of the whole, the present fall is only the prelude to a greater, and it will be necessary that the edifice should be entirely re-roofed before it can again with safety be used for the purposes of divine worship. How is this point to be accomplished? The inhabitants of the parish will not easily be persuaded to undertake at their own expense so serious a task. Her Majesty's Commissioners of Woods and Forests have long held out hopes that they would lend assistance towards beautifying and repairing generally the abbey, but years have rolled away, and the matter appears to remain in *statu quo*. We trust, however, that in an age when, happily, the spirit is abroad for building and adorning churches, something may yet be done towards rescuing this noble and time-hallowed structure from the very disgraceful condition in which it has hitherto been suffered to remain.

ERECTION OF LUNATIC ASYLUMS.—In the last *Gazette* there are proclamations ordering lunatic asylums to be erected. 1. Near Mullingar, to contain 300 lunatic poor, and to be called the Mullingar District Lunatic Asylum. 2. Near Dublin, in addition to the existing Richmond Lunatic Asylum, to contain 300 lunatic poor. 3. Near Omagh, to contain 300 lunatic poor, and to be called the Omagh District Lunatic Asylum. In an official circular sent to the magistrates in those English counties that are about to build lunatic asylums under the new Act, very strict regulations are laid down as to the situation and construction of the building. Plans for the proposed Pauper Lunatic Asylum for Middlesex, to be erected at Colney Hatch, are occupying a large number of architects. The building is required to accommodate 1,000 patients, and this makes it a work of difficulty as well as magnitude. The designs are to be sent in on the 1st of October. An exhibition of them, which it is to be hoped will take place, will present an interesting study, and will probably influence the construction and arrangement of all those that are afterwards to be erected.

IMPROVEMENT OF MECHANICS' INSTITUTIONS.—The recent abandonment of more than one of the metropolitan institutions, has, of course, given rise to various remarks and suggestions. A writer in the *Athenæum* urges, that habits of thought and observation on the part of the members have not been cultivated. "Popular lectures and light literature give a certain amount of information in an easy and pleasant way; and, as the mind is seldom tried with a difficulty under this system, the habit of labouring after knowledge is lost. By acquiring knowledge easily, and by picking up a certain amount of conversationable material at a cheap rate, habits of indolence—or at least of impatience—have been generated; and the great besetting sin of the present age is the result." He suggests the following plan as a remedy for this:—"Let the members of each institution organize themselves into classes, for pursuing some especial branches of inquiry

which might be of immediate and local interest. Suppose botanical, geological, mineralogical, natural history, or archæological classes to be formed. The business of each member of each class should be to gather local specimens and collect local information. The interest which would arise from the habit of searching the hedge rows, the rocks, the seashore, or the fields—of studying antiquities in any form, or collecting traditionary history—would very soon be sufficient to insure regular meetings of the classes. Every member bringing his little store of specimens or information, comparisons are made—knowledge is sought for and obtained. A record should be kept of the proceedings of each class. No matter would be too trivial for registration; and thus a mass of information would be accumulated which it would be impossible to obtain in any other way,—and which would be made available for general use. The advantages of a system of this kind are numerous;—but principally it would tend to the cultivation of habits of observation." We agree with the writer in thinking that, valuable as classes for learning languages are, more important would be those which should teach the interpretation of the "tongues in trees, books in the running brooks," and "sermons in stones."

THE PNEUMATIC RAILWAY SYSTEM.—Originative geniuses, still discontented with the rail, and especially with that grand anomaly in its principle,—the want of a proper fulcrum,—which nevertheless works so well in practice,—are still turning it upside down, inside out, and backfront foremost, in the endeavour to set it on its proper basis; and the result of another of these endeavours has just been patented, advertized, and exhibited. Messrs. Cunningham and Carter's pneumatic railway system seems to consist not only of an inversion of the ordinary apparatus of the rail, but of the atmospheric apparatus also, with a mutual adaptation of the one to the other. The prime mover is a vacuum formed by a few moderately sized steam-engines to a whole line, placed any where to suit convenience, and dispensing the vacuum power along the line through an unslit simple copper tube like a gas or water main, to sets of small and simple air or vacuum engines with which it communicates by valves, which are opened, except at stations, or even there, by fitting levers worked by the train itself in passing, so as to open the communication as the first carriage comes up, to continue the working power according to the length of the train, and to shut off the vacuum as the last carriage passes. And the power thus brought into play is carried into action on the train by means of horizontal wheels planted in sets at every 300 feet along the line, and griping the train carriages by help of side rails fixed to the carriages,—the rails so organized and connected, that the engineer can regulate the adhesion according to the speed required, or at once withdraw it altogether. The copper *main* is laid under ground like any other main. The air or vacuum-engines, which are to be planted outside the line, eighteen pairs per mile, are duplicates, and easily removed, each working its whole set of horizontal wheels [the revolution of which, by the way, can be readily reversed, although, in fact, we can see no reason why wheels in rotation might not be made to move trains thus in contrary directions on their opposite edges without reversal of their rotation at all]. The whole system, which is held to be far from complex, can be laid down, according to the statement of its friends, on very economical terms—a double line, with the light rails alone requisite, and every other item, costing only 4,000*l.* per mile.

SUSPENSION OF WORKS ON THE STAMFORD AND RUGBY RAILWAY.—The works on the above line, from Rugby to Great Bowden, have been stopped in consequence of a disagreement between Mr. Burton, the contractor, and the resident engineers. The company have seized upon the whole of the contractor's "plant," alleging he is not proceeding fast enough with the works. A correspondent states, that the contractor has been ill-treated: saying, "he was required to put on 100 waggons, 300 tons of temporary rails, and 500 men, in seven days, and of course could not comply."

IRON HOUSES.—A block of three-story buildings is in the course of erection in Cincinnati, the entire fronts of which are to be of cast-iron.

ONE VIEW OF MANCHESTER COLLEGIATE CHURCH.—Externally, the Collegiate Church is sorely wasted and much blackened; and, save at some little distance, its light and elegant proportions fail to tell. The sooty atmosphere of the place has imparted to it its own dingy hue; while the soft new red sandstone of which it is built has resigned all the nicer tracery entrusted to its keeping, to the slow wear of the four centuries which have elapsed since the erection of the edifice. But in the interior all is fresh and sharp as when the field of Bosworth was stricken. What first impresses as unusual is the blaze of light which fills the place. For the expected dim solemnity of an old ecclesiastical edifice, one finds the full glare of a modern assembly-room; the daylight streams in through numerous windows mullioned with slim shafts of stone curiously intertwisted a-top, and plays amid tall slender columns, arches of graceful sweep, and singularly elegant groinings, that shoot out their clusters of stony branches, light and graceful as the expanding boughs of some lime or poplar grove. The air of the place is gay, not solemn; nor are the subjects of its numerous sculptures of a kind suited to deepen the impression. Not a few of the carvings which decorate every patch of wall are of the most ludicrous character. Rows of grotesque heads look down into the nave from the spandrels; some twist their features to the one side of the face, some to the other; some wink hard, as if exceedingly in joke; some troll out their tongue; some give expression to a most lugubrious mirth, others to a most ludicrous sorrow. In the choir,—of course a still holier part of the edifice than the nave,—the sculptor seems to have let his imagination altogether run riot. In one compartment there sits, with a birch over his shoulder, an old fox, stern of aspect as Goldsmith's schoolmaster, engaged in teaching two cubs to read. In another, a respectable-looking boar, elevated on his hind legs, is playing on the bagpipe, while his hopeful family, four young pigs, are dancing to his music behind their trough. In yet another there is a hare, contemplating with evident satisfaction a boiling pot, which contains a dog in a fair way of becoming tender. But in yet another, the priestly designer seems to have lost sight of prudence and decorum altogether; the chief figure in the piece is a monkey administering extreme unction to a dying man, while a party of other monkeys are plundering the poor sufferer of his effects, and gobbling up his provisions. A Scotch Highlander's faith in the fairies is much less a reality now than it has been; but few Scotch Highlanders would venture to take such liberties with their neighbours the "good people," as the old ecclesiastics of Manchester took with the services of their religion.—*Miller's First Impressions of England.*

TRIAL FOR BAD CARPENTRY.—We understand that the contractor who was indicted for so inefficiently doing his work at the Peebles hustings that itfell down, has been pronounced *not guilty*. The erection was composed of spruce fir, and wanted a centre beam and post, but it was duly inspected at the time, and the witnesses were contradictory, and hence it is supposed the above result.

BETHNAL-GREEN CHURCHES.—The following is a list of the tenders delivered, Sept. 16th, for the last of the ten new churches at Bethnal-green, Mr. L. Vulliamy, architect:—

| | |
|---|---|
| Lock and Nesham | £5,525 |
| Burton | 5,321 |
| Holland | 5,304 |
| Piper | 5,219 |
| Hicks | 5,155 |

The quantities furnished by Mr. Nicholls and Mr. Reid.

## TO CORRESPONDENTS.

"*Henricus.*"—Westminster Hall will close on the 2nd of October.

"*Geometric System of the Ancients.*"—Mr. Browne has sent us a reply to Mr. Chantrell's letter; but, as it is entirely personal, and we have allowed each party to speak, we cannot find space for it. Mr. Browne concludes with,—"I shall lose no time in arranging, in a practical shape, a series of full-sized examples of Bases, Capitals, Labels, Strings, Cornices, Mullions, Tracery, &c.; and then tender the 'wild' matter to a discerning public, and abide by its decision regarding the pretensions of Chantrell and Browne."

"*Inops.*"—Take the opinion of a friend in whom he can confide.

"*Price of Brickwork and Concrete.*"—The price of the brickwork given at the close of the leading article last week (p. 443) should be per *yard* instead of *foot*, as is shewn by the context.

*Received.*—"G. W. B.," "J. W.," "E. A.," "T. P.," "C. J.," "R. A. G.," "C. W. E. P.," "H. S."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


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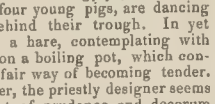
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|---|---|---|---|---|---|
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| Wrought Bars and Bright Fittings. | | | |
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|---|---|---|---|---|
| £1 6s. | £1. 13s. | £1. 16s. | £2. | £4. 10s. |

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| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. | £5. 15s. | £5. 5s. | £6. 10s. | £7. |

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IMPROVED FLOORING CRAMPS, &c. &c.
which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

PATENT BELLS. — Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal.—Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

PATENT METALS for Bearings.—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sent for Bearings and engineering purposes generally, will be found superior in quality and cheaper, than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any ordinary brass. Messrs MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

TO BUILDERS, CONTRACTORS, &c.

GREY STONE LIME of the best quality will be delivered alongside any wharf in London at 7s. per yard of thirteen baskets.—Parties can be accommodated with a moiety of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London. Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Steel street, Liverpool.

GREAVES'S LIAS LIME and CEMENT. — ROTTY and VEREY, 3, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metalline Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against a cheap and spurious imitation of their Cement, which has recently come to be of the same description. Sand is pledge themselves that MARTIN'S CEMENT is entirely free from any admixture of vegetable or animal matter, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint in four days, with out pecking, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufactures, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Cunningplace, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed for this Invention over every Cement hitherto introduced:—Green, nor other cause discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Seaside. It may be used in the Coldest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of our Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred. Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the Office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 39, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the end, producing a pure stone like effect, produced to by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT, THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depôts:—Three Crane Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c. JAMES WESTON having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL WALL, POPLAR enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Fari-street, Blackfriars.

EMERSON'S PATENT CEMENT PAINT. Arrangements are completed for the introduction of this VALUABLE and ECONOMIC PAINT. It is PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be requisite, with water.

The surface to which it is to be applied NEEDS NO PREPARATION, but to be clean and free from dust. It matters not whether the wall be wet or dry, its adhesiveness being such that it will cling to any surface.—BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT, and may be made of any TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of a light creamy or stone colour.

TO ROMAN CEMENT it may be applied the day after it is put on the walls, and one small cask will cover a moderate sized house.

It is partically calculated for COUNTRY HOUSES, VILLAS, &c., for its PERMANENCY and PLEASING EFFECT; also for LODGES and ENTRANCES, as it does not absorb moisture, and consequently will never vegetate, and will PRESERVE the walls as effectually as any cement.

T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as more efficient and economical.

THOS. AND JNO. CROGGON, 8, Laurence Pountney-hill, Cannon-street, London.

Price .. .. 8s. 6d. per cask of 1 cwt.
12s. 6d. .. .. 2 cwt.
An allowance to the trade.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, stink traps, and various shapes always on hand.

TUBULAR DRAINS in GLAZED STONE WARE, Manufactured by HENRY DOULTON and Co., Potters, HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3-inch bore, 3d. per Foot. 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 0½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by them so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers Office, Hatton-garden, August 26th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly, JOHN ROE.

Mr. H. Doulton.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

Foot Pavements.
Kitchen Floors (particularly where it is essential to keep damps from rising).
Garden Walks and Terraces.
Carriage Drives.
Cattle-houses and Stabling.
Dog-kennels.
Barn Floors.
Granaries
Tan-room Floors.
Malt-house Floors.
Piggeries, &c. &c.
Covering of Railroad and other Arches.
The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company, and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.

TO BUILDERS AND OTHERS.

**PERSONS having Freehold or Leasehold** Property in HOUSES or LAND TO DISPOSE OF may hear of PURCHASERS by forwarding full particulars of the same to Messrs. MURRAY and YOUNG, Auctioneers, Surveyors, House and Estate Agents, at their offices, 14, Duke street, Wellington-street, Southwark, near London-bridge.

**BUILDING LAND, CROYDON, to be** LET or SOLD, in Plots of an Acre, more or less, as may be required. Apply to Messrs. DAVIS and VIGERS, 3, Frederick's-place, Old Jewry.

IMPORTANT TO BUILDERS.

**BUILDING GROUND TO BE LET** in all parts of London and its suburbs, upon very favourable terms, and in most cases liberal advances. List can be had, and terms, ... every information, free of charge, or by post, upon inclosing two stamps. ... peculiar facilities for quickly disposing of Houses and Estates, which Builders generally will do ... will be subject to no charge ... our means, and then ... BECKWITH and SALMON, ... Land and Estate Agents and Auctioneers, 2, Bucklersbury.

TO SMITHS, ENGINEERS, COACH PAINTERS, &c.

**PREMISES TO BE LET, consisting of** a GROUND FLOOR and TWO LOFTS over, with Loop-hole Doors, with Cellar, and a FOUR ROOMED HOUSE adjoining. Rent, 4... Inquire on the premises, No. 9, Smart's-buildings, High Holborn.

TO CARPENTERS, BUILDERS, BRICKLAYERS, AND OTHERS.

**IN the immediate vicinity of Grosvenor and** Berkeley Squares, TO BE LET OR SOLD, very compact BUSINESS PREMISES, with dwelling-house.—Particulars can be obtained on application to Mr. CROWE, 10, Old Church street, Edgeware-road.

**EXTENSIVE Business Premises TO BE** LET, in a leading thoroughfare, and within three minutes' walk of the Great Western Railway Terminus, Paddington; they are well adapted for carrying on the business of builder, coach-maker, or any other requiring space or premises. Particulars can be obtained on application to Mr. CROWE, 10, Old Church street, Edgeware-road.

TO BUILDERS.

**AN Eligible Site for Building a Terrace,** with an uninterrupted frontage on the River Thames, and a considerable depth for Gardens in the rear, TO BE LET, in the rapidly improving Parish of Hammersmith, or in Plots for one or more houses, to responsible Parties. A Plan may be seen and Particulars obtained, at ... terrace, Hammersmith, or at the Offices of Messrs. GARLAND and CHRISTOPHER, Architects, Hanover Chambers, Buckingham street, Adelphi.

TO SOCIETIES, ARCHITECTS, &c.

**TO LET, in Golden-square, TWO HAND-** SOME ROOMS on a First Floor, which would make excellent Offices for an Architect and Surveyor, or a Society. Rent very moderate. Apply to Mr. PEGLER, 20, Golden square, Regent-street.

MANUFACTURING PREMISES, A FEW DOORS FROM REGENT-STREET.

**TO BE LET, extensive ranges of WORK-** SHOPS, with Gas laid on, and Hot Water Warming Apparatus, Hot Rooms, Large Yards, and Residence. A capital Situation for a Builder, Joiner, Coach or Pianoforte Maker, or any Business requiring great Space, near a principal thoroughfare. Enquire at ..., Regent-street.

TO CARPENTERS AND OTHERS.

**TO BE LET, about Twelve Miles from** London, in Middlesex, an OLD-ESTABLISHED BUSINESS of a CARPENTER, UNDERTAKER, and WHEELWRIGHT, which has been carried on by the present proprietor and his family many years, who is about to decline the same in consequence of ill health. The premises are very excellent, and the stock, which is to be taken at a valuation, not extensive. Any young and active person will find the concern worthy of notice.—For further Particulars, apply by letter, post-paid, to Messrs. PUGH and CO., No. 14, King-street, West Smithfield, Snow hill.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c., suitable for a Builder.

**TO BE LET OR SOLD, in the vicinity** of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw-pits, Stabling, Machinery for Sawing and Planing, &c. To view, apply upon the Premises, No. 12, Dorset place, Dorset square. For terms and particulars of Mr. H. BIBBS, 1, Carlton villas, Edgeware-road. Written applications cannot be attended to.

## SALES BY AUCTION.

IN BANKRUPTCY.—GREENWICH, KENT.

**MR. NOBLE is instructed by the Assignees** of Mr. W. C. BANKS, a Bankrupt, to SELL by AUCTION, at the Greyhound Tavern, Greenwich, on TUESDAY, September 28, 1847, at Two o'Clock in the afternoon, all those FOUR PARTLY ERECTED CARCASES of Second-rate Dwelling-houses, situate in Burney street, Greenwich, for which Leases will be had direct from the Freeholder, at a moderate ground-rent. Also the beneficial interest in a Building Agreement of three several Plots of Land, held for 78 years from Michaelmas next at a moderate ground-rent, eligibly situate in Burney street, Greenwich, within five minutes' walk of the Railway Station, the Steam-boat Pier, and the Park. Nearly half of the said Plots are built upon, and Leases granted at improved Ground-rents, ... either as an investment or speculation. Houses in this locality are in great demand. May be viewed. Particulars had three days prior to the day of sale of J. IVIMEY, Esq., Solicitor, 26, Chancery lane, or of Mr. NOBLE, 23, Abchurch-lane, City, and London-street, Greenwich.

TO WHOLESALE AND EXPORT IRONMONGERS, BUILDERS, GAS COMPANIES, and Fitters, Engineers, Merchants, Shipchandlers, and others.—By

**MR. FULLER, at the Warehouses, Red** Lion-street, Spitalfields, a few paces from the terminus of the Eastern Counties Railway, on MONDAY, October 18, and following days, at Eleven o'clock, ... lots, without reserve, an extensive STOCK OF EDGE TOOLS AND STEEL, of the best quality and manufacture, being the entire stock on hand of an eminent manufacturer ... removed from their works ... the formation of a new partnership ... purchase the stock. Mr. Fuller begs particularly to direct the attention of his friends and the public to this announcement, as probably a stock of so much importance, either as to extent, value, or quality, has never before been submitted to public competition.

It includes 6,000 dozen files, flat, four square, round, half-round, three square, bastard, second cut and smooth, from 4 to 24 inches, saw and lock files, from 3 to 18 inches, and rasps, assorted; 1,000 dozen spades and shovels, London, Southampton, Norfolk, Lancashire ... tools, picks, grafting ... assorted, of all sizes; 800 dozen scythes, double refined Crown, Norfolk, Briar, Canada, &c., assorted; 300 dozen hatchets, adzes, and bill-hooks, assorted; 300 gross chisels and gouges, firmer, millwrights', coachmakers', turning, mortice, socket, and cabinet, assorted; 400 dozen choppers and cleavers, assorted; 800 dozen trowels, best London brick, pointing, Philadelphia, Boston, slaters, moulders, and garden, assorted; 1,000 dozen chaff, hay, and thatcher's knives, drawing knives ... garden hoes and forks, hay forks, ... and Dutch hoes; 600 dozen matchets, Demerara cutlass blade, wood and horn handle, assorted sizes; 1,200 cavalry and sea-service swords; ... from 1 to 6 inches; 200 dozen hoes, Carolina, West India Barbadoes, Louisiana, Demerara and Virginia, assorted; 100,000ft. wrought-iron gas tubing, from three-eighths to 2-inch, crosses, T's, caps, bends, elbows, and nipples, assorted; 100 tons of blister, cast, double and single shear, sheet, and spring steel; a large assortment of wrought-iron ... Catalogues three days previous to the Sale ... may be had at the Warehouses, and of Mr. FULLER, 13, Billiter street, London. Approved Bills at Three Months will be taken for any amount above 100l.

TO ZINCWORKERS AND OTHERS.

**TO BE DISPOSED OF, in consequence** of the death of the proprietor, an EXCELLENT BUSINESS in the above line.—For further particulars, apply to E. W., at 98, Upper Seymour-street, Euston-square.

POWERFUL LANDING CRANE. TO ENGINEERS AND OTHERS.

**TO BE SOLD, a Bargain, a 16-Ton** improved CAST AND WROUGHT IRON CRANE, recently erected. May be seen on the Quay, Albion Wharf, Holland-street, Blackfriar's-bridge.—Particulars of Mr. EMBLETON, Engineer New Park street, Southwark-bridge.

VALUABLE INVESTMENT.—Leasehold Property, Brick-lane, Old-street St. Luke's.

**TO BE SOLD or LET at Moderate** Ground-rents, THIRTY extra-substantially-built FOURTH-RATE CARCASES complete, held for a term of nearly 70 years direct from the Ironmongers' Company.—For Particulars, inquire of Mr. SAUNDERS, the Langton Arms, Wenlock street, St. Luke's, near the Church.

**CHEAP ORNAMENTAL GLASS.—I beg** to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No 1, King street, Baker-street, Portman square. Cash only.

EMBOSSED GLASS.

**EDWARDS and PELL, 15, Southampton-** street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**PLATE GLASS.—Architects, Builders,** and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate Glass Company. Liberal discounts allowed on glazing qualities. London Warehouse, 99, Hatton-garden, Holborn. H. CHRISTIE, Agent.

N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one-half, and three fourths of an inch thick.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

**WINDOW GLASS, LEAD, VARNISH,** COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopgate street, Without. Lowest prices charged. Please inquire them.

Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop-fronts, Show-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

Ground and Dry and Good Colours of the best quality; Brushes, Dryers, and every article used in the Trade Warranted.

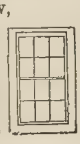
VARNISHES and GENUINE WHITE LEAD, MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 87, Bishopsgate-street Without, London; THOMAS MILLINGTON, Proprietor.

**CHAS. WM. WATERLOW,**



MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



TO THE BUILDING WORLD.



**H. BANKS,**

Manufacturer of Shop Fronts, Sashes, and Frames, and Joiner to the Trade, 78, Bethnal-Green Road, London. Parties engaged in building, will find the charges at this establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.

N.B. Glazed Goods securely packed for the Country.

**DR. ARNOTT'S CHIMNEY VENTI-** LATOR.—F. EDWARDS, Stove Maker to her Majesty, 20, Poland street, Oxford street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description.—Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

**REGISTERED AIR REGULATOR for** FLUES.—H. JONES and Co., respectfully invite the attention of Architects, Builders, and the Public generally to this invention, which has been found perfectly to answer the purpose of preventing chimneys smoking. With it, the flue may be opened to its full size, or it may be instantly regulated so as to contract the passage for the smoke to any dimension, or the flue may be closed altogether, the use of which in the event of the soot becoming ignited will be readily seen; its construction is so simple, that any domestic may regulate it; perfect ventilation is secured; and the unsightly deformities to the exterior and destruction to furniture, paint, &c., to the interior of buildings, will be, by the use of the "Air Regulator" entirely removed. Price 20s. Models to be seen at the manufactory, 6, Rose-street, King-street, Covent-garden. Specifications made out, and contracts entered into for fitting houses with the above; or for gas, brass, or iron-work, to any extent on the shortest notice. Cast-iron hit and miss ventilating bricks, 14 inches by 6 inches, 3s. 6d. each.

**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sun-blind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12 n, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

## PUBLICATIONS.

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**THE TRADESMAN'S BOOK of OR-** NAMENTAL DESIGNS, a Series of Original Designs for every species of Ornament applicable to Trade and Manufactures. The work is in large quarto, and will consist of about Twenty-four Monthly Parts, each containing FOUR PLATES, engraved on copper, and beautifully printed from transfers on stone.

London: WM. S. ORR and Co., Amen Corner, and 147, Strand; and J. MENZIES, Edinburgh.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

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**BUNNETT and CORPE'S Patent RE-** VOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters, as secured by this Patent, is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and nine years' practical experience, during which they have adopted every real improvement, enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

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The Builder.

No. CCXLIII.

SATURDAY, OCTOBER 2, 1847.

QUIETLY and quickly the auditory of the Theatre Royal Drury-lane has been wholly re-decorated, affording us a fit opportunity to preserve for our readers a view of the interior of that building. As occasion offers we shall continue the series, with the addition, probably, of the plan of one or two of the most convenient and effective.

The present theatre was commenced, under the direction of Mr. B. Wyatt, on the 29th of October, 1811, and opened to the public on the 10th of October in the following year. Its predecessor, opened in 1794, was burnt down on the 24th of February, 1809.*

In 1822 the interior of the theatre was remodelled under the direction of Mr. S. Beazley, the architect, by the late Mr. Peto, for whom, if we remember rightly, the present Mr. Grissell had the general overlooking from first to last. The portico in Brydges-street and the colonnade in Russell-street were afterwards added.

In respect of the alterations, the account we have already quoted says:—"In its original state, as constructed by Mr. Wyatt, the auditory included three-fourths of a circle, the diameter of which, across the pit to the line of the breastwork of the dress-boxes, was 58 feet; and the extreme distance, from the front of the stage to the back wall of the boxes facing it, was 53 feet 9 inches. The present form, as designed by Mr. Beazley, is nearly that of the horse-shoe; the extremities converging from a semi-circle, of 51 feet 6 inches in the chord, into an elliptical curve, which decreases, from the above width, to 46 feet 6 inches at its termination near the stage: from the front of the latter to the dress-boxes, the extreme distance is 48 feet."

The following are some of the dimensions given:—

| | ft. | in. |
|---|---|---|
| Span of the roof of the auditory between the extreme walls | 77 | 5 |
| Width of the proscenium in front | 46 | 6 |
| Ditto, at the curtain | 40 | 0 |
| Height of proscenium, to the centre of the arch | 43 | 0 |
| The extent of the stage, from the orchestra to the back wall, is | 96 | 3 |
| Width of stage from wall to wall | 77 | 5 |
| Height of the flats and side scenes | 21 | 0 |

The plan is a parallelogram of 131 feet from north to south, and 237 feet from east to west, exclusive of scene rooms, which extend further eastward. The auditory is nearly in the centre: the entrance hall, lobbies, &c., are to the west, the stage to the east: the green rooms, &c., on the south side of the latter.

We may add, for it is worthy of note, that the staircases and approaches are fire-proof, and sufficiently capacious to contain as many persons as could at any time be within the theatre. Wyatt, in his "Observations on the Design, &c.," which he published, points this out, and alludes to the means they present to obviate the danger of an alarm of fire.†

Our engraving shews the present appearance of the house as seen from the stage; the pit being boarded over for "promenade concerts," with which the theatre will open next week.* The decorations are simple, although exceedingly effective, and may be described in a few words. The ground of the whole is a faint blossom colour, approaching a white, and the ornaments, which are all *appliqué*, are gilt. To speak more in detail:—The fronts of all the boxes are laced with a trellis of large mesh, formed of an enriched moulding gilt, and upon this, festoons of detached flowers, very nicely modelled, also gilt, are supended. On the dress boxes the festoons are looped through wreaths; on the next tier, getting lighter as they rise, they are tied with a gilt riband, and on the front of the third tier the festoon consists of riband only, instead of flowers. The fluted Corinthian columns which form the proscenium, two on each side, have their caps and bases gilt; the flutes, it will be remembered, are real apertures, to assist the view from the private boxes between them, and are entwined by a continuous wreath of flowers gilt, as are also the small columns which support the boxes throughout the house. The whole of the ornaments, fruit and flower work, are of *papier mâché*,—the ornamented moulding which forms the trellis being of a new patent machine-made kind,—and were made, gilt, and fixed, in five weeks, by Mr. Bielefeld.

The ceiling is painted to represent the sky seen from a roofless building, and much ingenuity is exhibited in the endeavours which are made to avoid those contradictions to the deception, which usually present themselves in such an arrangement. A continuation of the gilt trellis work, rising from the walls, forms an enclosure around the lower part of the circle (interfered with by the opening for the gallery), through which the atmosphere is seen. The central glass chandelier, a new one, made to present, by masses of drops, six flags, with the lines of the union-jack marked on each of them by light, is kept close up to the ceiling and is seen to be held by six flying cupids; a thick cup of glass covers the actual means of suspension, in order to prevent its interference with the illusion; with what success, however, we had not the opportunity of fully testing.

For colour, it will be seen, entire dependence is placed on the draperies, in respect of which Mr. Frederick Gye (by whom all the decorations have been arranged), has taken a bold step, which can scarcely fail to be successful. Acting probably on the proverbial partiality of the fairer portion of the British public for a red coat, he has adopted nothing more nor less for his draperies, than bright scarlet cloth, of which our army officers' uniform are made, with yellow edging, and which must produce a brilliant effect. He has not confined this to the private boxes, but by narrow vallances under each tier has effectively tied the whole together. The inside of the boxes is lined with a yellow patterned paper on a crimson ground. We have only to add, further, that the series of what were called family boxes, at the back of the dress-circle, have been cleared away, so as to form an inclosed area, for the accommodation of a large number of standing spectators in the event of large audiences.

Shortly we shall have to speak of a similar work, which is being carried out in an entirely different manner, with what effect remains to be seen.

Coloured decorations are being extensively employed in private residences. Amongst the most important mansions recently so adorned in the metropolis is Devonshire House, Piccadilly, where Messrs. Crace have been doing their utmost and with good result. The decoration here included the re-arrangement of the pictures in panels, so as to make them more entirely part of the room in which they hang.* In Paris, besides the Opera-House, of which we spoke last week, the *Théâtre Français* is being restored by M. Cicéri. The ceiling is being painted by M. Gosse. At the Chamber of Deputies great decoration is going on, and M. Horace Vernet is engaged upon the ceiling. Nor is decorative sculpture forgotten in the gay capital. The municipal council have voted the sum of 76,668 francs for four statues in stone, for the exterior of the Bourse, and five new statues are about to be placed in the grounds of the Luxembourg, namely, Marguerite de Provence, by Husson; Anne de Bretagne, by Debay; Anne de Beaujeu, daughter of Louis XI., by Gatteaux; Anne of Austria, by Ramus; and Marie de Medicis, by Callouet.

*Apropos* of decorations, however, our readers will hear with gratification and surprise that the Church of Santa Sophia, at Constantinople, which has been converted into a mosque since 1453, and is the most ancient Christian church that exists, is now undergoing a thorough restoration, by order of the sultan, under the direction of M. Fossati, an architect. As we are informed, they have removed the layer of plaster with which the superb mosaics and frescoes that decorate the walls were covered, and which are not less important as regards art than they are in respect of history.

"But Mr. Editor," says *Crito*, "you have quietly crept from the theatre into the church?" True, Sir, we have, and a very proper order of proceeding too; but as the reverse of it might not seem so altogether unobjectionable to some, we will stop where we are, and say nothing more at present of the new decorations at Drury-lane.

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## ON THE CONSTRUCTION AND ARRANGEMENT OF PARSONAGE HOUSES.

By the Late Mr. Alfred Bartholomew.†

IT is of the greatest importance that the clergyman should reside among his flock, for nothing tends more to the moral elevation of a country parish than the having resident within it an affable man of education; by that education the superior of most; by his companionable cheerfulness the friend of the gentleman, of the yeoman, and of the cottager; by his station, and the gravity of his calling, lifted above all coarse and frivolous freedom; and by the blameless example of his life, which he dares not forfeit, exciting to decency of carriage. We can imagine no calling higher than that of the rural pastor.

If no suitable house be provided for the minister within the parish, much of that time which would be passed by him in comforting, advising, visiting, and aiding his parishioners must, of necessity, be wasted in the mere transit from his distant residence to his church, his time will be wasted in unprofitable labour, he will seldom be at hand when needed, he will be fatigued by unnecessary journeys, and little known to his parishioners, he will be considered almost as a stranger.

Without further preface, we proceed to the more immediate object of this essay, viz., the arrangement and construction of parsonage-houses.

In all parsonage-houses external stucco should be avoided. These domestic edifices, like the parish church, should be durable, and so as to suffer little decay within a considerable time, so that, as the emoluments derived from livings to which they are attached are generally of

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* The first theatre on this site was opened by Killigrew in 1663, burnt down in 1672, and, according to some authorities, says Mr. Brayley, in Britton's "Public Buildings of London," Vol 1, was rebuilt by Sir Christopher Wren in 1674. The volume quoted contains a long account of the theatre, a plan, sections, and several views. The "Cockpit," first built in 1617, was opposite the Castle Tavern in Drury-lane.

† Some remarks on theatres will be found p. 81, and p. 129, *ante*. An account and view of the Opera House, Covent Garden, are given p. 265, &c., *ante*.

* See p. 473.

* A costly marble staircase has recently been added to the house by his grace.

† The following paper, left by the late Mr. Bartholomew, was read by Mr. French at a meeting of the Freemasons of the Church held on the 14th ult.

moderate, if not small amount, the charity and hospitality of the incumbent shall not be crippled by the expense of upholding, repairing, and colouring mere flimsy show. We object to the use of Parker's cement stucco from its being, in most cases, not sufficiently sound, although possibly, if done by a plasterer upon whom dependence can be placed, and with quick cement, it may last long; but this rarely can be ensured, and the workmen after the utmost endeavour can seldom be brought to saturate the work, while yet damp, with sufficient rough ground-colour, which shall enter far into its pores, so that it may always retain and exhibit externally a stone lime colour, instead of the dark oxides of iron and manganese, which are natural to the cement.

When this description of stucco has not this ground colouring, while yet damp, the rains washing off the surface distemper tintings, which are added, people grow tired of perpetual recolouring and whitings, and resort to the more expensive mode of painting it with oil colour; but the metallic oxide within the stucco destroys such paint in a very short time, and causes it to peel off; sometimes, indeed, if the cement be old, and first painted with red lead oil-colour, it may retain the paint longer, but not permanently.

We object to rough-cast external stucco from its numerous prominences and cavities retaining the wet.

The degree of picturesqueness of a parsonage-house must, in a great degree, depend upon the wealth of the living; for if, as one of Theodore Hook's characters in the novel of the "Parson's Daughter," says, "most clergymen are poor, and have large families," it will not be very satisfactory to the incumbent to have the number or the sizes of the rooms reduced, in order to obtain mere external effect. If a limited sum of money is to be expended, we hardly know any one who would exchange square bed-chambers of good altitude, for low sloping garrets, however picturesquely they may be set off externally with dormer-windows and pierced barge-boards, paid for merely by loss of comfort in the habitation.

Projecting porches are in general not only useful, but breaking the plain general squareness of the fabric, add much to its picturesqueness; but few persons are aware how much they cost. They require some ornament; their walls need to be faced within and without; they entail the expense of separate roofs (mostly leaded flats), with a separate conveyance of water for them. For these reasons, a porch recessed within the general body of the house, and taken out of the entrance-hall, by saving most of the extra expense, must, in the cheaper class of fabrics, be taken to compensate for the loss of effect produced by projection.

But porches, to all kinds of habitable buildings, to be truly useful, ought to be of such dimensions as to allow carriages to drive beneath them, so that persons may, under cover, ascend to or be set down from carriages; for, in this respect, the mere covered gateway to the bricklayer's yard, with a side-door in it, affords more of comfort than the most sumptuous ordinary porticoes.

The aspect of the principal rooms of a clergyman's house, like that of all other human habitations, should be nearly towards the south; this rule should never be violated without very great reason. If a fine view can only be obtained by placing the house in another direction, still some windows should be so placed as to admit the cheerful warmth of the southern sun, while as few apertures as possible, and those not large, should be made to admit the eastern winds.

The more a house approaches to a square form, the cheaper will it be, from requiring less external face-work, simpler roofing, and less guttering, and the warmer and more comfortable will it be, from having less external walling exposed to the wet and cold. Such compactness occasions the house to appear less imposing than it would if extended to a long shape.

We prefer chimneys placed projecting externally, without breaking into the rooms. Thus placed, they appear more picturesque externally, loss of internal space is avoided, and the cornices of the rooms do not require to be broken round the chimney-fronts. We know that some persons say a house is warmer with chimneys placed in its centre; we believe such not to be the case; if as far as home comfort is concerned, external moisture is to be considered an enemy to be kept from the domestic citadel, we not only think, but know from experience, that the placing a chimney-flue in every external wall not only keeps the walls dry in rainy weather, but prevents the cold, wet, and damp, from penetrating the heart of the dwelling.

The principal rules for the aspect in ordinary situations of a parsonage, like that of all other well-placed houses, are therefore to seat as many as possible of the living apartments towards the south, with some slight inclination towards the east rather than towards the west, since the cold bracing winds of the east are more healthy than the damp brought by those more from the south-west. Let the south-western walls contain as many chimneys as possible, and have the perpetual drying of the kitchen chimney. Place the kitchen offices towards the north, particularly the larder and pantry. The situation of the external entrances of the house, must depend upon the nature of the plan, the peculiarity of the site, and the situation of the roads,—but they should not open towards the east, so as to fill the whole house immediately with a cold wind, nor should they be so placed as to admit the south-western rains. Due attention must, however, in the placing of a house, be paid to the changes of climate and aspect which occur from local situations, as by the seaside, under a hill, or otherwise.

We like in moderate-sized houses the free extent and display which result from uniting the living apartments by folding doors, but it should be observed that the so placing folding-doors occasions the voice to be heard from one apartment to another, and thus causes divulgence of conversations intended to be private; still, we think hospitality a duty incumbent upon a minister of the gospel, and that his residence should consequently afford him the means of entertaining once a year, at least, his parishioners. By such meeting many a vein of rancour between parishioner and parishioner is healed, many a man who would otherwise look askance at his pastor for twenty years, when he finds how cheerful, kind, and hospitable he is, how little, though he takes tithes, he bestows of them upon himself, ceases to be the favourer of dissent founded on no principle, and does the best to support the church of his forefathers, and if this be the effect upon the class whom the incumbent usually finds the most troublesome of his parishioners, what must be the effect upon those of a more kindly nature?

Therefore, in parsonage houses which do not afford any one room of size sufficient for the entertainment of a moderately large company, we should separate, if possible, by a small ante-room, cabinet, or boudoir, the two apartments that are intended to be united, so as by this interval to cut off sound. Where apartments are united by folding doors, we should in all practicable cases place their chimneys exactly opposite each other; we hardly know any deviation which could compensate for the loss of symmetry and effect produced by this arrangement, and the counter reflection of looking-glasses over chimneys so placed, is sure to please every one who sees them. The windows of a parsonage, from the usually moderate value of the incumbency, should be as few as possible, so as to avoid undue burthen of tax. In the open country, where window-light is twice or thrice as effective as in confined towns, we have found one window under 4 feet 9 inches wide (to which the single tax is restricted) has amply lighted an apartment 16 feet by 14 feet. The less the window light, the less will be the first expense of glazing, painting, window-cleaning, shutters, curtains, and blinds, and of maintaining them.

Bay-windows being general favourites, inquiry should be made how far their use is consonant with economy and convenience; their construction of necessity entails the incurrence of considerable expense, and if their shutters, curtains, and blinds, be properly managed, they also become very costly, nor can a bay-window well escape without payment of the tax for three windows; if bay-windows be made with flat sides, their workmanship being all straight is cheapest, and their sashes act much better than they would if curved. It is a frequent custom to carry up bay-windows only one story, but this practice should seldom be resorted to,—the roof and parapets of sunk dwarf buildings are more expensive than if they were carried up to the general roof of the fabric, and generally an extra expense is incurred by supporting the main wall of the house across the bay; this is often performed upon a timber breastsummer, which, shrinking by the drying of the wood, the wall above of necessity follows the shrinkage, and cracks from the rest of the work. In every such case an arch of brickwork or masonry should be spanned over the building for the support of the superstructure, care being taken, if there be not sufficient abutment, to restrain the spread of the arch by an iron tie-bar beneath it. Rooms are rendered handsomer by arches so placed above their bays; such arches may be either plain with beads at their edges, or may be rendered ornamental.

We recommend the chimney-shafts to be generally finished without chimney-pots, but carried up as detached flues, with the clear sky visible between them, but, both for safety and effect, connected together at their summits; this, though costing a trifle extra, gives more character and beauty to a country-house than any thing of equal cost, and indeed in economical parsonages, the chimneys are almost the only portions of such structures which admit of indulgence in the picturesque; their altitude, too, should never be stinted from false motives of economy. We have ourselves found the false economy in this parsimony in having to raise chimneys so stinted, with the additional cost of second scaffolding, and the reconstruction of the chimney tops.

We prefer in all country-houses, and, indeed, it were well if the same were extended to town-houses, to have the roof made to project over the walls, so that if the guttering be defective, that may be the extent of the damage, and the wet run without instead of into the building, damaging ceilings, cornices, and furniture, and rotting the wood. In most ordinary parsonage-houses, economy requires that the guttering should be merely of cast-iron, painted, but in edifices which are more costly, and assume more the appearance of mansions, they should be of lead sunk within the eaves. We think that the light zinc eaves' gutterings, which are now being adopted, should be discarded; the metal is too dear for them to be sufficiently thick not to be too much at the mercy of the winds, and to resist long the corrosion of the atmosphere and rains. But even when guttering of cast-iron is adopted, it should be at first well painted, both within and without, and should be so kept: from neglect in this we have seen such guttering corroded through in twelve years.

All the walls and subdivisions of the house should, wherever so practicable, be of masonry or brickwork; subdivisions of brickwork nine inches thick, are in general not more expensive than timber-quartered partitions, which should never be adopted except in cases where foundation-walls cannot be obtained. Unless the external walls be of porous brick or most absorbent stone, they need not be battened, except indeed they are exposed to the south-western rains; battens not only themselves increase the expense, but lead to the cost of laths for the plastering: they take away the soundness of plastering upon the walls themselves, and leave space for vermin. The materials of the walls must be such as the county affords most readily; no materials are more proper than good bricks for comfortable habitations, as few descriptions of stone can make a house so dry; but it depends much upon the situation, whether the bricks of the county will form handsome external work. The finest bricks, indeed, for work are malm (or marle) paving-bricks; a house composed of these may almost defy decay or entrance to damp; we desire no other facing for these, though they are not quite so even in colour as the best washed malm facing bricks, which, however, are not so hard; but on the score of soundness of workmanship, and thence of true economy, by which the smallest quantity of material is made to perform the greatest office, they are principally to be adopted: the work being within and without composed of them, there is no motive in the bricklayer saving by breaking off the greater part of the heading or tie-bricks, as is commonly the case in work faced with more expensive materials; we would rather have a sound unfaced wall of malm paving-

bricks, with all their headers laid into the bonding of the work, than one of the common faced walls half as thick again. In the counties of Suffolk, Essex, Cambridge, and Southampton, and in some other places, the local white bricks afford a material so beautiful, that, considering its wholesome dryness and economy, it may, for habitations, be preferred to most kinds of stone; but as red bricks pervade the largest portion of the country, it is desirable that they should be so used that their disagreeable colour may, if possible, be forgotten, for we know of no sight much less cheerful or more disgusting than a town all composed of red bricks. If neither stone nor white bricks are to be obtained within a reasonable distance for the general facing of the work, the expense may be greatly reduced by using those materials only for quoins and other decorations, and by leaving all the remainder of the work of the ordinary red bricks: if stone be procurable at hand, it may be used without working it fair, though the quoins may be worked smooth, or formed with rock-work.

Soundness in building is the more necessary from the strictness of ecclesiastical dilapidations, therefore all that entails great expenditure to maintain ought to be avoided. For ourselves, we hardly like the windows of apartments to look out on the entrance-side of a country-house. Though not burthened with over-modesty, we confess we neither like when at home to be stared at through the windows by all who come to the entrance, nor when coming to it ourselves, do we like a broadside of eyes fired upon us from every port-hole in the house.

Instead of battening the south-west side of the house, we would rather make it 18 inches thick, and within it carry up two or three flues from the kitchen fire-place, so as both to make the inner surface of the wall more remote from the exterior, and to dry the wall after rains; in this case the chimneys need to project only half a brick to obtain 13½ inches internal depth for the fire-place, and the extra thickness of the wall would not cost more than would battening and lathing.

As we dislike window-shutters projecting far into a room, we greatly prefer an external projection by giving to the windows, instead of concealing their internal projection by wood battening, which lessens the internal space: and though some persons dislike shutters hung with lines and weights like sashes, we think they may be properly used on some occasions, as they do not project far beyond a wall which is 14 inches thick, and upon the whole they keep as long in repair as boxed shutters hung vertically.

Though ordinary porches, if towards the east, will have the cold winds drive into them, and if towards the south-west will admit the rain, yet by changing their entrances to their most sheltered sides, these evils may be obviated; if porches be made to stretch out far enough to admit carriages to drive under them they may be glazed in front, so as to be sheltered from both rain and cold wind.

Plans may be divided into regular and irregular; the regular, or those which have not only every side uniform, but every door, window, chimney, and other internal feature uniform; irregular houses should have no apparent internal irregularity; though, like trees, their general forms be varied, yet should internal apartments be as uniform as the leaves and flowers of nature; we, ourselves, always think meanly of the skill and ingenuity of those whose plans fail in this particular respect; both comfort and picturesqueness result from irregularly massing together of the great component parts of a country-house, but the use of the same licence in the interior of a house spoils it: we are so fastidious in this respect, that we would have no chimneys or windows out of centre, no doors breaking irregularly into halls, passages, or lobbies.

And we wish it to be understood, that although we admit irregularity of general form in small country-houses, we nevertheless consider them, how pretty and toy like soever they may be, but in a low style of art, being thoroughly confident that though uniformity united with picturesqueness as in St. Paul's cathedral, Blenheim, and Castle Howard, are necessary to the highest style of art, while such regularity is kept to, there is sufficient of diversity to be obtained, as in those edifices, by forming the wings of buildings after Nature's mode in animal bodies, with the difference of right and left; they have thus all the picturesqueness which irregularity can give, with the cultivated charm which can alone result from regularity; most of the finest English mansions are designed upon this principle.

The external walls may be composed of a kind of mosaic of red and white bricks, or red and yellow, or white and yellow with lines in diagonal and other patterns composed of any of these colours, or with interlacings of black bricks sorted from among the red bricks, or blacked and glazed on purpose. Very picturesque string-courses may be composed of an alternation of red and white bricks worked in manner of herring-bone, and by giving timely directions, the bricks for that description of work may be prepared with splayed ends proper for the work, without the labour and imperfection of cutting them on purpose, the cornices, arches, jambs, mouldings for the plinths, strings, labels, chimneys, and other parts, may be composed of bricks moulded and burnt to the shape. Great character may thus be given to buildings at a trifling expense; these ornaments should in general be in white bricks, though red ones may serve where others would, from local circumstances, be too expensive.

Proper contiguity of the respective apartments and offices, if of importance in an ordinary house, is of still higher importance in parsonages, where the manners of genteel life have so often to be supported upon narrow means, and if in ordinary families it be a foolish sin to waste uselessly the time and labour of servants, with a poorly beneficed clergyman it becomes improvidence of a burthensome character.

If a house be old and malformed, it will become a matter of calculation whether it will be more economical to incur the expense of so altering the fabric as to produce proper contiguity of the respective apartments, or to bear the charge and inconvenience of the extra labour which result from such malformation; it will be soon found that by having to fetch water, taking utensils far to the scullery, and their several depositories, and bringing them back again as far, by having to go from one end of the house to the other to supply the dining-room from the kitchen, and a few other such seeming trifles (as they are when viewed apart), the whole time of a servant may be consumed, besides the consequent breakages, which would hang over the living as a dead weight, a mortgage for no loan, a rent-charge for no estate, unless such loan or estate consist in the trial of patience by long waiting for every required article, dinners cooled in their passage to table; glass, china, and earthenware broken, servants worn out with wasteful to and fro, or the family unserved to save them from such fatigue. Therefore the kitchen should be no further removed from the dining room than may be necessary for concealment and keeping away smell; the inferior entrance to the house should be contiguous to the kitchen and servants' hall, so as to be attended to readily, and without calling off the servants from their work, and for the same reasons the principal entrance of the house should not be remote, else not only will the servants' time be wasted and their work delayed, but the family and visitors will be annoyed by long waiting without entrance.

The larder and pantry should, if possible, be near the inferior entrance, for provisions to be at once deposited in them, and also near the kitchen, ready for immediate use, and yet sufficiently out of sight to prevent robbery by any dishonest person coming to the inferior entrance; and if a house-keeper be provided for, it will be well so to place her room as to be convenient for over-looking at once the inferior entrance, that those who come and go may be seen, and for supervision of the kitchen, the pantry, and the larder, while her own store-closet may be accessible only from the room. The scullery should always be closely attached to the kitchen; and the china-closet should be contiguous to the scullery, that utensils may be immediately put away in their repositories, and adjoining to the kitchen, that they may be at hand for use, though there may be another closet for choice glass and china under the immediate keeping of the mistress of the family, the house-keeper, or the butler. If there be a butler's pantry, it should be near both the kitchen and the dining-room; and if there be a servants'-hall, it should not be very remote from the principal entrance and the dressing-room and living-rooms, and yet should be so far off as to be screened from sight, and for no noise to come from it to annoy the family. The back-staircase should not be far from the principal staircase, and so attached to the offices as to enable the servants to go up stairs about their work, especially to the nursery, and to their own chambers, without being seen from the principal staircase. The larder should always be on the north side of the house, as should also the dairy, if within the house. No washhouse or brewery should be within the dwelling-house itself.

Chimneys constantly in use should always be placed on the west or south-west side of a house; those the next most constantly in use on the north side, and the others, if possible, on the east. The warmth of chimneys need never to be expended on a southern wall (which, in most days of the year, has some sun upon it), unless it be inclined so much to the west as to receive more moisture than the sun-heat will dry. Aspect, though not much attended to in large close towns, where both sides of each street are unavoidably filled up with dwellings, is of great importance in country houses, where there is no shelter from inclemency of weather, and the health and comfort of the inmates greatly depend upon attention to this. By the admission of cold east winds, face-aches and other pains may be caused; and by the dampness of a south-western aspect, shivering and rheumatism may ensue. When it is beheld that the unsheltered south-western side of every ordinary building is much more weather-beaten and decayed than any other part of it, we may easily conceive how much rain must be imbibed; and if such a wall be not speedily dried, how much unwholesome dampness must hang about the fabric.

We think that when a living does not exceed 200*l.*, a sum equal to not less than four years' income should be allowed for the erection of the house and offices, otherwise the dwelling will be of so mean and contracted a character as to be probably worse than the former house. It must be remembered too, that in such affairs no deception can be practised; an uncertain expenditure must not be gone into; the poor incumbent must not allow himself to be cajoled into the pretence of building a large house for a small house, and find, in the end, that an ill-built house cost him double the amount of expenditure which he was taught to consider would be sufficient for the undertaking. To disabuse himself, he would do well to profit by the experience of his friends, and learn what has been spent in an undertaking as nearly as possible similar.

What few windows are admitted towards the east should be as small as possible, so as not to admit the cold winds; though it is well not to admit many windows towards the south-west, yet they need not to be made so small; the winds from that quarter bring more of moisture than of cold, and the glass, if well cemented, keeping out wet better than walling, it would be well if the south-west walls of all houses were built of the hardest non-absorbent malm or marle paving-bricks, pointed with Parker's cement.

In good planning, the great art consists in bringing together the various apartments and offices naturally and conveniently, without useless loss of space, with walls as nearly as possible of uniform thickness, with doors, windows, chimneys, and piers, as nearly as possible uniform. When in any plan you find masses of wall placed merely to fill up wasted corners or nooks, a portion of one apartment breaking irregularly into another, space shred to pieces by the curvature of one room being made regular, cutting an irregular piece out of the next room; passages tortuous, irregular, and dark; door-jambs placed aslant as the only means of partially concealing irregularity, be assured that the author of such a plan is neither alive to the higher qualities of plan-making, nor is he capable of working them out scientifically.

It sometimes happens that a living is of such small value as to be wholly inadequate for the respectable maintenance of the incumbent; in which case, he has either to depend for resources upon private fortune, the keeping a seminary, upon authorship, or some other mode of increasing his emolument; in all

which cases, if he rebuild the parsonage-house, he makes it larger and more expensive than is consistent with the mere value of the living. This may appear improper, from burthening so poor an incumbency with the charge of keeping up a house disproportionate to so poor a living; but as few curates would take such a description of preferment unless otherwise assisted in fortune and income, it cannot properly be said that such a house is a burthen, since such a living requires naturally such an augmentation.

Slate should be used for roof-covering, as the cheapest and lightest for general use; plain tiles form a good covering, but their small size and great thickness requiring them to be laid to a pitch or inclination much steeper than slating to be equally effective in keeping out wet, the rafters not only require to be longer than if they were laid to a lower pitch, but on that account require to be stronger, as well as from the very great extra weight of the tiles. Plain-tiling is very near as dear as slating, and when the quantity is taken into account, which is of necessity extra beyond that of slating laid at a sufficient pitch, such tiling costs more than good slating, and there is nearly about the same extra cost for the timber-work under plain-tiling, both from extra scantling and length.

If circumstances should necessarily occasion the house to be placed with a northern aspect, some of the rooms should still open to the south, as should, if possible, the principal staircase, so that the house may have some supply of warm rays to counteract the effect of cold.

Great care should be taken, that in addition to cheerlessness of aspect, the house should not be open to eastern winds, and walls kept damp by south-western rains.

The nursery should be over the kitchen, so that the noise which children may make, do not to disturb the persons in the other living-rooms, and for the almost constant firing of such apartments, to keep the south-western walling as dry as possible, and to receive a constant warmth by being over the kitchen.

As in general apartments of plain quadrilateral forms, squares or parallelograms are not only most useful, and are best suited for the disposal of furniture, but are also cheapest to build; houses, consequently, for the incumbents of all ill-endowed livings, will in general, in order to suit their contracted means, and to obtain the greatest accommodation for a given outlay, be of plain quadrilateral forms, so as to be economically subdivided into the various apartments without loss of space.

As a parsonage-house is attached to the soil, and is expected to endure though all other houses in the neighbourhood fall to ruin, it should, for plan, convenience, and economy, be a model from which the other inhabitants of the parish may copy with advantage.

Such parts of the pavings as do not, for keeping down the damp, require to be laid hollow upon cross walls, may be made of tiles, either red, white, or of both those colours intermixed in mosaic, square tiles laid diagonally with two colours.

It is desirable that only a small frontage shall be presented to the east and south-west, and bay-windows are proper in such fronts, and on the northern side, since they catch the southern sun.

There is no impropriety in a water-closet or a bath on the ground story being approached from a dressing-room, since this arrangement will afford great privacy, but it would be a greater advantage if such water-closet or bath have also another access by means of a lobby, but no water-closet for general access should be approachable by any other apartment.

We recommend that all the offices except the stabling, washhouse, brewhouse, fruit-room, and farm-buildings, shall be combined under one roof, otherwise even a large house will lose its importance; on this account also, we dislike the principal living-apartments to be contained within one regular fabric, while the kitchen-offices are placed in a mean irregular wing, which being not picturesque, seems patched upon the main fabric only to destroy its uniformity, and make it appear ugly.

In the larger class of houses, if any thing in the nature of a tower or turret be introduced, we advise it to be placed centrically with regard to the plan, so as to form a symmetrical crowning mass; we are no lovers of the one-sided nondescript bell-less campaniles, which bad and corrupt taste have lately brought into use in pretended Italian designs for dwelling-houses; we should neither like ourselves to pay the wasteful expenditure to which these additions (generally useless) lead, nor should we be willing to incur the repute of producing lofty objects which spoil the aspect of a building, from destroying its central effect, its uniformity, and its pyramidal picturesqueness; we think St. Paul's, the Parthenon, and Henry the Seventh's Chapel, would have alike been spoiled by irregularity; we believe that no perfect building which is irregular, exists; and we believe further, that the irregularities of existing buildings have arisen purely from accident, or from an unwholesomeness of mind in their designers.

As it is by no means a beauty for the principal entrance to a house to be under the stairs, from the confined altitude at coming in to the house, which produces a disagreeable impression, this should very rarely be given into, though sometimes a plan, in other respects excellent, may seem to sanction this inferiority.

In all designs, care should be taken to avoid the bad taste and wasteful expenditure of masking and concealment; no false gables which shew a thin edge when viewed sidewise, should on any account be allowed, no blank windows which diminish the thickness of the walls, and admit damp, besides incurring extra expense should be tolerated, but all decorations should spring out of the actual construction and arrangement of the building.

A larder should face the north; or, if its aspect differ from that quarter, it should rather turn towards the east than the west, cold winds being more favourable than warm western rains for the preservation of viands. In the construction of the gables, it will in general be best to let the slating cover the brickwork or masonry, instead of carrying up the masonry or brickwork higher than the slating. This mode is economical, since it saves the expense of stone coping, while if the rafters are laid horizontally, their ends may be brought out and shaped ornamentally without any casing upon them. If gables be carried above the covering, not only will there be the extra expense of additional walling and coping, but also that of lead flushings, without which there is no certainty of preventing the wet from penetrating between the roof and the gable.

It is one of the offences of curved gables of the so-named "Elizabethan" architecture, that they cannot be covered by the roofing, as may those of pure pointed architecture, which, being constructed on the principles of true taste, has every part of its ornament emanating from its necessary and philosophical structure.

Houses which are regular may, nevertheless, have their four sides different, and become the more interesting on that account.

If the roof be made to project far over any gable, it should be on the south-west side, in order that the upper part of the walls which, in that aspect, are much subjected to the influence of the weather, may be protected from the rains.

In general, for the diffusion of heat, the fireplace is best placed on one of the longest sides of a room, and best lighted also on one of the longest sides; and though not very often so arranged, there is a convenience in the windows being opposite the fire-places, for then the whole family circle, sitting round the fire, may be enabled to read with the light directly on their books.

By placing the aspect of a house south-east, two fronts may receive the meridian sun, without receiving the south-west rain, while the south-west side may contain the kitchen and nursery, with their drying chimneys.

The kitchen-court should in general, when no local circumstances interfere, be placed on the west side of a house, so as to leave all the other sides free from encumbrance, and open to general view.

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St. Mark's, Gloucester.—The cost of this church, described in full last week, including interior fittings, gas, and fences, but exclusive of architect's charges, was 3,076*l*. We are anxious in all cases, where we give the size, materials, and arrangement of buildings, to add their actual cost, such relative data being necessarily valuable.

## ART IN VENICE.

Although the attendance at this year's scientific congress will be very scanty, worthy preparations have been made by private individuals. The installation of the marble statue of Marco Polo (the forerunner of Columbus) is first to be adverted to. It has been executed by Luigi Fornari—and represents the adventurous traveller with a rudder in his hand, his head covered with a Chinese cap. Mr. Fornari is an artist, very much appreciated of late, and his Laocoon (an interpretation different from the antique one), his lotus-gathering Nymph, David and Goliah, deserve the highest praise. The statue of Marco Polo has been made by order of the Common Council of Venice.—M. Zandamenighi also excels in sculpture-art; he is one of the Canova school.

Fresco painting has made grand progress here of late, amongst which the vault of the Church of Sta. Maria Formosa, painted by Paulett, deserves the first place. Schiavoni and Lorenzi are praised for the depicting of luxuriant feminine beauty, and the all-known antiquary, Mr. Sanquirico, has always some of their specimens at hand. Lastly, the French Government, whose art-patronage is incontestable, have commissioned the painter, Mr. Serrus, to execute a copy (full size) of the Ascension of the Virgin, by Titian. This work, completed after years' labour, will grace the art-exhibition, to take place at the present congress.—The King of Prussia has commissioned Mr. Gerhart, from Erfurt, to make (*in situ*) sketches of the finest scenery and buildings of Venice. Forty water-colour sketches have been thus obtained, mostly of a novel character, and will be reproduced at Munich by eminent artists in oil.

An order lately received by Mr. Kreutz (author of the work on the Cathedral of St. Mark), from the Emperor of Russia, deserves separate notice. As H. M. intends to erect structures in Russia after Venetian patterns, he has commissioned Mr. K. to execute elevations and plans of *five* of the most splendid Venetian palaces of the modern school. Mr. Kreutz has added to this about 100 working drawings of ornamental and architectural detail, which will make this collection most available for its purpose. Those chosen are the two palaces of Rezzonigo and Pezaro, built by Longhara, the Palace Grimani, by Sanmicheli, and the Palazzi Corner and Grassi.

## THE STATE OF ARCHITECTURE IN IRELAND.

In our last number we stated that the Royal Institute of the Architects of Ireland had presented an address to the Lord-Lieutenant, and we gave a portion of his Excellency's reply. The following is that portion of the address to which our extract from the answer applied;—

"It cannot be necessary to suggest to your Excellency, that, amongst all enlightened nations, and particularly in England, the profession of architecture has, at all periods, received that encouragement and protection which, from the influence it exercises over the moral and social interests of mankind, it so justly merits, and its progress has, in consequence, kept pace with the advancement of art and science; but it is disheartening to reflect, that, in this country, the science of architecture has not found congenial encouragement, and whilst the efforts of its instructed professors have been successfully directed to its development, legitimate competition (that which can alone elicit genius and excellence) has been denied to Irishmen, and the talent which should have found due appreciation in the country that produced and fostered it, has been compelled to seek for its reward in other lands.

May we hope that your Excellency will be pleased to accept our welcome to Ireland, and our assurance of that perfect sincerity with which it is offered."

The matter is one of considerable interest. The *Leinster Express* has a leading article upon it, from which we make the following extracts:—

"To the uninitiated, the language of the address may possibly appear to require explanation; but to those who are cognizant of the mode in which the claims of this distinguished body have been slighted and overlooked, and the honours and emoluments for which they should, at least, have been afforded the oppor-

tunity of competing, conferred upon incompetent pretenders: the meaning of the address is no longer obscure. In every imaginable instance, where the erection of national structures has been thought of, the claims of our native architects have been refused any recognition, save, indeed, upon the ignominious condition of becoming, as it were, journeymen to some alien empiric, whose works are a sufficiently eloquent reproof to the taste and judgment of his employers, and a reproach to the spirit of the country, which quiescently permitted the imperial principle of centralization to attain such a mischievous climax. We do not desire to speak mystically on this subject: we have unfortunately before us proofs too plain and palpable of the truth of these propositions.

His Excellency may very well express his astonishment (and we trust it is unaffected), that the talent which could have produced the many beautiful buildings which are scattered over the face of the country, should be retarded and disheartened in its efforts at advancement; but so it is, and so will it continue to be, unless and until the lever of public opinion is energetically applied to the evil, and the unquestionable right of Irishmen to compete for works, which are to be erected at our own expense, recognized and asserted."

"When the new poor law was about to be introduced, and a vast number of workhouses were required to be erected—were our native architects invited or permitted to compete for them?—no such thing! A gentleman was brought over from England, utterly unknown even by name in this country, and without, we think, the proper qualifications for the task; yet, *mirabile dictu*, he is announced as the 'Omnibus' architect, under the influence of whose wand a myriad of workhouses are to spring into simultaneous existence in every part of the kingdom. Remonstrances were addressed to the Government—the manifest folly, and mischief, and injustice of the proposed appointment were presented to them; but all to no possible purpose: sites were selected without any reference either to the rate-payers or the guardians—plans and specifications were duly prepared by Mr. Wilkinson for his subordinates, and the works commenced. What was the result?—1st. The erection of a class of buildings wholly at variance with common architectural propriety, and unsuited to the purposes of their construction, as well as to the character of the country. 2ndly. The inflicting upon the rate-payers the payment of an enormous sum, '*dehors*' the estimated expense of the buildings, by reason of the false calculations and estimates originally made. 3rdly. Litigation consequent upon the refusal of the guardians of several unions to raise the sums required for the completion of the works; and lastly,—creating the necessity of an application to Parliament for a very enormous sum, *in addition* to that originally stated in the estimates. A commission was appointed to inquire into this shameful job, and to report upon the works in the several parts of the country. We believe this commission did make a report, but it was not convenient to publish it, and thus that creditable affair ended."

"We could pursue this train of reflection further, but we shall reserve ourselves, until we see what the Government will do as to the Lunatic Asylums and other buildings of a public description, which are to be speedily erected in Ireland. Will they profit by what has occurred? or will they not?—In any event, we would counsel the 'Royal Institute of Irish Architects' to bring the matter at once before the Earl of Clarendon—they will culpably forego the opportunity which his reply to their address offers them, if they hesitate to do so."

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MALLEABLE GLASS.—AN EQUIVALENT TO.—Professor Schoenbein, who invented the gun-cotton, is stated in the *Revue Scientifique et Industrielle* to have, to a certain point, discovered malleable glass! He renders paper paste (papier mâché) transparent by causing it to undergo a certain metamorphosis, which he calls catalytic, for want of a more intelligent term. He makes of this new paper, window-panes, vases, bottles, &c., perfectly impermeable to water, and which may be dropped on the ground without breaking, and are perfectly transparent.—*Mechanics' Magazine.*

## IMPROVEMENT OF THE CITY.

ONE object of the Act passed end of last session of Parliament, for "Improvements in the City of London," being "to widen Queen-street by taking down the houses and buildings on the east side of the same street between Little St. Thomas Apostle and Upper Thames-street," the "Corporation are empowered to take the burial-ground of the parish of St. Thomas the Apostle" for the purposes of the Act. Yet for all that, at the end of the schedule it is stated in a note, that "no part of the burial ground of St. Thomas the Apostle is to be taken without the consent in writing of the Lord Bishop of London;" so that the corporation are "empowered" by law to do what the bishop may defy both them and the law to do. And moreover forth comes a demurrer, the rector of 'Little St. Thomas,' to wit, who says he "can never be reconciled to such an act of desecration," and accordingly intends not only to advise the bishop not to give his consent, but to "take the sense of the new Parliament on the propriety, decency, and duty of repealing so much of the Act as authorizes the throwing my churchyard into the street, &c." If the churchyard belong to the rector, his 'vested rights' have certainly, to all appearance, been somewhat cavalierly dealt with; but in these enlightened days when 'consecration' of city churchyards by the vested authorities means turning out the poor old rotten bones ere the flesh be off the limbs or the hair off the head, or ere either flesh or bones be allowed to 'rest in their graves' until they fairly rot away, far less until the time appointed; and when the same authorities 'authorize the throwing' of the very human remains themselves, thus 'consecrated,' out of the churchyard 'into the street,' much sympathy, with that system of 'burial in towns' which fosters such abominable practices, cannot even among the members of the 'new Parliament,' with a grave face well be either asked or looked for.—Workmen, we may here observe, have been employed in pulling down several houses in Gresham-street, formerly Lad-lane, in order to carry out the improvements in that quarter. The houses are upwards of 200 years old, and on tablets in the front of each are elaborate busts of a female crowned with a garland of flowers. These have been reserved from sale by the Mercers' Company, and are to be preserved at their hall. In the front of all the new buildings are busts of her Majesty (crowned) in niches.

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## NOTES IN THE PROVINCES.

CHRIST CHURCH, Portswood, was consecrated on Friday week. It was begun about a year ago (the foundation-stone having been laid on 12th September, 1846), in a district of South Stoneham parish, and has cost about 3,000*l.*,—500*l.* granted by the Incorporated and Diocesan Church Building Societies, the remainder by subscription. The style is the early English, and the architects, as we think we have already observed, were Messrs. Raphael and J. Arthur Brandon: builders, Messrs. Burton, of Lambeth. There are 404 sittings, 252 free.——A distemper painting has been discovered in the ambulatory of Exeter Cathedral, south of the entrance to the Ladye Chapel. It is supposed to have been executed about A.D. 1327-69, but a great part of it has been destroyed.——The new market-hall, at Melksham, was opened on 14th instant. The building is said to be a commodious and spacious structure.——The church of Llanvihangel-juxta-Usk, being rebuilt, was consecrated on Monday week before last. The aisles are separated from the nave by oaken pillars. The roof is open, and the seats are without doors.——The first stone of the Birmingham borough lunatic asylum was to be laid on 29th ult. The architect is Mr. D. R. Hill, of Birmingham.——The county of Cambridge has been singularly unfortunate of late. One village, Cottenham, had scarcely been devastated by fire, when another, that of Needingworth, near St. Ives, lost 88 houses and the produce of 300 acres of land, valued at 20,000*l* and inhabited by about 100 families. The labouring poor, not insured, are the severes sufferers.——Three gentlemen are said to have lately expressed their wish to present each a handsome stained-glass window, towards beautifying and restoring Ely Cathedral; and a fourth has offered to present another, if the laity of the city will contribute a sum sufficient to purchase a corresponding window. The required sum is only 80*l.*, and a subscription of 10s. each has been set on foot, and many, dissenters as well as churchmen, have readily responded to the call.——Bottesford Church having undergone extensive repair and alteration, is to be re-opened on 12th inst., by the Bishop of Peterborough. High-backed pews have been replaced by open oak benches with carved heads, many free. An arch in the tower has been exposed by the removal of the singers' gallery, and a carved oak chancel-screen erected. Plaster and paint have been removed, and a distemper painting exposed. The nave and aisle floors have been laid with covered tiles, and the windows re-glazed. A new roof has been placed over the aisles, and the principal entrance will now be through the tower at the west end. The cost of the whole is upwards of 1,700*l.* Messrs. Sharpe and Paley, of Lancaster, are the architects, and Messrs. Broadbent and Hawley, of Leicester, the contractors.——Upwards of 5,000 poor inhabitants of Nottingham, are supplied with water *ad libitum* by the Trent Waterworks Company, for about 1d. per week to each house of three rooms. The immediate increase of cleanliness and diminution of disease was declared by the medical faculty to have been very great. The system too has been found to be highly advantageous to the saving both of time and morals, when compared with the common fountain system at Newcastle-on-Tyne and elsewhere. The company thus supply on an average 79 gallons for one farthing, delivering the article at all times night and day for a twentieth part of the previous expense.——The old chancel of Rampisham church has been replaced by a new building, ornamented with a Gothic stained-glass window.——Christ church, East Knottingley, the foundation-stone of which was laid on the 17th ultimo, is to be of a somewhat unusual form. The plan is cruciform, but the arms of the cross are not as in cross churches, transepts, but chantries or chapels springing from the north and south-eastern ends of the nave. The church is to consist of nave, north and south chapels and northern porch, chancel and vestry on the south side. The style adopted is early English, and the walls will be faced with sandstone from Ackworth Moor. The furniture will be of stained deal. The floors of the nave and chapels are to be furnished with open benches, free. There is to be a gallery with rented seats. The designs are furnished by Messrs. Vickers and Hugall, of Pontefract, the architects appointed by the committee. The site has been presented by Mrs. Seaton, a resident of the village, which will now have two churches with schools attached. The opening, according to the *Doncaster Gazette*, is expected to take place about the middle of next June.——The wooden hoarding in front of the New Exchange, in Albion-street, Leeds, has been removed, and the greater part of the exterior of the edifice exposed to public view. The foundation-stone was laid on 12th November, 1845. The erection is fast approaching completion. The architects are Messrs. Hurst and Moffatt; clerk of works, Mr. Donaldson. The upper room is capable of holding about 2,000 persons, and has been already occupied by the brokers. If we are not mistaken, says the *Leeds Intelligencer*, it is intended that the building shall be used as an exchange and club-house. Besides a large public room, and an ante-room on the second-floor, it has a capacious coffee and dining-room, library, &c, on the ground-floor, billiard-room, card-room, smoking-room, &c., in the basement story, with kitchens for cooking, cellars, and all other requisite conveniences.——A grant of 120*l.* from the Education Committee of the Privy Council, has been made towards the erection of two new schools in Ludworth.——A building for literary purposes has been recently erected, at an expense of more than 3,000*l.*, by the inhabitants of Wisbeach, a town with a population of 10,000.

## THE ORIENTATION OF CHURCHES.

Mr. Editor,—I was surprised to find from an article in The Builder of the 25th inst., that a casual remark of mine on the orientation of churches, which I let fall in the course of my lecture on "Mediæval Architecture," recently delivered at Liverpool, should have given rise to observations in some local journals. The subject presented itself to my mind unpremeditatedly, as is frequently the case in the delivery of unread lectures. I recollect stating at the time, that I did not then remember the *precise* orientation of S. Peter's at Rome, but that I was quite certain that the altar *was not at the east end*. The opinion of your correspondent concurs with mine. S. Peter's stands approximatively, not exactly, east and west, with the altar to the west. S. John's the Lateran has a similar direction, with a twist rather more to the south; and this, the "*Orbis et urbis mater*," in the centre of Christian Europe! In St. Maria Maggiore the altar end is to the north-west; in S. Giovanni e Paolo, west; in S. Gregorio Romano, close to it, nearly south; as also in S. Andrea della Valle, where the pompous funeral service for O'Connell was lately performed; and the same is observable in S. Ignazio, the church of the Collegio Romano, the focal point of orthodoxy! On entering Rome by the Piazza del Popolo, the traveller finds to his left the interesting church of S. Maria, with its altar nearly east. But the two churches immediately opposite the city gates have their entrances to the north, their altars to the south! Now these are not taken as rare instances of exception to the rule laid down by the present authorities of the Church of England, for not one-fourth of the Roman churches have their altars at the east end; but they are amongst the most ancient and most important of those sacred buildings. Consequently, the observance is not a Catholic one (*non ab omnibus*). I believe that the primitive Anglican Church did, at a very early period, adopt this tradition; but surely with us the question arises, whether we are bound to this fragment of antiquity hand and foot, at whatever cost or convenience, or whether we may regard it, as does the Church of Rome, in the light of a non-essential, subordinate to other considerations of locality, and the relative position with other objects. A glance at Nolli's fine map of Rome will bear out my remarks, or reference to the compendious plan of Letarouilly.—Believe me to be, &c.,

T. L. Donaldson.

## ARCHITECTURE AND ANTIQUITIES IN WALES.

CAMBRIAN ARCHÆOLOGICAL ASSOCIATION.

A society for the examination and preservation of the antiquities of Wales has been established, chiefly, as it seems, through the exertions of the Rev. H. Longueville Jones; and the first annual meeting of the members was held last week at Aberystwith. It lasted four days, and many interesting papers were read. Sir S. Glynne, Bart., took the chair, and Lord Dungannon, Sir Samuel Meyrick, the Dean of Hereford, the Dean of Bangor, and others, assisted. Among the papers read, which related to architecture, were the following:—

On the "History and Architecture of the Church of Clynnog Fawr, Carnarvonshire," by the Rev. H. L. Jones, illustrated with a series of sketches; on the "History and Architecture of Strata Florida Abbey," by the Rev. George Roberts; on the "General State of Welsh Antiquarian Remains, and on certain desiderata connected with them."

An excursion to Strata Florida Abbey afforded much to interest; and the Dean of Hereford, after giving an account of the visit at the evening meeting, observed, that "If the only result of the society's visit to South Wales was the careful exploration of this beautiful ruin, their time would not have been thrown away; and if each present extended his inquiries only to his own immediate neighbourhood, he would be doing a vast amount of good."

It is proposed to raise a subscription to clear out the remains of a ruin which possesses a history of greater interest than any other ecclesiastical structure in the country.

On the motion of Lord Dungannon, it was resolved that the restoration of Clynnog Fawr Church, and the chapel of St. Beuno, there, be entrusted to Mr. H. Kennedy and Mr. Penson, architects. The Dean of Bangor mentioned an interesting fact, that 50*l.* had been granted by the Queen for the purpose of repairing the Tudor tombs in Penmyndd Church, Anglesey. The committee decided that the next general meeting should be held in Carnarvon, sometime in 1848.

## EARLY STATE OF LAMBETH MARSH.

This tract of land, according to Hollar's map, extended from near Stangate to Broadwall, and was bounded by the river on the north-west and the ancient way or road called Lambeth Marsh on the south-east. From excavations, it is evident that the flow from the river has not extended beyond the said southern line. The lowest part of this land is where the late Belvidere Brewery was, with its large piece of ornamental water.

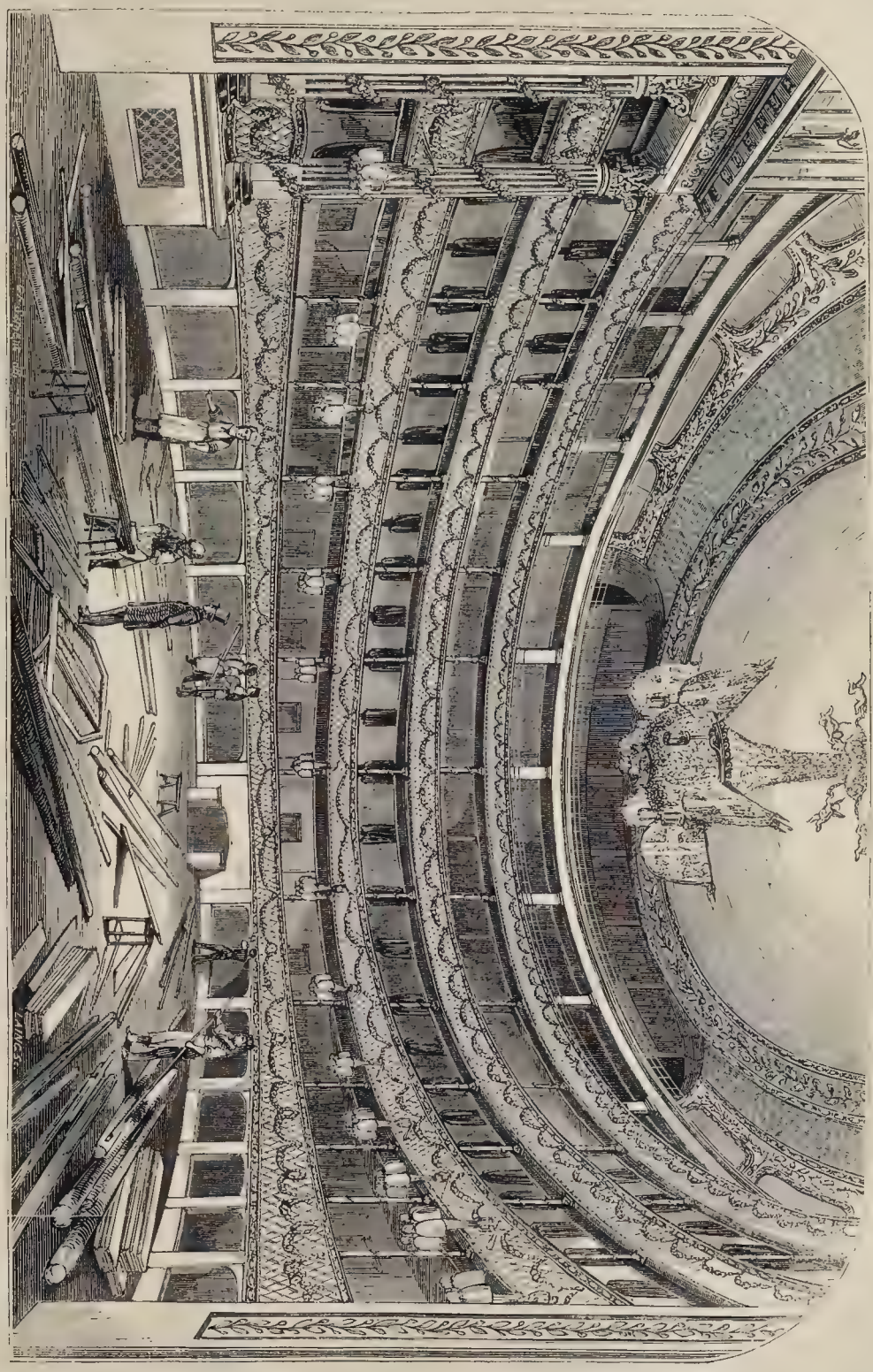
Some idea of its early state may be formed from examination of the cuttings for the railway and lines of sewerage now making at the great terminus, near York-road, a space in size equal to Grosvenor-square. It is there evident that a very great deposit derived from the river, had accumulated from the rise of the Thames, bringing on occasional inundations. In some places, where the water has flowed in with greater rapidity, gravel stones have been carried in; at other parts where the water might have remained nearly quiescent (as in a dock), there is to be found merely river mud, settled and pressed, so as to appear as a kind of dark wet clay, but the whole contains fragments of twigs and wood; and even at the lowest parts are to be found bones, small pieces of Roman tile, and of brick, which is an undoubted proof that this sediment is not of extremely ancient date. It is of the same nature as the present adjacent shore.

The names of Narrow-wall and Broad-wall have been derived from the embankments subsequently made. Broadwall became a road leading from the river to St. George's fields.

On removing the ground for the foundation of the new church in Lambeth Marsh, it appeared as if a creek had extended to near the road there, which may account for the ancient road taking such a bend on its way from Stangate (the ferry from the palace) to Kent-street, the then only way to Dover. The mud is not to be found so far south as the Westminster-road, nor in any other place, excepting within the limits above mentioned. T. H.

## RAILWAY JOTTINGS.

The result of the meeting between the railway and exchange authorities, is the expression of an opinion that no *new* contracts on lines authorized last session should be entered on, except under special circumstances. Each company, however, will doubtless look on the probable increase of traffic on their own main lines, by the formation of new branches and extensions, as amongst those 'special circumstances' entitling them to make exception to the proposed rule,—even tho' it were imperative. Agreements with contractors to induce them to proceed at a moderate speed, with the works in hand, are also recommended, and indeed are highly recommendable in probably most cases, though they will form a somewhat curious contrast with the bonuses for precipitate haste so recently prevalent.——Meantime, although in some cases matters have already come to a crisis, as on the East Lancashire line, where it has been 'resolved to stop entirely the works on the Preston and Liverpool' portion of the line, and to induce, if possible, the East Lancashire Company also 'to suspend the progress of that part of the line near Liverpool which the two companies are constructing jointly,'—and on the Basingstoke and Salisbury line, where a considerable reduction has been already made amongst the mechanics and others employed at the Andover establishment, at which a winter's work had been looked for and depended on,—still, matters on the whole progress as if no real ground of danger, or more evil days than the present, as yet were dreaded; the Ambergate, Nottingham, and Boston, and Eastern Junction shareholders, for instance, having just been engaged in the pleasing duty of increasing the number of their directors from thirteen to a corps of sixteen at 1,200*l.* per annum each, and that by a majority of no less than 20,000 shares—more than all of whom were confiding proxies; while, on the other hand, masons, unthankful for their present mercies, are, at Perth, refusing to 'enlist' for 28*s.* a week, at the general terminus, even though invited by the stirring appeal of the drum; and at Swansea and Newport they have just struck work so determinedly, that a bargain has been counter-struck between the engineers and the contractors, that stone shall be turned into wood, and bridges be built by carpenters and joiners, so as to save the masons trouble, a mode of settling the difference which cannot but strike and astonish the masons very forcibly, if it do not altogether petrify their wooden heads into stone itself, by way of compensation for so unexpected a transfiguration of stone blocks into blocks of wood.——We can see, we imagine, through the mists of future progress, that our proposed amendment and adoption of the Austrian imperial law anent all and sundry managers of 'railways causing accidents,' up even to the occasional 'suspension' of a director, as an illustrious example, is on the way to, if not on the eve of, final accomplishment. One of the recent legion of public complainants, awake to the right remedy or preventive, says—"The learned judges have hitherto always told us that wilful negligence, causing human death, involved the crime of manslaughter. Are railroad directors exempt from the operation of such a law? or how, otherwise, does their wilful negligence escape punishment? If a guard were attached to every two carriages of a train, a constant chain of communication with the engine-driver from all parts of it would be kept up, available as well by night as by day, and a similar number of breaks would insure the speedy stoppage of any train on the occurrence of danger, and probably save many lives. These precautions have already been often suggested, and recklessly disregarded; a fact which, if it were properly impressed by every coroner on the minds of his jury, when impannelled in consequence of fatal railroad accidents, would, no doubt, in many cases, produce such verdicts as would soon compel the adoption of measures dictated by mere common sense, and only resisted by the most detestable avarice. Every fresh line will but add to our dangers." The coroner on the unfortunate victims next to be sacrificed at the shrine of the railway Mammon will not fail, we trust, to point out the path of law and duty to the immaculate twelve. Meantime, *pro forma*, we may chronicle another of the plentiful suggestions to which it is plainly useless to expect attention in the only yet available quarter. A correspondent of the *Leeds Intelligencer* proposes the adaptation of atmospheric pressure, in a reservoir of portable dimensions, with a force pump and whistle, to the production of a code of signals for such purposes as those already pointed out *ad nauseam*.——It appears, from an appropriate return of the number of railway accidents, to be presented to the new members of Parliament, that during the last half year, ending 30th of June, and of course exclusive of the more recent fatalities, 101 human beings were killed, and 100 more or less injured, on railways in Great Britain and Ireland,—a number equivalent of course to 200 killed and as many wounded every year.——The progress of the Shrewsbury railway bridge has been delayed by the swelling of the river during the late rains.——Mr. Knight, contractor of the works on the Rugby and Leamington line, has not only provided for the comfort of his workmen by the erection of a quadrangle of convenient cottages, but for their moral welfare by the erection of a chapel for divine worship on Sundays.——The Birkenhead Docks have been made free, for all shipping landing cargoes, by the railway company, who are themselves to pay the tonnage rates,—6*d.* for foreign and 1*d.* for coasting vessels; so that virtually no dues whatever are now charged on ships entering or goods landed at this port.——The express trains from London to Liverpool, *viâ* the Trent Valley line, will perform the distance—200 miles—in five hours, or at the rate of 40 miles per hour.——The works contracted for by Messrs. Coulthard and Allen, between Clapham and Casterton, on the North-Western, are progressing, and the village of Ingleton is filled with work people



INTERIOR OF THE THEATRE ROYAL, DRURY-LANE.—(See Page 465 in present Number.)

employed on the line. The viaduct across the river Greta, which consists of twelve arches of considerable span and height, has been contracted for by Messrs. Walmsley and Headley, of Preston, to be built of stones from Newby Moor Quarry.——The proprietor of the *Hull Packet* has published a lithographic view of the Hull railway station and hotel, from designs furnished by the architect, Mr. Andrew, of York. ——Workmen are now busily employed in clearing the site at the Spital, Newcastle-on-Tyne, for the central railway station there, which is to cost 94,000*l*.——On the railway works, near Mallow, Ireland, a man was killed on Tuesday week by the falling in of an earth bank; and a correspondent of a Cork paper says:—"Not a day passes without one or more accidents. I have heard it stated that the overseers, who are themselves sub-contractors, make the poor workmen cut in too deeply, in order thereby to facilitate the fall of the earth-bank, and thus save the extra expense which would be incurred by doing it without danger to life or limb."—On 15th inst. all the railways throughout the kingdom of Prussia are to be simultaneously opened, that being the birthday of the king.—As soon as the line of electric telegraph between Vienna and Prague is completed, every locomotive is to be furnished with a small electric apparatus, by aid of which, and by that of a wire, which can, at pleasure, be put into communication with that of the railway, the train can announce to every station far or near, the events it may have learnt upon the road. We had occasion, we think, to report some time since, that this project was in hand. We are glad to find it still tenacious of existence, as are so few really good or useful schemes such as this *may* be, or at all events, ought to be.

## VENTILATION OF THE CONSUMPTIVE HOSPITAL.

A CORRESPONDENT has forwarded to us the following account of the mode adopted for ventilating the hospital for consumption at Brompton, by Dr. Arnott.

For ventilating purposes, air may either be *drawn* in and out, or driven in and out. In the present case, as the more economical mode, the second has been adopted, and the rotatory fan and the screw are the instruments employed. Dr. Arnott has derived the main idea of his plan from an apparatus invented about a century ago by the Rev. Dr. Hales. It consisted of a bellows-like chamber, with a tube and nozzle, through which the air was expelled into the chamber to be purified. The machine was very generally employed in the English and Danish navies, but was ultimately abandoned because of the labour required to force the air through the narrow nozzle and pipe. One-half the ship's crew were required to ventilate the other half. Dr. Arnott saw the advantages of this contrivance, and perceived also that he could dispense with the enormous power required to propel the air, simply by enlarging the area of the nozzle to the same calibre as that of the main box. The application of steam power also renders the apparatus complete. It now consists of two wooden quadrangular boxes, in which two hollow pistons move up and down alternately, by means of a rod attached to either end of a wooden beam, on the principle of a steam-engine. The beam is moved by a steam-engine of about one-horse power. When the wooden piston descends in the box, a valve opens in the upper half of the box, through which the air is admitted; when the piston ascends, the valve is closed, and the air is propelled into a central chamber. The same effect is produced in the lower half of the box; and thus, in both boxes, each ascent and descent of the piston impels a quantity of air into the central chamber situated between the two. From the central chamber the air rises into another apartment, filled with plates of copper, heated by an adjacent fire. These are placed at distances of half an inch from one another, and the air passing between them is thus raised to the desired temperature. The warm atmosphere now passes into a large tube, which ascends to the top story of the building, but in its course gives off a branch at each flat or landing. These are divided into ramifications, the narrowest of which go to the nearest apartments, and the widest to the most distant. They run along the skirtings of each room, into which they open by valvular fissures. The impure air of each room escapes by other valvular apertures, opening into the chimney as high as the ceiling. The apparatus is said to be capable of throwing into the building *three thousand* cubic feet of air, which, as the hospital contains a hundred inmates, is an allowance of twenty cubic feet per minute to every person.

## THE ARCHITECTURAL ASSOCIATION.

THIS society (a reconstruction, as our readers will remember, of the "Association of Architectural Draughtsmen") will hold their first conversazione at their new rooms, Lyon's Hill Hall, Strand, on Friday next. A prospectus put forth by the committee states, that,—"The chief objects of the Architectural Association are, the advancement of the study of design in architecture, the development of true principles of criticism, and the affording means whereby the student may acquire an aptitude for the application, re-combination, and extension of the present materials of the art." And that,—"For the attainment of these objects, the business of the ordinary meetings of the association will consist of the production of designs for previously determined subjects; the reading of papers on the several branches of science and art, comprehended under the term architecture; free and open discussion; and the contribution to the society's portfolio of subjects displaying either originality of design, examples of construction and decoration, or modes of representation."

The annual subscription is ten shillings, payable quarterly.

## ST. MATTHEW'S CHURCH, WIDCOMBE, BATH.

THE style of this church, briefly alluded to in our leading article last week, is the decorated; it is 98 feet long from east to west, and 64 feet wide from north to south, in the clear of the walls. There is a transept to the north, in which is a vestry-room and seats for 300 children, about half of whom are seated in a gallery in the transept. The body of the church affords seats for 900 adults. The ground on which the church is erected is so limited in extent as not to admit of a projecting chancel; one is formed by stone screens or parcloses, in the easternmost intercolumns of the nave. The church has little decoration, as may be supposed, when it is known that the cost, exclusive of site, &c., was 5,000*l*. The spire is 150 feet high. Messrs. Manners and Gill were the architects.

## A VOICE FROM WINDSOR.*

THIS "Voice," in a blue cover, says that the royal town is being ruined by the unwholesome restrictions thrown in the way of visitors to the Castle, which, said "Voice" avers, our good Queen can know nothing of. Instead of the average annual number of 150,000 admirers, shouts "Voice," only 27,000 passed through in 1846, when the visit was made "free" to the public, but by tickets only obtainable IN LONDON. The inconvenience and loss which followed this regulation, led to the issuing of tickets, from the Winchester Tower, in the Castle, to "residents and visitors at Windsor, who have not had an opportunity of obtaining them in London," but, according to our "Voice," Mr. John Roberts, therein placed to dispense them, exercises such an amusing caprice, as to make this order of little service. "Voice" speaketh out plainly,—perhaps it cometh from a stomach, which may be pinched,—and will, we hope, be listened to so far as it presenteth reason.

THE MASONS AND THE FOUR O'CLOCK PRIVILEGE.—About 150 masons dined at White Conduit House, on 28th ultimo, "in commemoration of the achievement of the four o'clock movement," and a testimonial was presented to one of their number for his services in obtaining this privilege from the masters.

* Strange, Paternoster-row.

## EFFECT OF SARACENIC ARCHITECTURE ON THAT OF VENICE.

A CORRESPONDENT of the *Athenæum*, in a letter from Venice, refers to the effect of Arabian art upon that of Venice. Such of the communication as relates to architecture we extract:—"There can be little doubt that the earliest good edifices of the Venetians were Byzantine;—but the fame and beauty of the Saracenic style soon swept all before it. The Ducal palace, in which the Saracenic predominates, seems to have been constructed by Calendario in the middle of the 14th century—and to have been thus a contemporary of the mosque of Sultan Hassan in Cairo, just after the two great Kalaons had added so many magnificent edifices to that capital:—and surely the Arabic reconstruction of the elements of the sublime and beautiful in architecture after their dissolution in the lower empire is immeasurably superior to that of the northern Gothic. The Arabs in their details shewed (excepting perhaps in Granada) less curious and elaborate tracery than the men of the north; but with them it was always in subordination to some great feature either of the elevation or the interior—and always formed a harmonizing contrast to some more simple part of an edifice, or a relief to the mere grandeur of its outline. This it is which has made the Ducal palace the most beautiful edifice in the world. The old Piazza di San Marco, before it was burnt down—as shewn in the large and curious picture of 'Gentile Bellino' (A.D. 1496) at the Accademia—was entirely Saracenic; so that the Piazza must have borne the closest resemblance to the court of a mosque. For it was then much smaller; being narrower by the breadth of the campanile, and something more. Not only were the archivolts of the horse-shoe form and the cornices serrated, but even in the minutest particulars the Oriental style was imitated.

Several remarkable edifices of Saracenic architecture are yet visible on the Grand Canal:—one of which is the Fondaco dei Turchi. There is, however, no connection between its architecture and the subsequent destination which gave it its name. It is supposed to have been built in the 12th or 13th century,—when the Saracenic taste was in full prevalence.

"After the Italian invasion of the cinquecento, and the different direction taken by Palladio, Sansovino, and Sammicheli, Venice rapidly changed appearance. To such houses as are seen in Giovanni Mansueti and Vittore Carpaccio succeeded the modern Palazzo, with its balconies and pilasters. The change is not to be regretted as regards Venice in general; but I certainly think that the old Piazza di San Marco, with its Arabic colonnades, its serrated cornices, and its bright red pavement streaked with white marble, would have been more in unison with the church and the Ducal palace. St. Mark's is still the most oriental of all the edifices in Venice. Place an ignorant Cairene at the gate next the Piazza dei Leoni, and you would have some difficulty in persuading him that Venice was not the seat of a long and illustrious Saracenic occupation,—and that St. Marco is not a mosque abandoned to defilement by the anger of God or the pusillanimity of the bearers of the banners of Islam. The crowd of domes, the innumerable costly pillars of all sorts, sizes, colours, and capitals, which have the air of having adorned successively the palaces of antiquity, the churches of the lower empire, and the mosques of the Saracens, at length stand in enduring commemoration of the Millennium during which the Levant influenced the arts and exercised the arms of the great republic. Even the turned wooden grates or window frames above the great gates are of the very patterns used to this day in Cairo—and which were in the 15th century all gilt." The Palazzo Loredano, a peculiarly light and handsome specimen of Saracenic architecture, built since the invasion of the Italian style—and the celebrated Ca Doro, now the property of Taglioni—are both so well known as to require no further consideration.

WESTON-SUPER-MARE BRIDGE.—Recent tremendous gales have nearly destroyed one of the piers in course of erection for the intended suspension-bridge here, concerning which we spoke sometime since. It is supposed that the whole mass must be taken down.

## PROCEEDINGS OF THE WESTMINSTER COMMISSIONERS OF SEWERS.

A SPECIAL court was held on Friday last, Capt. Bague in the chair.

Mr. Hertslet, the clerk, read a letter from the vestry clerk of St. Anne's, Paddington, complaining of nuisances from the want of drainage on the property of Sir John Eyre, and calling upon the court to put in force the powers of their new Act for the abatement of the same. Referred to the surveyor.—A memorial was read from a resident householder of Ladbroke-terrace, Notting-hill, which was signed by nine other persons, complaining of the pestiferous nature of a drain near their houses, which emitted effluvium of the most pernicious description, one life having already been sacrificed by it, while others were threatened, and calling upon the court to stop and entirely remove the same. The surveyor was ordered to take immediate steps in the matter.—A most voluminous document was next handed in from Mr. Edmund Warne, the vestry clerk of the parish of St. Anne, Soho, drawing the attention of the court to the very deficient state of the drainage of that locality, and enumerating upwards of fifty streets that were entirely without, or only partially provided with sewerage. That the health of the inhabitants was most seriously affected thereby, and praying relief under the powers of this court. This document led to a long conversation, and it was finally ordered that Mr. Warne be informed that the subject should be taken into immediate consideration.

*The Drainage of Long Acre.*—It will be remembered that a short time since M. Le Breton brought before the court the subject of the loss of life of George Grosse, of Langley-court, Long Acre, from the want of proper drainage, and the surveyor of this court was ordered to report on the best means of remedying the evil and preventing similar fatal results. In accordance with this resolution, Mr. Phillips presented the following report:—

"Long Acre is situate on a summit level, being the ridge of a hill. From Drury-lane to St. Martin's-lane the ground falls to the westward, and it subsides to the northward and southward. As the keeping of all sewers properly washed out and cleansed must necessarily depend on a good supply of water, the principle which I have thought it best to follow for the proposed drainage of Long Acre, is to obtain this by carrying a sewer from the lower end of Long Acre and St. Martin's lane to the upper end at Drury-lane, forming junctions with the main sewers at the two last-mentioned places. It is not intended by this means to divert the sewerage from Drury-lane, and so to surcharge the sewer in St. Martin's-lane, but an ample supply of water can thus, when required, be obtained from the sewer in Drury-lane, situate on a high level, for washing out not only the proposed sewer in Long Acre, but also the sewers proposed to be built in the various streets, alleys, and courts in the immediate vicinity on a low level.

The position and level of the sewer proposed will have reference to carrying out this principle to the improvement and drainage of the neighbourhood generally.

Having a due regard to their strength and durability, economy in the construction of sewers is as essential a feature to be considered and acted upon as the arrangement for keeping them cleansed. After mature consideration, therefore, I am decidedly of opinion, that for all practical purposes a sewer of the accompanying shape, size, and thickness ($4\frac{1}{2}$ inches) will be found sufficient and ample for the drainage of Long Acre. The greater part of it may be executed by tunnelling, for as the earth through which it will pass is of a gravelly nature, not liable to expand and slip, it is so far favourable for its construction.

The total length of sewer required, including the necessary junctions for the side streets, courts, &c., will be about 1,825 feet, and I estimate the expense at 750*l.* The same length of the present No. 2 sewer (9-inch brickwork) will cost 1,500*l.*, or double the former sum. Should the court determine to build the half-brick sewer as proposed by me, I think the court should execute the work."

Mr. T. L. Donaldson wished, in the first instance, to know who was to pay for the proposed work, and whether it would be fair to tax the present generation for carrying out an enormous system which must tend to the benefit of their successors. He thought, therefore, that it was highly necessary that they should proceed with caution, and not ruin by expenses those whose health they were about to preserve, and that all their works should be done with extreme caution. He was of opinion, that as the Mercers' Company had profited by the property, that they ought to build the sewer, and this court might also compel them to pay for it.

Mr. Le Breton said the state of Long Acre required their immediate attention, for by the want of drainage people had lost their lives, while they had for years and years been endeavouring to compel the owners of the property,—not only the Mercers' Company, but other proprietors,—to do what was required, but without success. By the provisions of the new Act they had the power to execute the works, and to compel the proprietors to pay for their construction. As to any difficulty about raising the money, he thought a few hundred pounds would be lent with readiness by the Messrs. Drummond at 5 per cent., for he had himself that day effected a loan for the baths and washhouses of St. Martin's-in-the-Fields, with the Economic Assurance Company, of 10,000*l.*, at 5 per cent. Under ordinary circumstances it was necessary that they should proceed with caution; but in this case it was their bounden duty to proceed with the required work before the winter overtook them, and not to allow another year to go on without some improvement, particularly as a petition had been presented, signed by nearly every inhabitant, requiring immediately that something should be done. The surveyor held his power under the court, and was an officer of great value, with great experience in these matters, and his calculations in the case of Kensington had been verified to the letter. In fact, contractors had been found to do the work even below the estimate. In Southampton very extensive works had been done in $4\frac{1}{2}$ inch work, and found to be very successful; and he thought reducing their plan to $4\frac{1}{2}$ inches would give them the means of making sewers where they were never before thought of, but where they were most required; for it appeared that it was in the suburban districts where the greater portion of their sewers were constructed, while very little money was laid out in making new sewers in the very centre of London. Few persons were aware that in a street like Long Acre, within half a mile of Trafalgar-square, there was no sewer, but that the accumulation of the filth of cesspools was necessary at intervals to be pumped into the public streets. He hoped, therefore, that this court would immediately carry out the measure proposed, and concluded by moving,—"That the report of the surveyor on the sewerage of Long Acre be adopted, and in $4\frac{1}{2}$ inches work."

Mr. L. Wood seconded the motion.

Mr. W. Donaldson was happy they were at last in the position to carry out the plan of forming a sewer in Long Acre, and he thought it would be a good occasion for forcing contributions from the owners of the property there, and trusted it would not be done altogether at the expense of the court or the district, but that such portion as could should be claimed from individuals. The public, too, ought to know that it was not the fault of this court that the work had not been done before, but that their power was unequal to enable them to do so. With respect to the plan, he thought it was a desirable one; but as to the $4\frac{1}{2}$-inch work, he felt alarm when it was proposed for Kensington, being in a district which might at a future time be used for the drainage of the entire locality; and he was not at all satisfied with the proposition of $4\frac{1}{2}$-inch work for such a district as Long Acre. They ought not to be called upon to build sewers every twenty or thirty years, but they should be of that substantial nature as would last for ages. Expense ought not to be taken into account, but durability should be their first consideration, and, therefore, he was not prepared to vote for the plan proposed.

The surveyor had made a calculation, and the difference between $4\frac{1}{2}$-inch work and 9-inch work was as between 7s. 6d. and 12s. 3d.

Mr. Gunter, not being a practical man, should vote for the plan of the surveyor; for if even the sewer should fall in, he should not consider any blame due to himself. They had placed their surveyor in authority, and he thought they should act upon his suggestions, and not upon those of other persons.

Mr. Hawkes said every commissioner ought to use his own discretion. He did not think that the plan proposed for such a thoroughfare as Long Acre was what the public had a right to expect, and he could not support the proposition for doing the work on the $4\frac{1}{2}$-inch principle.

Mr. Halswell supported the original motion.

Mr. T. L. Donaldson was of opinion that the whole plan should be referred back to the surveyor, as he objected to the court doing the work. They had the power at any time to compel the Mercers' Company to execute the works in Long Acre, but the collateral streets and alleys were totally unprovided for. The people in Long Acre had the power to remedy themselves, but in the back streets, where pestilence was raging, the evil was left untouched. Let them spend the money in forming sewers there, and afterwards bring that powerful body, the Mercers' Company, before the public, and compel them to do what was required. He moved, as an amendment, "That the plan be referred back to the surveyor, to report as well upon the several courts and alleys collateral with Long Acre, as Long Acre itself, and to submit estimates for the same."

Mr. Gutch seconded the amendment. Mr. Cantwell, as a practical man, dissented from an opinion given by the surveyor, that he would sooner have the arch turned in mortar than cement, and gave it as his opinion, that $4\frac{1}{2}$ inch brickwork if done in cement was equal to 9 inch work in mortar. Mr. Kendall objected to $4\frac{1}{2}$ inch work.

Mr. Le Breton replied, and asserted that both Mr. Barry and Mr. Hardwick were favourable to $4\frac{1}{2}$ inch work.

The Chairman then put the amendment, which was negatived by a majority of 8 to 3; and a subsequent amendment, adopting the plan of the surveyor, excepting that the work should be 9 inches, instead of $4\frac{1}{2}$, was rejected by 6 to 2. The original resolution was then carried, as was also the following:—"That the solicitors be required to prepare and give all necessary notices for the works in Long Acre, under the provisions of the Act 10 & 11 Vict., cap. 70."

*The Sanatory Commission at Gwyder House.*—Mr. T. L. Donaldson drew the attention of the court to a notice in one of the morning journals as to the proceedings of the sanatory commission, stating that their surveyor had given evidence before it, and wished to know whether he had any communication to make to the court on the evidence he had given.

The Chairman said, that in reference to this subject, the surveyor had placed himself entirely in his hands, and such being the case, he now told him that he thought the most prudent course for him to pursue was not to disclose the nature of the evidence given by him to the sanatory commission at Gwyder House. Mr. T. L. Donaldson was surprised at the decision of the chairman, although he must of course bow to it. The Surveyor said, his examination was a very lengthened one, and embraced a variety of questions, but he could not tax his memory with the facts.

Mr. Le Breton said, in the course of his examination he might have been asked whether their court was an efficient one, but they could not expect him to answer such a question there. Mr. Phillips: If I am to give an honest opinion, I should say this court is *not* an efficient one. Mr. Hawkes: I should say so too, by the appointment of such inefficient officers.

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WANT OF HOUSES IN EDINBURGH.—A singular and yet a very natural reaction is at length about to take the place of that stagnation in the building trades, which, in its turn, inevitably followed on the mad speculations, which, nearly a quarter of a century since, reared up an entire new city, as if by magic, in the midst of corn-fields and farm-houses. Such a lesson had been then learned as has scarcely yet been forgotten; so that the necessary demands of a growing population have been hitherto unheeded, and the consequence now is, an exorbitant rise of rents, the emigration of the new town ancient immigrants back again to the old town whence they came, and the ousting of the poorer classes, on whose sturdy shoulders all heavy loads of grievance ever ultimately fall, even out of the old town, which had been so long since, as it were, handed down to them. More room is now the outcry, and the only fear may shortly be, that a new generation of builders, who have neither reaped nor partaken of the experience of their now wiser fathers, may not deign to benefit by that experience, but once embarked, may rather vie with them in a new race of floating building speculations to supply the now very urgent demand. While not a seventh part of the former amount of building is as yet in progress, there has been an immense increase of alteration and improvement, all, however, tending rather to diminish the amount of accommodation than to increase it. What are now required, are the rapid erection of cheap and plain, but substantial erections in or near the outskirts of the city, old or new, for the middle classes, and square or other blocks of cottages, in like localities, with open airy sites, for the lower. "And there is little doubt," observes the *Mail*, "that there will ways and means be found of producing the requisite house accommodation in and around the city, so soon as it becomes obvious to builders or speculators that it *is* urgently wanted and sure to pay," as it now appears to be.

SCHOOL OF DESIGN, SOMERSET HOUSE.—Nothing has yet been done by the Board of Trade to alter the system at the school. It is to open on Monday next, and efforts are being made to ensure a council meeting on Tuesday, which, owing to the retirements, is a difficult matter.

## Correspondence.

DOVER HARBOUR—UPRIGHT WALLS IN THE SEA.

SIR,—Looking through THE BUILDER for the 18th ult., I was struck with the declaration of Sir Howard Douglas against the practicability of building a perpendicular mole in the sea! The ancients managed these things well enough "to my personal knowledge," as witness the mural mole at Civita Vecchia, the "wall" at Santa Maura, Caligula's-bridge, at Pausilipo, and numerous others.

I am, Sir, &c.,

W. H. S.

BRICKS FOR ROAD PAVEMENT.

SIR,—Ingenuity is nearly exhausted in devising improvements in paving. Almost every thing, even India-rubber, has been put in requisition. Bricks remain, however, to be tried, *i.e.*, for public roads; and since various kinds, according to the different purposes, are already produced, they could surely be made fit for this purpose. They might be laid on end, and need not be more than 6 inches long. As they would all be exactly alike, there would be no fitting or choosing, as is the case with the best cut stones, by which much time would be saved, and the pavers enabled to proceed with wonderful rapidity. Where the road is sufficiently wide, they could do one-half first, while carriages passed on the other, by which the very injurious interruptions to business in our principal streets would be obviated. Probably the Commissioners of Excise would grant permission, without waiting for a special Act of Parliament, to make bricks of any size and form, when confined *exclusively* to paving.

PROJECTOR.

TO DETERMINE LINES OF ROOF.

SIR,—Will one of your readers be kind enough to inform me how to get by lines the saddle of a ridge stone for the hip of a roof, supposing the pitch of the roof to be one-fourth of the span.—I am, Sir, &c.,

A CARPENTER.

## Miscellanea.

CHART OF ANCIENT ARMOUR.*—The author of this pictorial chart expresses a hope that it will be found useful and acceptable "to those wandering among the ancient sepulchral monuments of our cathedrals, or treading the brasses of our country churches; to the student poring over the pages of chivalry or deciphering the illuminations of middle-age lore; to the traveller exploring the armour-galleries of his own or of foreign countries; to the painter, the sculptor, the historian, and the costumist;"—and we beg leave to say, we think it will. It consists of a folded sheet, whereon are nicely depicted eighteen figures, shewing the variations in armour between the 11th and 17th centuries. It will not give profound knowledge, but those who master it fully, will be able to approximate the date of most of the armour and effigies which may be brought before them. In the little key which accompanies the chart, Mr. Hewitt gives the following memorandum:—

"It will be of use to note that, for *general purposes*, the body armour during four centuries may be thus simply classified:—

12th century.... Scale, ring, and mail, *unmixed* with plate.
13th century.... Mixed mail and plate; the mail predominating.
14th century.... Mixed mail and plate; the plate prevailing.
15th century.... Era of complete plate.

For the 16th century, or Tudor period, the breastplate will be found a good guide. Its form was at first globose: then a point appeared in front, near the centre: this point or peak gradually fell towards the waist, till at last it extended even beyond the band of the breastplate, and assumed both the form and the name of a 'peascod.' Under the Stuarts, the peaked waists by degrees disappeared, till at length the breastplate became nearly square at its termination, with an obtuse ridge down the centre."

* "Chart of Ancient Armour from the 11th to the 16th Century." By J. Hewitt. Bell, Fleet-street.

THE IRISH ART-UNION AND THE LORD LIEUTENANT.—Addresses to Lord Clarendon have of course been numerous. The Royal Irish Art-Union, amongst other bodies, presented one on the occasion of his Excellency's visit to an exhibition of sculpture by native artists, soliciting him to become a patron of that body. The Viceroy at once assented, and said in his reply:—"When I look around at all these beautiful and speaking proofs of native talent, and deduce from them that in other branches of art the same talent, with the same result, has been displayed, I feel well assured that in Ireland there must exist a vast amount of artistical genius which only requires and will amply repay a generous encouragement. Let it be withheld, however, or afforded with a niggard hand, and it is hopeless to look for success in art; and if we recollect that without a Julius II. and a Leo X. the transcendant genius of Michael Angelo and Raffaelle might not have been developed, and their immortal works might not have been executed, we must feel how much those will stand in need of encouragement who, without a hope of reaching their unrivalled eminence, have still at first to struggle against difficulties not inferior to theirs. It has been often said, and I fear with truth, that in Ireland neither fame nor reward attend Irish genius; but I rejoice to think that it has not hitherto on that account languished; for the admiration with which the British public have long been accustomed to view the works of Shee, Mulready, Danby, Maclise, Rothwell, Macdowell, Hogan, Kirk, Moore, Foley, Jones, and other illustrious artists I could name, proves that in England sterling merit is appreciated as it deserves to be, and that among my countrymen, as respects art, and I trust in all other things, justice to Ireland will not be looked for in vain."

THE "NAVVY," NOT THE NAVY, THE DEFENCE OF THE COUNTRY.—Mr. Weale, the architectural publisher, has addressed a letter to Lord John Russell, pointing out what he considers the dangerous position of the "snug little island" in the event of invasion, and urging that our railway labourers, and all able-bodied male persons applying for parochial relief, be drilled and trained to arms. For our own part, we cannot bring ourselves to believe in invasions of England, and should deeply regret to see the mind of the country so unsettled and disturbed as it would be by such a proceeding as that proposed.

NEW SYNAGOGUE AT CANTERBURY.—The first stone of a new Jewish temple or synagogue was laid on the 13th ult. (13th Tishri, A.M. 5608) in King-street, Canterbury, on the very site of the ancient house of the redoubted "Knights Templar;" once the inveterate scourge of the persecuted Jews, but now themselves removed from the face of the earth, together with their house, which has thus given place in the lapse of ages to so singular an inheritance. The site of their former place of worship was required for a railway station, &c. The stone was laid by Sir Moses Montefiore in the presence of the mayor, aldermen, &c., of the city. No particulars either as to style of architecture, architect, or builder, are given by our authority, the *Morning Advertiser*.

SECOND-HAND STEAM 'USED UP.'—At the sitting of the Paris Academy of Sciences on 20th ultimo, M. Séguin read a paper on the effect of caloric in steam as connected with motion, the result of which seems to be that it would be possible to make the same steam which has already imparted motion, repeat the operation by giving to it a new supply of caloric without the necessity of the production of new vapour. This, as the *Morning Post* observes, would be a very important improvement in steam-engines, and M. Séguin promises to follow up his experiments with a view to arrive at the practical application of his theory.

TINKERING THE ANGELS.—It is a novelty to find the old custom of mending the parish angelicals brought down to our own times, in Salopian localities; but so it is. For example:—

The Churchwardens of L———
To Benjn. Evans,
1847. for repairing the church.
Feby. 7.—Making a new wing to a angel .. 3s. 6d.
Making a new angel: you fund the stuf ..... 8s. 6d.
Repairing the leg of a cherrybum 2s. 6d.
14s. 6d.

—*Eddowes' Shrewsbury Journal.*

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of a town-hall and other buildings at Yeovil; and a national school and master's residence at Maryport (extension of time); for the execution of the works or a portion of the works of the Manchester and Southport Railway; the erection of ten gate-keepers' lodges on the East and West Yorkshire Junction Line; the extension of sewers in Tower Hamlets; the covering of 623 feet of King's Scholar's pond sewer, and 250 of Ranelagh sewer; the inclosing of airing grounds at Fever Hospital of Bedford Infirmary; renewing and repairing the pavements at Gosport; sinking and boring for water near Maidstone; lighting theatre of Polytechnic Institution with gas by chandeliers, or otherwise, together with designs for same; also for a supply of pig iron, paint and tar for East-India Company.

TRAPPING SEWERS — IMPURE ATMOSPHERE.—Last week, Mr. T. A. Smith delivered a lecture on the corruptions and impurities of the atmosphere caused by carbonic acid and other gases from fires, candles, gas-lights, gas-works, and manufactories. Of all the contaminators of the atmosphere, sulphuretted hydrogen was the most detrimental and poisonous. In escaping from decomposing animal and vegetable substances in dwellings, dust-bins, dung-heaps, slaughter-houses, burying-grounds, and cesspools, it had the most injurious tendency, and no one could scarcely pass the gullyholes of their sewers without being affected by it. Besides being a deadly poison, it had a deteriorating effect upon paintings and furniture, and there was not a house in London but what some portion of the furniture in it was less or more affected by this poisonous effluvium. Mr. Smith went through several experiments, which proved the statements he made regarding it. Some had proposed to get rid of the poisonous matter by decomposing it by means of lead or chlorine, either of which would do so, but instead of getting rid of it by chemical means, the better way would be by some mechanical process, and in doing so to adopt the generally acknowledged fact—that to prevent an evil was better than to cure it. It was thought that the introduction of large shafts into the sewers, so as to carry the offensive matter far up into the air, that it might be there decomposed by the influences brought to bear upon it, was the best mode of getting rid of it; and no doubt the plan was a good one, but the formation of their sewers in an oval, instead of the shape which many of them at present were, so that no matter could remain in them, and the cleansing them out every day by a copious supply of water, was the best mode that could be adopted.

CONSTRUCTION OF WET DOCK AT ABERDEEN.—The works are being vigorously prosecuted. The formation of the lock has offered many difficulties on account of the nature of the bottom. It was built within a coffer-dam 390 feet long, and having six feet of clay puddle; the interior of the dam was braced to resist the pressure by parallel braces of great magnitude, on which cranes traversed in every required direction for setting the masonry. The masonry of the dock is almost entirely composed of fine dressed granite, resting on a platform of timber, supported by 4,000 piles of American red pine, from fifteen to twenty feet long. The gates are of mahogany, covering a framework of cast iron, each leaf weighing upwards of fifty tons. By the arrangement of the machinery these are easily worked by five men. The quay walls are all of dressed granite, the near walls constructed for a depth of twenty-one feet water at deep tides. The estimated cost of the harbour works is one hundred and twenty thousand pounds.

KNELLER HALL, MIDDLESEX.—A correspondent writes as follows:—"Kneller Hall, formerly the residence of Sir Godfrey Kneller, Bart., and built by him, has been purchased, we understand, by Government. The staircase, which goes to the height of two stories, is very interesting, as it is supposed to have been painted by himself. The subjects on three sides, as well as the ceiling, are allegorical, that on the west side next the hall representing painting, sculpture, and architecture, evidently contains portraits, perhaps of Sir Godfrey and his family. The paintings being only on lath and plaster partitions, have suffered considerably, but it is to be hoped they will now be carefully restored, and preserved in their original position.

## TO CORRESPONDENTS.

"*Conduct of a District Surveyor.*"—The generally litigious proceedings of the surveyor in question have been brought before us by several previous correspondents. We would avoid personalities until forced by sense of public duty.

"*R. N.*"—We are unable to comply with the request. In 3rd volume of "The Builder," p. 7, a paper on the subject will be found.

"*Constant Reader.*"—We believe there is a literary institution at Dalston.

"*Sir R. M.*"—We shall be glad to receive information.

"*Lime-Kilns.*"—A correspondent wishes to know the most approved form of kiln for burning *mountain limestone*.

"*H. A. M.*"—Write to the secretary, Mr. Jayne, 11, Harrington-street North, Hampstead-road.

"*R. K.*"—Illness has prevented reply.

"*Constant Reader.*" Notice must be given of erection of *insulated* building. The fee is settled by the Act, II. 1s.

"*W. T. H.*"—Remove the parts affected by the dry-rot, and admit current of air. A wash of hot lime and copperas is recommended.

"*J. G.*" (Leamington.)—An Arnott's valve in the chimney, close under the ceiling, will be found useful and inexpensive.

"*J. A. Ellis.*"—We will look to it.

*Received*—"G. P. M.;" "Messrs. F. and W.;" "H. C.;" "C. J.;" "G. O." (not necessary). "Walter." "M. W." "Portraits of the Marquis of Granby and Mr. Duff, M.P." engraved after —— Grant, R. A., by George R. Ward. "Caldwell's Musical Journal." Part IV. (Orr and Co.) "Westminster Review." "Dolman's Magazine."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

## ADVERTISEMENTS.


**CIVIL ENGINEERING,** Architecture, and Machinery.—The SESSION for this Department will commence on WEDNESDAY, 19th October. It consists of the following classes:—

Mathematics—Professor De Morgan.
Natural Philosophy—Professor Potter, A.M.
Chemistry—Professor Graham.
Practical Chemistry—Professor Fownes.
Civil Engineering—Professor Harman Lewis, A.M.
Mechanical Principles of Engineering—Professor Eaton Hodgkinson.
Machinery—Professor Bennet Woodcroft.
Architecture and Construction—Professor Donaldson, M.I.B.A.
Geology—Professor Ramsay, F.G.S.
Drawing—Teacher, Mr. G. B. Moore.
Prospectuses and further particulars may be obtained at the Office of the College.

FRANCIS W. NEWMAN, Dean of Faculty of Arts and Laws.
CHARLES C. ATKINSON, Secretary to the Council.
University College, London, August 19th, 1847.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them coming through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitations have a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Blandford-street, Blackfriars-road, London, in bottles 6d. and 1s. each, and at 10s. per gallon. The oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Fencing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred we glu is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If be used with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

**GREASE! GREASE! GREASE!**—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent discount for cash.

Samples sent by addressing to J. T. FITT Swan Mead, Bermondsey New-road, London.

RAILWAY BREAKS.—TO RAILWAY COMPANIES, CAPITALISTS, OR INVENTORS.

**A NOVEL Description of RAILWAY BREAK**, the invention of a distinguished Foreigner residing abroad, which is perfected for Patent, is TO BE DISPOSED OF. It is self acting, requiring no manual management, and capable of being fixed and acting on any number of carriages at once. A company or individual desiring to secure this valuable Patent Right will apply to Mr. JOHN GEDGE, Patent Agent, 4, Wellington-street South, Strand, London.

ARCHITECTURAL ENRICHMENTS.

**BIELEFELD'S IMPROVED PAPIER MACHE**, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Design prepared for the execution of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff price 21. Works, 15, Wellington Street North, Strand.

**FIRE BRICKS.—WARD & HART,** Hondurus Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

**CHEAP ORNAMENTAL GLASS.—I beg** to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

**E. AND W. H JACKSON,** late Bromley and Drake. Patent Plate, Crown, Sheet, and Ornamental Glass, of superior quality, and at the lowest terms. Warehouse, 315, Oxford-street.

EMBOSSED GLASS.

**EDWARDS and PELL,** 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

**PLATE GLASS.—Architects, Builders,** and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate Glass Company. Liberal discounts allowed on glazing qualities. London Warehouse, 99, Hatton-garden, Holborn. H. CHRISTIE, Agent.

N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one-half, and three-fourths of an inch thick.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and Cirey Company, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

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Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the best wholesale terms.

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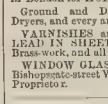
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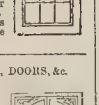
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**CHAS. WM. WATERLOW,**
MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-driven Moulding Machines in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



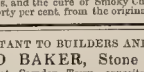

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Beg to inform the Trade, and the Building Public at large, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Mouldings and Machining work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.

**DR. ARNOTT'S CHIMNEY VENTILATOR.**—F. EDWARDS, Stove Maker to her Majesty, 30, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description. Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

By Her Majesty's  Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve VENTILATORS.**—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12, Cumberland Market, Regent's park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

IMPORTANT TO BUILDERS AND OTHERS.

**ALFRED BAKER,** Stone Merchant, 33 Pratt-street, Camden Town, opposite Star Coal Wharf, begs to inform Builders that they can have GAUGED ARCHES IN PAINSWICK or PAILSWORTH STONE to imitate brickwork of any colour: the arches being in one piece, are much stronger than brickwork, and can be had at half the cost of brick arches; strait and camber arches from 10d. to 2s. per foot run, N.B. Inch slate from 4d. per foot; block cube, 1s. 6d. per foot; bore chimney pieces from 9s. each, not to be equalled in London at the price.

PREPARED FLOORING BOARDS.
AT REDUCED PRICES.
**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.
Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

**ALFRED ROSLING** begs to inform the Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parellel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**TIMBER** of any Size, **PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.



MUIR'S PATENT PLANING MACHINE.
SAW MILLS, GILLINGHAM-STREET, PIMLICO.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced work, &c. The sawing and planing will be done at the usual charges, at 1 in the 6 t pressive manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter if you warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance to Cabinet-work, all sorts of Shutters, and similar work. For Licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 25, New Broad-street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

TO ARCHITECTS, SHIP JOINERS, CABINET MAKERS, &c., REQUIRING PINE WOOD.

**SELLING OFF,** at reduced prices, in consequence of a Dissolution of Partnership, at the Mahogany-yard, in Little Windmill-street, Haymarket, a choice collection of DRY MAHOGANY, Rosewood, Satinwood, Maple, &c., in planks of all thicknesses, and veneers; also upwards of 20,000 feet wainscot planks, running from 1¼ inch to 3 inches thick. The whole is perfectly dry, and fit for use, requiring to be disposed of forthwith.

LADDERS, BARROWS, &c.

**G. ELL respectfully invites the Attention** of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Trescels, Steps, &c. &c. in constant on hand, at a very low Scale of Prices; and is now selling Excellent Step-ladders, of ash frames and elm tops, as low as 12s., by a quantity being taken; and the best make of stout ash frames, steps to lean, rich elm tops, finest size, as low as 16s., for cash; Ladders commencing at 4d. per pound. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3, and 6, Tottenham-court New-road, St. Pancras, opposite Hampstead-road.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edge being sheathed with iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal inside, coss pushy cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising bar now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement entitles the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with the old principle.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, having fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Sash-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

# PEAKE'S TERRO-METALLIC, DRAIN, AND CONDUIT PIPES;

**ROOFING, RIDGING, PAVING, AND OTHER TILES;**

## BUILDING, PAVING, AND MANY-FORMED BRICKS, &c.

*Of at least One Hundred Sorts and Sizes.*

### THOMAS PEAKE,

**4 WHARF, MACCLESFIELD-STREET SOUTH, CITY-ROAD BASIN, LONDON,**

A CENTRAL SITUATION,

**AND THE TILERIES, TUNSTALL, STAFFORDSHIRE POTTERIES,**

Begs to remark that his Establishment was founded upwards of a century since, and for forty years has been carried on by his late Father and Himself. That during the last thirty years he has introduced [illegible] Department of British enterprize Manchester, and other parts of the Country, with complete success, where they continue to be duly appreciated. That the cost of transit has been of late so reduced, as to enable him to keep a [illegible] Messrs. Wyatt, Parker, and Co. as agents, but [illegible] in Town as well as in [illegible] Terro-Metallic goods will be as generally adopted as they shall become known. That he is sincerely grateful to his numerous customers for their favours during so long a period, and respectfully assures them, as well as the Public generally, that they may rely upon the advantages derived from his extensive experience for a third of a century being continually exerted to merit their future confidence and support. No MATERIAL, he submits, can be more desirable than his Terro Metallic to mould into an almost infinite variety of articles, required either at home or abroad, by the Nobility, Clergy, Gentry, Civil Engineers, Architects, and Builders;—also by the Owners and Occupiers generally of Land, Mines, Buildings, Gardens, and other Property. The late Mr. Loudon, the late Mr. Telford, C.E., and the Incorporated Church Building Society, [illegible] and institutions, have [illegible] testimony to the [illegible] and easy adaptation [illegible] Court of Sewers for Westminster, in 1846, wrote,—"I consider they" (viz., the Terro-metallic Pipes) "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains." Surely STRENGTH, STRAIGHTNESS, and SMOOTHNESS, are not ordinary characteristics! The Terro-Metallic has NECESSARILY a Firm Body, intense heat being indispensable to fuse its surfaces, forming thereby a natural and estimable glaze; this glaze, however, being natural, will expand or contract with the body, and consequently the articles will remain uninjured: but this is not always the case when bodies are covered with artificial glazes. The variety of ordinary and unsolid earths, of which bodies are formed, to receive upon their surfaces glassiness by means of [illegible] will not stand the great degree of heat needful to bring the Terro-Metallic to its admirable compactness, solidity, and strength; and many clays would be thereby reduced from a large article or vessel into a bit of shapeless scoria. Experiments have demonstrated this to be a fact, and they could be easily repeated. Indeed, persons in the habit of [illegible] DIFFERENCE of bodily texture prevalent in such articles, and inseparable from UNCERTAINTY as to their durability; an uncertainty which increases by competition, but is by no means so important in [illegible] for permanent work beneath our streets and buildings. It is submitted, therefore, that Terro-Metallic Pipes are, for obvious reasons, a desideratum for [illegible] even to the body, or that [illegible] the surface of any street [illegible] with the risk of injury by heavily laden carriages passing over them,—but also because they may be laid in newly-formed ground without danger of fracture or breaking line by subsidence. The sockets of these pipes are roomy and deep, with well-formed shoulders, which are of a piece with them, not stuck to them after they are made. It is also further submitted that the Terro-Metallic cannot fail to take preference against every other material of inferior firmness, solidity, and strength of bodily texture, in proportion as the Public shall severally have an opportunity to judge for itself by examining and comparing it in [illegible] with all [illegible] materials and [illegible] according to their intrinsic merits respectively.

The colours of the PLAIN TILES for roofs are either Blue, Brindled, or Red. They are neither nailed nor pegged, but are hung upon sawn laths, 1 inch by 3-8ths of an inch, by knobs, which take firmer hold, as the wind lifts the lower end of the Tiles. Hence, and considering the fold of 7 inches, [illegible] RIDGES, HIPS, AND VALLIES are neatly tiled, superseding the use of Lead, which is liable to be either stolen or perforated by worms. Plain Tiles, of some antiquity and comparatively rude manufacture, in the Midland Counties, are still efficient upon roofs where they have lain undisturbed for 150 years; and a mansion called Turnhurst, the last residence of the celebrated civil engineer, Brindley, is a remarkable instance. Sudbury Hall, lately occupied by her Majesty the Queen Dowager, the seats of Earl Talbot and Lord Hatherton, also churches and other valuable buildings, are covered with Plain Tiles 11 inches by 7 inches by 7 16ths of an inch, of which 1,000 lay 200 square feet, at 8-inch gauge, and weigh [illegible] for both tiling and pointing. The Incorporated Church Building Society prefer these Tiles to all other materials, excepting Lead and Copper. The Dukes of Devonshire and Sutherland are in the habit of using Terro-Metallic articles, and possess in the neighbourhoods of Chatsworth and Trentham, of Mr. Peake's manufacture, probably the best as well as most varied specimens of tiled roofs in the world. Travellers, who immediately after hurricanes have traversed [illegible] Thatch and all kinds of Slates have been [illegible] as these Tiles, have no doubt observed the damage sustained by roofs of other materials, [illegible] Metallic Tiled Roofs were uninjured. Consequently, the latter are preferred in the bleak moorlands of Staffordshire, Derbyshire, &c. In regard to the strength of timber required for Plain Tiles it may be acceptable to describe one of two similar roofs, which stand perfectly, although [illegible] degrees of heat and cold from the [illegible] feet long and 18 feet wide, without partition. No stronger timber is used than red deals, 11 inches by 3 inches. The principals are 10½ feet apart; there are two side trees on each side 5½ inches by 3 inches, the spars are 3 inches by 2½ inches, and 15 inches apart. The laths are sawn 1 in. by 3-8ths of an inch. The pitch is between a third and a square. These Tiles keep the interior of buildings comparatively warm in winter and cool in summer, and thereby preserve the timber of the roof. Their appearance in perspective upon buildings erected in the Early English style [illegible] varied also by the [illegible] lower end of the tiles, being moulded to numerous devices, "shewing off some of the most pleasing alternations of straight and waved lines." The PAN TILES are both of the usual form and [illegible] GRECIAN AND ITALIAN TILES [illegible] RIDGE AND HIP TILES are [illegible] patterns of [illegible] fastened at [illegible] VALLEY TILES [illegible] PAVING TILES consist of Squares, Bl[illegible] sizes, [illegible] worked than [illegible] these [illegible] the Tiles [illegible] extensively used [illegible] Liverpool, Hull and Preston; [illegible] comparatively [illegible] the bearings and axes of machinery, therefore, as well as the cotton, silk, woollen, or other fabric being wrought by it, suffer less injury by these floors than any other. Smaller squares, and other forms of Tiles, are used to pave Aisles in Churches, Entrance-halls, Household Rooms in Farmeries, and other respectable Dwellings, Cottages, Kitchens, Cellars, Schools, &c. They are easily cleaned, even from grease.

BRICKS, to any reasonable dimensions, are supplied; those 9¼ inch by 4½ inch by 2 7-8ths, are in great request for Tunnels, Bridges, Canal-locks, Breast-walls, and various works upon Railways, Canals, &c. In distant localities, where the carriage is expensive, these Bricks are restricted to a facing of brick-breadth. Also, FIRE BRICKS, FRONT BRICKS, CLINKER BRICKS, WARE-HOUSE, and BARN-FLOOR BRICKS, and PAVING BRICKS for Courts, Areas, Cottages, Foot-paths, and Channels; NOSED BRICKS, i.e. one corner rounded; SEMI-CIRCULAR BRICKS, to erect Columns or Cope walls; Bricks champhered to the angle of an OCTAGON; Bricks champhered to angles of Gables, and useful to draw a covering over horizontal Flues; Bricks for PLINTHS to Patterns; KEY-STONE or WEDGE-LIKE (longitudinally or transversely) BRICKS for Arches, Culverts, or Curves; other forms would be made to Patterns or Sketches.

SOCKET PIPES for DRAINS, CONDUITS, FLUES, &c. may be had of different diameters, from 2 inches to 18 inches, increasing in thickness in proportion as the diameter is extended, and in lengths not exceeding 27 inches net; these Sockets are deep, neatly formed in the substance of the Pipe, and not stuck to it afterwards. The joints are made tight with a little Roman cement or good mortar. If desired, any form or size of Pipe would be perforated with holes, widening from the exterior to the interior surfaces. Being of true circular form and neat workmanship, smooth inside, which is well covered by a natural, efficient, and durable glaze, they resist the commonly injurious effects of atmosphere, and of mineral or other fluids or acids. These Pipes are very desirable, as they are in extensive and increasing demand, for small Sewers, Drains, Conduits, Flues, &c., instead of Brickwork, which must be erected of a bore fifty per cent. larger than the Pipes in diameter to equal them in efficiency. Also, CONICAL, REBATED, and PLAIN PIPES, of various diameters and lengths. The different forms of Pipes when divided longitudinally into halves, before they are fired, make superior surface Channels, especially adapted to convey water down the slopes of railway and other works. The Pipes, Bricks, and other articles have been, and continue to be in extensive use in the construction and draining of railway and other important works, a proof of the estimation in which they are held by the Engineers.

THE SKIRTING TILES protect the Plaster on the Walls, and make a neat and durable finish. Vermin cannot harbour about them, and Oil-paint of any colour they will take and retain for a long time. GARDEN-WALK EDGING, either with a bead along the top or an OG, has a neat appearance, and holds up the soil, but does not shelter insects; it is the best and cheapest material for the purpose on account of its durability. DRAIN GRATES are intended to prevent Leaves, Straws, Sticks, and other things from choking Drains; they are suited to gravelled walks in Parks, Pleasure-grounds, Gardens, Cemeteries, as well as Streets, Sculleries, Courts, Areas, and all other places where water enters Drains. CHANNEL BRICKS supplied of different lengths, breadths, and patterns, to lay in any place paved with flag or other material where water is to be carried off. WALL COPING, of several patterns and dimensions, calculated to preserve walls, and especially those built of bricks of questionable durability; one of the patterns, with Bridge Tiles over the joints, is uniform with the Grecian Tiles for Roofs. CHIMNEY TOPS are manufactured to suit Customers, a few patterns are always ready for sale. Many smoky chimneys, which had not been benefitted by any other means, have been cured by a roomy Pipe three feet long, pierced all over with holes, [illegible] diameter.

PUGGING TILES are of various patterns, to place in partitions; also, under chamber floors to prevent the noise of one room from being an annoyance in others. KILN-FLOOR TILES are of two sizes, viz., 9 inches and 12 inches square, and well pierced; they are used to pave Kilns for drying and seasoning Malt, Grain, &c., as well as Wood and other materials used by manufacturers and others. FLUE COVERS are either oblong or square, about 2 inches thick, and of different sizes; they are used to lay over horizontal Flues, extending from centre to centre of the mid-feathers or partition walls. DRAINING SHELLS, whose form is well known to be like a horse-shoe, if one looks at the end or transverse section of the Tile, are of three sizes, viz., 2½ inches, 3½ inches, and 4½ inches across the [illegible] Of Terro-Metallic the shells are very durable, and are usually placed in the drains upon damaged Roof-tiles of the same material.

CHIMNEY AND OTHER FUNNEL LININGS, instead of parget, are a desideratum in consequence, 1st, of its being illegal as well as inhuman to employ climbing-boys; 2nd, of smoky chimneys and down-draughts, owing to defects in the joints of the brickwork between the flues, and the parget having perished; and, 3rd, of many and disastrous fires attributable to the latter defects. These linings are made of a peculiar mixture of materials to bear heat and cold; they are of different dimensions and forms of area, and are unquestionably deserving of attention from all who are erecting or altering chimneys; they have been extensively used in some parts of the kingdom for many years past, and with entire satisfaction.

HOW TO CUT OR FIT TERRO-METALLIC WARE: rule upon the edges and surfaces of the article the line of division proposed, then with the cutting-end of a brick-hammer, or other instrument made as sharp as possible, chip along said lines to the depth of one-sixteenth or one-eighth of an inch, without cutting any part, and always deepest at the arrises. This done, the article will divide under a few slight taps with the edge of a trowel, or other similar tool in weight proportioned to the size and thickness of the article. TO PRESERVE THE COLOUR of the articles, care should be taken not to expose them to lime or other similar dust,—or to mortar, the stains from which cannot be removed. Ridging or Hip Tiles should be pointed early on a fine day, and in mortar almost black with smith's refuse or furnace sand.

THE TILERIES ARE SITUATED near the centre of the Kingdom, about Three Furlongs from the Main Line of the North Staffordshire Railway, with which it is to be connected as soon as finished by a private branch, and along the margin of the Grand Trunk Canal from the Trent to the Mersey, [illegible] to the port of Liverpool, [illegible] the parts of the Empire. FOR EXPORTATION TO THE BRITISH COLONIES, and Foreign Countries generally. MERCHANTS in Liverpool and Glasgow especially, will find these goods susceptible of extended and lucrative commerce. THE MANUFACTURER IS NOT IN THE CARRYING TRADE, and therefore cannot undertake carriage of his goods, excepting to deliver them alongside of carriages, boats, or railway trucks at his own wharfs or branch railway, at which time he expects them to be signed for "in good condition," and responsibility to end as far as he is concerned. POSSIBLE VARIATION IN SIZE OF ARTICLES. PIPES, as well as other things contained in the lists, may vary more or less from the stated dimensions and weights; they are, however, as accurate as circumstances permit, and sufficiently so, it is hoped, for [illegible] PURCHASERS NOT TO PICK THE ARTICLES, which are sold "ACCORDING TO THE CUSTOMS OF THE BRICK AND TILE TRADE," as soon as drawn out of the ovens, and having been placed upon the works or other premises in the usual manner, they are not to be picked, but taken all together as far as the number required, still, purchasers may select any of the lots to be supplied from [illegible] NEWLY DESIGNED ARTICLES, AND ALTERATIONS SUBJECT TO EXTRA CHARGES for new [illegible] or altering other, and [illegible] dividing, or altering any article from the established form or size. NUMBER IN COUNT is ten times ten in a hundred, ten of which make a thousand. TERMS RESPECTING CREDIT, SPECIAL CONTRACTS, AND PAYMENT, [illegible] partly by the [illegible] in the trade, and partly by such special bargains as the manufacturer may enter into; Excise, Wages, and other out-goings, are prompt and without abatement, [illegible] strictly fulfilled by purchasers in all points of view, payment to be made [illegible] and without abatement, according to such special agreement, and generally in all other cases the prices as per lists respectively, as well as charges for new or altered goods, are to be paid for on or before delivery in cash, without discount, premium, or abatement, or the respective items to be subject to interest at the rate of [illegible] per cent. per annum until paid. REFERENCE INDISPENSABLE in special bargains [illegible] delivered before they shall be paid for. LETTERS MAY BE ADDRESSED to either No. 4 Wharf, Macclesfield-street South, City-road Basin, London; or to The Tileries, Tunstall, Staffordshire Potteries.

## UNSOLICITED TESTIMONIALS, NOTICES, &c.

"I consider they," the Terro-Metallic Drain Pipes, "are admirably adapted from their material and strength, as well as from their Straightness and Smoothness, for house and other drains." *[illegible], Esq., Surveyor to the Honourable Commissioners of Sewers for Westminster, [illegible] 1846.*

"[illegible] a further supply [illegible] of Terro Metallic Drain Pipes, of [illegible] diameter, [illegible] will soon be worked up. It is also desirable to procure [illegible] and other [illegible] I also [illegible] Metallic Pipes. [illegible] 1846.

"[illegible] The [illegible] Mr. Telford, but was removed at the completion [illegible] the best Newcastle blue brick, the hardest and most [illegible]

"[illegible] which should be not less than seven pounds to the foot; [illegible] Blue Tiles [illegible] are perhaps the next [illegible]

"On the western side of Tunstall, on the long declivity which reaches to the banks of the canal, are the extensive works called THE TILERIES. The clay on this brow has a [illegible] and are forwarded to distant parts of the kingdom, consisting of Tiles, Quarries, Building and Flooring Bricks, Pipes for conveying water, and other similar articles of very superior hardness and durability. At these works steam-engines are used for crushing and preparing the clay." *History, &c., of the Borough of Stoke-upon-Trent, by John Ward, Esq., page 150. Simpkin, Marshall, and Co., 1843.*

"A mode of Tiling adopted by the ancients, and of which there are specimens still to be found in Rome, is thus described by Borgnis ('Traite de Construction,' p. 253), a description follows, with plans and sections of the 'Italian' Tiles, 2 B and 2 C, p. 956, and sec. 1924:—'the mode of Tiling exhibited in the Temple of Diana Propylea, is given in the engravings of that Temple in the Unedited Antiquities of Attica.' After describing this mode of 'Grecian Tiling, D 2 and E 2, with plans and sections, it is stated that "the effect of these Tiles is remarkably good, and imitations of them might be introduced in Villas and Cottages with excellent effect." P. [illegible], and sec. [illegible]

"Which (viz., Flat or Plain Roof Tiles, with lower ends ornamental) would produce an agreeable shade, showing off some of the most pleasing alternations of straight and waved lines that this species of material is capable of producing." P. 229, and sec. 459, where the Tiles are figured.

"The Tiles being formed of Terro-Metallic Earth, have somewhat of the colour of Cast-iron; they are almost equally hard, and must, from their nature, be incomparably more durable. In short, we consider them as the best of all coverings for roofs, whether of small or large buildings. * * * There are suitable Ridge-Tiles, Hip-Tiles, Valley-Tiles, and many others, all manufactured by Mr. Peake, in the same superior style." *Page 648, and sec. 1368, Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture. Longman and Co., 1833.*

"Every thing tending to facilitate the sweeping of chimneys by machinery is now peculiarly deserving of public attention. We have been much interested by the sight of a newly-introduced material for lining flues, invented and manufactured by Mr. Thomas Peake, of Tunstall, Staffordshire, whose name is important Terro-Metallic improvements are [illegible] known through 'Loudon's Encyclopædia.' This species of piping is so exceedingly cheap that it will cause no very material additional expense in the construction of chimneys, [illegible] presents a perfectly smooth channel for the sweeping machine [illegible] requires less frequent cleansing than a common chimney, as it affords no lodgment for soot. [illegible] 14th [illegible] 1841.

### LISTS TO CONTAIN NEARLY ALL THE ARTICLES, WITH OTHER DETAILS RESPECTING THEM, ARE TO BE READY FOR DISTRIBUTION IN A SHORT TIME.

*Reference to sketches of some of the articles:—They are to a scale of 3-4ths of an inch to a foot, or thereabouts.*

No. 1. Plain Roofing Tiles.
No. 2. Ornamental Roofing Tiles of six patterns.
AA 2. Pan Tiles.
2 B, 2 C } Italian Tiles.
D 2, E 2 } Grecian Tiles.
2 D. Grecian Ridge.
2 E. Grecian Eaves Tile.
3. Plain Gable Tile.
A 3. [illegible]
No. 4. Capped Ridge Tile.
5. Plain Ridge.
C 5 to F F 5. Plain Saddle, grooved for ornaments.
C 5 to F F 5. Rolled Saddle, grooved for ornaments.
B 5. Pyramid Ridge.
C 5. Vandyke Ridge.
D 5. Trefoil Ridge.
E 5. Fleur-de-lis Ridge.
F 5. Fleur-de-lis Ridge.
F F 5. Fleur-de-lis Ridge.
G 5. Inverted Arch Ridge.
6. Capped Ridge.
A 6. Gothic Cap Ridge.
7. Rolled Top Ridge.
1[illegible]. Quoined Hips.
11. Quoined Vallies.
A 14, B 14 } Paving Tiles.
C 13, D 13 } Paving Tiles.
15. Paving Tiles.
A 15. Paving Tiles.
No. 16. Paving Tiles.
17. Skirting Tile.
18. Skirting Tile.
19. Skirting Tile.
21. Paving Bricks.
20. Channel Brick.
D 30. Channel Tile.
33. Kiln-floor Tile.
40. Wall Coping.
41. Wall Coping.
No. 44. Drain Guard.
46. Garden Edging.
A 46. Garden Edging.
48. Drain Shell.
51. Plain Pipe.
52. Rebated Pipe.
57. Socket Pipe.
61. Conical Pipe.
B 64. Flue Lining.
C 64. Flue Lining.
C 65. Chimney Top.
66. Chimney Top.
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[Entered at Stationers' Hall.]

# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 244. OCTOBER 9, 1847. Price ..... 3d. Stamped ..... 4d.


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AS CLERK, an Active Young Man, aged Thirty years, wishes for a SITUATION. He has a thorough practical knowledge of Building, capable of measuring up works, estimating, bookkeeping, making out accounts, specifying, superintending workmen, and a little drawing, with the general routine of a Builder's Office. Salary, 30s. per week, or by the hour. Satisfactory references.—Address A. B, No. 7, Richmond-terrace, Paddington green.

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METROPOLITAN BUILDINGS ACT.—NOTICE TO CANDIDATES FOR DISTRICT SURVEYORSHIPS.

Office of Metropolitan Buildings, 6, Adelphi-terrace, 6th October, 1847.

NOTICE IS HEREBY GIVEN, that the Examiners appointed by and in pursuance of the Metropolitan Buildings Act will hold their next Examination of Persons desirous to obtain a certificate of qualification for the office of District Surveyor on FRIDAY, the 29th day of October, instant.

Persons desirous to be examined must apply on or before the 25th instant; and their applications must be accompanied by a preliminary statement, according to the course of examination prescribed in the rules for that purpose, copies of which, and any other information on the subject, may be had at this Office, or at Mr. WEALES, Architectural Bookseller, 28, High Holborn.

Subsequent Examinations will be held in the months of January April, or July, or at such other periods as shall be appointed, of which due notice will be given.

ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.


BUILDERS' BENEVOLENT INSTITUTION, Freemasons' Tavern, Great Queen-street, Lincoln's-Inn Fields, for the Benefit of Decayed Masters; and also to afford Relief in case of Accident to their Workmen.

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The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations; and the additional Names, with the liberal Donations and Subscriptions appended, are highly gratifying. They beg to intimate they have appointed Mr. Edward Herbert, 43, Crawford-street, Marylebone, and Charles Jackson, 3, Paradise-terrace, Holloway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, and the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of the Institution will shortly be printed.

ARCHITECTURE and SURVEYING.—Classes are now forming for COURSES of INSTRUCTION, embracing Drawing, Measuring, Taking-out Quantities, &c., under the tuition of an experienced practitioner. DAY CLASSES from Ten to Four; EVENING CLASSES from Half-past Six to Nine.

Address, R. M., Office of "The Builder," 2, York street, Covent-garden.

ARCHITECTURAL ASSOCIATION.—The First Conversazione of the Society for the Sessions 1847 and 1848, will be held at the New Rooms for Meeting, "LYONS INN HALL," Newcastle-street, Strand, on FRIDAY, the 8th of October. The Hall is opened at Six o'clock, and the Chair to be taken at Eight o'clock. The President will deliver an Address during the Evening. Members of the Profession are invited to attend.

DECORATIVE ART SOCIETY.—General Meetings October 13th and 27th. A paper "On Art; its distinctions and purposes relatively considered," will be read by Mr John Dwyer, V.P. Visitors admitted with tickets obtained from E. LAUGIER, Hon. Sec., 17, Sussex-place, Kensington.

A SECOND EDITION, enlarged, of the ABSTRACT OF PAPERS in 1836 and 1836, is ready, price Eighteenpence, and may be had from SIMPKIN and MARSHALL, or from P. CALDER, 199, Oxford-street.

EMPLOYMENT WANTED.—A Person in strong health and of active habits, who has been accustomed to business, and can give respectable references, is wishing for EMPLOYMENT in a Wharf, or in a Merchant's or Builder's Yard or Office, or as an active Agricultural Steward. He can keep accounts, and is willing to work as well as to superintend others Address, J. G., 116, St. John's-street-road, Clerkenwell.

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BRICKS.—To Architects, Builders, and others. Superior White and Red Paving Bricks, Stable Pavours, &c., &c., may be had on very liberal terms at W. and S. WRIGHT'S, Brick and Tile Manufactory, Hanwell, Middlesex.

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### CONTRACTS.

TO BUILDERS.

SEALED TENDERS for Constructing a MILITARY POST at EASTERN KING, STONEHOUSE, for a specific sum, will be received at the Ordnance Office, Pall-Mall, London, on or before 26th October, 1847. Detailed Drawings and Specifications of the different Works and Buildings, with the Terms and Conditions of the Contract, may be seen, and Forms of Tender and every information obtained, daily, after 12th proximo, at the Commanding Royal Engineer's Office, Devonport, between the hours of Nine and Four o'clock, until the 25th proximo.

Commanding Royal Engineer's Office,
Devonport, 30th September, 1847.

TO BUILDERS AND OTHERS.

THE Court of Sewers for Westminster and part of Middlesex will be ready at the Court House, No. 1, Greek-street, Soho-square, on FRIDAY, the 15th of October, 1847, to receive TENDERS for the FOLLOWING WORKS, viz.:—to build about 300 feet of sewer in the line of the open Ranelagh Sewer, adjoining northward to the King's-road, at Chelsea; a plan and specification of the above works may be inspected, and Forms of Tender, and other particulars obtained at this office, daily, between the hours of Nine and Four. Parties offering must be in attendance at Twelve o'clock precisely, on the 15th of October instant, with separate sealed Tenders, specifying on the outside for which of the above Works the Tender is made. Each Tender must be strictly in the printed form prescribed. The Court does not bind itself to accept the Lowest Tender.

LEWIS C. HERTSLET, Clerk.
Sewers Office, No. 1, Greek-street, Soho-square, 8th Oct., 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.
Court of Sewers, Tower Hamlets.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets', (excluding St. Katherine's and Blackwall Marsh,) at their meeting to be held on WEDNESDAY, the 13th day of October, at Two o'Clock in the afternoon precisely, at the office of Sewers, No. 15, Great Alie-street, Goodman's fields, will be ready to receive TENDERS sealed up from any persons or person willing to enter into contract for the works necessary in EXTENDING THE SEWER from Assembly-row to White Horse-lane, Mile End-road, being a length of 700 feet or thereabouts. A Plan and Specification of the said works, with the Forms of Tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'Clock. The Contractor will be required to sign a provisional agreement to secure the due execution of the said Contract, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners: no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon.—Dated this 29th day of September, 1847.

JOHN WILLIAM DWYER,
Clerk to the Commissioners.

N.B The Commissioners do not pledge themselves to accept the lowest tender.

TO BUILDERS.

THE Special Commissioners of the Town of Yeovil, in the County of Somerset, are ready to receive TENDERS for the ERECTION of a NEW TOWN HALL and other BUILDINGS. The Plans and Specification may be seen any day between the hours of Ten and Five o'clock, at the offices of Mr. STENT, Architect, South-street, Yeovil. The Estimates and Tenders are to be left at my office in Yeovil, on or before the 12th October, 1847, sealed up and marked "Tender for Town Hall." The Commissioners will not be bound to accept the lowest tender.

J. T. VINING,
Yeovil, 15th Sept. 1847. Clerk to the Commissioners.

ARTESIAN WELL.—To Well-Borers, &c. TENDERS will be received for RE-BORING, and obtaining an efficient Supply of Water at the ARTESIAN WELL, at the London Orphan Asylum, Clapton, Middlesex.—Particulars may be had at the Office of the Architect, Mr. A. POTTER, Ashpitel's, 5, Crown-court, 193 Broad-street, between the hours of 11 and 4. Tenders will be received at the Board room of the Asylum, Clapton, on Thursday, the 14th instant, at Four o'clock.—N B The Board do not bind themselves to accept the lowest Tender.

GUILDHALL, September 24, 1847

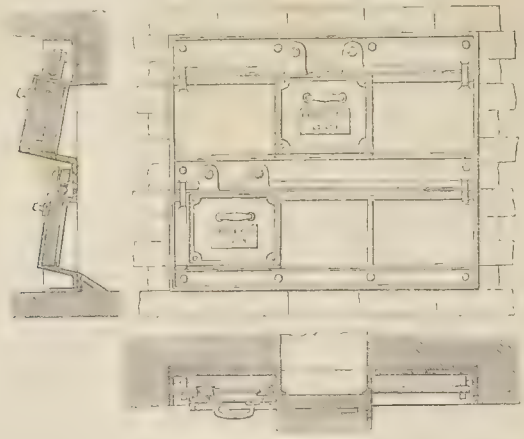
THE Committee for Letting the City's Lands will MEET at Guildhall, on WEDNESDAY, the 13th day of October next, at one o'clock precisely, to receive TENDERS for LETTING on BUILDING LEASES for 61 years, from Michaelmas, 1847, a PIECE of GROUND on the north side of Narrow street, at the corner of Cross-street, at Ratcliffe; and a Piece of Ground on the east side of Paddle-dock, on the south side of Upper Thames-street, and on the north side of the River Thames. Also, to receive Tenders for letting on leases for 21 years, from Michaelmas, 1847, a House, No. 19, on the north side of Broad-street-buildings; Nos. 20, 29, 28, 27, 26, and 25, on the north side of Bevis Marks, St. Mary Axe; Nos. 7 and 8, on the west side of Castle-street, Houndsditch; and Nos. 5, 5, and 4, on the north side of Crescent-place, Blackfriars. Also to receive Tenders for letting on lease for 100 years, from Michaelmas, 1847, a House, No. 48, on the west side of the Curtain-road, and Nos. 1 and 2, on the south side of Charles-street, adjoining; a House, No. 50, on the west side of the Curtain-road, and Nos. 26 and 27, on the north side of Mottley-street adjoining; Nos. 1, 2, 4, 5, 6, and 7, on the west side of Martha's buildings, Old-street; and Nos. 9, 10, 11, 12, 13, and 14, on the east side of the said buildings; also, Nos. 9, 10, 11, and 12, on the south side of Featherstone-court; and Nos. 1, 2, 3, 4, 5, and other premises in Princes-buildings, Featherstone-street. Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall. THOMAS SAUNDERS, Comptroller.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Painting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield-street, Oxford-street

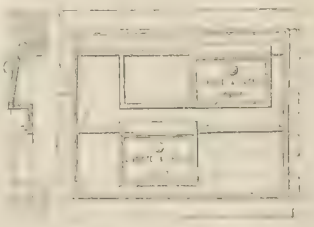
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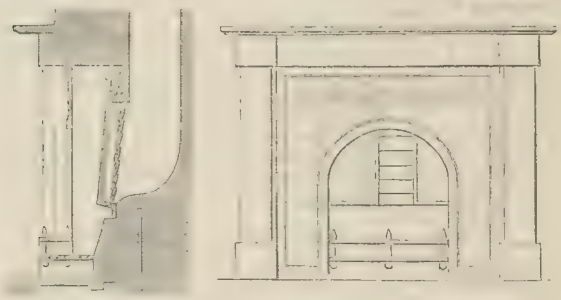


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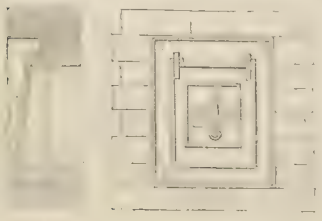


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These Doors are admirably adapted for CLOSING the OPENINGS of FLUES of DWELLING-HOUSES, STEAM-BOILERS, COPPERS, FURNACES, &c. &c., for the purpose of CLEANING THEM. They form a COMPLETE AIR-TIGHT CLOSURE, which will be found of great importance, increasing the draught in many Chimneys, smoking from badly-fitted Flue Doors. They are made of all sizes that can be required; they are also made with locks or other fastenings when required.



The Builder.

No. CCXLIV.

SATURDAY, OCTOBER 9, 1847.

NATURALLY enough, the business of the Metropolitan Buildings office has been simplified by time and experience, and now goes on more smoothly than it did. Party-wall proceedings and the decision of what is "the general line of the fronts of the houses" in respect of proposed projections, appear to form the greater number of the cases brought before them. Complaints of injurious delay in the office occasionally reach us, but seldom with such a full statement of the attendant circumstances as would enable us to judge of their correctness.

Delay has been caused in some cases, and with injurious results to individuals, as we are informed, by a difference of opinion between the referees and the registrar, leading to a refusal on the part of the latter to affix the official seal, without which the award is not complete. Section 89, provides with regard to the registrar, so far as relates to the affixing the seal of office to any document, "that if it shall appear to the said registrar that any such documents are contrary to law, or not complete in any of the requisite forms, or beyond the competence of the said official referees, either with regard to the provisions of this, or any rules or regulations presented for their guidance by the Commissioners of Works and Buildings, then it shall be the duty of the said registrar to refuse to affix the seal," and afterwards, if desired by the referees, he is required to report the matter to the Commissioners of Works, with the reasons for his refusal, and power is given to the Commissioners, either to authorize him to affix the seal or to confirm his refusal.

Several cases have in this manner been sent to the commissioners, who seem to be in no hurry to interfere. One of the matters in difference is particularly important, as affecting private rights: it relates to the restoration of ancient lights in party-walls, when the walls are rebuilt. In many old houses there is a room, for example, receiving light from a window in the party-wall above the roof of a lower adjoining house, and the broad question is, whether, when the party-wall be rebuilt, the window is to be blocked up, and the owner of the house so lighted injured (always, of course, supposing him legally entitled to the opening), or if it should be restored? Money compensation may be awarded, but in many cases could not be commensurate.

The referees are willing to authorize the retention of such openings, requiring that the building under them be made fire-proof; but the registrar considers that they have not power to do so, and that no openings may be left.

Some time ago, we gave an abstract of an award in a case in the Marylebone district, where the district surveyor, being called in to survey the party-wall, certified that a portion of it should be rebuilt, and another portion amended by bricking up certain windows in it.* The owner of the house so lighted appealed against this (*inter alia*), and the referees determined that, be being lawfully entitled to the lights, the district surveyor had no power to direct their removal; but that the space before the windows, from the level of the underside of the sill of the lower of them upwards was of the nature of intermixed property, and that the building owner "must, in building against the said wall and under such windows, construct *a party arch or arches, or a floor formed of proper and sufficient incombustible materials*, in accordance with the rules of the Act, as a covering to any building so to be built, as a separation of such intermixed property."

In cases where the wall was absolutely to come down, they appear to have taken the same view of the question, and directed similar precautions, but the registrar, as we have already said, has considered it his duty to object, and the point is still unsettled.

The most recent case before us, wherein the question is involved, relates to the party-wall of a house on the east side of Bull Inn-court, Strand, wherein there was a window opening over the adjoining house. Here it was found that the adjoining house belonged to the building owner, and would come into his hands within a year, and the referees said in their award,—that "inasmuch as there is no person excepting the said building owner entitled to the window existing in the said party-wall, we do hereby declare our opinion, that it will not be lawful for the said building owner to rebuild the said party-wall with any such window therein."

To this award the registrar appended the following note:—

"It appears to me that the following words, 'inasmuch as there is no person, excepting the said building owner, entitled to the window existing in the said party-wall,' contained in the third page of the award, are calculated to raise the inference, that under other circumstances an opening in a party-wall between buildings in different occupations, is admissible,—a point involved in several cases now under the consideration of the Commissioners of Works and Buildings. As, however, the award is substantially in accordance with my opinion as to the law relating to openings in party-walls, I have, without assenting to the above inference, affixed to the award the seal of office of the registrar of metropolitan buildings, in order that the parties may not be prejudiced by delay."

Without in any way reflecting on the step taken by the registrar, we are disposed to think that the referees do not exceed their power in permitting the restoration of ancient lights with such precautions; that they *ought* to have this power for the sake of the public can scarcely be questioned, and if the Commissioners of Works think they do not possess it, it should be forthwith given to them by a "modification."*

To the opinion of the referees in another matter we are compelled to object,—we mean as regards "*attached* buildings and offices." They have determined, on what grounds we are unable to discover, "that an 'attached building,' within the meaning of the Metropolitan Buildings Act, is a building in the same occupation with a main or principal building, and separated therefrom by one of its inclosing walls, *without any doorway or other internal communication with the main building*."

Schedule C, as our technical readers remember, begins thus,—

"*Attached Buildings and Offices.*—With regard to buildings or offices now built, or hereafter built (except greenhouses, vineries, aviaries, or such like buildings), and that, whether such buildings or offices be attached to or detached from the buildings to which they belong. Every such building is to be deemed, in respect of the walls thereof, and all other requisites, as a building of the rate to which it would belong if it had been built separately."

And all regarded this as a useful provision, calculated to prevent unnecessary expenditure, and waste of room. It was concluded, for example, that if an owner desired to add a small closet building to his residence, call it an extra first-rate, two or three stories high, and communicating with each floor, it would be rated as if it had been built separately, and would not need to have walls two-bricks thick (occupying eighteen inches of ground), but such walls as the Act required for such a small building *per se*:—a perfectly reasonable, and very proper provision.

The referees, however, by their definition, above given, and their awards, have entirely abrogated it. For such buildings as those to which they make the clause apply, it was not at all necessary: it must have been intended to meet just such a case as that we have stated.

In the case of Otto House, Fulham, where it was proposed to add a building of two stories (containing four rooms), to an extra first-rate of the public building class, the inexpediency of the principle they had laid down was made evident. The referees determined that "it was an addition to an extra first-rate building (which would have required walls 21½ inches thick), and not an attached building, within the meaning of the Metropolitan Buildings Act; but inasmuch as it contains two stories only, and having regard to the height of such stories, and inasmuch as regarding its connection with the main building, it is structurally an independent building, not exceeding in area a building of the second-rate of the dwelling-house class, and having regard to the circumstances that by schedule C, part 2, walls of the thickness of 13 inches only are prescribed for second-rate buildings of the first class, we do hereby approve of the proposed walls being built of the thickness of 13 inches only."*

We feel called on to dissent entirely from the referees' definition and awards in this respect, and express a hope that they will reconsider the matter, and render it so clear, as may easily be done, that it will not be necessary to make the walls of a closet-building inconveniently and wastefully thick, or to go to the Metropolitan Buildings Office, on every occasion, to get leave to act according to what we have no hesitation in saying is the true meaning of the Act.

---

The following are abstracts of some recent awards which have public interest:—

PORCHES.

WITH regard to a wood portico in front of a fourth-rate building in Wellington-street, Woolwich, recently inclosed with wood shutters and boarding, the district surveyor gave notice of irregularity.

The builder, Mr. Hill, then proposed to enclose the said portico with brick piers and wood sashes and doors, so as to make a permanent inclosure of the same, but the district surveyor thought, "that according to the provision made in schedule E, under the rule headed, 'Projected buildings beyond the general line of buildings, &c.,' such projections must neither be built with nor be added to any building on any face of an external wall

* See p. 250, *ante*.

* At the moment of going to press, we received intimation that the opinion of the Commissioners of Woods and Forests in a case of this sort (Morley's and Grant's, last) has been received, and is to the effect, that when a party-wall is condemned, and which may have had therein ancient lights, yet that the new party-wall must be built "imperforate." The adjoining owner, deprived of his lights, is to be compensated for their loss by the building owner.

* See p. 397, *ante*.

thereof, so as to extend beyond the general line of the fronts of the houses, &c. &c." And as he considered this was before the general line of the fronts, was of opinion that the portico in question could not be permanently inclosed before that line.

The builder urged, that as the said open portico had stood for many years, the inclosure might be made permanently to the same.

The referees determined,—"That inasmuch as the 'portico' referred to in the said requisition, when inclosed, would not be such a projection as is allowed by the said Act to project beyond the general line of fronts in any street or alley, it will be contrary to the Metropolitan Buildings Act either to inclose such portico with any materials whatsoever, or to take down the same and erect in lieu thereof such a projection as is proposed by the said William Hill."

EXTERNAL INCLOSURES.

Mr. Dennis having erected a building for workshops, &c., in Albion-road, Woolwich, "had constructed the northern front of the said building above the first floor entirely of wood framing and boarding, and glazed sashes and frames, the same being flush with the brickwork below, and at the ends thereof, contrary to the provisions of the said Act."

The surveyor gave him notice of the irregularity, but he omitted to amend it, "in consequence, as he stated, of the uncertainty in which he had been as to whether the South-Eastern Railway Company would purchase the building for the purpose of removing the same."

The referees' award was,—"That inasmuch as the front of the workshops referred to in the said information has been built of wood framework and weather boarding, in the second or one-pair story thereof, the same is contrary to the Metropolitan Buildings Act, and we do hereby direct the said Thomas Dennis forthwith to remove the same, and if the front of the said workshop be rebuilt, then to rebuild so much thereof as abuts upon his own premises, of the materials and in the manner prescribed by the said Act for external walls, placing all the necessary woodwork for the window frames in 4-inch reveals, formed in piers carried up in brickwork, and to rebuild so much thereof as abuts on adjoining premises, of the materials and in the manner prescribed by the said Act for party-walls, making no openings therein, and carrying up the same above the roof or gutter adjoining thereto, to the height directed by the said Act."

PARTY PARTITIONS, *quasi* PARTY WALLS.

Mr. Thornton, owner of a house in Battersea Rise, gave ordinary notice to the district-surveyor of Clapham and South Battersea, that he apprehended "that the *party wall*, or some part thereof, on the line of junction," &c., was so far out of repair as to need to be repaired or pulled down, and required a survey to be made.

The surveyor having made the survey, certified as follows:—"I do not find that there is any party-wall existing between the houses referred to in the notice, No. 9, delivered to me, but in lieu thereof, that there is a party timber partition.

And whereas the notice, No. 9, delivered to me, does not appear to me to be applicable to the case to which it refers, I withhold certifying as to the manner, &c., in which such party timber partition ought to be pulled down and rebuilt, unless I shall be further required by the official referees to do so."

The building owner appealed against this certificate in these words:—"Inasmuch as the surveyor does not certify that the work, viz., to pull down the party structure, and in lieu thereof to build a proper party-wall, is proper to be done, and I hereby request you to inquire into the matter, and to award thereon."

And the adjoining owner (Mr. Picking) appealed against it, "inasmuch as the notice applies to a party-partition out of repair, whereas the party-partition in question is in perfect repair; and also because the intention of the building owner of the adjoining premises is not to repair and restore his property, but to improve, by pulling down and making cellars, which are not now there; and this, I think, should not be done by putting me to additional expense and loss."

At the hearing, Mr. J. A. Young, surveyor of building owner, produced drawings of the intended new house, and stated, "that it was not proposed to remove the whole of the party structure in question, but only about 13 feet from the front towards the rear, and the return; and that it was proposed to make a basement-story, which would be below the level of the lowest floor of the houses parted by the existing party structure; and also, that Mr. Thornton's new house should extend out beyond the house next adjoining on the west side, up to the line of the public footway; to which Mr. Picking objected, on the ground that it would be a projection beyond the general line of fronts, and would be injurious to him."

The referees awarded as follows:—

"First. With regard to the matter of the appeal of the said Thomas Thornton, that the structure which separates the houses of the building owner and of the adjoining owner, although it be in part a timber partition, is sufficiently described in the notice of the building owner to the district-surveyor as 'the party-wall' between such houses, and that the district-surveyor ought thereupon to have proceeded, and to have certified in the manner and to the effect set forth in the 24th section of the Metropolitan Buildings Act.

Secondly. With regard to the matter of the appeal of the said William Picking, that the district-surveyor, not having certified upon the points raised therein, namely, the condition of the party structure, and at whose expense the new party-wall should be built, such appeal does not set forth any ground of objection to the said certificate; but inasmuch as by the failure of the district-surveyor to certify in the manner directed by the said Act, the said William Picking was not informed of the liabilities to which, as the owner of one of two buildings separated in whole or in part by a party timber partition, he is exposed upon the rebuilding of the adjoining building, nor of the intention of the building owner in the case as to the replacing of such party structure, the said William Picking was justified in raising a question so as to induce further inquiry.

Thirdly. With regard to the said certificate of the district-surveyor, we do by this our award reverse the same; and in pursuance of the request of the said parties, that the official referees should by their award supply the deficiences of the said certificate, we do hereby find and certify, determine and award,

First. That the party structure referred to in the said notice as 'the party-wall' between the premises in question, is structurally of timber from the outside of the fronts of the houses parted thereby, to the west end of that part of the said party structure which returns westward. And inasmuch as it is the intention of the said Thomas Thornton wholly to rebuild his said house, it is his duty to take down such timber partition and in lieu thereof to build a proper party-wall, and such work ought to be done, and that at the joint expense of the owners of the premises parted thereby in pursuance of the provisions of the said Act in that behalf; and that so much of the said party structure as extends rearward from the west end of the return aforesaid, is built of brickwork, and is so defective as to render it necessary to take down and rebuild the same in case the said Thomas Thornton in rebuilding his said house should use the same otherwise than as a party-fence-wall.

Secondly, That inasmuch as the new house proposed to be erected by the said Thomas Thornton will require a party-wall of greater thickness than the adjoining house of the said William Picking, and will have a basement story, the new party-wall from the foundations upwards, ought to be built as proposed, of the thickness required for the house of the said Thomas Thornton, but that no part of the new party-wall ought to extend beyond the present line of the fronts of the said two houses, without the consent of the said William Picking in pursuance of the 38th section of the said Act, and in no case ought any part of the new party-wall to extend beyond the general line of the fronts of the buildings in the place in question, which we do hereby determine and award to be,"—so and so.

"Thirdly. That the central line of the present party structure on the ground-floor is the line of junction between the said premises, and that the new party-wall should be erected upon such line in the manner directed by the said Act in schedule D, part 3, with regard to party-walls, in reference to the site thereof.

Fourthly. That it will not be necessary to lay to either of the said houses any part of the soil or ground of the other of the said houses.

Fifthly. That the whole of the expenses of the party-wall in the basement story and the shoring rendered necessary thereby, and all the other expenses (except a due proportion of the expenses incurred in respect of so much of the new party-wall as will be used by the said William Picking), being paid by the said Thomas Thornton, and any damage that may be occasioned by the works being made good by him, no compensation should be paid by either the building owner or the adjoining owner to the other, in consequence of the proposed works."

The costs of the proceedings except the expenses attending the appeals to be paid by the building owner (*11.* 19*s.* 2*d.*) "subject nevertheless to the provisions of the first-mentioned Act (section 46), relative to the reimbursement by the adjoining owner of expenses incurred by the building owner in respect of any party structure, built to part buildings or premises belonging to other owners from the buildings or premises belonging to himself."

The costs of the appeals 3*l.* 14*s.* 2*d.*, to be paid by the district surveyor.

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We may further add some recent proceedings before the magistrates, in respect of enforcing an award:—

OPENINGS IN PARTY WALLS.

At Guildhall, a few days ago, Messrs. Bridger and Ashby, builders, were summoned to answer the complaint of Mr. Mountague, the surveyor of the north district of London, for neglecting to comply with the award of the official referees, in respect to bricking up certain openings in a party wall in Love-lane, or inserting iron doors in such openings, as a precaution against the spreading of fire.

Mr. Mountague stated the nature of the case. Messrs. Spence, Bagally, and Co., are warehousemen, and occupy two adjoining houses for the purposes of the trade. Some time ago they employed the defendants to make some alterations to obtain an internal communication on different floors from one house to the other. It being a party wall between two houses, originally built as dwelling-houses, it was his duty as surveyor to bring the matter under the notice of the official referees, to obtain their directions as to the precautions to be taken. They required iron doors in stone cases to be affixed in every opening, but Messrs. Spence thought fit to finish the openings in the wall in some way of their own. The referees made an award that Messrs. Spence should pay 15*l.*, as the expenses of the reference, and that the builders should either brick up the openings or fit up iron doors to them, according to the terms of award. The present summons was taken out to enforce obedience on the part of the builders, by requiring them to enter into recognizances to obey the award within two months, and by committing them if they refused to be bound or neglect to abate the cause of complaint.

Mr. Young, the solicitor for the defendants, said the award was about to be enforced as respected the payment of the fees, and an action would be raised upon the distress warrant to try the whole question; and as there really was a question in the case, no other steps ought to be taken, which could only come to the same point of raising the question for the superior court. Messrs. Spence, Bagally, and Co. denied that they had done any thing that required the interference or directions of the referees. They denied that their authority, or their award was of any legal force, and they were fortified in this denial by the opinions of the late and of the present Solicitor-General. Such being the state of the case, he felt bound to take advantage of any technical objection he could; and he objected that by the Act every prosecution or action was to be commenced within six months of the cause of complaint, whereas in this case the award was made fifteen months ago, and the complaint of non-compliance was not raised till now.

Mr. Alderman Farncomb asked how it was possible for the builders to comply with what was required of them. They had finished their job, and had left it some months. If

they presented themselves with iron doors and a gang of bricklayers, Messrs. Spence and Co. were not bound to admit them. They would shut their doors against the intruders, and therefore the builders ought not to be called on to accomplish an impossibility or be imprisoned.

Mr. Mountague said that was no fault of his. He must take the law as he found it. He was a public officer, and through him the official referees must maintain their authority. They called upon him to do his duty, and he therefore prayed that the nuisance might be abated. The payment of the fees was a distinct matter. This complaint of being out of time came most ungraciously from Mr. Young, after obtaining repeated adjournments to get the opinions of counsel, &c.

Mr. Young said all the adjournments had reference only to the demand of the expenses of reference. The case of the builders had never been adjourned. The summons now before the magistrate was an original complaint, and therefore out of time.

Mr. Alderman Sidney said the Buildings Act was a blundering affair, and the attempt to mend it last session had been given up. As enough had been done by issuing a distress warrant to raise the question, and there would be no failure of justice from refusing the present application, he and his brother magistrate concurred in dismissing the summons, on account of the lapse of time in making the complaint. They did this without meaning in the least to blame Mr. Mountague for the course he had taken or the temper he had shewn.

Mr. Young begged to say Mr. Mountague had performed his duty in a very courteous manner.

## THE VALUE OF MODERN WORKS.

### REFLECTIONS ON ARCHITECTURE, AND NOTES ON BUILDINGS IN LIVERPOOL.

In writing these memoranda on works in Liverpool, we have been much impressed with a conviction which we deem sufficiently important for present notice. That opinion has been, probably in a great measure, arrived at, from the attention which THE BUILDER has of late given to the want of a prescribed and systematic education for the young architect, the consequence of this want being, that the attention of students is absorbed in some one department of the study, which has to fit them for the practice of architecture, and which department, although important enough not to be neglected, is yet not sufficiently so—the main object of the student's course of instruction, and the public want of professional assistance being considered—as to render it politic to withdraw any attention whatever from studies, which are, perhaps, less enticing and conducive to immediate fame, but which no architect can dispense with. It will not be thought, that we could ever recommend the student to hold even the mere literary and historical departments of architecture, as accomplishments which might be done very well without; still they are not the only or the most important consideration, and there have been clever men and great architects, who have not known every thing that "architecture" includes, or, who have been skilled in only one branch of the *art*. Whether that individual may be entitled to the credit of skill in architecture, who has mastered the grammar of Italian or Gothic architecture, as he may be held to be or not, according to the opinions of advocates of each considered system, is, at least, a less sufficient reason for ascribing such an attribute, than would be his possession of knowledge of the science of construction and practice of building, and capability of imparting beauty to the forms originating in fitness or convenience. Every style practised by any nation of the earth—if affording matter for criticism at all, as more than curious construction, or hand-work—has shewn itself a medium for the production of beauty of design.

It is, perhaps, less necessary to insist that the scientific and practical departments of architecture require the attention both of student and architect, than to urge the complete revisal of the method by which the ability to practice the profession is expected to be attained. It will far more tend to subsequent profit, and the early and complete possession of indispensable knowledge, to consider what are the different departments of education, and to advance each during the most important years of life, than to devote those years to some one branch, postponing other branches to a period when they may indeed be supplied, but then with immense trouble and incidental loss. If our student readers are employing their time in gaining a knowledge of art in celebrated works of architecture, and in endeavouring to penetrate the principles which guided the selection of details, they may rely, that far from that time being misspent, they are acquiring important, indeed, necessary information. But they must not allow their attention to be confined to these. The different branches of education should be followed by them, we believe, somewhat *pari passu*, to fit them for the duties which, progressively, they must undertake.

It is no doubt highly interesting to examine into the workings of the artists' minds in times which have now the charm of antiquity, and to gain the lessons which those times can teach, and still valuable would these be, if merely provocative of that enthusiasm which should characterise the architect. But there would be error in considering that architecture is wholly fine art. It is at least as important to consider and study the different methods of construction which may now be applicable to a building, and valuable even to notice the working of the mind of the modern architect. —The end of our argument, therefore, is to urge the frequent observation of works in progress, as one of the most important aids to architectural knowledge.

Indeed, all architects require a constant cultivation of the observing faculty, in order to preserve readiness of adaptation in details of construction to requisite ends. The opinions, and even the mistakes of those of their own time, are valuable in suggesting their own line of thought and action, and more so because they *are* those of contemporaries. Such notice is often interfered with by the necessity for attending to matter of more pressing importance, but should never be considered as unnecessary, unless it be useless to preserve that activity in resources and suggestions, which is required in the age.

It is to be wished that the habit of writing down impressions were more general. Architects are much inclined to be critical, yet apart from the inherent difficulty of architectural criticism, and the abstruseness of its principles, so confessed by even the real thinkers, the solution of many of the questions which make up the great variety of contradictory opinions, is indefinitely postponed, by reason of the impossibility of arriving at real argument, where each would be incapable of understanding his own professed opinions, and of advocating them. When each of us is fairly committed to some one of the opinions—upon the question of style, for instance,—something really important will have been gained towards the settlement of that troublesome question.

But the present object is less to carry out these incidental arguments to the point to which they might possibly lead, than to record a few notes of matters of art and construction in Liverpool. Judging from such streets as we were able to look into, enough has been done in this town within about the last five years to afford much matter for thought. We cannot look at the Town Hall and Exchange buildings, which used to be considered remarkable works of architecture, then at the buildings lately erected, without feeling that there is really much ground for hoping that architecture will again have vigorous existence. Something may be detected of the same want of careful design which rendered the work of Stuart and Revett so great a blessing to the architects of another order and school, and we can often think more of the talent of the architect whose work may be full of questionable features, than of his whose work has indeed no point to catch at for blame, but none for praise.

> "——— in such lays as neither ebb nor flow,
> Correctly cold, and regularly low,
> That, shunning faults, one quiet tenor keep;
> We cannot blame indeed—but we may sleep."

Without entering into the question of originality in that day or this, architects of the Italian school formerly had manifestly a small number of the resources possessed by those of our own day. We do not speak of Jones, Wren, Hawksmoor, Burlington, Vanbrugh, Talman, Chambers, and others, men capable of producing works that would be honourable to any age and country, but we rather contrast the ordinary municipal buildings of a town by artists, who may be considered respectively as not amongst the one or two architects of highest repute in either age. We say then, that whilst in the one case we have usually a common arrangement of well known orders, joined to one understood variety of rusticated basement, in the modern building we find real design. In the Liverpool Town Hall, there is some attempt at ornament, but it appears as if carved by a very unskilful hand, or as though designed by some one unable to draw. The buildings in Dale-street, nearly opposite, erected a few years since, notwithstanding some points which might be criticised, have very great merit in this particular. The ornament has a perfect character of unity of design in all its parts, true accordance with the Grecian principle out of which it has been educed, and yet is strikingly original, shewing how much may yet be wrought out of a style, in which it had been supposed by many there could be no further novelty. The ornament above the doorways in the court, may be instanced, and the whole has obviously been designed and drawn by some one who has had perfect command of his pencil.

The new building for the Assize Courts is another work, most creditable to the architect, and to the people of Liverpool, and is indeed a building of which the country may have reason to be proud. It occupies an immense space, and would, like the less important instances just given, lead us to think that we are only just beginning to discover the real value of Grecian architecture. Still it has some points which might be open to objection,—and we wonder there are so few, considering the difficulties to which the architect has been subjected, in endeavouring to make his design accord with the plans of others. The portico has, we might say, less of that importance which should characterize that feature when attempted in so large a building, only that we are mindful of the different effect which may be expected, when the steps and approaches are completed. It has, however, a great fault:—the line forming the apex of the roof breaks off abruptly at a short distance from the back of the pediment, always a most unpleasing feature, even to those unacquainted with architecture, but most remarkable in a building claiming to recognize the spirit of the Grecian style. Our attention had been directed, quite spontaneously, by a non-professional friend, to a more glaring example of this mistake in one of the largest buildings in Liverpool. Such an instance shews, that an architect may be perfectly familiar with the style he has chosen to adopt, and may even have personally investigated its examples, and yet from forgetfulness of some principles of design apparently simple, or from thinking rather of introducing some admired feature, than of taking those which would have appeared to grow out of the requirements of the building, may err, not only against principles which can be understood without much knowledge of architectural works, but even against those of the particular authorities which he had taken for his guidance. In saying this, we are not forgetting the supposed form of roof in the hypaethral temple.—In the end farthest from the portico, the architect of the Assize Courts has adopted an apsidal form, and this part of the building has great beauty. The accessories of steps and terraces, and the enclosed areas in the middle of the street, judging from an engraving we have seen, please us as arguing a mind alive to the value of these important but much neglected features, upon which something has already appeared in these pages — under the head of "Leaves from an Architect's Diary." Nevertheless, the interruption of the attic for a short distance between the apse and the main building, though it appears to have been made with some judgment, seemed to us objectionable. And the use of square columns, which, though limited to a portion of the flank, form so important a feature in the effect and arrangement of the building, may be a point open to discussion. For ourselves, we have never been able to divest our sight of the bulky appearance which columns of this kind have when viewed obliquely, and they have been employed but

seldom in consequence of this defect. We have included them amongst forms—such as those of pediments given in the work of Sir Wm. Chambers,—"to be avoided." It is true, that the same objection might be made to angle pilasters, were it not that in that case there is no other form that readily suggests itself, for which we feel we have undoubted reason for preference.—The merit of a work cannot be estimated except by those who are fully acquainted with the forms which various features have heretofore taken, and who can discern the use of reason in the choice of those which have been selected, or the preference of those which have been invented. Therefore the unlearned world — speaking professionally—can never be, as many would still argue, the proper judges of works of architecture, although the art is to be used chiefly for their gratification and benefit. Where forms are selected, the true critic will expect none but the best which could by possibility be found, or that the architect thought them so, knowing the others, and being able to say *why* he rejected the latter. If forms are invented, criticism may be more lenient, in justice to the exertion of the faculty, but is still not rightly exercised unless guided by similar rules. A faultless work may indeed be—

——"what ne'er was, nor is, nor e'er shall be,"

but still the *standard* is perfection, or that which has formed its nearest approach, and is so in all art, yet, as we have once before urged, is constantly forgotten in what is commonly esteemed architectural criticism. Invention is the highest faculty of the artist, yet can hardly begin without acquaintance with the inventions of others. A company established in the year 1850, to form a new cattle-market in the city, would, we think, only waste its capital, and be told that other localities had been found since 1847, and would receive no pity, whatever reasons it could give for ignorance. It is the business of all to know the progress of events; and so, as it is the duty of all to undertand the laws, it is required of the architect, and of whoever gives an opinion upon architecture, that they should be familiar with all that has transpired in the progress of invention.—But returning from this digression, and without obstinately persisting in an objection to the use of square columns in the particular case of the Assize Courts, where much might be adduced in favour of the architect's adoption of them, and not forgetting that an example may be found of the use of a square column even in Athens, the use of *angle pilasters* of the kind above referred to, is foreign to the principle of Grecian architecture. They may be found in works of late date, no doubt, and are so in those of the age of Pericles; in the Temple of Theseus the antæ are returned of equal diameter on each face; but the principal was the reverse. Breaks through the whole height seem to have been introduced expressly to prevent any assimilation with columns, and with the same object their capitals were always different.

Time did not allow the writer to see the interior of the building, or even any thing more than the principal fronts. If each of these is, as we were told, what ecclesiologists call a "show front," and that there are many windows in the other, it might be ground of objection with those who deem that windows are things forbidden in Grecian architecture. Certainly, though temples had none, assize-courts must have. But, if the fact be as stated, whether convenience has been interfered with to make a building which shall be Grecian in appearance, as well as in principle, or not, we have no opportunity of knowing, nor dare we hazard a hasty opinion as to the management of apertures for illumination, in any modern adaptation of Grecian architecture. We only know that this question, and that general one, of the extent to which the choice of a style obliges us to enter into its associated characteristics, peculiar to the time, nation, or religion, and foreign to those of ourselves, is matter for serious deliberation. Few will now be found to go the whole extent of advocating a complete resuscitation of things foreign to our own habits and condition; but few are entirely without such trammels, and none have any conception of the complete revolution which may occur in architecture ere it becomes as much a reflection of knowledge and civilization at this epoch, as it has been at other periods. The state of the art now must be matter of regret to all professors, who practise it with any feeling of its proper use as art, following in a track of which reason must often suggest the error, yet shrinking from the labour which a complete research into principles would require. Something like the consideration, devoted by Burke and other writers on The Beautiful, is now needed, and an arrangement of the materials which the industry of late years has collected, so to extract from such principles as are peculiar to styles, those which may usefully govern the forms of modern art, to the end that we may exchange the concurrent use in buildings of similar purpose, of antagonistic principles, for a different method dictated by reason, and not by whim. Few are able to conceal from themselves the insufficiency of the reasons for the preference of any one style over another; and the end which has manifestly to be brought about in art is, that whatever character has been imparted to a design, should be capable of being supported by argument. Thus, confidence in the propriety of the course adopted will be possessed, a feeling unknown to these days, and the inventive faculty, however influenced by proper rules, will not be prevented by the fear of an invention being construed into ignorance of style.

Returning to the notice of Liverpool—in Castle-street a new building is in progress, for the Branch Bank of England, but it was not sufficiently far advanced to see any thing more than that the principal front would have four Doric columns between rusticated piers at the angles. Its character marks it as one of Mr. Cockerell's. Another building is in progress next to it, for the Commercial Bank, but the design has no great merit; the basement, in particular, is deficient in that requisite of solidity which should always characterize rusticated work. The architect is Mr. Cunningham. In Fenwick-street, there have been several new buildings, and they are generally of some merit; they are in the Italian style. A Catholic church is also in progress near Islington, and in the same neighbourhood is the Collegiate Institution, in the late Gothic style, which, being by the architect of the Assize Courts, would afford us an illustration, were one wanting, of the curious state into which the practice of architecture has fallen. Many instances have occurred of an architect designing in two different styles, even in times in which such an occurrence would not be suspected by many, but at no period has it been the *system* to practise in every style; moreover, it is a system in which we are all implicated.

Any architect much engaged in the construction of warehouses, would do well to visit Manchester and Liverpool, where good design and sound construction seem to be united in such buildings. Of the former town, we shall have again to speak. In Liverpool, the experience of several large fires has led to the use of fire-proof construction in all warehouses lately built. Iron doors are almost universal, and for the windows, in place of sashes, it is not uncommon to find sliding doors of iron, which is further employed in the form of a quarter of a sphere, in place of the old penthouse covering to the hoist, above tiers of door-cases, and for many other purposes to which it was scarcely ever applied till lately. But the warehouses at the Albert Dock are certainly the warehouses, *par exemple*, of Liverpool. They extend round the four sides of the dock, the front wall, which is of four bricks thick, being supported upon arches, springing from iron columns. These columns, which stand close to the edge of the masonry forming the dock, are of Doric character, and are four feet in diameter at the base. Thus there is a large area, conveniently situated for landing goods, and for hoisting them into the different stories of the warehouse. The floor above this ground story is wholly supported by similar iron columns, of which those in the range next the first mentioned, are three feet in diameter. The aperture in the floors for raising the goods is formed by an iron frame, to receive the fire-proof arches. It would be difficult to find a building in London, having the appearance of solidity and strength found in these warehouses. This arises chiefly from the manner in which the brickwork is executed, which is in a style quite unknown to London workmen. The bricks are considerably larger every way than the kinds usually employed, in length measuring 9½ inches.

The large block of commercial chambers called "The Tower Buildings," in the old churchyard, erected from the designs of Mr. J. A. Picton, have been already described in this journal.* Crescent Chapel Schools, by this same architect, of which we gave an engraving some time ago, are now finished, and look very well.

Of the landing-stage, designed by Mr. Cubitt, and built upon pontoons of iron, our readers have no doubt heard. It is an improvement upon the old barges, such as are constantly the occasion of accidents in the Thames, but the bridges to the quay not being completed, it is, of course, deficient in some of the most important improvements which are expected. A good working contrivance is wanted more in these than in the stage itself. Something which we at first took to be the "mysterious machine" already noticed in The Builder, was explained to be a girder for one of these bridges; but though it had the outward configuration, it was so different to most girders we had seen before, that we dare not vouch for the fact. It appeared to be either made of, or covered with, boiler plate, fastened by rivets.

The station of the Manchester and Liverpool Railway has much altered its appearance. A larger area has had to be gained by removing the rock, and thus shortening the tunnel; and a church, which now stands near the edge of the excavation, will, it is said, have to be taken down. We also heard that there was some intention of removing the façade of the station, which can hardly have been built ten years. A new tunnel to the north end of the docks, is also in progress.

## SANATIVE REFORM.

### PROGRESS OF THE MOVEMENT.

In a vast metropolitan concentration of human life like ours, in which occurs a whole sixth part of all the waste of health and life in the three United Kingdoms, and in which, from amongst 2,000,000 people, nearly 50,000 die every year—900 every week—*one every tenth minute*—the mere destruction, deliberate, avoidable, and murderous, though it be, of 10,000 of these every year—200 every week—*one every hour*, by means of municipal poison alone, insidiously administered along with the air which the doomed ones breathe till they breathe no more, may, by comparison, at first glance, seem to be a matter of minor import; yet, if we estimate the value of a single life at the amount of the popular outcry created by the scarcely more deliberate, though more designed, destruction of that one life by domestic poison, not more insidiously administered along with the food that he eats, or the fluids that he drinks,—and which ought both of them to co operate with the air that he breathes,—for the sustenance of the life thus valued,—what a mighty and eternal outcry *ought* to rend the welkin and the walls of every city, town, and village in the empire! till an end be for ever put to this now too well recognised and wholesale system of manslaughter,—and so, in the course of years, the precious lives of hundreds of thousands of fellow-beings be saved to 'a good old age,' the *only* natural, and, as such, unavoidable cause of death. But silent as the grave to which this monstrous evil leads have been the voices of the people at large, even while their more enlightened brethren were attesting, proving, and exhorting, in this noble cause, *till now* that the feeling and the fears of the community are really roused, and the outcry does begin in earnest to be not merely audible, but *in crescendo* towards a simultaneous and thundering appeal to our bran-new, and let us hope, in a sanative sense at least, *clean sweeping* legislators, and that too in the articulate and intelligible form of what we trust will prove, in effect, an irresistible demand for the one grand reform of the day,—the all comprehensive sanative reform in all its cognate ramifications; and in anticipation of which demand, we rejoice to perceive so many of the local municipal, parochial, and other authorities now bestirring themselves, too, in earnest, with the purpose of 'setting their houses in order,' or rather,—with the birch at length in terrorem hanging over their devoted heads,—reluctantly

* See p. 531, Vol. IV.

giving promise of being 'good boys' for the future, henceforth resolved to keep clean scrubbed, and in sightly condition, their olfactory drains and slobbery surfaces. And we doubt not that the new Health of Towns' Commission, with a Chadwick as its keen-scented ferreting organ, has already, even though with a less-urgent cleanser at its other extremity, begun to exercise a salutary, and indeed we may say, in more than one sense, a sanative influence, over these metropolitan 'heads' in particular.*

The mass of matter on the sanative movement, metropolitan and provincial, gleaned from the newspaper press and now before us, may well demand the advent of the 'Journal of Health,' proposed to be established by the Health of Towns' Association; for our present limits would be barely sufficient for even an index to the whole mass, far less for the briefest abridgment. We must at least retain some record of its more prominent features, however,—and first, of what is going on in the metropolitan districts.

At Guildhall, in the city, the commissioners of sewers have been bringing up the owners of cesspools and other nuisances, who have been compelled forthwith to abate them, and to properly drain their premises. Mr. Alderman Johnson has declared "the intention of the court of aldermen to make a peremptory order in every case of the kind that is brought before them." Two inspectors of pavements caught fevers from merely inspecting these death-pots, near Aldgate. The owner of some houses in Swan-lane, Thames-street, on being called on to open a communication between a privy and the sewers, set forth that in one case this had been done, but that the result was, "that at high-water the Thames flowed up the sewers through the privy and into the cellar, where it stood three feet deep. The commissioners themselves therefore were to blame, in not placing traps at the mouths of the sewers. At Windsor-street, Bishopsgate, a communication between a cesspool and a sewer had been stupidly opened at a point seven feet above the bottom of the pool, and a new opening at the level of the latter was ordered promptly to be made. The majority of the 'governors and directors of the united parishes of St. George the Martyr and St. Andrew's, Holborn,' have voted, by 'one,' admission to rate-payers at their meetings, but still loving the darkness at least, if not the dirt, they split, fourteen to fourteen, on the question of admission to the public press, and the chairman cast his second vote after his first into the anti-sanatorial cesspool. The sanatory committee of the Marylebone districts were lately to be summoned forthwith, to investigate and remedy "the gross and grievous evils existing in the parish;" and Mr. Joseph warned the vestry, that if nothing shall have been done at the opening of Parliament for the 'health and comfort' of the public, this would undoubtedly be held "a good and valid ground for taking from them that power which hitherto they had enjoyed." A memorial signed by 300 of the rate-payers of All Souls' district, Marylebone, has been presented to the vestry, recommending the condition of the district to their notice—its dense and poor population [by the way, the authorities here are at present helpless, being nearly 5,000*l.* in debt, from pauper-drainage on their funds]—defective drainage and ventilation, and high rate of mortality—and impressing on them a sense of the benefit derivable from the speedy establishment of the proposed baths and wash-houses. Their spokesman, Mr. Edwards, hinted that "unless the local authorities were prepared to do what the Government proposed to do, the rate-payers would prefer general to local government;" so they are at present rather in a fix with a heavy debt upon their heads, at a time when it is late enough to redeem themselves even with no want of the needful. The memorial was held to be a complete reply to Sir P. Laurie and others, who had proved restive under the proposed washing and scrubbing process, and had declared the rate-payers themselves to be adverse to it. A motion was then put and carried, *nem. con.* that the bath and washhouse commissioners be requested to take steps to meet the wishes of the memorialists, and since then the commissioners have reported, that the Government is willing to take part of the Yorkshire Stingo site at 2,000*l.*, leaving two-thirds of it for the baths at 3,000*l.*, the loan of which from the Consolidated Fund they accordingly recommend. At St. George the Martyr's, a special meeting of the board of guardians have unanimously passed "various resolutions for the improvement of the sanatory condition of the parish," in districts of which so pestilent is the atmosphere, and so "pregnant with disease and mortality," that even medical students, who are usually rather reckless of their own safety, have generally objected to attend to the cases of fever which there so malignantly prevail in the midst of "excrement and decaying vegetable refuse matter," &c. &c.

A report on the Elim chapel cellar nuisance having been made to the Commissioners of City Sewers by Mr. Haywood, the surveyor, recommending that the whole be built up and all its abominations buried within it after every crevice has been rendered air-tight, and what requires it covered over with a solid body of concrete 2 to 3 feet thick, so as "effectually to prevent the formation or permeation of noxious gases, and also render easy of detection any future attempt to bury there again, and thus aid in the good of abolishing intra-mural interments,"—the magistrates determined on the immediate abatement of this nuisance, and accordingly authorized the employment of workmen, who have since been 'laying concrete over the ground, breaking the roof, and stopping up all holes,' in order to accomplish the end in view.

Complaints, too, are ever and anon issuing forth from the doomed inhabitants of infected districts, still drawing public attention to various other 'most infamous nuisances,'—such as that of a ditch near Blackfriars-road, where 'the filth from all the cesspools and drains in a very crowded neighbourhood' is received, and 'much disease and a continual stench' kept up thereby,—and that of a 'pest depot at St. Mary's, Newington,' one of its 'most frightful nuisances,' described as "a filthy, fœtid, poisonous ditch, reeking with deadly effluvia, and surrounded by thousands of poor inhabitants," in Nursery-row,—another "filthy open ditch alongside the Archbishop of Canterbury's park wall," at Lambeth, "the stench from which is very offensive, and the sight of it very disgusting," a nuisance which "blocks up the sewers from the houses, the cellars of some of which "stand four feet deep of stinking water." Nay, the precincts of the royal residence itself are still described as "totally without sewerage, the whole of the waste water passing into cesspools, whence when putrid it is pumped into open gutters, diffusing miasma around it as it passes through the streets." Here, also, "from the number of cesspools, the ground has become completely imbued with this pestilential matter, and thus are the noxious gases being perpetually evolved." Disease is constantly prevalent on the spot, and as the saturation goes on, "should the disease assume a more virulent character, the inhabitants of Buckingham Palace would, from their proximity, stand in the most imminent danger." Again, a fair example and type of the general state of the great metropolitan 'Babylon, which stands on many' cesspools, exists "under the walls of Bedlam itself, where the filth of various kinds, which must proceed from so large an establishment, is allowed to flow without the least covering, contaminating the neighbourhood by producing fever, and disgusting the inhabitants by its offensive exhalations," while, in another ditch, a stagnant one, "rubbish of every kind is thrown in by the poor, the odour of which I should think could be smelt for 200 or 300 yards from the spot." And besides all this, in the same locality, ashes and rubbish accumulate in the very houses, "eight weeks having elapsed without one of the dust contractors' carts coming round to collect the refuse!"—a fact which reminds us of a merited rebuke, some time since administered by the Scottish journalist Chambers.—"When it so happens," says he, "that 1,800,000 persons choose to huddle themselves into a space of about five miles in mean diameter, instead of being spread over several counties, it becomes necessary to use very active and energetic measures to keep them sweet. Such a place naturally inclines to be (pardon salutarily plain language) one vast dunghill.' Nevertheless, "the plan of cleansing followed in London is so grossly absurd, that people in well-managed country-towns will probably feel a difficulty in crediting its existence. The contractors are at no pains to clean out bye-courts and lanes, because the trouble is not compensated by the value of the refuse there to be collected. They sweep once or twice a week, as best suits their own convenience or views of profit. The want of a general and uniform government of such matters in the metropolis is most deplorable. Accustomed to live amidst the impurities in question, the Londoners have become used to the evil, insomuch as to be scarcely sensible of it. They would, therefore, if left to themselves, feel little wish for reform. It is a case exactly like that of the Scotch under the censure of Dr. Johnson, or the Americans under the sarcasms of Mrs. Trollope. The Londoners need to be awakened to a sense of the nastiness in which they live. We can assure them in the most solemn manner, that they are excessively dirty. Are they convinced?—then some good may be expected. If not, we must plainly tell them that the filth which they are unconsciously living amongst yearly chokes its thousands, and will continue to do so as long as it remains undiminished."

Now, however, that our own ever-green and racy satirist of absurdity and folly, and lover of fun and frolic, *Punch* assures us that the very "announcement of a commission to report on the sanatory state of the metropolis has caused the greatest commotion among the stinks, sewers, filth, fevers, drains, dust-holes, and depots, from Wapping to Westminster," and that the three plagues, typhus, cholera, and scarlatina, are 'laying their heads together' in a secret confabulation, which we would readily report were it not that 'all the world' already knows the secret to relate to their fell design to 'make the most of the time that is left them,'—we have every hope of these devils ere long having their due, and of the state of our great metropolis being no longer a bye-word and a reproach in the mouth of one who dwells in a city once, if not now, itself notorious, as the writer can attest, for the vilest compound of villanous smells within the limits of those 'most abominable of all chemical substances' the sulphuretted and phosphuretted hydrogens, *et hoc genus omne.*

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Mezzotinto Engravings by Mr. G. R. Ward.—Mr. Ward has recently engraved two portraits after Mr. F. Grant, A.R.A., namely, the Marquis of Granby, and Mr. Duff, the member for Banff. The painter has been fortunate both in his subjects and engraver. The first portrait is simply a half length, the second a full length with some scenery, but both have exceedingly good heads, and Mr. Ward has rendered them in black and white with ability and great success.

Lunatic Asylums.—The plans in competition for the proposed pauper asylum for Middlesex, were sent in on Friday in last week. A lunatic asylum for the counties of Monmouth, Hereford, Brecon, and Radnor, is to be erected in the neighbourhood of Abergavenny. The sum put down for it is 20,000*l.* The foundation-stone of the Birmingham Lunatic Asylum was laid last week.

The New Synagogue at Canterbury. In reply to our comment last week, we have a note from the secretary of the building committee of the Hebrew congregation, Canterbury (Mr. J. Jacobs), stating that the style of the new synagogue is the *Egyptian;* that Mr. Hezekiah Marshall, of Canterbury, is the architect, and Mr. Cozens the contractor.

Architectural Association. — This evening (Friday), the first conversazione of the new association will be held, as mentioned last week, at Lyons-Inn Hall, Strand. We hope to find that a large number of our younger readers will avail themselves of the advantages which the society offers. Several of the elder members of the profession are expected to attend and give their countenance to the meeting.

The National Gallery.—It is generally understood now that a new building will be obtained for the national collection as soon as possible.

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* The constitution of the commission is thought to augur well on the whole, to be the new-born Hercules, who is to cleanse the Augean stable. The labour which it has to accomplish is multifarious and indeed arduous. All the sewers' commissions have to be investigated, all the water supplies, all the paving boards, all the separate trusts for lighting and cleansing the metropolis, and all the various relations in which these trusts, boards, companies, and commissioners stand to the ruling authorities of parishes, wards, liberties, counties, hundreds, and manors. The ministers are considered to have at all events thus given a pledge that they are in earnest in the cause of metropolitan sanative reform. A suspension of the commissions which expire in December, pending the inquiries and their results, is advocated by the *Spectator*.



GALLO-ROMAN MONUMENT AT IGEL.

## GALLO-ROMAN MONUMENT AT IGEL.

### GALLO-ROMAN WORKS GENERALLY.

THERE are still extant in France numerous examples of Roman buildings, differing in a measure from their prototypes, which directly testify the subjection of a large portion of that country to the Roman Empire. More especially is this observable in the departments between the Seine and the Loire, as well as the territories watered by the Aisne and Marne, where they chiefly abound. Their age extends over a period of six centuries, from the time of the invasion of Cæsar to about the middle of the fifth century, soon after which period the Gallo-Romans obtained their independence, and then became subject to the more powerful Francs. By far the greater number of these monuments, however, belong to the age of the Empire's decline.

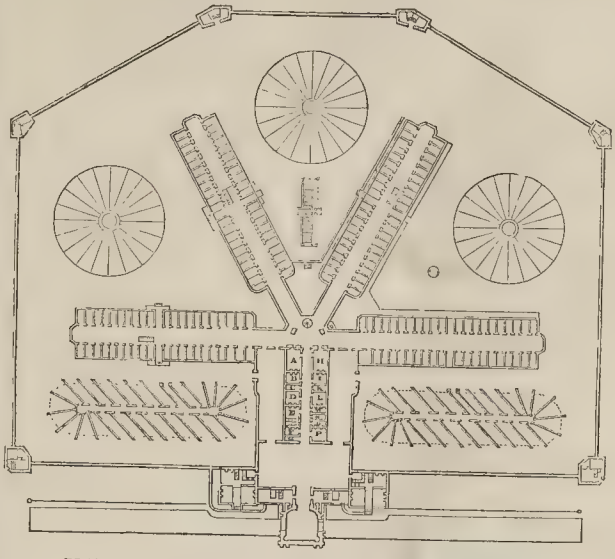
As they exhibit a modification of style to which we have now no parallel left in our own country, the specimen given above of a very elegant Gallo-Roman work, may not prove uninteresting to those who concern themselves in examining the history of architectural development. It is situated at Igel, an unimportant village in the old department of Sarre, and stands by the side of the Roman street which led from Trêves to Rheims. It has frequently excited the attention of antiquaries; but the cause of its erection still remains unexplained. Some persons have presumed the monument was erected in memory of the marriage of Constans Chlore with the Empress Helen, in consequence of the bas-relief found on one of the sides of the die, representing a man giving his hand to a woman, as it were in token of alliance. A mutilated inscription, with the aid of a little restoration, perhaps might sufficiently prove, that it was in fact erected by two members of the family of Secundinus, to Secundinus Securus, a rich Gallo-Roman merchant, founder of the village of Igel, in the fourth century. All, however, are agreed in supposing it a cenotaph.

The monument, built of a fine limestone, is square on plan; its height is about 66 feet, and the width of its base is 20 feet.

It is curious to notice in the above specimen the similarity that exists with the style of design prevalent during the revival of antique art in the fifteenth century. The same result has arisen in both ages, from the basis being compounded of the same ingredients; on the one hand by the evanescent yet struggling spirit of antique art, united with the excessive freedom and licence of the times, and on the other by the endeavours of those who fostered *regenerative* art, to free their minds from the trammels of the Gothic style, which in a measure had been the consequence of that very licence and freedom. In fact, it would require but a trifling modification and refinement of the several parts, to produce from the above specimen a very fair example of cinque-cento design. This effect may be more or less observed in all the monuments of the low Empire, whether existing in France or elsewhere.

Among the many specimens of Gallo-Roman monuments worthy of notice, we may mention the "Porte Noire" at Besançon, the "Porte de Mars," at Rheims, that at Saintes, at Langres, at St. Andre (Autun), at Nismes, the "Porte Dorée," at Frejus (Var), the elegant tomb and triumphal arches at St. Remi and Orange, the tomb of Jovinus, at Rheims, the temple and tomb at Vaison (Vaucluse) Temple of "La Fontaine," at Nismes, the column of Cussy, in Burgundy, the origin of which has created so much discussion and dissension; the "Maison Quarrée" and "Tour Magne," at Nismes, the obelisk of "Estelle," the tomb of Pilate at Vienne, the theatres of Arles, Orange, and Nismes, the palace of Gallien, at Bordeaux, the Pretorial palace at Trêves, the Palace and other antiquities at Aix, the aqueducts of "St. Just" (Rhone), Jouy (Moselle), Gargallon (Var), Pont du Gard, and lastly, the "Pile cinq Mars," on the right bank of the Loire, four leagues below Tours, which, if not of Gaulish origin, as is generally supposed, is full of peculiarities, which deserve especial examination.

## CONSTRUCTION AND FITTINGS OF PRISONS.



PLAN OF THE PENTONVILLE MODEL PRISON.—*Fig.* 1.

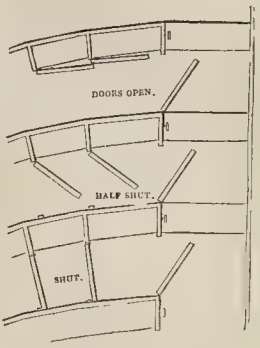



*Fig.* 2.

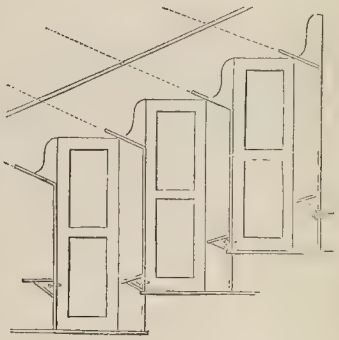


*Fig.* 3.

*Fig.* 5.

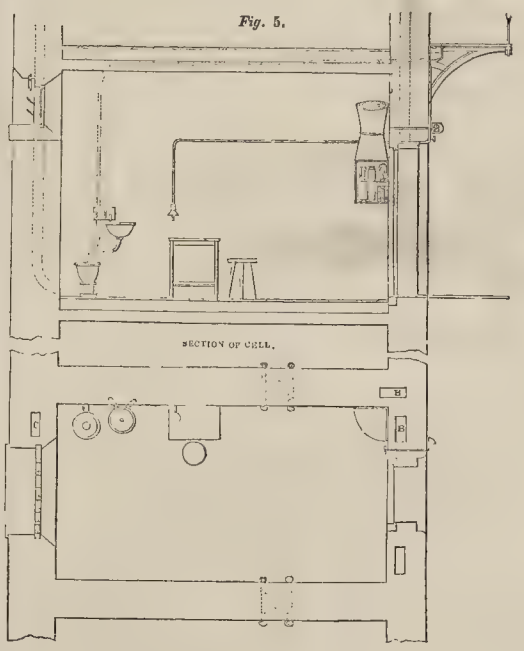



*Fig.* 4.

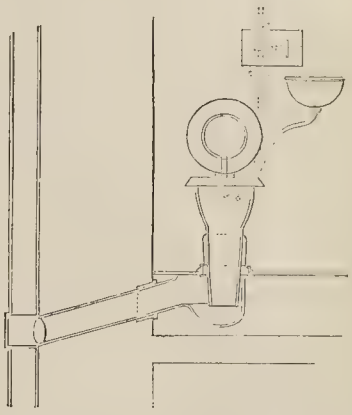


*Fig.* 6.

In enumerating the names of the above Gallo-Roman works, our object has been to draw attention to a class of style in architecture which has hitherto been too hastily condemned, because belonging to a debased era, and unable to bear comparison with Roman works of a higher stamp; but it should be remembered that each age had its peculiarities, from which many a useful lesson may be extracted, whether it be in the shape of a warning to avoid, or an inducement to imitate.

W. L. B. G.

### CONSTRUCTION OF PRISONS.

The daily papers have doubtless made many of our readers acquainted with the fact, that a "Penitentiary Congress" was held at Brussels the week before last, wherein Col. Jebb (commissioned by the Secretary of State), Mr. B. Rotch (the magistrate), and Mr. Charles Pearson, took a distinguished part.

Foremost amongst the subjects of debate was *the mode of constructing cellular prisons*; and as this is a matter which greatly concerns architects and others of our readers, we deem it right to record the results.

Colonel Jebb rightly remarked, that there was an intimate connection between the construction and the discipline of a prison. He was impressed with the necessity of having the various departments and the various offices of the establishment kept quite distinct one from the other, with a convenient mode of access to the centre and the cells. It was also essential that the families of the officers should not live in the prisons; that the latter should come to

their employment at a certain hour during the day, and attend alternately at night. He saw by a paragraph in the programme that it was proposed not to construct prisons with more than three stories, including the ground-floor. He thought, however, that when the number of prisoners amounted to 700 or 800, it would be more convenient to have four stories than very long wings. With respect to the attending of divine worship, a mode existed in Pentonville and other places, by which all the prisoners might proceed separately to the church or chapel, and hear and see the person officiating, without being seen by any one except by him. The time occupied in proceeding to and departing from divine service was seven minutes respectively. With respect to the size of cells, he thought that, as a general rule, they should be about 13 feet long, 7 broad, and from 8 to 9 feet high. Of course it would be necessary sometimes to make larger cells for special purposes.

The following are some of the propositions, which were agreed to *nem. con.*

The buildings and exercise ground should be disposed so as to receive the rays of the sun, and be sheltered from rain and the north wind. 2nd. The destination of a prison must in some sort determine its internal arrangement. If it is to be a penal prison, none but convicts of one sex should be placed in each, and the number should never surpass the maximum of 500, although the congress were of opinion that a less number would be better. If it is to be a preventive establishment, different wings and sections should be parted off for the different categories of prisoners. The two sexes at any rate must be kept distinct. 3rd. The number of stories should not be more than three, including the ground-floor. The parts of the prison specially destined for persons undergoing their sentences should be disposed in such a manner as, 1st. To allow of a complete separation by day as well as by night. 2nd. To give them the means of open air exercise. 3rd. To enable them to be suitably employed; to receive instruction, and to assist at divine service and religious exercises, without infringing the rule of separation. 4th. To facilitate the mode of superintendence of the prisoners, and of frequent communication with them.

The following propositions were read and discussed:—

*Central Observatory.*—The various parts of the building should be connected with a central point of inspection, from which the head of the establishment may inspect, without being under the necessity of moving, all the essential branches of the service. Regard must be had to the internal distribution of the localities, to the arrangement of the galleries, and to the choice of the materials of construction, in order that no material obstacle may thwart that inspection.

*Cells.*—In the disposition and arrangement of the cells, regard must be had to the following conditions:—1. The cells must be large enough to allow of the prisoners taking exercise, carrying on trades, and enjoying sufficient space and air for the preservation of their health. The space should vary from 28 to 35 cubic metres. 2. They should be lighted up, ventilated, and heated in a suitable manner. 3. Their construction should be such as to allow of no communication between their inmates. 4. They should be furnished with bed and bedding, with a fixed washhand basin with a tap, with a water-closet, and with other necessary articles. The prisoners should also have the means of giving the alarm to the attendants in case of illness or accident, or under any circumstance in which their presence might be necessary. 5. The prisoners should be subjected to an easy but unperceived inspection.

*Special Cells.*—In penal prisons it is necessary to have a certain number of special cells for the infirmary, for special punishments, for the different callings, and for prisoners on their first arrival. The cells for infirmaries, chiefly reserved for patients who cannot be suitably attended to in the ordinary cells, should be more spacious than the former, and should be disposed in such a manner as to allow of the free access of the attendants. One cell of that kind for every forty or fifty prisoners would possibly be sufficient. Cells for punishment should be stronger than others, and should be built in such a manner as to be easily darkened, if necessary. One such cell would be sufficient for about 100 prisoners. The dimensions of the cells for the exercise of certain trades should correspond with the use to which they are to be put. They should be situated in preference on the lower stories, and their number must depend on the nature of the trades carried on in the prison. In prisons where prisoners are constantly arriving, a certain number of cells should be made in which each prisoner may be placed temporarily, previous to being seen by the surgeon, and such cells might be of smaller dimensions than others.

*Heating and Ventilation.*—Whatever the system of ventilating by heating may be, its results should be the following:—A sufficiency to each cell of fresh air, or, if necessary, of air tempered for each prisoner, without the inconvenience of draughts. The extraction from each cell of a quantity of foul air equivalent to the quantity of pure air introduced; and the carrying on of the heating and ventilation without facilitating the means of communication, whether of sound or otherwise, between the different cells.

Mr. Rotch said, that excellent as the Pentonville Model Prison was, he could not help saying that many things were wanting to render that establishment perfect. All the medical men to whom he had spoken on the subject were of opinion that the temperature should be lowered by night time. The mode of ventilation was not good in Pentonville, and he would just observe, that if people were satisfied with what was simply good, they would never have better. The question of ventilation was a most important one, particularly for nations which, unlike England, had no colonies to which criminals might be transported, and which were, therefore, under the necessity of detaining the criminals for a long time in prison. It must not be said that there was no way of bringing the fresh air into prisons conducted on the cellular system; but rather urge architects *to find out a plan to that effect before the next congress was held.* The system of ventilation in Clerkenwell prison had been lately changed, because it was found to be a bad one. Mr. Rotch here showed the meeting a plan for procuring a ventilation: the principle appearing to be, that fresh air should be applied from the lower parts of the building, whilst the foul air should escape from the roof of the house. He would just state one fact to show that at Pentonville some improvements were required. About three weeks ago he had been informed by one of the furnace or oven men of that prison, that it required thirty-six hours to lower the temperature.

Col. Jebb admitted that it would be better to admit air into the prisons by means of open windows, but then such windows would admit of communication between the cells. He did not think that the present system at Pentonville could be well changed at present without endangering the health of the inmates. Should the medical men, however, decide otherwise, alterations would be made. He thought that the present mode of ventilation would not act prejudicially on the health of the inmates during the eighteen months or so they remained in the model prison.

The article in favour of the establishment of a central observatory of inspection was adopted, as was also one relating to cells, with the exception of a sentence which fixed their space at from 28 to 35 cubic metres.

The congress also adopted the following propositions:—

*Chapels.*—The chapel should be so disposed as that each prisoner should join in the exercise of worship—seeing and hearing the minister officiate without being himself seen; regard being had at the same time to the fundamental principle of the separation of prisoners amongst themselves.

*Parlours.*—A certain number of cell parlours should be made for the use of prisoners not authorised to meet their relations or friends in their own cells.

*Divine Service.—Administration.—Lodging of Persons Employed in Prisons.*—Whatever plan may be adopted, independent of the localities above-mentioned, each prison on the cellular system should contain a bath-room, with a number of separate baths, in proportion to the number of inmates; a kitchen with its accessories; a baking-house and a washhouse; a certain number of magazines for provisions, fuel, clothes, general stores, and manufactured goods, according to the destination of the prison; a clerk's office, and a meeting-room for the committee of surveillance; lodgings for the director or chief officer, the guards, or watchers, and, in penal prisons, for the sub-director, the superintendent of works, the almoner, the doctor or his assistant, and of such other persons as may be placed in each prison by the administration.

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In Mr. Cresy's valuable "Encyclopædia of Civil Engineering,"* a long account is given of the Pentonville Prison (so frequently referred to at the Congress), with numerous illustrations of the fittings. We are permitted to place copies of some of these before our readers, together with the plan of the building (fig. 1), and the following particulars.

The first stone was laid on the 10th of April, 1840, and the whole was completed in the autumn of 1842. It is adapted for the reception of 520 prisoners upon the separate system, each having a cell, 13 feet by 7 feet, and 9 feet in height.

The plan exhibits a central hall, open from the floor to the roof, from which branch five blocks of buildings, each having, on the ground-floor, a corridor, which extends the whole length, with galleries above, in which are the entrances to the cells, arranged on each side against the outer walls. From the central hall the doors of all the cells may be seen, as the galleries are formed of open ironwork. The Eastern Penitentiary at Philadelphia, designed by Mr. Haviland, seems to have been the prototype for this arrangement. As there are no female prisoners, there is but one class of cells.

The boundary wall is upwards of 20 feet in height, and solidly constructed; and on the outside is an open space of considerable width. The basement is not sunk into the earth, except in one portion, where it has an open area: over the whole surface of the walls a course of slate in cement was laid, 6 inches above the ground line, and the walls stand on a bed of concrete, 3 feet in depth and as much in width, so that every precaution is taken to prevent the ascent of moisture. Under the entrance building is a ward for the reception of prisoners, where they are examined by the medical attendant. The access to this ward is from the ground-floor, near the entrance door; and the accommodation consists of a receiving-room, a number of cells in which prisoners can be locked up for twenty-four hours, if necessary, an examining-room, clothing stores, bath, and a closet for fumigating and purifying clothes."

Besides the 520 separate cells, there are twenty others on the basement area as workshops, &c.; a chapel which contains stalls for 256 prisoners; a board room for the commissioners, A; offices for secretary, B; governor, H; chaplain, D; physician, E; governor's clerks, N, O, P; clerk of works, &c., waiting-room, G; visiting-room for prisoners' friends, LM; schoolmaster's room, library, surgery, offices for the steward and clerk, kitchen, and scullery, stores for provisions, &c., stores for manufactured articles, dwellings for governor, chaplain, assistant-chaplain, steward and manufacturer, principal schoolmaster, clerk of the works, four principal warders, twelve warders, two gate-keepers, one messenger, an engineer, and apartments for the deputy governor, president medical officer, and infirmary warden. The total area, including the boundary wall, is six acres, ten perches. There is a garden of two acres in the rear, and a terrace and road 75 feet broad in front.

The chapel is 72 feet 6 inches in length, 40 feet in width, and 26 feet in height to the under side of the cornice, above which is a coved ceiling. It occupies a portion of the under part of the building, and is entered on the level of the first and second galleries. The rows of seats are so disposed, that the prisoners are effectually separated from each other, whilst at the same time each has a view of the officiating clergyman, and can be seen by the attendant inspector. Each prisoner as he enters closes the door after him; and, when a row is filled, the officer fastens the whole of the doors in the row by a handle and crank.

There are four entrances, and by means of a

* Longman, Brown, and Co., London.

sliding partition drawn across the gallery, the whole can be filled in seven minutes. When service is over, a signal is made, by means of a letter, which designates each row, and the prisoners occupying the seat corresponding with it retire.

The plan of the stalls (fig. 2) shews the doors, shut, half shut, and entirely open, in the three different rows; the clear space allowed each prisoner is in width 20 inches, and in depth 32, the width of the seat being 9 inches out of it.

The section (fig. 3) shews the stepping up, so that each prisoner may obtain a view of the clergyman. The height of the divisions up to the top of the reading-desk is 4 feet 6 inches; the width of the reading-desk is 16 inches, and the height of the doors above the floor of each 6 feet. By this arrangement, the prisoners on the rear and front are prevented from seeing each other.

*The cells* are each divided by a wall, two bricks in thickness; the external walls are two bricks and a half. The ceilings are formed of half-brick arches, worked in cement, over which is laid a bed of concrete, about 6 inches in depth; this is levelled, and on it is placed the floor of asphalte for the cells above. The whole thickness from the floor of one cell to the ceiling of the other is 12 inches. In the upper cells, for the purpose of greater security, is a brick arch, 9 inches thick, worked in two courses in cement, with a layer of hoop-iron laid diagonally, at intervals of 4 inches.

The cells are 13 feet in length, 7 feet in breadth, and 9 feet in height to the under side of the arched ceiling. The window-frame, which is fixed, is of cast-iron, glazed with fluted glass, having outside two strong iron bars, so placed that they do not intercept the light. The door has a spring-lock, and a small trap is contrived for the introduction of provisions: there is another opening, covered by a movable flap for the purpose of inspection. Water is supplied from triangular cisterns, fixed in the angle of each cell; the gas-light is over the table (seen in the plan and section, figs. 4 and 5); near to it is the earthenware basin and water-closet, shewn more at large by fig. 6.

The cost of the erection at the Pentonville model prison was as follows:—

| | | | |
|---|---|---|---|
| Messrs. Grissel and Peto's contract, &c., for the building | 70,115 | 14 | 6 |
| Asphalte for cells, roads, and paths | 2,503 | 8 | 9 |
| Water-closets, fittings, basins, cocks, &c. | 1,154 | 10 | 9 |
| Locks, fastenings, bells, &c. | 941 | 5 | 9 |
| Superintendence | 689 | 4 | 11 |
| Sundries | 861 | 10 | 9 |
| | £75,765 | 15 | 5 |
| Additional expenses for fittings, furniture, &c., artesian well and machinery, heating and cooking apparatus | 8,402 | 16 | 9 |
| | £84,168 | 12 | 2 |

Which, divided by 520, the number of cells, give for each 162*l.* Besides the prison the following are to be added:—

| | | | |
|---|---|---|---|
| Detached residence for seven families complete | 1,892 | 7 | 1 |
| Archway and terrace wall | 2,856 | 5 | 2 |
| Wall inclosing garden | 739 | 10 | 7 |
| Stables and road | 415 | 0 | 0 |
| | £5,903 | 2 | 10 |

ANOTHER DESTRUCTIVE FIRE AT CONSTANTINOPLE.—In the 'infidel' district of Pera, inhabited chiefly, as most of our readers know, by the European merchants, and where, it will be recollected, the new English embassy, of which we gave a view in THE BUILDER, was some time since erected, another fire appears to have occurred during a period of high Mahomedan religious excitement, when not even a fireman amongst 'the faithful' Turks, appeared to assist in quenching the 'devouring element,' over which all rather seemed to exult as 'a mark of the wrath of Allah against the Giaours;' so that in a region where combustible wooden domiciles are so rife, it took no long time to destroy 300 of them, including some of the handsomest in Pera, and even blacking the walls of the new embassy with the smoke and ashes.

## "THE ECCLESIOLOGIST" AND ST. PHILIP'S, AT LEEDS.

SQUARED STONE.

SIR,—"The Ecclesiologist," if not so acknowledged by practical men, considers itself the oracle of ecclesiastical matters, but it is indispensable, that for its notices of new churches, or of restorations of old ones, a personal inspection by a competent judge connected with it should be made. In the notice of St. Philip's Church, at Leeds, No. LXII., October, 1847, pp. 109-110, it is stated as "being built by Mr. Scott," and ends a few *oracular* absurdities, by advocating the most arrant quackery.

As the list of members contains the names of some practical men, it is extraordinary that those who pen the articles for publication, should not from those practical men seek the information of which they stand so much in need—many young architects are misled by this work (if we may judge by the nice finishing of their competition pictures), and will be still more so by the concluding paragraph of this notice. "The stone of which this church is built is very regularly squared, which is a great mistake." The operatives in the olden times were taught to work by level and square, and where stone abounded, it was regularly coursed and squared, as may be seen in every ancient church, from the earliest to the latest period. The Abbey of Kirkstall has through all its stages the stone "very regularly squared;" so has the Abbey of Fountaynes, the small church of Adel, the cathedral and the larger and lesser churches of York, though not in the immediate stone district;—but in the West Riding of Yorkshire, within the districts of the magnesian limestone, the stone of the coal measures, and the millstone grit, the masonry of *every building is* "regularly squared," and beautifully coursed too. Where can there be a finer specimen of *squared mason's work* than the fine old Norman tower of Campsall Church, near Doncaster. In Leeds, the only works differing from ancient custom are the *modern churches* of St. Saviour's (wherein the stones are regularly coursed) and St. Andrew's. The stone of Leeds requires that the bed and face should both be worked; square faces and beds are prepared with less trouble than "fancy" work, and common sense tells us, as it did the ancients, that "regularly squared" work was stronger than all other. In the old churches of Bradford, Halifax, Bingley, and scores of others, squared ashlar work is invariably used, though in those districts self-bedded stone abounds. From these places, and others in the Yorkshire coal districts, we have the flags, or York paving-stone, and ancient and common practice agreed in using these stones on their natural bed, forming a face with a hammer, or for better work with a mallet and chisel. Where stone could not be obtained, it was brought from a distance for angles or quoins, and bonding; also, for arches, jambs, tracery, &c.; and marine cobbles were filled into the intermediate spaces of the walls; large irregular blocks of chertz, from the northern chalk-beds were sometimes used, but it is evident, that oolitic stones were preferred, and these were "squared." Out of the stone districts quoins and fillings may be tolerated, but any where within them, irregularity is quackery. In the lias district of Lincolnshire the quoins are generally from the oolite of Ancaster. In the formation above the chalk, east of the Wolds of Yorkshire, even the Coralline oolite is used for the mouldings and ornaments, and marine cobbles or shingle, formed with concrete lime and sand into a solid mass, complete the walls. Shirlaugh chapel (built by Walter Shirlaw) is coursed level and regularly squared; so are the larger churches on the coast, as Bridlington, Hornsey, and Scarborough; so is the small church at Hackness, in the upper red sandstone district.

In the plain, unpretending church of St. Philip, at Leeds, the "elaborate" ridge-crest to the chancel is a plain stone foliated ridge, instead of an "elaborate" cast-iron fence, or *gaol crest* (*the material of the district*); the "fancy" glazing is in simple figures, adopted by the ancients, and their modern imitators of vesicas, squares, &c., as simple as can be. The nave was made to project, to suit the obliquity of the site, and the organ-gallery fitted into it unobtrusively. I will as speedily as possible conclude, for the several blunders in the "Ecclesiologist's" conjectures need not be answered before the work is completed, when, in justice to the architect with whose work the "Ecclesiologist" can find "no actual fault," his name should be ascertained, his motive for designing a church in this peculiar form, and at least, before condemning his construction, the ancient models of the locality should be examined, and a knowledge obtained of the common-sense methods of building existing from time immemorial; then

"Each might his sev'ral province well command,
Would all but stoop to what they understand."

I am, Sir, &c., DIONYSIUS.

## NOTES IN THE PROVINCES.

THE foundation-stone of the Portsmouth, Portsea, and Gosport Hospital for the sick poor, was laid by his Royal Highness the Prince Consort, on Monday week.——It is proposed to convert the old custom-house at Portsmouth into a corn-market and commercial exchange, the want of which has been long felt.——The restorations of the Priory Church at Christchurch have been at length begun, by the removal of the organ, so as to throw into view the chancel, with its groined ceiling and altar-screen.——A new church is shortly to be built, by subscription, at Newtown, Soberton.——The public baths and washhouses recently opened in Milk-street, Bath, are said to be 'replete with every convenience,' at the most moderate charges, for behoof of the poor. ——The Hereford 'Chapter and Cathedral Restoration Committee' contemplate further active measures for the completion of the work begun in 1842. At a recent meeting, reported by the *Hereford Times*, the cost, &c. of the restoration of the eastern wall of the Ladye Chapel, the rebuilding of the distorted piers of the tower, and other relative works already accomplished, were recited, and the means of further progress suggested.——The first stone of Govilon Church, Abergavenny, was laid on Wednesday week before last. The building, it is said, will be of the early English style of architecture, from a design furnished by Messrs. Wyatt and Brandon. The contract is somewhat near 1,000*l.*, and the work will be done in about a twelvemonth. — Christ Church, Little Drayton, a district church in Market Drayton, built by subscription, with a donation of 1,000*l.* from Mrs. Noneley, was consecrated on 23rd ult. It is a stone building, in the early English style, with side aisles, and a north-west tower. The interior is fitted up with open seats, mostly free, for 600 persons. The roof is of stained deal, varnished. The architects were Messrs. S. P. and J. Smith, of Shrewsbury.——A correspondent of the *Leicester Journal* complains that 'the monuments, which formerly disfigured the walls' of St. Martin's Church, are to be replaced. The repairs here are nearly completed.——'Great improvements,' says the *Norfolk Chronicle*, have been made in Colton Church, which is one of the few almost unaltered decorated buildings of old erection. A new eastern stained-glass window has been inserted; benches replaced by pews, the chancel beautified, and its wooden windows are to be removed. The exterior of the church has been repaired, and the plastering removed, new buttresses built, the roofs restored and slated, &c.—— Gainsborough, according to the *Lincolnshire Times*, is now becoming gradually modernized and improved by aid of plate-glass, exterior decoration, and other works, such as flagged pathways.——A printing-office at Liverpool was undermined by adjoining excavations, a few days since, and fell to the ground.——Designs for a new quay at Newcastle, and plans for suitable buildings on it, are to be furnished by Messrs. Dobson and Green, of that town, architects. The quay is to be 100 feet in width, from the buildings to the river, and the whole, says the *Gateshead Observer*, would 'form one of the most magnificent works, of a commercial character, that any county could present.' The addition is much wanted.—— At the Glasgow Cathedral workmen, says the *Gazette*, are engaged in taking down the clumsy tower—to a certain extent, at least. ——The erection of a cathedral on a grand and magnificent scale, at Perth, is talked of—not for the Presbyterians, of course, who erect no cathedrals, as they have no church hierarchy—but for the Scottish Episcopalians.

## RAILWAY JOTTINGS.

It really looks as if there were much more knavery than folly about the Stock Exchange schemers, in their present attempt to stop the railway works, and take the daily bread out of the mouths of thousands and tens of thousands. Something like a clue to it we find peeping out on the Glasgow Stock Exchange, where it has been *agreed* that, while the continued drain of money for railway calls is (temporarily, of course) keeping down those magnificent profits which the shareholders have not the patience to wait for, it is better at once to pull up the fruitful seed that is now being planted, or to twist the neck of the golden goose that is now in the act of laying their precious nest eggs, or about to lay them; and that this is advisable, inasmuch as it will, by some hocus pocus of magical exchange dexterity, "enhance the value of railway property to a much greater extent than could be done by the formation and opening of new or branch lines." And while there appears to be a very general concurrence amongst 'railway directors and railway shareholders' thus to take even the temporary morsel out of the mouths of the industrious poor, without a vestige of remorse or pity, either real or pretended, expressed or experienced, some of the public press have been induced to second them. As for the scarcity of cash or its equivalent,* and the railway expenditure as its alleged primary cause, Mr. H. Houldsworth, the chairman of the Lancashire and Yorkshire Railway Company, remarks, that "If the surplus capital of the country is insufficient to meet a demand of this kind [estimated at 17 to 18,000,000*l.* per annum 'as the measure of disturbance from this cause'] for two years and a half, which is about the duration up to the present time, without producing such effects as we at present suffer under, I am at a loss to account for the power we appear to have possessed of carrying forward improvements of all kinds, and of raising and expending capital *unproductively*, during the war. * * I believe we could as easily raise 106,000,000*l.* per annum now, if needed, as we then did; and how was the money then spent? Much of it in maintaining armies abroad; subsidizing; providing powder and shot, muskets and cannon, and rearing men and horses for the consumption of war; all unproductive expenditure — dead waste. Now railway expenditure is unproductive only for a time, differing in nothing from the ordinary application to mills, dwellings, &c., except that in the former case the period of non-production is from two to four or five years, whereas in the latter it varies from one to two years. Then the saving to the public in the reduced charge of transit is not less at this time than eight to nine millions per annum upon the railway capital in operation, and goes far to lessen the burden of the 18 millions of estimated pressure upon the surplus income of the country, arising from the expenditure in progress." He admits, however, that although he does "not think the number of men likely to be employed in the construction of railways in the next four years will exceed the average of the last two years," it would have been much better if the expenditure on railways, sanctioned by Parliament, had been spread over eight or ten years; and he still recommends a mitigation of the evil by allowing companies more time for the construction of works.—The traffic on 3,152 miles of railway, week before last, exceeded that on 2,525 miles in the corresponding week of last year by 26,045*l.*, the total amount being 207,463*l.* The Great Western traffic at present exceeds that of last year by nearly 1,000*l.* a week.——The railway clearing-house system has recently been extended to the transmission of goods and the recovery of lost luggage. The present clearing-through system, so far as regards passengers, is regarded as a very efficient one. The goods freight, on the same system, is now of course also charged throughout, and it is divided between the companies and settled through the clearing-house, so as to avoid the keeping of accounts between one company and another.——The attention of the Girder Bridge Commissioners, it is said, will be given not only to the present state of iron girder bridges, but to other inventions, such as that of Mr. Sadler's balance-bridge, by which the dead weight, or *vis inertia*, of the suspended iron for arches will be considerably lessened; and an invention by Capt. R. S. Warrington, the author of the ventilating apparatus in use on board the *Growler* and other vessels.——The *Cincinnati Times* declares that a gentleman has discovered a plan by which he can send a man from Cincinnati to New York in two and a half hours, by a railway which shall not cost more than three times as much as the telegraph, including viaducts and other *et ceteras*. He can transport from Cincinnati to New York, in a day of ten hours, 400 tons of merchandise, at a cost not exceeding the usual rates, and that without either steam or horse-power. What does the Cincinnati man intend? says the *New York Express*. To stretch four wires along the 'line,'—two for a vehicle platform, and two over-head to steady the lightning vehicle, and then propel by electricity? Lazy-going concerns such as railroads are certainly behind the age, save to carry freight, as ships, sloops, and canal boats do.

* "Cheer up," says the *Glasgow Gazette*.—"There is an arrival of one million (specie this week at the Bank of England from South America, and more is coming from other quarters."

## THE SCHOOLS OF THE SOCIETY OF BRITISH ARTISTS.

On Monday night last, the schools opened by the Society of British Artists, were inaugurated by an able address from the president, Mr. Hurlstone, in the gallery, at Suffolk-street, where a very large audience had assembled. In the course of his address, Mr. Hurlstone offered tribute to her Majesty's present ministers, as being the first on a former occasion of holding office, to recognize the value of the arts in connection with manufactures, by the appointment of a committee and the establishment of schools of design, and, more lately, by the legalization of Art-Unions, which were doing so much to make a love of art general, and to open fresh sources of pleasure to the multitudes.

A small fee will be taken from each student (2*l.* 2s. annually, at present), but the desire of the society is to make the schools entirely free as soon as possible. A class is to be formed for ladies, with models classically draped.*

Dr. Meryon afterwards gave an introductory lecture on comparative anatomy, which was well received.

* The objects proposed by the Society are, as we understand,—A school of anatomy, with demonstrating lectures, &c.; an antique school, for which casts from classical sculpture have already been purchased; a life school, which it is intended to adapt to the convenience and available hours of those who may be during the day engaged; a school of painting, to which, it is said, some collectors are already disposed to lend, for the use of the school, valuable works; a library, and lectures, by professors, upon anatomy, comparative anatomy, painting, sculpture, architecture, engraving, perspective, chromatics, and other subjects connected with the arts.

## MIDDLESEX HOUSE OF DETENTION.

This building, of which we gave a plan, section, and description, last year,† is now completed, if not opened for occupation. It is fitted up in the same manner as the model prison at Clerkenwell, illustrated in our present number, and appears to be very complete. Considerable preparations have been made for the ventilation, as set forth in our former account, and we shall be curious to learn the result.

A tablet on the staircase leading to the magistrates' room, records that the *Building Committee* consisted of Mr. Rotch, chairman; Messrs. Byng, Bague, Buchanan, Bluck, Crake, Devon, C. Elliott, G. H. Elliott, France, Freshfield, Hall, S. Mills, Pryor, Pownall, Russell, Rose, A. Smith, J. Trotter, Townend, Tulk, J. Wilks, J. Wilson, Whiskin, Wigg, and Col. Wood; Chas. Wright, Clerk; W. Moseley, Architect.

† See p. 277 and p. 283, Vol. IV.

The Government School of Design.—The Drawing School at Somerset House opened on Monday, with twenty male students in the morning, and about forty in the evening! Correspondents complain of entire absence of arrangement. The masters had received no orders of any sort for their guidance as to the formation of classes, there was no one there to give instructions to them, and they had no power to act by themselves. The main burden of the school at present rests on the elementary master if we are rightly informed. The Board of Trade has done nothing.

## WESTMINSTER COURT OF SEWERS.

A general court was held on Friday in last week, at the court-house, Greek-street, Captain Bague, R.N., in the chair.

After some uninteresting business had been disposed of, the court proceeded to receive tenders for the following works:—For covering over 623 feet of King's Scholars' Pond sewer, between the Standard public-house and Charlotte-street, Pimlico; the estimates for which were as follow:—H. Perkins, 736*l.*; Yeoman, 685*l.*; J. and S. Williams, 640*l.*; Scisson and Co., 594*l.*; Humphreys and Thirst (accepted), 559*l.*

The next was for covering over 250 feet of Ranelagh sewer, north of Harrow-road:—W. Hutton, 381*l.* 3s.; Yeoman, 376*l.*; Perkins, 353*l.*; Scisson and Co., 340*l.*; Humphreys and Thirst, 339*l.*; J. and S. Williams (accepted), 330*l.*

The court then took the next order of the day, viz., "To consider and sign a decree for a rate on the western division of the Westminster sewers of 3d. in the pound, to allow the abstracts of former rate-books, and to sign the rate-books for a new rate." The decree was then duly signed. The following is the abstract of the new rate:—

| | Rental. | Rate. |
|---|---|---|
| St. John, Hampstead.. | £4,174 | £52 3 6 |
| St. Marylebone ..... | 578,256 | 7,228 4 0 |
| St. George, Hanover-sq. | 510,802 | 6,385 0 6 |
| St. James, Westminster | 152,199 | 1,902 9 9 |
| St. Martin ..... | 8,095 | 101 3 9 |
| St. Margaret & St. John | 162,416 | 2,030 4 0 |
| Totals..... | £1,415,942 | 17,699 5 6 |

Since the last rate made on this division, on the 21st of February, 1845, there has been an increase in the rental of 73,783*l.*

A letter was read from Lord Dudley Stuart, M.P., complaining of the want of drainage in St. James's-place.

The chairman then drew the attention of the court to the subject of which notice had been given "as to certain notices issued contrary to Act of Parliament, calling upon persons in Robert's-terrace, Chelsea, to communicate with a sewer, and other matters connected therewith." The conduct of Mr. Farlar, one of the commissioners, in reference to this subject, was brought before the court, a fortnight since, when the clerk was ordered to collect further evidence, to request the attendance of the parties on whom the notices had been served, and also to inform Mr. Farlar that his presence would be necessary at the next court, so that the matter might be fully investigated.

This day the court was thronged with persons from Chelsea who had received the notices, but on the question being called on, Mr. Farlar was not in his place.

Mr. T. L. Donaldson said he had received a letter from Mr. Farlar (why it had been particularly addressed to him he knew not), stating that he should not be able to attend the court that day. Such being the case, in the absence of Mr. Farlar, he hoped the matter would be deferred.

Alderman Johnson thought the absence of Mr. Farlar should not debar the court from going into the question. Mr. Le Breton inquired if Mr. Donaldson was authorised to state that Mr. Farlar would be in attendance if the investigation was postponed. Mr. Donaldson said he had received no instructions to give any such assurance. The chairman then put the question whether the matter should be proceeded with, which was carried by a large majority. The chairman then suggested that the whole of the minutes referring to the subject should be read, which was accordingly done by the clerk.

The solicitor, upon being called upon for his opinion, said, this step taken by Mr. Farlar was one of the most illegal he had ever heard of, as it was a proceeding without any foundation whatever. No private individual, let him be a commissioner or not, had power to issue any notices, but all must be done in a collective capacity, and be the act of the court. He repeated, that it was a proceeding destitute of any legal power whatever.

It was then determined that evidence of the service of the notice should be taken.

Mr. Dobson, of No. 17, Robert's-terrace, produced the notice served upon him. It was accompanied by a bill, and he was informed that he would be waited upon next week for the amount, as well as the interest due upon it, and if the money was not paid and the work done within twenty-eight days, proceedings would be taken to compel the performance of the same.

Mr. Callow, as the owner of the house No. 14, Robert's-terrace, had also received a similar notice, and had also been called upon to pay to Mr. Farlar 26*l.* 10s., which was followed by a letter threatening proceedings.

Mr. Harrison.—Did the person who served the notice say he came from Mr. Farlar.

Mr. Callow.—No; but a gentleman called after-

wards, and said if the money was not paid within twenty-eight days he should proceed without delay.

The Chairman remarked, that all the notices were without signature.

Mr. Charles Miall, of No. 48, Brompton-square, said he was Mr. Farlar's clerk. He served twenty-six or twenty-seven notices on the occupiers of houses in Robert's-terrace and Alexander-place, Chelsea, by order of Mr. Farlar. Mr. Farlar instructed him to come to this court to obtain a quantity of notices, and afterwards ordered him to fill them up in a proper manner. He filled them up according to the numbers in Robert's-terrace and Alexander-place, and served them on the tenants in possession. He was also furnished by him with a list of prices, of the cost of going into the sewer, so that if any one was prepared to pay he might receive the money. He served all the notices. He went a second time to point out the power of the Act of Parliament, and to explain that it was necessary the whole work should be accomplished in twenty-eight days.

By the Chairman.—He received no money; but Mr. Farlar gave him instructions to tell the parties, that if the amount was not paid they would be proceeded against according to law. If the parties had offered to pay he would have given them an order to come to this court, when they would receive permission to break into the sewer. This order was in writing, but it was returned to Mr. Farlar.

By Mr. Harrison.—Should have received the money if the parties would have paid. Did not exactly remember the contents of the order he should have given to the parties, but believed it was to this effect:—"Please let the bearer open the sewer named on payment of the proper fee."

By Mr. W. Donaldson.—Throughout the whole affair acted as Mr. Farlar's agent.

By Mr. Le Breton.—When he applied for the blank notices did not say for what purpose he required them. He called upon several of the parties, but called upon the whole of them twice. Further evidence was then taken on the notices issued on Mr. Caldwell, Miss Bell, and about a dozen other persons, and it appeared in some instances Mr. Farlar demanded as much as nineteen years' interest on money advanced (as he states) by him for their benefit. Upon the clerk being asked as to whose name the sewer stood in, he replied, that no sewer in the adjoining street to Robert's-terrace stood in the name of Mr. Farlar.

It was then proposed and carried unanimously, "That the chairman be requested to inform the parties that the notices which they have received, being illegally given, are not to be attended to. That the parties be requested to pay attention to no notice which shall not emanate from this court and be properly given, and the court expresses its regret that the parties should have been so irregularly dealt with."

The following resolution was afterwards carried, proposed by Mr. Le Breton, seconded by Mr. L. Wood:—"That the documents laid before the court, and the evidence taken on the subject of certain notices issued by Mr. Farlar, one of the commissioners, on certain persons in Robert's-terrace, Chelsea, calling on them to communicate with a sewer, be referred to the solicitors to report thereon, and that Mr. Farlar be summoned to attend the next court, when the matter will be further investigated."

*The Defective State of the Drainage of Pimlico.* A document was read from an inhabitant of Palace-street, Pimlico, which set forth that there was an entire want of drainage in that locality, by which both life and health were endangered, and calling for a remedy.

The clerk remarked, that there was no sewer in the place, and it was rather extraordinary, as the place was under the immediate observation of royalty, and in the vicinity of Buckingham Palace. In fact, there was no part of Westminster where the drainage was so bad as near to the palace of the Queen.

The surveyor said he frequently had to pass that way, and the stench was almost unbearable. He was ordered to draw up a report, and submit it to an early court.

The Court was occupied for a considerable time in considering a report from the clerk, to the effect that a payment of 10*l.* 2*s.* 6*d.*, made to Mr. R. Jenkins, one of the commissioners' officers, three years ago, for a sewer in Vere-street, St. Clement's, had not been accounted for.

Ultimately, Mr. Jenkins was severely reprimanded for his neglect of duty, and directed to pay the amount into court.

ORNAMENTAL GLASS.—Miss Eliza Tonge, of Boston, Lincolnshire, has obtained a patent for improvements in ornamenting glass, by which the most magnificent combinations of colours are applied to the permanent development on plate glass of vivid illustrations of flowers, gems, and other pleasing natural objects.—*Sheffield Iris.*

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of a military post at Devonport; free grammar schools and masters' houses, &c., at Walsall; the construction of the Birmingham, Wolverhampton, and Stour Valley Railway from Wenson Green to Oldbury, a length of 4¾ miles, together with a branch line to Dudley, a length of three miles; also for the extension of sewers in Mile End-road, 790 feet in length.

[Advertisement.]

TO THE EDITOR OF THE BUILDER.

Southam Lias Lime Works,
October 5th, 1847.

SIR,—Your report of the proceedings of the Westminster Commissioners of Sewers, in last week's BUILDER, contains a statement that Mr. Phillips, the surveyer, would rather have the arches of his 4½-inch sewers turned in mortar than cement. It may not be generally known that the mortar used by Mr. P., and by Mr. Roe, of the Holborn division, is made from ground *Blue Lias Lime*, and that these gentlemen are not singular in their preference of lias to cement. Vicât speaks very decidedly in favour of the Blue Lias Lime for hydraulic purposes, and contends that it will supersede the use of cement. Many other eminent engineers, both modern and ancient, both French and English, also give the same preference.—I am, Sir, yours respectfully,

RICHARD GREAVES.

## TO CORRESPONDENTS.

"*Nulli Secundus.*"—Can our correspondent let us see the account in local newspaper.

"*Plymouth Person.*"—Inquiry is made for name of successful candidate in competition. His motto was *confido et aspiro.*

"*To Obtain Lines of Ridge Stone.*" A applies in the type. Several correspondents who have forwarded answers are thanked.

"*J. A. P.*"—We think it right to say, that the gentleman name d by our correspondent is not the author of the paper in question.

"*J. M.*"—We avoid giving recommendations.

"*T.*"—We can say nothing in praise of the earrings inquired about.

"*Perseverator.*"—We cannot interfere between landlord and tenant.

"*Guthlacus.*" Nicholson's "Principles of Architecture" would be found useful.

"*Hiems.*"—We are not acquainted with any efficient "substitute for lines and weights in suspending sashes."

"*E. S. W.*"—We are unable to advise. Plans for establishing communication between passengers and guards-vans are just now very plentiful.

*Received.*—"E. B." "J. F." (Manchester), "J. B." (Windermere) "R. G." "An Englishman," "J. W." (shall appear), "J. J.," "J. H. F." "A Constant Subscriber," "J. C." (Spalding), "J. S." "R. S." "A Bricklayer," "A. O." "A History of the Architecture of the Abbey Church of St. Albans." By L. C. and C. A. Buckler. Longman and Co. 1847. "Report on the Sanitary Condition of Sheffield." By Jas. Haywood, Chemist, and W. Lee, C. E. "The Freemason's Book of Ornamental Designs." Part V. Orr and Co.

"*Books, Prices, and Addresses.*"—We have not time to point out books or give addresses.

## ADVERTISEMENTS


ROYAL POLYTECHNIC INSTITUTION.—A LECTURE on the PHYSICAL PROPERTIES of a JET of STEAM, in reference to VENTILATION, &c. with Novel and Undeniable Experiments, is now by DR. BACHHOFFNER, daily at half-past Three. LECTURES on CHARACTER, with MUSICAL ILLUSTRATIONS, by Mr. J. RUSSELL, also spoken by Dr. Wells on the Pleiades, Jews, every day at Half-past Two, except Saturday. CHEMICAL LECTURES. The ELECTRIC TELEGRAPHS worked. The WORKING MODELS expanded scale. The beautiful OPTICAL EFFECTS in the air. A very NEW SERIES of DISSOLVING VIEWS. DIVING BELL and DIVER, with HYDE'S NEW APPARATUS for CONVERSING with PERSONS under WATER, &c. &c.—Admission, 1s.; Schools, Half-price.

TO LAUNDRYMEN, BOARDS OF GUARDIANS, PUBLIC ASYLUMS, AND OTHERS.

FOR SALE, a Four-Horse Power STEAM-ENGINE, with a very complete Apparatus for Washing, Mangling, &c.—Application to be made to Mr NOBLE, Surveyor, Woodford, Essex.

POWERFUL LANDING CRANE.—To Engineers and others TO BE SOLD, a Bargain, a 16-Ton improved CAST AND WROUGHT IRON CRANE, recently erected. May be seen on the Quay, A. Jones Wharf, Hayward-street, Blackfriars-bridge. Particulars of Mr EMBLETON, Engineer, New Park-street, Southwark-bridge.

JAS. COVINGTON and SON, Licensed Lightermen, No. 8 Wharf, City Road Basin, and No. 4, Warkworth-terrace, Limehouse, London. CONTRACTS TAKEN FOR LIGHTERAGE of every description of goods to any extent.

N.B. Heavy castings, &c., craned under Twenty Tons. Goods landed and carted.

DIXON'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

TO THE IRON TRADE, &c.

MR. WILLIAM HENDRY, late of the Firm of HENDRY and GLOVER, Iron Founders, Drury-lane, begs to inform the Trade that he has CEASED to have any CONNEXION with GLOVER since the 9th day of January last, and that he will not be responsible for any debts that may be contracted since that date.

TRACING (C.C.) PAPER

SUPERIOR TRACING PAPER. Also, the LONDON, Tracing Transfer, Copying, and other Papers, thus marked:

LONDON.

HORNE, 2, Thanet-place, Strand, near Temple Bar.
Seal Engraver in Ancient and Modern Style.

WOOD PAVING.—The Directors of the Metropolitan Patent Wood Paving Company, are prepared to execute orders on the shortest notice, for Paving Railway Stations, Sheds, Wharfs, Yards, Portices, Schools, Manufactories, Lodges, Workshops, Dwellings, Stables, and Barns. Their system of Wood Paving is admirably adapted for the above purposes, and is much in use.—Office, Belgrave Works, Thames Bank, Pimlico.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

MOSAIC PAVEMENTS.—SINGER'S PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental Pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall-bridge, Surrey side.

FRENCH GRANITE and CAEN STONE. Attention is invited to a cargo of the FINE GRANITE from the coast of Brittany, consisting of forty-nine Blocks which have just been landed, ex "Emperor," at the Stone Wharf, Deptford. CAEN STONE from the best Allemagne Quarries in stock, ready for shipment, or sent direct from the Quarry.—Apply at Messrs. FREEMAN'S Country house, Millbank street.

CAEN SUFFERANCE WHARF, ROTHERHITHE

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the more extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

IMPORTANT TO BUILDERS AND OTHERS.

ALFRED BAKER, Stone Merchant, 33 Pratt-street, Camden Town, opposite Star Coal Wharf, begs to inform Builders that they can have GAUGED ARCHES IN PAINSWICK or PAILSWORTH STONE to imitate brickwork of any colour: the arches being in one piece are much stronger than brick-arch, and can be had at half the cost of brick arches; strait and camber arches from 2s. to 3s. per foot run. N.B. Inch slab from 4d. per foot; block cube, 2s. 8d. per foot; Chimney-pieces from 9s. each, not to be equalled in London at the price.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone work, &c. are executed at the cheapest rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection at HOME.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to size from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Buy Chimney pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

WELSH SLATE SLABS of the Finest Description, and planed both faces, supplied to the Trade at the same prices that rough self faced Slabs are being sold at the principal Slate Wharfs in town. A large discount is also allowed, in Lots of upwards, parties ordering 150 feet and upwards may, if they prefer it, have the Slabs delivered, carriage free, to any canal or railway point within fifty miles of London.

All Whole carves direct from the Quarries. Enamelled Slate Chimney-pieces, Slate Mural Tablets, Baths, Paints, &c. &c.

Address, Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and Co beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining those of Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE, so celebrated for its durability, colour, and bed, is well known, having been selected in preference to all other for the Houses of Parliament, Westminster Hall, the Commissioners of Woods and Forests, for building the New Houses of Parliament, Lunatic Asylums, &c. &c. Quotations are at hand for forwarding the Stone to any part of the kingdom.

Apply, for information to Messrs Wm. WRIGHT and Co., Anston, near Sheffield, Yorkshire.

THE most perfect DRY GAS METER in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his long-established and extensive Factory, in Hampstead-road, manufacture with an old established premises, 67, St. Martin's-lane, feels he can safely say that he can now SELL any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, by time, or by any use. He invites attention to the fact of many of his late meters being in successful action at the Houses of Parliament, the Royal Docks, and at Themes Tunnel, Theatres, Churches, Gaols, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

LESLIE'S PATENTS.—GAS CONSUMERS guaranteed the following important sanitary and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, five, six, or seven feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Flat Flames and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent GAS REGULATOR or ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light proof, and not Smoke-producers; these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES:—Upright Burners, with Conyngham Spring Glass Holders, with either sized glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 2d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ACTIVE VENTILATION always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full Instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.

Offices and Manufactory, 59, Conduit-street, London.

TO BUILDERS AND CARPENTERS.

**A Considerable saving will be effected in the** purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

3d. 4d. 6d. [illegible] 2s per 1,000.

Best Sheet Floor Brads [illegible] per cwt. Best Town Glue [illegible] per cwt. Do Scotch, 52s. per cwt.

Best Patent Sash Line.

1 2 3 4 5 6 — 4s. 3d. 5s. 6s. 6d. 7s. [illegible] 12s. per gross.

Elliptic Stoves 3d per inch. Registers, [illegible] per inch. Self acting Kitchen Ranges, with oven and Back Boiler. Wrought Bars and Bright Fittings. 3 ft., £[illegible] 3 ft. 6 in., £[illegible] 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:— 3 ft. [illegible] 3 ft. 3 in. [illegible] 3 ft. 6 in. £3 10s. 3 ft. 9 in. £4. 4 ft. £4 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:— 3 ft. £5. 3 ft. 3 in. £5 1[illegible]. 3 ft. 6 in. [illegible] 3 feet 9 in. [illegible] 4 ft. £7.

Best Register Stoves, at 7d., 8d., and [illegible] per inch. Do. Elliptic do., at [illegible] do.

Manufacturer of WOLLASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE most respectfully solicits** the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from [illegible] per inch, and upwards. Bright ditto, with black and Bright Bars, [illegible] and upwards. Self acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:— 3 ft. [illegible] 3 ft. 6 in. [illegible] 4 ft. [illegible]

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell hanging in superior style, done in secret, [illegible] per pull.

IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces, Plates, Furnace Bars, Top and Fire Pieces, Stoppers, [illegible] [illegible] Frames, Lamps, [illegible] of the best description, at very moderate prices.—CAST IRON [illegible]

**HOT WATER APPARATUS. — The** attention of architects, builders, and others, is respectfully requested to BENJAMIN FOWLER'S superior method of heating [illegible] [illegible] — BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

**COLLINGE'S PATENT HINGES.—Sole** manufactory, 64, Bridge-road, Lambeth, where a great variety are always on view, for [illegible] park, railroad, coach house, [illegible] [illegible] CHAS. COLLINGE and Co.'s Patent [illegible] Mill, and [illegible] Hinge Manufactory, 65, Bridge-road, Lambeth. A liberal discount to the trade.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS, [illegible]

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, [illegible] St. Martin's-le-Grand, London, opposite the new Money Order Office.

TO BUILDERS, TIMBER MERCHANTS, CONTRACTORS, ENGINEERS, &c.

**LATEST Improvements in Circular Saws,** Mill saws, Files, Patent Machine Plane Irons, Machine Grooving and Moulding Irons, Cutters of all sorts, Millpicks, Chisels, Railway Springs, &c., manufactured by BLAKE and PARKIN, Meadow Steel Works, Sheffield.

**IRON FOUNDRY, 9, Brick-lane, Old-** street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, [illegible] Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Fencing, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKERS' OVEN WORK, Force Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c. always in stock.

IRONFOUNDRY.
163, Drury-lane, and Charles-street, London.

JOSEPH GLOVER,
Late HENDRY and GLOVER,

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, [illegible]; and in consequence of which, he has been enabled to make such [illegible] The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

PATENT COPPER WIRE ROPE LIGHTNING CONDUCTORS for the Protection of Churches, Towers, Chimney-Shafts, &c.

**SMITH and ENGLISH, Princes-street,** Leicester-square, London, beg to inform Architects, Builders, [illegible] who have adopted it in preference; [illegible] Iron Shutters, PATENT DOUBLE ACTION DOOR SPRINGS, PATENT CASEMENT FASTENINGS AND SILL BARS, [illegible] IMPROVED FLOORING CRAMPS, &c. &c., which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

**PATENT BELLS. — Messrs. MEARS** beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in [illegible] The composition is of a new metal, called the Union Metal, [illegible] Bell Foundry, Whitechapel, [illegible] and other Bells.

**PATENT METALS for Bearings.—En-** gineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have [illegible] purposes generally, will be found superior in quality and cheaper than the metals now in use. Other sorts will be found of a better [illegible] Messrs. MEARS will be happy to send any [illegible] quantity as samples, or to make any castings to patterns sent to them.

**PORTER'S CORRUGATED and PA-** TENT GALVANIZED IRON ROOFING WORKS, Southwark Bridge and the Grove, Southwark. At the above Works, [illegible] Patent process of Galvanizing Iron as first introduced into this Country, [illegible] Iron and Southwark. Manufactured of the best quality. Iron and Fence Hurdles in use.—The Trade Supplied.

FLEXIBLE PIPES AND TUBING FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-** RUBBER HOSE-PIPE and TUBING of every description. These pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperature, [illegible] Vulcanized India-rubber Washers for steam [illegible] all sizes. Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 2 feet lengths, in various sizes, from 2 to 9 inches, patronized by the Right Honourable the Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, stink traps, and various shapes always on hand.

**UNION BROWN STONE POTTERY,** CHEMICAL APPARATUS, and DRAIN PIPE MANUFACTORY, 1a, Vauxhall-walk, Lambeth. Patronised by Her Majesty's Commissioners of Woods and Forests, and by the Right Honourable and Honourable Commissioners of Sewers for Westminster.

WILLIAM NORTHEN, Inventor and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN-PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to the following list of prices:—

Straight Barrel Pipes, with Socket Joints, in 2 feet lengths [illegible]

Bends and Junctions equally low.

The following unsolicited Testimonial is respectfully submitted:—Sewers' Office, 1, Greek-street, Soho, July [illegible], 1847.

Mr. [illegible]

DEAR SIR,—Should you at any time be in want of Stoneware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, Stone Potter, Vauxhall-walk, Lambeth. I have [illegible] and I have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly,
JOHN PHILLIPS, Surveyor.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily, between the hours of Ten and Four, where [illegible] about to Purchase [illegible] Land for Building purposes, [illegible] Sewers, capable of affording [illegible] such Persons to apply for at the above office. By the Court.
STAPLE and LUSH, Clerks.

**THE Commissioners of Sewers for the City** and Liberty of Westminster, and part of the County of Middlesex HEREBY GIVE NOTICE, that by an Act of Parliament [illegible] 10th and 11th years of the reign of her present Majesty, chapter [illegible] local and personal, intituled, "An Act to explain and amend the laws [illegible] relating to the City and Liberty of Westminster, and part of the County of Middlesex," provision is made for the more effectually draining Houses and property; and with a view thereto it is enacted, that where houses built before or after the passing of the said Act [illegible] July, 1847, shall not be drained to the satisfaction of the Commissioners of Sewers, and if there shall be a sewer within [illegible] feet from front of the inclosure of any inclosure about the same, it shall be lawful for the Commissioners to order the owners or occupiers, at their expense, to drain such house, by continuing the sewer along their frontage, and by making a drain to lead thereto; and if there be already a sewer in front, adapted to the drainage, then that a covered drain into it shall be made, as the Commissioners shall direct, and that the parties shall contribute to the expense of the original construction of the sewer, if built within thirty-five years before the passing of the said Act. And by the said Act it is declared that no drains shall be made without first giving notice to the Commissioners, who are to regulate the construction thereof. And it is by the said Act further provided, that all drains and water courses, as well within as without houses and other property, shall be cleansed and repaired by and at the cost of the owners or occupiers. The Commissioners are by the Act fully empowered to impose fines and penalties any persons who contravene the Act, and it is particularly required that all persons will proceed to comply with these regulations.

An officer of the Commissioners will be in attendance at the office, No. 1, Greek-street, Soho, from 9 in the morning until 4 in the afternoon of every day, Sunday excepted, when every information will be given to parties to assist them in complying with the provisions of the Act. By order of the Court,
LEWIS C. HERTSLET, Clerk.

**WORCESTER ENCAUSTIC TILES.—** Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

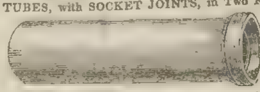
TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 1[illegible], Buchanan street, Glasgow; Mr. ROBERT CHARLES, Mill Hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

**TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY**
HENRY DOULTON AND CO., POTTERS,
HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3 inch bore, 5d. PER FOOT. 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 1½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no [illegible] for them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

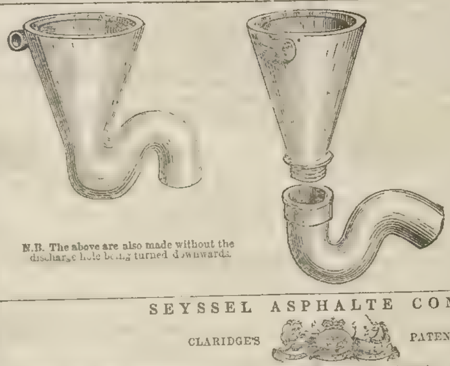
From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers Office, Hatton-garden, August 26th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,
JOHN ROE.

Mr. H. Doulton.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR**
WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

**THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the** following useful purposes:—

| | | |
|---|---|---|
| Foot Pavements. | Dog Kennels. | Covering of Railroad and other Arches. |
| Kitchen Floors, particularly where it [illegible] | Barn Floors. | The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Granaries. | |
| Carriage Drives. | Tun-room Floors. | |
| Coach-houses and Stabling. | [illegible] Floors. | |
| | [illegible], &c. &c. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage [illegible] to be derived from the adoption of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent [illegible] with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information [illegible] to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

# THE BUILDER.


**BRITISH MUTUAL LIFE OFFICE.**—The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

**LONDON and PROVINCIAL JOINT STOCK LIFE INSURANCE COMPANY.**—The Directors invite the public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and strik ng advantages offered by this Office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE FOURTHS of PROFITS divided. For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No. 26, Nicholas lane, Lombard street.

TO BUILDERS, CONTRACTORS, &c.

**GREY STONE LIME** of the best quality will be delivered alongside any wharf in London at 7s per yard of thirteen buckets. Parties can be accommodated with a moiety of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard Lease cask is 20 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT.** — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**PORTLAND CEMENT** is the only Cement for external purposes which requires no painting or colouring. Does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building in a flowing reservoirs, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and in fact, marble Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust

It is a cheap and elegant substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

**BATHSIDE CEMENT WORKS,** established to supply a genuine quality of ROMAN CEMENT. THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon street, London. Depôts:—Three Cranes Wharf, 64, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Dust as Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON having completed extensive alterations and erected new Steam-Mills, is enabled to supply the LIME AND PLASTER WORKS, MILL WALL, POPLAR** respectfully solicits the favour of the Commissioners of Sewers, Surveyors, Engineers, Contractors, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Pearl-street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.** BUTTY and VERY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock, walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it forms in or power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked as a beautiful stone colour similar to Portland stone, does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and cement.

**MARTIN'S FIRE PROOF AND ORNAMENTAL CEMENT. CAUTION.—Messrs. STEVENS and SON,** of Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency from any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface, when, may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon the proper principles.

It is peculiarly adapted as an internal stucco for walls, shafts, rings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 28, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 26, Canning-place, Liverpool.

TO THE BUILDING PUBLIC.

**FIRST-RATE ORNAMENTS** in ROMAN and other CEMENTS and PLASTER OF PARIS, at reasonable prices, consisting of Vases, Ballusters, perforated Panellings, Capitals, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Gothic and other Chimney-shafts, Soffits, Bed-mouldis, Pateras, &c. &c.; 36-inch Centre Flowers fixed, complete, 2s6. each, smaller in proportion. An assortment of Shop-front Trusses, also ready for fixing. JOHN HERBERT and SON, Modellers, &c., 42, Parker street, Drury-lane

**EMERSON'S PATENT CEMENT** PAINT. Arrangements are completed for the introduction of this VALUABLE and ECONOMIC PAINT. It is PERFECTLY WATER-PROOF; and, being in a liquid or pasty state, may be applied at once from the cask with a common paint brush, thinning it, as may be requisite, with water

The surface to which it is to be applied NEEDS NO PREPARATION, but to be clean and free from dust. It matters not whether the walls be wet or dry, its adhesiveness being such that it will cling to any surface. BRICK, STONE, SLATE, TILE, FELT, OR ROMAN CEMENT; and may be made of any TINT OR COLOUR, to suit the taste of the consumer, its present colour being that of a light creamy or stone colour.

To ROMAN CEMENT it may be applied the day after it is put on the walls, and one small cask will cover a moderate sized house.

It is partic ularly calculated for COUNTRY HOUSES, VILLAS, &c., for its PERMANENCY and PLEASING EFFECT; also for LODGES and ENTRANCES, as it does not absorb moisture, and consequently will not vegetate, and will PRESERVE the walls as effectively as any cement.

T. J. CROGGON recommends THIS PAINT, instead of Coal Tar and Lime, for PATENT ASPHALTE FELT ROOFS, as more efficient and economical

THOS. JNO. CROGGON, 8, Laurence Pountney hill, Cannon-street, London.

Price ... ... 9s. 6d. per cask of 1 cwt.
" ... ... 18s. 0d. " 2 cwt.
An allowance to the trade.

PREPARED FLOORING BOARDS.

AT DITTON'S, PIMLICO.

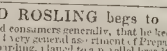
**ALWAYS on SALE,** a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from 4 inch to 1 inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Sons).

**ALFRED ROSLING** begs to inform the Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Flat Boards and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attendance qualities of workmanship. Saltwater Bridge Wharf, Barnaside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS (from Byron and Co.),** late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING PLANED FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Battens of every dimension. Mahogany, Cedar, Rosewood, Wainscot, Elm, and Fir Laths; Wheelwrights' Goods. All sawed and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.



MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

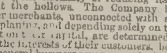
Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING COMPANY** continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In all cutting, or sawing and tongueing a board although curved, the machine follows the edge, receiving no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but their own, and practical, and depending solely on the public for a moment's interest in their success, pledge themselves to endeavour at all times to study the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, is now in full work at the Grand Sawing Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, and is commenced working. The sawing and planing will be done at the usual charges, and the Grand Sawing Machine** The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage no matter how warm the temperature of the room, and by the invisible action of the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

LADDERS, BARROWS, &c.

**G. ELL respectfully invites the Attention** of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Trestels, Steps, &c. he has constantly on hand, at a very low Scale of Prices; and is now selling Excavators' Barrows, of ash frames and elm tops, as low as 12s. by a quantity being taken; and the best make of stout ash frames, stays to legs, inch elm top, largest size, as low as 15s., for cash. Ladders commencing at 4d. per round. Every other description of Barrows and Ladders equally low

G. ELLS' MANUFACTORIES, 3, and 6, Tottenham-court New-road, St. Pancras, opposite Hampstead-road.

By Her Majesty's Royal Letters Patent.

**PATENT ASPHALTE ROOFING FELT,** as used by

Her Majesty's Woods and Forests.
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinburgh.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London

CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

**F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and** ONLY Patentees of
**THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.**
Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; as having great national always it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent in fuel is effected. The TRADE are respectfully solicited to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only works in Great Britain where the above roofing is made are F. McNEILL and Co's Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

**WOOD and MARBLE SAWING MILLS'** Commercial-road, Pimlico.—PREPARED FLOORING. J. HOLMES begs to call the attention of Consumers to the extensive stock of Prepared Flooring at the above Mills, thoroughly dryed and for immediate use, at fair prices that must give satisfaction. Also Deal, Mahogany, Hard woods, and Spanish, for Handrails, &c. An assortment of well seasoned Wainscot, of the finest quality, inch thick, and upwards.

SAWING in all its Branches.—The largest stock in London of veined, statuary, and other Marbles, in Slabs of various thicknesses and sizes to select from, sawn perfectly smooth and even.

Hard Slate in any quantity, also Portland Paving, Landings, and Sinks. York and Portland Paving, and slate rubbed with dispatch

Mahogany, Timber, Deals, &c., for Sawing, fetched from the docks, and delivered on the shortest notice.

SPACIOUS DRYING ROOMS for Seasoning Floor Boards, &c. Sawing, planing, &c., executed.

N.B. The strictest attention shall be given to all orders.—Apply to J. HOLMES, on the Premises.

**WALLIS'S PATENT LIQUID WOOD KNOTTING** This useful, discovered Liquid Composition, which, Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade possesses the important qualification of effectually stopping knots in Wood, never bad, and preventing them creating disgust and disappointment after the paint is done

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for

In the application, as will be not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest frosts will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms well with oil an unctuous and cohesive body. It is finished with other paints it has a softer tone than white lead. For buildings painted during occupation, it is most preferable, being perfectly innoxious.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 90, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the orders being chiefly attached with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease with all the use of machinery. Their superiority over other revolving shutters consists in their great strength, and shutters being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer persons disattached with the patent rising gear now used for iron shutters, and have it removed, and the trade to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action for damages under the Writ of Scire Facias, and the Decree in the Court of Chancery, the Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The warm and cold wheel motion for raising and lower ng are made from shutters as secured by this Patent; is the only and a simple mode of effecting that object. In large shutters it is most desirable.

Some thousands of Bunnett and Corpe's Shutters have now been put up without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement enables the Patentees to offer them in comparison with any others. They will guarantee all Shutters put up by them to be stronger and last twice as long as any with thin convex laths.

B. and C.'s new manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper rabbetted hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, ZINC, PORTABLE FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Enamelled, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 20, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

WANTED to Lay Out from 100*l.* to 200*l.* either in Freehold Land in the neighbourhood of a railway would be preferred), a Freehold or Long Leasehold House, at a small Ground Rent, a Carcase or House on repairing lease.—Address with particulars, post paid, H. H., care of Mr. McNeil, 50, Bow-street.

PUBLIC INSTITUTIONS.—A most valuable PLOT OF GROUND TO BE LET, for 97 years, at a moderate ground-rent, most eligible for any large Public Institution requiring space and fresh air, in the neighbourhood of the Regent's-park.—For particulars, apply to Mr LITTLE, 36, Northumberland-street, New-road.

FREEHOLD BUILDING GROUND.—A Few Plots remaining of the most Valuable Building Ground in the neighbourhood of the Regent's-park.—For particulars inquire of Mr. LITTLE, 36, Northumberland-street, New-road.

IMPORTANT TO BUILDERS.

BUILDING GROUND TO BE LET in all parts of London and suburbs, upon very favourable terms. List can be had, and terms ... liberal advances ... free of charge, or by post upon inclosing two stamps. Our offices also afford peculiar facilities for quickly disposing of Houses and Estates, which Builders generally will do well to avail themselves of, as they will be subject to no charge whatever, unless a sale be effected through our means, and then only the usual moderate commission. BECKWITH and SALMON, Land and Estate Agents and Auctioneers, 25, Bucklersbury.

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c., suitable for a Builder.

TO BE LET OR SOLD, in the vicinity of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw-pits, Stabling. Machinery for Sawing and Planing, &c. To view, apply upon the Premises No 12, Dorset-place, Dorset-square. For terms and particulars, of Mr. H. BIERS, 15, Carlton-villas, Edgeware-road. Written applications cannot be attended to.

TO CARPENTERS AND BUILDERS.

TO BE LET, at Brentford End, Middlesex, within ... yards of water carriage, a CONVENIENT SEVEN ROOMED HOUSE, with a good dry Cellar, detached Wash-house, and Walled Garden; a side Carriage Entrance, with Fold ... and Rooms, Yard, containing Buildings 41 feet by ... feet, with Lofts over, may be converted into excellent Workshops for a Manufactory at a trifling expense, well adapted for any business requiring roomy premises, and a particular good situation for a Carpenter and Builder, there being none of the trade in the immediate neighbourhood.—Apply to Mr WILLIAM DICKIN, Grocer, Brentford End.

## SALES BY AUCTION.

VALUABLE NURSERY STOCK. To Noblemen, Gentlemen, the Trade, and all others engaged in Planting.

MESSRS. PROTHEROE and MORRIS will submit to PUBLIC COMPETITION by AUCTION, on the Premises, the ARBORETUM, Fulham-road, Brompton, on MONDAY, October 25th, 1847, and Following Days at Eleven o'clock, by order of Mr. D. A. RAMSAY, in order to clear the ground, a large portion of the valuable Nursery Stock, consisting ... quantity of very fine Evergreens, Standard and Dwarf ... Roses, Fruit, and Forest Trees, with a choice collection of New, Ornamental, and ... Shrubs, &c. &c. May be viewed prior to the sale. Catalogues after October 1st, 6d. each, returnable to purchasers, may be had on the premises, of the principal seedsmen, and of the Auctioneers, American Nursery, Leytonstone.

UNDER A FIAT IN BANKRUPTCY, issued against Mr. James Caldwell ... In the picturesque Village of CHARLTON, near BLACKHEATH.

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LONDON MECHANICS' INSTITUTION, Southampton Buildings, Chancery-lane.—R. H. SEMPLE, Esq., will commence a course of Lectures on "CHEMISTRY, with especial reference to its application to the ARTS and MANUFACTURES," on Friday, October 22nd, at Half past Eight o'clock. Mr. Semple will continue the course on October 29th, November 5th and 10th. Non-subscribers admitted by tickets 6d. each. Subscription, 6s. per quarter, with 2s. 6d. entrance. Tickets for the half quarter, commencing 16th instant, are now ready for delivery. Prospectuses, containing particulars, may be obtained on application at the Library of the Institution.

A. McFARLANE, Sec.

CITY of WESTMINSTER LITERARY, SCIENTIFIC, and MECHANICS' INSTITUTION.—Every subscriber to this Institution has now the privilege of attending himself, and introducing a lady to a Lecture weekly on Science, Literature, Art, or Music. He can also attend (without extra charge) well-conducted Evening Classes in English Grammar, Writing, Arithmetic, Book-keeping, and the Mathematics, Geometrical and Architectural Drawing, adapted to the student and workman, landscape, figure, and ornamental Drawing, the French Language, Discussion, Elocution, and Music. Library, Reading, and Gymnasium, for a small additional sum. The Reading-room, open from Nine A.M. to 10 P.M., is well supplied with newspapers and periodicals. The Library of 4,000 Volumes of science, history, and general and entertaining literature, is available for calculation and reference. Facilities for Chess are also provided. A member obtains all the above advantages for 6s. per quarter; and persons may join the Institution at any period by paying for the unexpired term of the quarter. Persons desirous of obtaining prospectuses, lists of lectures, and any further information, are invited to apply at the Institution, 6, Great Smith-street, Westminster.


### CONTRACTS.


TO BUILDERS.

SEALED TENDERS for Constructing a MILITARY POST at EASTERN KING, STONEHOUSE, for a specific sum, will be received at the Ordnance Office, Pall-Mall, London, on or before 26th October, 1847. Detailed Drawings and Specifications of the different Works and Buildings, with the Terms and Conditions of the Contract, may be seen, and Forms of Tender and every information obtained, daily, after 12th proximo, at the Commanding Royal Engineer's Office, Devonport, between the hours of Nine and Four o'clock, until the 26th proximo.

Commanding Royal Engineer's Office,
Devonport, 30th September, 1847.

LONDON and SOUTH-WESTERN RAILWAY.—The Directors of the London and South-Western Railway Company wish to receive TENDERS for SINKING an ARTESIAN WELL on the Company's premises at Nine Elms. Tenders to be addressed to the Secretary, and to be delivered at this office before Ten o'clock on Friday, 29th inst.—By order,

P. LAURENTZ CAMPBELL, Secretary.

Nine Elms, Vauxhall, 12th October, 1847

TO JOINERS, PLASTERERS, STONE-MASONS, AND PAINTERS.

PERSONS willing to CONTRACT for the FINISHING of TWO VILLA CARCASES in Healing Park, can see Plans, Specification, and other particulars, at the office, No. 36, Shepherd's Bush Market, Notting Hill, any day from Nine to Five o'clock, Sundays excepted. The Tenders to be given in on the 23rd of October. Persons tendering will be required to attend at Three o'clock on that day.

TO BUILDERS.—ST. MARTIN-IN-THE-FIELDS, WESTMINSTER.

THE Guardians of the Poor of this Parish HEREBY GIVE NOTICE, that they are prepared to receive TENDERS for the erection, in the Workhouse Yard, of a BUILDING, to contain Two Small Wards for the reception of Inmates. Plans and specification may be inspected at the offices of H. E. KENDALL, Esq., Architect to the Board, 17, Suffolk-street, Pall Mall East, on any week day between the hours of Ten, A.M., and Four P.M. The Tenders are to be delivered in at the Register Office of the above parish, 44, Castle-street, Leicester-square, by Six o'clock in the afternoon of Monday, the 25th October instant, when and where the parties tendering are to be in attendance. The Guardians do not pledge themselves to accept the lowest or any Tender

October 14th, 1847.

TO ARCHITECTS, &c.

ERECTION of a WORKHOUSE.—AYLSHAM UNION.—The Guardians of the Aylsham Union are desirous of receiving PLANS for the Erection, in Aylsham, of a WORKHOUSE capable of containing Six Hundred Persons—Men, Women, and Children, properly classified, according to the Regulations of the Poor-Law Commissioners. The Sum of ONE HUNDRED GUINEAS will be paid to the Person whose Plan shall be approved by the Guardians and the Poor-Law Commissioners, unless he shall be afterwards employed in the Erection of such Workhouse; in which case he will be paid the usual Commission for his Services. Such Plans to be forwarded to the Clerk of the Union, addressed to the "Building Committee, Aylsham Union," before Tuesday, the 2nd day of November next, when the Committee will meet to inspect the same.

WILLIAM HILL, Clerk to the Union.

Marsham, Norwich, 5th October, 1847.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield-street, Oxford-street

ARCHITECTURE AND SURVEYING.

SUPERIOR INSTRUCTION given in the above, to respectable young men desirous of improvement; consisting of Drawing Plans and Sections, Measuring and taking out Quantities, Lectures on Design, &c., by an experienced practitioner at the West-end.—Address, R. T. N., Mr. Dawes, 19, Maddox-street, Regent-street.

MR. GRAYSON'S ARCHITECTURAL, MECHANICAL and PERSPECTIVE DRAWING ACADEMY, established above fifty years, Banner street, Finsbury-square. Engineers and Millwrights taught the principles of Machinery. The selection of Models accompanying the Diagrams which are introduced at this Academy will be found of great utility to the Student in elucidating the several Mechanical and Practical Sciences. Schools of Design, comprising the Gothic, Grecian, and Roman classes of Ornamental Composition. Morning Class from 8 till 2. Evening Class from 6 till 9. A vacancy for an Articled Pupil. Personal application, or by letter, post paid.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Carriage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.



H. MORRELL'S FINE PREPARED DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East-India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly finished drawings.

Sold wholesale at the Manufactory, No. 140, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

# THE BUILDER.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public that I have now completed a new ENGINE, and owing to the facility with which I can execute orders I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT, PUT and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. For bronzing and painted work in the most moderate terms.—CHARLES LONG, No. 1, Kingsland, Baker-street, Portman-square. ab. 6.

TO THE NOBILITY, CLERGY, GENTRY, ARCHITECTS, &c.

**ORNAMENTAL, STAINED, FIGURED,** and EMBLAZONED GLASS and ENCAUSTIC TILES, by new processes, for Domestic, Ecclesiastical, and Public Edifices.—G. WALKER, Patentee, Lambeth Marsh, Lambeth Pottery, respectfully solicits patronage. G. W. is now prepared to execute orders of any extent, and every pattern in Glass, also Encaustic Tiles, unaffected by the atmosphere, at the low quotation of 1s per square foot (Glass and Tiles). Tiles are usually low per square yard, according to the colour of ground and the ornament.

**PLATE GLASS.**—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the Thames Plate Glass Company. Liberal discounts allowed on glazing qualities. London Warehouse, 69, Hatton-garden, Holborn.—E. CHRISTIE, Agent.

N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one-half, and three-fourths thick.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO SQUARE.—A GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian Sheet, Rough Plate, Sheet Glass, either cut to size from 1 foot to 120 feet super, delivered free all London. Having a large stock on consignment at his Warehouse, begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

**SOHO PLATE GLASS WAREHOUSE,** 28, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the Thames Plate Glass and Crown Glass Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and size, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 28, Soho-square.

**PHŒNIX PLATE GLASS WAREHOUSE,** 24, St. Mary Axe, City.—E. MOSS, Proprietor.

Builders, Upholsterers, and Consumers of Plate Glass, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Railway Carriages, Mirrors, and other purposes. Colour, Quality, and Substance not to be met with elsewhere in the Kingdom. ROUGH PLATE GLASS for Skylights, supplied 1-8th, 1-4th, and 1-inch thick. All Plate Glass for Shop Fronts delivered within five miles of London free of all charge, and to all railway stations, free of expense in town or country. No connexion with any other house.

**WINDOW GLASS, LEAD, VARNISH,** COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 67, Bishopsgate-street, Without. Lowest prices charged. Please inquire them.

Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop fronts, Show cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

Ground and Dry Colours of the best quality; Brushes Dryers, and every article used in the Trade warranted.

VARNISHES and GENUINE WHITE LEAD. MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 67, Bishopsgate-street Without, London; THOMAS MILLINGTON, Proprietor.

By Her Majesty's — Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 13 a, Cumberland Market, Regent's-park, London. Their extensive and universal application to Public Offices, Bed rooms, and the surest and by far most effective, prove their great utility. Forty per cent. from the original Tariff.

**DR. ARNOTT'S CHIMNEY VENTILATOR.**—F. EDWARDS, Stove Maker to her Majesty, 20, Pobul ngton, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description. Prices from 2s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

**VENTILATION IMPROVED** and SMOKY CHIMNEYS CURED.—JOHN DROMGOLE, Window Sash Decorator and Ventilator Manufacturer to the Queen, begs to call the attention of Architects, Builders, and the Public to the truly invaluable TRANSPARENT SLIDE-VALVE VENTILATOR. This invaluable Article is universally acknowledged to be the most complete that has yet been invented for the purpose of obtaining a Perfect Ventilation, and its remarkable simplicity, efficiency, and moderate cost, claim for it the special attention of all persons who feel the very great importance of this desirable object. Its construction is such that it may be fixed in any sash without any alteration, and is equally applicable to the Cottage or Mansion. Ventilators with self-acting fan, for preventing smoky chimneys and curing draughts. It will also be found a permanent cure for Smoky Chimnies.—Lists of Prices, with illustrations, will be forwarded free on application. Sold Wholesale and Retail at his Warehouse, No. 2, Dorset-road, Bishop's-road, Paddington, where may be had every description of Window Gratings, Blinds, &c.

**CHAS. WM. WATERLOW,**

MANUFACTURER of Sashes and Frames, Wholesale Dealer to the Trade, 121, Bunhill-row, Finsbury-square. Well-seasoned Sashes, Shutters, Doors, &c., at the lowest prices.—Upwards of 500 DOORS, and a large variety of Sashes and Frames, always ready for immediate shipment. Steamboats, Wood Mouldings, &c., executed with despatch. N.B. This Establishment is now the Office of all Orders at the Wing.

SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

**JOHNSON and PASK,**

[illegible]

Beg to inform the Trade and the Building Public in general, that they have purchased the Stock, Patterns, Plant, Goodwill, and Premises of Messrs. Sharp and Co., Cabinet Makers, Upholsterers, and Wholesale and Retail Ironmongers, Aldermanbury, and have entered into the same business in the very best manner; French polished, and sent home goods to any part of the country. A full list of prices forwarded by return of post to any part of the country.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only, 70, York Road, Lambeth; and at 28, Cross Street, Barnsbury Road.

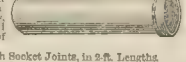
ARCHITECTURAL ENRICHMENTS.

**BIELEFELD'S IMPROVED PAPIER MACHE**, which has been almost universally adopted for architectural decorations, has been patronized by her Majesty, by the Houses of Parliament, Board of Works, as the highest of the nobility and gentry, and by the most eminent architects of the day. It has been at the royal palaces, at the present House of Lords, at Dudley Castle, at Drayton Manor, the new Conservative Club House, Pall-mall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Design prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the paper mache ornaments, with a tariff price £1. Works, 15, Wellclose Street North, Strand.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 9 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 74, Princes-street, Lambeth. A stock of well-seasoned and large-sharp-stocks always on hand.

**UNION BROWN STONE POTTERY,** CHEMICAL APPARATUS, and DRAIN PIPE MANUFACTORY, 14, Vauxhall walk, Lambeth. Patronized by Her Majesty's Commissioners of Woods and Forests, also by the Right Honorable and Honorable Commissioners of Sewers for Westminster.

WILLIAM NORTHEN, Inventor and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to the following list of prices:—



Straight Barrel Pipes, with Socket Joints, in 9-ft. Lengths.

| 6-inch. | 9-inch. | 12-inch bore. |
|---|---|---|
| 1s. 4d. | 2s. 3d. | 3s. 8d. each. |

The following unsolicited Testimonial is respectfully submitted:

Sewers' Office, 1, Greek-street, Soho, July 30, 1847.

Mr. —

Dear Sir,—Should you at any time be in want of Stone ware Drain pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, Stone Potter, Vauxhall walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly,

JOHN PHILLIPS, Surveyor.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with iron. Their construction is so simple that the largest establishment can be protected or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot get out, buckle, be strained, or get out of order, and are safer. Persons furnished with the patent closing gear now used if fitted shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering the shutters as usual by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement, enables the Patentees to challenge competition with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with iron convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC BASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stuffed and Plated, Best Plate Glass, and Ornamental Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

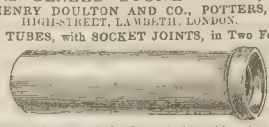
Metal Drawing, Stamping, and Plate Tracing.

Office at No. 28, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

**TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY** HENRY DOULTON AND CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths,



3 inch bore, 3d. PER FOOT. 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 4½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr Henry Doulton, by Mr. John Phillips, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

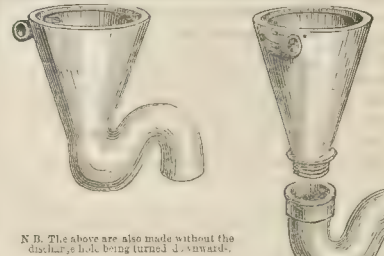
From Mr John Roe, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers Office, Hatton-garden, August 26th, 1847.

Dear Sir,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at the time I am in office can be procured with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR WATER-CLOSETS,** With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

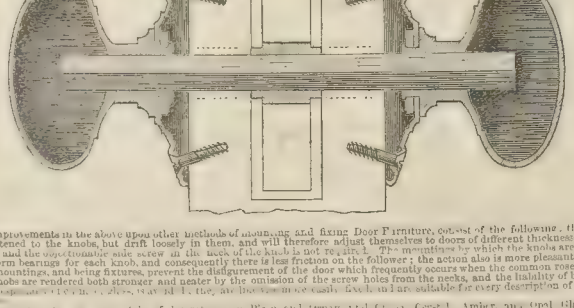
Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

By Her Majesty's — Royal Letters Patent.

**PITT'S PATENT SELF-ADJUSTING LOCK FURNITURE and SPINDLES**



The improvements in the above upon other methods of mounting and fixing Door Furniture, consist of the following, the Spindles are not fastened to the knobs, but drift loosely in them, and will therefore adjust themselves to doors of different thicknesses, without alteration, and the objectionable side screw in the back of the knob is not required. The mountings by which the knobs are secured to the door form bearings for each knob, and consequently there is less friction on the follower; the action also is more pleasant than with ordinary mountings, and being fixtures, prevent the disfigurement of the door which frequently occurs when the common rosette is used.

The knobs are rendered both stronger and neater by the omission of the screw holes from the necks, and the liability of breakage in [illegible] are made to suit every style of decoration, in Plain and Ornamental China, Crystal, Amber, and Opal Glass, Brass, Ivory, Ebony, Maple, Buffalo Horn, &c. &c., en suite with Finger-plates, Bell-pulls, and Levers, and may be obtained of all Ironmongers of the Principal Cities and Sole Manufacturers, HART and SON, Wholesale Ironmongers, 57, 58, 59, Wych street, Strand, London.

N.B. PITT'S PATENT SPINDLE is the only one that does not require screw in the side of the knob or mounting, the use of any Lock Furniture with it such side screws would be an infringement of the Patent.

The Builder.

No. CCXLV.

SATURDAY, OCTOBER 16, 1847.

WHEN the Society of Artists were incorporated in 1765, Mr. James Payne, the architect, purchased some ground in the Strand, belonging to Exeter House, and built for them an exhibition-room and academy, which he called THE LYCEUM.*

Dibdin, in his very brief account of the English Opera House,† says Garrick, after the termination of the society's operations, bought the lease to prevent the building from being appropriated to any theatrical purpose; but nevertheless, in 1790 a theatre was erected on the site for music and dancing. Four or five years after this, Dr. Arnold commenced a new theatre on the ground adjoining the Lyceum, but was stopped through the proprietors of the patent theatres, and gave up the lease he had obtained. In 1809 his son, Mr. S. J. Arnold, again purchased the lease, completed the theatre, and opened it for English operas. In 1812 he pulled down the old house, and, at a cost of little less than 80,000*l.*, erected and furnished the structure which immediately preceded the present "Royal Lyceum Theatre." The opposition of the other houses materially interfered with his plan; but, aided by the success of the inimitable Charles Mathews, the father of the present lessee, he managed to overcome the difficulties.

The front of the theatre then faced the Strand, and had a porch of eight Ionic columns, which supported a stone balcony with balustrade. Above were three tiers of windows, surmounted by a pediment. According to the account we have quoted, the auditory formed a portion of an ellipsis, whose transverse diameter was 35 feet; the distance from the front boxes to the orchestra was only 30 feet. It contained two tiers of boxes and two galleries. It was one of the earliest works of Mr. S. Beazley, and appears to have had a good reputation for convenience.

The fate of most theatres attended the Lyceum. On the 16th of February, 1830,‡ between 1 and 2 o'clock in the morning, a fire broke out in it, and in a very short time had enveloped the whole structure. One after another the houses in Exeter-street were swallowed up, until nearly the whole side of the street was a burning mass. The roof of the theatre fell in about 4 o'clock, and the destruction was complete, with the exception of the front in the Strand, which, with the old *Courier* newspaper office adjoining, escaped uninjured.

Some time elapsed before any arrangement was made for rebuilding the theatre. Mr. Beazley was again called in to prepare plans, and ultimately a contract was entered into with Mr. Arnold by Messrs Peto and Grissell,—the Duke of Sussex, Lord Saltoun, Sir Andrew Barnard, and C. W. Hallett, Esq., having been first appointed trustees by Mr. Arnold to carry out certain contingent acts.

By the terms of the contract, the builders were not to receive the full amount of their contract, 17,900*l.*, unless completed by a certain day; if not till over that time and before the expiration of a month, 650*l.* less; and if not done then, 400*l.* less still, and so on. This amount did not include painting, nor the erection of the green-room, dressing-rooms, and other apartments, which were postponed till 1838, and cost about 3,000*l.**

On Saturday, July 12, 1834, the new theatre was filled to witness a rehearsal of an opera, by Loder, called "Nourjahad," and on the following Monday it was opened to the public.†

The form of the building is shewn by the accompanying plan of the theatre as it now is,‡ to which we shall refer again presently. Its appearance then may be recorded by quoting from the descriptions which appeared in the newspapers of the following day. From the panelling of the dress circle spring six tall, slight fluted columns, painted white, and gilt, and with gilt capitals, which are carried up to the line of the second box circle, or the gallery row, the front of which is formed of their cornice, and an imitative balustrade.

The front of the first circle of boxes was ornamented with a series of classical subjects, "pencilled in the fresco style," on a light cheerful ground. The second circle was decorated with imitations of drapery, in crimson and gold. The balustrades were of a pale rose colour, nearly approaching to white, and relieved with gold. The ceiling represented a shield, divided into compartments, emblazoned with the insignia of the musical profession and medallions of eminent professors.

In front of the dress circle a novelty was attempted, in the shape of a balcony, extending between three and four feet from the general range, and ornamented on the front with gilt lattice-work. This part of the house, however, was never popular, and was ultimately modified.

We happened to be present at the opening of the theatre on this occasion, and have a copy of the address which was then delivered: the latter part of it, which refers to the building, may be quoted here not inappropriately:—

"This unpretending fane is dedicate
To gentle arts that soften or elate.
Sentiment, pathos, are not banished hence;
Bold whim and jest shall mock at sadder sense;
And guiding every change with mild control,
Music shall rule and harmonize the whole.
One custom broken here may ask excuse;
We to the theatre restore its use:
We think that every gesture should be seen,
And words be heard, to know well what they mean.
Therefore for this small scope your favour pray,
Where you see what we do, hear what we say.
Must we mete greatness by the builder's rule;
Or is this house fit for the Drama's school?
Your kind encouragement success ensures—
Be this the Muse's temple, be it yours."

And so doubtless will say the present lessee, whose extensive embellishments have called for notice, and led us to these prefatory memoranda, and the following particulars of the building as it now stands.

The references attached to the plan will shew the purposes of the several parts. The Queen having reserved a box, and signified an intention of occasionally visiting the theatre, some few structural alterations were called for to obtain a private entrance for her Majesty.

The following are the principal dimensions, which, we believe, like the plan, have not before been published.

The entrance-hall is 26 ft. by 23 ft. 10 in., with a screen of coupled Doric columns on each side. The ceiling in the centre is arched and coffered, and 7 ft. high. The vestibule and principal staircases are 61 ft. 8 in. by 20 ft. The ceiling over the centre is arched and coffered, and 36 ft. high. Over the entrance-hall is a saloon, decorated with pilasters and entablature, and having in the centre of the ceiling a lantern light, covered with a dome. The saloon is 36 ft. 2 in. by 23 ft. 10 in., and 21 ft. 3 in. high; the height under the centre of the dome is 33 ft. 6 in.

The walls of the parallelogram, inclosing the auditory and stage, and which support the great roof, are 2 ft. 8 in. thick, decreasing to 2 ft. 3 in. From the front of the stage to the back wall of boxes, is 48 ft. The extreme breadth of dress-circle is 52 ft. 10 in. The width of the stage opening 34 ft. From the proscenium to the back of stage, 41 ft., and behind this, there is 23 ft. in depth by 25 ft. in width, of extra stage.

The height from the highest part of the floor of the pit to the crown of the ceiling is 47 ft., and 3 ft. more from the lowest part of the pit.

The corridors which surround the auditory, are fire-proof, and the principal staircases are of stone. The floor of each circle consists of a curb 9 in. by 6 in., supported at intervals by cast-iron columns, to the head of each of which a double-flanged cast-iron bearer is bolted, the other end of which is firmly secured to the circular wall-timber. Binders 8 in. by 6 in. strapped and bolted with iron, and joists 5 in. by 2 in. complete the framing of the floors. The span of the great roof is 68 ft. in the clear of the walls, and the scantlings of the timbers are as follow:—

| | Inches. |
|---|---|
| Tie beams (scarfed) ..... | 15 × 8 |
| Straining ditto ..... | 13 × 8 |
| Queen posts (oak) ..... | 8 × 8 |
| Double ditto ..... | 10 × 3 |
| Principal rafters .... 12 & | 10 × 8 |
| Auxiliary ditto ..... 10 & | 8 × 8 |
| Common ditto ..... | 5 × 2½ |
| Struts ..... | 6 × 6 |
| Purlins ..... | 8 × 6 |
| Straining Sills ..... | 10 × 8 |
| Oak Corbels ..... | 12 × 8 |
| Wall Plates ..... | 12 × 12 |
| King Posts (oak) ..... | 8 × 8 |

The columns and pilasters of the entrance portico, in Wellington-street, shewn in the plan, are of Portland stone, the entablature, pediment, and ornaments, of Roman cement.

Let us now look inside, and see the appearance that has been given to the house in the short space of three weeks. The central chandelier is taken away, and in the place it occupied, is painted the figure of Genius, surrounded by a border of fruit. Around this are flying cupids, connected by wreaths, which they bear, and inclosed by a second circular border (this time of flowers) within gilt bands. The lower and principal portion of the ceiling, all round, is occupied by figures of the Muses, the Seasons, and mythological groups, very nicely designed and painted, and is inclosed by a third border of flowers within bands.

The members of the cornice, from which springs the coved ceiling (circular in plan), are very fully gilt, and below is a frieze of rich Italian foliage, with mask-centres, and birds in high relief, taking the appearance of white China, as do all the applied ornaments throughout the house, etch-gilt on a rose-coloured ground. The columns which support the gallery remain as they were, and are gilt, but the gallery front is entirely changed; the imitative balustrade, before mentioned, has disappeared, and in its stead are panels, shewing clusters of fruit and flowers, painted on a white ground. On the cornice from which the front rises are nine groups of sitting boys, entwined with foliage, holding branches for lights, and

* Hughson's "London," Vol. IV., p. 196.
† "Public Buildings of London," Vol. I., p. 272.
‡ "Gentleman's Magazine," Vol. C., p. 163.

* The side-building included the gallery stairs, consequently, until erected, a temporary staircase to that part of the house was required. This gave rise to a curious report, that the architect had *forgotten* to provide means of access to the gallery within the house, which appears to have been generally received, since we find a letter from the architect to the editor of *The Times*, explaining the circumstance, and contradicting the inference.
† The pieces played were, "The Yeoman's Daughter," "Call again To-morrow," and "Amateurs and Actors." "Nourjahad" was not produced till two or three evenings afterwards.
‡ See p. 494.

producing a play of outline novel and effective. The frieze here also is filled with rich foliage, as above, but on a blue ground, and altered in character by the introduction of birds in high relief, which, apparently, hold up in their bills, by strings of eggs, the drapery of the boxes beneath,—a pretty notion.

The first tier of boxes shews an entirely different treatment. On the face of each of the columns at this level, encrusting them, as it were, is a well-arranged group of three boys, associated with foliage, and terminating in a bracket, from which hangs a chandelier. The canopy of what was the balcony is removed, and on the front of the boxes, midway between each column, are groups of boys, in relief, representing music, war, hunting, surrounded by ornamental frames, and made (like the light-bearing boys and friezes above, as before-mentioned) to represent white china sparingly gilt. In intervening spaces, are oval medallions containing birds and squirrels, with twinings of holly, oak, and laurel. These are surrounded by borders of flowers, and birds are introduced between them, to hold up the drapery of the dress-circle in the same way as above.

The front of the dress-circle is new, and is made to swell out for the feet as at the Italian Opera House. The decoration here consists of a rich scroll of china flowers heightened with gold on a rose-coloured ground.

The draperies are all of India crimson damask with gold fringe, and present, in addition to the device of looping them up by the birds, an ingenious departure from the usual arrangement in respect of the private boxes. Fearing the heaviness that might result from the superabundance of the crimson drapery in this particular part of the house, Mr. Bradwell, by whom, as we ought to have said before, the whole of these decorations have been arranged and carried out,* has omitted it in the smaller sub-divisions, and introduced Swiss white curtains to each box as a separation.

The proscenium, to which we now turn, is exceedingly elegant and effective. The royal arms, also in white china, brilliantly heightened with gold, on a rose-coloured ground, which (with a blue border, to connect it in tone with the front of the slips and gallery) are made to occupy the whole of the upper part of the proscenium, by an extension of very elaborate and excellently modelled foliage. In the angles, reaching from the front of the slips to the cornice of the ceiling, are rays of gold mouldings with drops of painted flowers between them. The soffit around the opening to stage and the pilasters beneath, have china ornaments on a blue ground. The proscenium boxes on the dress tier have groups of boys in relief. Our readers will see from this simple description how much ingenuity has been displayed: the monotonous horizontal lines are agreeably broken up, and a nice play of light and shade obtained.

The whole of the applied ornaments, friezes, groups, and panels, are of *carton pierre*, designed and admirably executed by Messrs. Jackson, of Rathbone-place. This material, from the degree of relief and undercut which can be obtained in it, and its greater sharpness, seems much superior to *papier mâché*. The ornaments at the Lyceum, moreover, display such a degree of artistic feeling and good drawing, as to entitle their producers to very great credit.†

Of the effect of the theatre as a whole, we are unable to speak with certainty yet, although its success can scarcely be doubted. Next week, we shall give an elaborate engraving of the interior, and shall then be able to supply our deficiencies, and make the description more complete.

* The clever decorations at the Colosseum are the work of this same gentleman.

† Messrs. Jackson have recently published a very nice view, by Mr. Barry, of Iron-mongers' Hall, as decorated by them. We mentioned their works here at the time with much commendation.

## EXHIBITION OF ARCHITECTURAL DRAWINGS, &c., IN PARIS.

PUBLIC WORKS.

The yearly public exhibition of the works of young artists, and of what are called "Envois de Rome," is now taking place at the Palais des Beaux Arts. In this building are the schools of painting, sculpture, and architecture, and once a year prizes are given for the best productions in either of these departments. Those young men shewing the greatest promise, are sent to Rome to finish their studies at the expense of the Government, and their productions are forwarded yearly to Paris for public exhibition.

The subject proposed this year for architecture, was a design for a Chamber of Deputies. Certain rules as to extent, position, distribution, convenience, &c., are laid down in the programme, and the student is required to design such a building as will best answer the purposes of a legislative assembly. The first prize has been obtained by M. Louis André, the second by M. Charles Claudel. There is a good deal of merit in both designs, though neither of them would in point of convenience fulfil the object required. The first unquestionably has the advantage in point of drawing, richness of decoration, and distribution of the various parts. But they both appear to be wanting in exterior grandeur and elevation. Each student seems to have had in view the present grand entrance to the Chamber of Deputies, as seen from the Place du Palais Bourbon, and to have done no more than modify that to their purpose, merely giving a more convenient and regular distribution of the interior. Thus the lofty and somewhat unsightly back of the portion of building devoted to the sittings of the legislative body, the front of which overlooking the Place de la Concorde, forms one of the finest and perhaps the largest peristyles in the world, surmounted by a pediment, is copied in these designs, whereas it would have been of infinitely better taste and judgment, to have elevated the building generally, so as to have concealed the back almost altogether. This is the great fault of both artists. Because the buildings surrounding the present chamber are, principally owing to the nature of the site, inferior in height to it, is no reason for carrying the same accidental plan into effect on a new edifice.

There are three sets of architectural drawings from Athens and Rome. The first, by M. Paccard, consists of three drawings of the Parthenon in its present state, and three others in the state it may be supposed to have been in at the time of its greatest splendour. They are exceedingly good, well drawn, and rich in colouring. The artist has surely devoted himself *con amore* to his subject, and has restored to us the Temple of Minerva, as brilliant in colour, and splendid in decoration, as when first reared by the magic talent of the Grecian. It is impossible to look at these wonderful creations of an independent people without feeling of how great value is liberty to the cultivation of the human mind, and to the production of works of genius. It wants but a spark of true freedom—freedom of conscience, freedom of action—to animate, to give energy and vigour to that intelligence which is degraded and demoralized by tyranny, whether religious or political. It may struggle forth here and there under patronage, but it is neither happy, nor enduring, much less progressive;—it is more imitative than inventive, and as rare and fitful as its patrons are few and accidental. The genius of the Grecian was the genius of an intelligent advancing nation, which, free in action, had become of necessity free in conscience in a great measure, despite the hostility of the priests to the mental development of the "faithful." The genius of the patronized man, often exaggerated, is the genius of momentary encouragement backed by a certain personal liberty of action, which his position obtains for him, and which dies with him.

The Greeks owed much of their superiority to the freedom of their system of education. The tying down of the mind to positive rules and doctrines of any kind,—the great fault of the semi-barbarous tyrannic mind,—turns it away ever from the main object, stifles the activity of the intelligence, and leads inevitably to mediocrity and slavish imitation. Had the young Greek started on better moral and religious grounds than those his demoralizing mythology afforded him, would he not have been the most perfect model of a man that the world has ever presented? His free mind wrought miracles of intelligence,—inquiry, examination, discussion, produced an almost incredible development of talent and genius, which was only wanting in completeness from the demoralizing activity of religious errors and superstitions.

With better grounds to start upon, with better principles, moral and religious, to work out practically, we want their free and intelligent system of education. With a freer education to examine into and inquire after truth of every kind,—with fewer positive and incomprehensible doctrines and laws to weary and worry the mind of the student,—not only would the youthful mind be greatly developed in intellectual power, but it would be strengthened morally to a degree unknown in practice in these civilized times; and the love of truth, instead of being rooted out by the forced respect for ancient contradictory and incomprehensible errors of the old teachers and masters, would increase in intensity with the advance of years, and be an unceasing source of delight in practice and research. The modern intelligence is chiefly weakened by the incessant action of the mystery of falsehood, of habit, and of interested convictions.

But to return to the exhibition. The next in point of merit are drawings of the Temple of the Sun, by M. Thomas. They are well and elaborately done, and the colouring good. The last are of the Temple of Fortuna Virilis at Rome, by M. Desbuisson. We could almost fancy we see, in the difference of hue and degradation, the inferiority of the Roman climate compared with that of Greece: the sombre tints predominate, and the effects of the greater dryness or moisture of the atmosphere appear in the clearer preservation of the ruins of the one, and the tendency to moulder and crumble away of the other.

For bas-reliefs, the subject chosen was that of Telemachus presenting to Phalanthus, overcome with an excess of grief, the urn containing the ashes of Hippias. There were eight competitors for the prizes: of these, the bas-relief of M. Perraut was unquestionably the best. That of M. Maillet was exceedingly good in point of execution, but was wanting in character and expression. The figure of Telemachus, by Perraut, is young and graceful, and at the same time shews that the youthful hero comprehends the amount of grief around him, and is affected by it. The point of merit in the work, and which gives it artistic superiority, is this:—at the moment when Phalanthus is pressing the urn to his breast, he seizes, by the same movement, the hand of Telemachus, which has not yet left it, and thus the friendly embrace intended for the ashes of Hippias, is extended to his enemy. This silent reconciliation of the two young men is well imagined, and gives a poetry and elegance to the composition worthy of an intelligent mind.

The execution of some of the others is good, and the disposition of the figures clever; but they are wanting in the grand object, expression.

We suspect, that in schools in general, less attention is paid to the expression than to the skill and adroitness with which the mere mechanical work is performed by the hand. The professors are on this account, probably, more to blame than the students. Let the workmanship be ever so exact, what is it without expression? it is that which animates matter and constitutes art. And yet the mere imitation of nature is the end invariably sought, when, in fact, it is but the means by which to arrive at the great object. Correctness of drawing, facility of execution, are main points inculcated, and certainly in these respects the French school is not inferior to any—rather the contrary. But this is insufficient; and the observation frequently used in regard to modern education will hold good here, namely, that the most distinguished men have acquired their talents by the force of their genius, and by

studies altogether independent of academical instruction.

The subject proposed for painting was the death of Vitellius. The first prize was awarded to M. Leneveu, whose work, whether as regards colour, drawing, or disposition of the figures and expression, is infinitely the best. There is an energy and movement about it, which is altogether wanting in most of the others, whose personages stand as stiff and indifferent to the stirring scene to be represented, as did no doubt the models from which they were studied.

Among the improvements projected here, is the restoration of the old Gothic tower of Saint Jacques-la-Boucherie. The church was destroyed during the great revolution, and a market now occupies its site.* It is one of the most curious and elegant relics of Gothic architecture remaining in Paris. It is proposed to place a beautiful fountain at the base of it, which will contribute at the same time to benefit the thickly populated quarter where it stands.

A great moveable cupola, of spherical form, has just been terminated at the observatory here. It is placed on the platform of the tower to the east of the main body of the building. A parallactic glass is to be fixed in it. Some difficulties have arisen in its construction on the ground of danger from instability. It was necessary to make the cupola and floor move together round the glass. For this operation 21,261 kilogrammes of iron, 19,209 of cast-iron, 4,521 of copper, 1,979 of lead and soldering, and 687 of bronze, were used:—each kilogramme 2lb. 3oz. 5drs.

The works of the new church of Sainte-Clotilde in the place Belle-chasse have been suspended, for want, it is said, of materials. The contractor has been unable to fulfil his engagement, and desires an augmentation of the sum agreed upon, or the cancelling of the contract. The work is now recommenced. The wooden pavement in the rue de Richelieu, before the Théâtre-Français, laid down two or three years ago, has been undergoing some repairs. This is the only spot at which it has been allowed to remain—it is now again in pretty good condition.

On the Place du Carrousel, an entire repaving has been going on for some weeks past, and the ground has been slightly lowered. The ugly wooden buildings which have so long disgraced the quarter, are now in course of destruction, and some little improvement to the appearance of the place will result from it—but it would require many millions of francs to be laid out, to make the alterations so long demanded by the public. The authorities of the town, the Civil List, and the Chambers, are unable to come to a decision as to the raising of the necessary funds.

* The contributors to the exhibition of drawings, were Messrs. Donaldson, Leeds, Kerr, Soyer, Wyatt, Young, Hodge, A. Bailey, and others.

## EDUCATION OF THE ARCHITECT.

### OPENING OF THE ARCHITECTURAL ASSOCIATION.

On Friday evening in last week, the Architectural Association opened the session, in Lyon's-inn Hall, Strand, under promising circumstances. More than one hundred gentlemen were present, and the walls and tables displayed an interesting collection of architectural drawings, and other works of art.*

Mr. Robert Kerr, the president, took the chair, and Mr. Jayne, the hon. secretary, read the report of the committee, setting forth the position of the association.

Twenty-one gentlemen were proposed as members, and letters were read from Professors Cockerell and Hosking, Messrs. Angell, Bellamy, and others, regretting their inability to attend the meeting, but expressing their cordial approbation of the objects of the association.

The president then delivered the following able address:—

The institution of the Architectural Association is an endeavour towards an improved system of architectural study,—an endeavour on the part of the students themselves.

The fundamental position that architectural education,—the present system of training the architect,—is defective and insufficient, if it has not been frequently agitated and loudly proclaimed, has not been the less continually felt by every thinking mind, and earnestly lamented by every aspirer after progress. And there may be nothing of novelty in a serious attempt to improve upon the system,—an energetic endeavour for progression. If architecture is "the only branch of human ingenuity which is an exception to this century in its intellectual advancement" (and I can never forget these memorable words),—if the profession of the architect has been a strange anomaly among professions,—so unsettled in the principles of its subject and so uncared for in investigation and teaching,—it has not been so without many an earnest mind having been aroused to complain, and many an energetic scheme having been perseveringly urged. But in the present project there is certainly a novelty of nature. Whether it may succeed or not may scarcely yet be predicted; but as a scheme aiming at the association together, on the largest scale, of the entire body of our professional youth, for the end of *self-education*, and with the good trust of simple *self-reliance*, it possesses a novelty which ought to be attractive enough to ensure an indulgent trial, and a straightforward earnestness of good purpose which deserves of every old man favour, and of every young man help.

Self-education; self-reliance: now, lest there should appear in this the semblance of too much self, let me parenthetically say that self-education does not imply any want of reverence for the authoritative and experienced, or self-reliance any lack of appreciation of their sympathy and encouragement and guidance. In whatever branch of knowledge or of skill, the utmost care of the teacher must fail in fulness of effect, unless followed up by the student's own self-energy in persevering self-instruction; and however perfect the master, and however worthy of dependence his attainments or his powers, the defect is a vital one in the result if it be a defect in the self-reliance of the pupil. And if we add to this the additional reason, that in this one subject of ours, if in no other, self-education is more than usually requisite, and, at the present day, self-reliance more than usually to be inculcated, we reach the full explanation of what might otherwise appear merely a fantastical fancy or an idle boast.

When I speak now of architectural education, I use the term in what may be called two senses,—I signify two things. Just as it happens that there are two significations attached to the word *architecture* among us,—two different subjects called by its name. And here, at the risk of being charged with continual repetition of one idea,—riding a hobby-horse to death,—or whatever else it may be called to best indicate the sin, I must beg your permission to direct your attention, as a first point, to this distinction, both as possessing an important bearing on my present subject, and as constituting in itself a valuable axiom which, as it has never yet been fully acknowledged, has not yet ceased to demand to be constantly urged.

"Architecture," says Vitruvius, in language sufficiently ambiguous, but with proper allowance sufficiently expressive to be accepted for the occasion, "is a science arising out of many other sciences, and adorned with much and varied learning, by the help of which a judgment is formed of those works which are the result of other arts." This is architecture *professional*,—a branch of knowledge (as it may be defined) which has its province in *building and that which pertains to it*,—a calling in the division of labour which has its object in such. It comprehends, therefore, several and various sciences and crafts, matters of knowledge and matters of skill—which, although in themselves they exist separately and distinct, yet demand, for their good conjunction, most serviceable employment, and most advantageous government, the existence of a supreme power, as representative of the whole and ruler of the whole. In short, if we had an Æsop, we might cause him to construct a fable,—how the constituents of building and that which pertains to it—the knowledges and the crafts—met to create a king; and chose not any one of themselves,—but formed a new existence, to guide and govern all for the best. There have been many disruptions in the old dominion since the days of Vitruvius,—dialling and mechanics have severally and wholly swarmed long ago, and left the old hive and name to building alone of the three,—but of architecture-professional the old definition is still holding good,—"a science arising out of many other sciences, and adorned with much and varied learning,"—architecture a very important science, and the architect a very useful man.

But among the many matters which come under the category of what pertains to building, there is one which in its nature stands essentially distinct and essentially alone,—a Fine-art of Design. Among the things which pertain to building, there is a certain fine-art which pertains to building. It stands distinct, in that fine-art is distinct from every thing besides; and it stands alone because among its associates there is no other of the smallest approximation to its nature: all building, and, excepting this one part, all architecture-professional have their object in the mere edifice; this fine-art has in the mere edifice its mere *subject*,—its *object* is a certain poetic spirit in the edifice, which we call beauty. There are many other objects besides beauty,—and just as many agents in their production; but beauty is one of the objects,—and that which produces it—fine-art—is one of the agents. It may require an effort of abstraction to segregate it purely,—considerable minuteness of distinction and detail to define it accurately; but its nature is still distinct and clear,—and its perfect individuality as plain as a mathematical fact. And if I give to this fine-art the name of *architecture* more peculiarly,—it certainly has no other name, while all its professional adjuncts as certainly have; and if I claim for this fine-art specially the peculiar honour attached to the name,—it is because without it all the rest together form a very different and a much less honourable thing. In short, architecture is of two parts; and the architecture-artistical is a very different thing from every one or all together of those things which form the architecture merely professional; this fine-art has no commutability with the rest,—there is no connaturalness. And the architecture which gives the architect that place which the builder and the engineer do not claim,—the architecture by which he is an artist, and his work a work of poetic genius,—the architecture which seats him in our Academies of Arts,—is *this* architecture and not the other: this *alone*, and not the other at all.

This distinction and separation being made, there appears at once a distinction in the merits of our present subject of architectural education. We have not to complain so much of the neglect of the one as of the neglect of the other, not so much of the neglect of what I shall call the merely professional, as of the neglect of the purely artificial; and in so far, therefore, the advancement of the study of the artistical, more than of the study of the professional, becomes chief and prominent in a scheme like ours. The knowledge of what I have called the merely professional may not yet be so completely and systematically obtainable as it ought to be; but very much more is it the fact that the proper teaching and learning of the Art of Design is scarcely in the least degree understood or known. The pupil of the professional architect has no very great difficulty presented to him in acquiring practically, in the ordinary way of pupilage, the skill of mere professional routine;—and in view of so many excellent scientific treatises, and so many practical means of learning—extending even to professional classes in our universities,—the young architect has no great reason for complaint in the way of systematic scientific instruction. But if he wishes to be educated for an *artist*-architect, he soon discovers that office routine, even of the best, is not the sufficient means, and that for systematic artistic training there may be said to be absolutely no means at his command at all. Not that I would throw disparagement upon the labours of a professorship, but general investigation is not practical training,—or upon the valuable studies in art which the works of the master present as they arise for example to the pupil; but something more than this is given in other professions before the course of learning is pretended to be complete.

Wherefore, although the discussion and development of professional science will not be neglected in your operations, yet I hope to find the artistic training of the young architect kept peculiarly in view—a prominent object in your purpose, as the more needed in present circumstances, and the more noble in essential

nature—art always more noble than mere craftsmanship, however excellent.

Leaving, then, the learning of the practical professional knowledges out of present account, seeing that with proper use of the means provided there is not much left to desire,—and thus confining our notice more to the study of the fine-art of architectural design,—it comes now to be observed that in this subject the self-instruction, which has been mentioned as a principle in our society, is an especially valuable one. For although I would be very glad to see our scheme so well supported as to carry out a full system of classes with a full catalogue of teachers,—yet when we remember that Art lies, not in the mere obtainment of knowledge of facts or the acquirement of skill in operation by laid-down rule and rote, but in attaining a power of invention—fancy—creation—whose mode of action will perhaps for ever be mysterious more than intelligible, and seem more to exist in incomprehensible accident and caprice than by systematic mental rule, then it will appear how much depends on something beyond the mere instruction in criticism which is the utmost province of the *teachable* in Art, and how eminently, when the acquirement is so subtle a thing as fancy, the means must lie more in *self-education* by careful observation and thought — self-dependent and within, than in any thing which can be communicated by systematic instruction from without.

Then the peculiar necessity for *self-reliance* which I spoke of is constituted simply in this fact,—that the fine-art of architectural design, in the full breadth and depth of a fine-art, is in the present system entirely untaught and even strangely denied existence. To my perhaps sanguine mind I will confess the signs of the times give credited evidence, that the rising generation of architects will be much more *artists* than we are. It would take a long time to explain it,—and it may seem an affectation or a vagary to say it,—but still I will not hesitate to affirm that when our successors point back to our nineteenth century of architecture, it will be as to a chaos before the sun of the true spirit of art had begun to shine—a period wherein the fine-art in the nature of a fine-art was almost inconceivably unknown. Works will be produced within perhaps the century, which we do not dream of,—creations so novel and superior that, unaccustomed to think of novelty in its true principles, we are perfectly unfit to conceive of such. And therefore the great glory of self-reliance in our youth. With fancy yet uncorrupted by our habits of copyism and rote,—energy yet uncramped by dogmatism and specious fallacy,—let them have full free scope in bold exercise of thought, and proud unbroken confidence in the boundless power of Mind.

And they who are to be more spectators of our attempt than actors in it,—who are our judges rather than ourselves,—you will not think that our self-education is an idle caprice, or our self-reliance an empty boast. You will not reject our scheme for what is rather its broad basis and its good foundation. Every liberal mind will encourage us. To afford our pupils the means, on a large scale, of mutual aid in their professional knowledge is one good object, first. To provide the means of better education in that artistic power in which education is so much neglected, is another and a nobler object, secondly. To lay the groundwork of a grand advance in the Art itself is yet another and yet a nobler object, thirdly. And for these our three good objects, if we are to succeed, we must have at least the good will and the kind word of our superiors and fathers. Our self-education does not imply any want of reverence for the authoritative and experienced,—nor our self-reliance any lack of appreciation of their sympathy and encouragement and guidance.

Such are the views which individually I have to offer as my contribution to the general counsels. I have not enlarged upon details, because I would avoid tedium. We are not without details, but the general spirit is as yet the chief consideration. Nor have I even exhausted the subject generally. I might have spoken of that valuable principle,—the application of the plan of mutual instruction by discussion to the period of life when it is the most servicable, most provocative of energy, and most practicable in respect of leisure and inclination; but I have on other occasions laid out this argument already. I might also have entered into what may appear a necessary qualification to all that I have said,—that, although I have made mention generally of the pupil and the student, the scheme is meant to embrace not such alone as are generally termed so, but the whole of a much larger class. But what I have said will, I hope, have been sufficient for all the general exposition which could be attempted on such an occasion; and I have only to say in conclusion, that the project now I hope fairly to be tried, as it has been long a favourite subject of my castle-building in the air, is still an object of my most sincere and fervent hopes; and to express the trust that those who are potent to help will help willingly, as it is their duty,—and that those who are to carry out the operation of the scheme will carefully and energetically follow out the good purposes,—so that, as in the games of old, the ardour of youth may be stimulated by the encouragement of age, and the man of grey hairs, thinking of himself long ago, may look upon the young runner with kindness and pride.

The president said, that Professor Donaldson, who had favoured them with his presence that evening, had been invited to take the chair, but had paid the society the compliment to say, their own president was the proper person to do so: that gentleman, however, would probably give the meeting the benefit of some observations.

Mr. Donaldson said, he had availed himself with great pleasure, of the invitation to attend this first meeting of the society, for he felt that every association for self-improvement and mutual encouragement was of the utmost value, not merely to the student, but also to the masters in the art. This had led to the establishment of all the scientific societies in the metropolis. It was for this that the Institute of British Architects was founded.

Assuredly there is one great question, which above all now presses itself upon the consideration, and agitates the mind of every thoughtful architect. That is, are we to have an architecture of our period, a distinct individual palpable style of the 19th century? If so, from what types are we to derive a new inspiration for our conceptions, so as to give a character, that should at once indicate the epoch? Are we to go to the monuments of the classic times? Are we to adopt the gigantic and cumbrous style of Egypt, consisting of huge masses and gloomy though majestic effects? Assuredly not, with our advance in the science of construction, which dispenses with their heavy columns and enormous beams. Are we to go to the purer buildings of Greece, where a highly imaginative and critical people were able to appreciate the refinements of the most delicate detail? Are we to go to the gigantic and splendid edifices of the Romans with their vast extent and splendid marbles? But we have not like them provinces, whose riches we can apply to the embellishment of our metropolis. Alas! it is from the hard-earned savings of the people, that we must derive the means, and thus are limited to a niggardly expenditure in our public monuments inadequate to noble structures. But still, are our studies to have no reference to past times, and are we to reject the edifices of antiquity? No: they were the productions of great minds, and neglecting them, we foolishly forego the experience of many ages and of thoughtful men, who had certain ends to realise and did so with the utmost skill. We must study their monuments to teach us how to think, but still not with the slavish subjection and pedantry of a school. Again, are we to found our conceptions upon tradition? But are our feelings the same as those of the times of traditions? Have we not other rules of judgment, other principles of action? We cannot then abide by mere tradition and precedent. The truth is, that we must go to Nature herself. We must study her in her most elegant, her noblest developments. We must consider our habits of private and public life. We must keep in view our moral, religious, and political institutions, and climate. And above all, we must remember the materials, those we have at hand, so different from those of past periods, particularly iron, which of itself is calculated to effect a revolution in the art. We must bear in mind that we have to create and not to copy. Thus, in looking at an edifice, we must not be content to sketch a base or a capital, or to measure an elaborately traced window. This may render us skilful and elegant draughtsmen. But unless we seize their general principles, harmony, proportion, and beauty, we shall lose the main purpose of the thoughtful mind; which is to impress on the memory the leading combinations of the monument as a whole; and to learn to design with the same originality and like taste that our fathers have developed, when they created these admirable productions of their genius.

The great source of design exists primarily in geometric forms. And he thought that we lose much of the facility of composition by not habitually accustoming ourselves to study the combinations of the square, the parallelogram, the polygon, the circle and ellipse, and all the exquisite gradations of which they are capable. We should profit greatly, were we to make it our "ludus" or sport. He hoped he should be pardoned in offering these few suggestions, and they would not consider them dictated by too much of a professorial tone. But he imagined, that he could not better respond to the honour he had received in this invitation, than by following out the tone of thought which pervaded the admirable address which their president had just delivered. He had indulged in a poet's dream. Let us each endeavour to realize it by a new combination of all the arts of design, and by uniting to architecture the productions of the painter and sculptor, without whose aid no monument can be perfect.

Mr. Godwin, being called on, said it would be wrong if he were to lessen by any casual observations, the useful impressions which the addresses of the president and of Mr. Donaldson must have left on their minds. All would admit, even if unable to go the whole extent, in any respect, with the speakers, that the remarks thrown out were most suggestive, highly important in their results, and demanding serious consideration. Kindly called on as he had been, he could not, however, deny himself the pleasure of congratulating the society as well on the numerous attendance that evening, as on the interesting character of the works with which the walls were covered. He would take it as an omen of success. The subscription being so small, as they had wisely chosen to make it, numbers were absolutely necessary to enable them to carry out their views, and he could scarcely doubt that, offering as the society did, many advantages to several large classes of persons, these numbers would readily be obtained. Mutual instruction was laid down as the broad means of accomplishing the objects of the society; but it would be necessary, of course, to frame a plan of proceeding more in detail, and for this he should anxiously look. At the preliminary meeting for the establishment of the society, he had suggested that the Institute might be induced by proper representation and arrangement, to afford at all events a meeting place for the society, and the use of their valuable library. He still held the same view: rent was the clog on all societies. At all events it would of course be clearly understood that no feeling of *opposition* to the Institute existed: the society was intended for those to whom the former offered no assistance,—they were both at work on the same road, and if the society followed out efficiently the course it had laid down for itself, it might justly claim the applause and support of every member of the profession, and could scarcely fail to aid in advancing that art, the progress of which he, in common with the majority there, enthusiastically desired.

Thanks having been voted to the visitors and contributors, and to the president for his able address, the meeting was adjourned to the 22nd, when a paper will be read by Mr. J. D. Wyatt.

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Improvement of the Working Classes.—The Working-men's Association for their mental improvement is extending itself over the metropolis, and has several district libraries, circulating many thousands of volumes. It was originated, as we are informed, by the men in Messrs. Maudesley's employ, who at first contemplated nothing more than a little society for mutual instruction; but, a knowledge of it spreading, it was taken up by Lord Radnor and others, who interest themselves in the condition of the working classes.

## RAILWAY JOTTINGS.

The railways south of the Thames have reduced the tolls taken at the Vauxhall, Kennington, Camberwell, Croydon, and other bars on the Surrey and Sussex roads, by 100*l.* a week, and in consequence of the extension of the South-Western line from Nine Elms to the York-road, a loss of revenue to the extent of 6,000*l.* per annum has been anticipated. No reduction to that amount having been proposed, however, at the recent letting of them by auction, at the Sessions House, Newington, no offer at all was made for them.——While the railways in question are thus swallowing up the turnpike traffic, and in every way profiting by the public to an enormous extent, some of them not only 'cannot afford' a halfpenny candle in transit at night, to a whole train load of low class human traffic, but from Tunbridge Wells, complaint is made, that on fares to the amount of two guineas for four seats, even by express train, a half-penny has been demanded by the company—a sum equal to half a farthing on each seat—for one of their own time-tables! There are surely very close and narrow cuttings on this line, but perhaps the company is accumulating a fund that may enable them to afford to enlighten the darkness of the miscellaneous sojourners in Parliamentary trains, and thus to pay some little respect to the decencies of humble life, even though at the *expense* of the express train traffic.——Complaints, 'south of the Thames,' have ever been rife. A very serious one has just been made against the Brighton management by one of the sufferers in an 'accident,' which has occurred by 'collision of a frightful and terrific nature,' at a junction where it appears to be 'the astounding fact, that two meeting trains are due at nearly the same time and at a point of great danger,' and where the 'imperfect nature of the signals' and 'most culpable neglect of duty' are moreover suspected to have determined the certainty of collision. Seven out of eight passengers in the one carriage in which the complainant sate were bruised, and marks of blood and other injuries were observed in other carriages. The collision, though made light of by the officials, was rough enough to break the tender, demolish a horse-box, and shatter a buffer, a panel, &c.; and at a house to which Mr. Wyon was conducted, "the prevailing feeling with the inmates after a few days' experience, and observation of the manner in which the Lewes trains intersected the down line was, that they ought to be supplied with bandages, &c., and fit up the house as a hospital: such was the dread occasioned by the construction of the junction."——The Great Western authorities have appointed a 'travelling carriage porter,' or guard, or watchman rather, to take his place on an iron chair affixed to the tender of every express train, with his face to the train, 'to keep a steady and vigilant look-out on both sides and along the top of the trains, so that in case of any accident to any of the carriages, or signal from the guard, or other cause, he may communicate with the engine-man and stop the train.' He is also at stations to look to the condition of the axles, wheels, greasings, lamps, couplings, &c. The office is to be held as a reward of merit by a porter selected from the company's corps, with a salary of 25*s.* a week, a pilot-coat, &c.——The works of this line at Swindon are being rapidly extended, and it is expected that when the full complement of hands are at work, they will be enabled to complete a first-class carriage in six days.——On Monday week the electric telegraph was opened between Liverpool and Manchester.——The engineers of the lines that meet at Gainsborough have determined on the site of one station for both lines.——The equinoctial tides in the Trent have damaged the railway-bridge to the amount of 1,000*l.* The piles, which had been driven twelve feet into the bed of the river, have been forced from their positions.——The goods-office at the railway terminus at Redcar, and the promenade-room, newly erected, have been almost totally destroyed by fire. The goods-office, at a cost of 2,000*l.*, was nearly completed.——The foundation-stone of the general railway station at Perth was to be laid on 13th current. The Duke of Athol, as Grand Master of the Freemasons for Scotland, was invited to lay the stone, but in consequence, as it is supposed, of the position of the council as demurrers to the legality or sense of shutting up the Glentilt roads, his grace did not deign to notice the invitation, and the Hon. Fox Maule was to lay the stone.——On the Midland Irish Great Western, recently opened, the second-class carriages have plate-glass windows, cushions, lights, &c. And there are fourth-class carriages which convey passengers at little more than a farthing per mile. The Irish directors are 'gintlemen.'——The works on the St. Petersburgh and Moscow line are being urged forward with extraordinary activity. In addition to peasants and workmen, and by a sort of exemplary inversion of Mr. Weale's proposition to turn 'navvies' into armies, 50,000 soldiers have been turned into 'navvies,' and their immense united strength thus turned to better account than to the idle and continual waste of this description of 'working power,' so prevalent elsewhere, yet so capable every where of assisting great national works, not otherwise to be even dreamt of. The railway junction of Moscow with St. Petersburgh will thus be completed in the course of next autumn, and the emperor, having approved of the route from Warsaw to Moscow, has given orders for the commencement of these works also without delay.

## ORIENTATION OF CHURCHES.

Several writers in your columns have lately occupied our attention on orientation of churches. Permit me, in addition, to observe, that though Mr. Donaldson states most correctly that the altar of S. Peter's at Rome *stands* at the *west end* of the cathedral, yet it *faces east*. Four years since I stopped at Rome during the Settamana Santa,—was near the altar on Easter Sunday, when the Pope himself celebrated High Mass,—and, as a matter of course, where the altar *faces the east*, his holiness and all attending celebrants faced the *east* also during the whole service. On entering S. Peter's, only the *back* of the altar is seen. Therefore, in the high seat of orthodoxy (as some would call it), we see that the most solemn services of the church always are observed by the primitive custom of the Christian church in facing the east during the celebration of such services. Need we refer to authority for this natural reverence for that part of the heavens where the star first appeared which announced to a sinning world the nativity of a Saviour? If we need it, St. Augustine, who was a presbyter in the Christian church A.D. 390, witnesseth to the observance as invariable amongst Christians, who says, in Serm. Domini in Montem, c. 5, "*Cum ad orationem stamus, ad orientem convertimur, unde cœlum surgit.*"*

The building churches east and west, burying east and west, and repeating the Creeds east and west, are customs that are venerable for their antiquity, and venerable as indices which, in the first establishment of Christianity, distinguished in worship the *Christian* from the *heathen*, as regarded *external* observances.—Your obedient humble servant,

Necton, Oct. 6, 1847. W. Mason.

* "When we offer up prayer, we turn to the *East*, whence cometh the light," metaphorical for "*Light of the World.*"

## TOPOGRAPHY AND ARCHITECTURE OF WILTSHIRE.

Mr. Britton has worked hard for the Wiltshire Topographical Society, but has not been fully seconded by his brother members, and through that circumstance, perhaps, in great measure, the society has not been joined by the inhabitants of the county, who must surely all feel interested in its success, in such numbers as are required and might have been expected. In his very valuable and interesting "Memoir of John Aubrey," printed by the society in 1845, reference was made to Aubrey's unpublished "History of Wiltshire," of which a copy is in the library of the Royal Society. Mr. Poulett Scrope, M.P., a member of the society, and who has in hand for it a "History of Castle Combe," now nearly completed, proposed that this MS. or the most important portions of it, should be printed by the association. The council concurring with him, Mr. Britton undertook to edit it, and by selecting only those portions really illustrative of Wilts, or comprising information useful or interesting in itself, and adding to these his own notes, has produced a valuable volume. He has done much to raise John Aubrey,—"Magotie-headed" John Aubrey, as Anthony à Wood wrongly terms him,—in the estimation of discriminating critics.

A general review of the history,—which is divided into chapters under various heads, as rivers, stones, worthies, arts, architecture, &c., would be beyond our province; but throughout are interspersed notices topographical and architectural, which will interest many of our readers, and some of these we propose to extract. We may, however, first quote Aubrey's remarks on *sound*, which shew his habits of observation, and that he was in advance of some of his contemporaries.

"As the motion caused by a stone lett fall into the water is by circles, so sounds move by spheres in the same manner, which, though obvious enough, I doe not remember to have seen in any booke."

"Why may I not take the libertie to subnect to this discourse of echos some remarks of sounds? The top of one of the niches in the grot in Wilton gardens, as one sings there, doth return the note A *re* lowder, and clearer, but it doth not the like to the eighth of it. The diameter is 22 inches. But the first time I happened on this kind of experiment was when I was a scholar in Oxford, walking and singing under Merton-College gate, which is a Gothique irregular vaulting. I perceived that one certain note could be returned with a lowd bumme, which was C. *fa, ut*, or D. *sol, re*; I doe not now well remember which. I have often observed in quires that at certain notes of the organ the deske would have a tremulation under my hand. So will timber; so will one's hat, though a spongie thing, as one holds it under one's arm at a musique meeting. These accidents doe make me reflect on the brazen or copper Tympana, mentioned by Vitruvius, for the clearer and farther conveying the sound of the recitatores and musicians to the auditors. I have from hence induc't to be of opinion that these tympana were made according to such and such proportions, suitable to such and such notes.

Mersennus, or Kircher, sayes, that one may know what quantity of liquor is in the vessel by the sound of it, knowing before the empty note. I have severall times heard great brasse pannes ring by the barking of a hound; and also by the loud voice of a strong man."—(The voice, if very strong and sharp, will crack a drinking glass, adds J. Evelyn.)

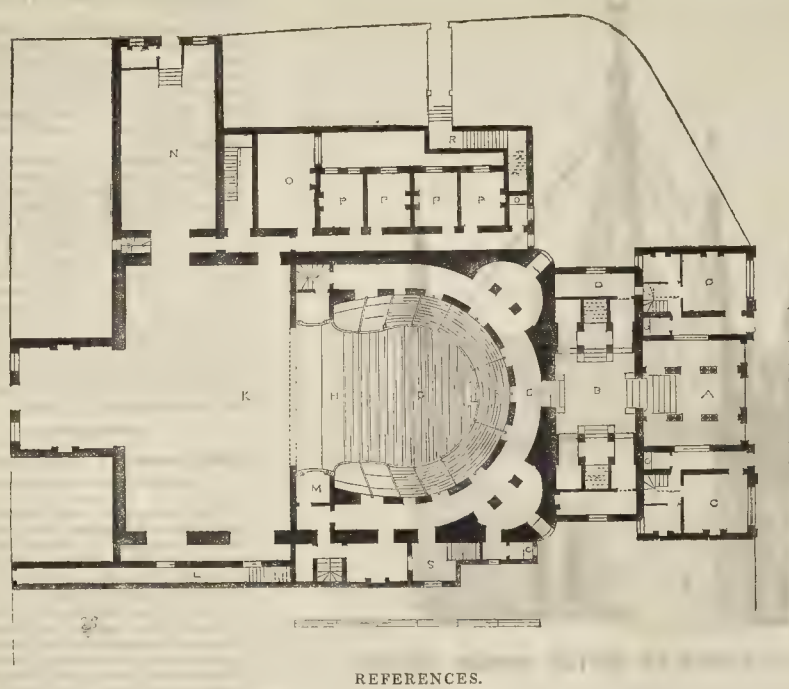
Mr. Britton says in a note, "I have been favoured with a confirmation of this note of Evelyn from the personal experience of my old friend, Mr. Brayley, who was present at a party on Ludgate Hill, London, many years ago, when Mr. Broadhurst, the famed public vocalist, by singing a high note, caused a wine glass on the table to break, the bowl being separated from the stem."

Aubrey's work was written, we must remember, between 1656, and 1691.

Aubrey speaks of *Kingston House, Bradford*, as "of the best architecture that was commonly used in King James the First's raigne." His editor remarks, "part of this once fine and interesting mansion still remains, but wofully degraded and mutilated. It is called Kingston House, having been formerly the residence of a Duke of Kingston. It appears to have been built by the same architect as the mansion of Longleat, which was erected between the years 1567 and 1579, and for which, it is believed, John of Padua was employed to make designs."

*Building Stones.*—"The quarre at Haselbury [near Box] was most eminent for freestone in the western parts, before the discovery of the Portland quarrie, which was but about anno 1600. The church of Portland, which stands by the sea side upon the quarrie (which lies not very deep, *sc.* ten foot), is of Cane stone, from Normandie.(?) Malmesbury Abbey and other Wiltshire religious houses are of Haselbury stone. The old tradition is that St. Adelm, Abbot of Malmesbury, riding over the ground at Haselbury, did throw down his glove, and bad them dig there, and they should find great treasure, meaning the quarre.

At Chilmarke is a very great quarrie of freestone, whereof the religious houses of the south part of Wiltshire and Dorset were built.




REFERENCES.

| | | | |
|---|---|---|---|
| A Lobby. | E Corridor. | K Stage. | O Green Room. |
| B Principal Staircase | F Dress Circle | L Royal and Private Box Entrance. | P P Dressin Rooms. |
| C C Dwelling Houses | G Pit | M Queen's Box. | R Gallery Entrance. |
| D Private Box Entrance. | H Orchestra. | N Scene Room. | S Cross gay from Pit. |

PLAN OF THE ROYAL LYCEUM THEATRE.*

[The walls, buttresses, and other substantial parts of Salisbury Cathedral are constructed of the Chilmarke stone.—J. B.]

At Teffont Ewyas is a quarrie of very good white freestone, not long since discovered.

At Compton Basset is a quarrie of soft white stone betwixt chalke and freestone: it endures fire admirably well, and would be good for reverbatory furnaces; it is much used for ovens and hearthstones; it is as white as chalke. At my Lord Stowell's house at Aubery, is a chimney-piece carved of it in figures; but it doth not endure the weather, and therefore it ought not to be exposed to sun and raine.

At Yatton Keynel, in Longdean, is a freestone quarrie, but it doth not endure the weather well.

In Alderton-field is a freestone quarrie, discovered a little before the civill-warres broke forth.

In Bower Chalke field, in the land that belongs to the farme of Broad Chalke, is a quarrie of freestone of a dirty greenish colour, very soft, but endures the weather well. The church and houses there are built with it, and the barne of the farme, w^ch^ is of great antiquity."

*Avebury and Stonehenge.*—"I have heard the minister of Aubury say those huge stones may be broken in what part of them you please without any great trouble. The manner is thus: they make a fire on that line of the stone where they would have it to crack; and, after the stone is well heated, draw over a line with cold water, and immediately give a smart knock with a smyth's sledge, and it will breake like the collets at the glasse-house. [This system of destruction is still adopted on the downs in the neighbourhood of Avebury. Many of the upright stones of the great Celtic Temple in that parish have been thus destroyed in my time.—J.B.]

Sir Christopher Wren sayes they doe pitch (incline) all one way, like arrowes shot. Quære de hoc, and if so to what part of the heavens they point? Sir Christopher thinks they were cast up by a vulcano."

*Wilton House.*—Of this well-known residence of the Pembroke family, Aubrey gives many interesting particulars. He says, the old building at Wilton "was designed by an architect (Hans Holbein) in King Edward the Sixth's time.* The new building which faced the garden was designed by Monsieur Solomon de Cauus, tempori Caroli Imi., but this was burnt by accident and rebuilt 1648, Mr. Webb then being surveyor."

"The house is great and august, built all of freestone, lined with brick, which was erected by Henry, Earle of Pembroke. (Holbein's porch, and probably other parts of the house, were anterior to the time of the first Earl Henry.) Mr. Inigo Jones told Philip, first Earle of Pembroke, that the porch in the square court was as good architecture as any was in England. 'Tis true it does not stand exactly in the middle of the side, for which reason there were some would have perswaded his lordship to take it down; but Mr. Jones disswaded him, for the reasons aforesayd, and that we had not workmen then to be found that could make the like work.

King Charles I. did love Wilton above all places, and came thither every summer. It was he that did put Philip, first Earle of Pembroke, upon making this magnificent garden and grotto, and to new build that side of the house that fronts the garden, with two stately pavilions at each end, all *al Italiano*. His Majesty intended to have had it all designed by his own architect, Mr. Inigo Jones, who being at that time, about 1633, engaged in his Majesties buildings at Greenwich, could not attend to it; but he recommended it to an ingenious architect, Monsieur Solomon de Caus, a Gascoigne, who performed it very well; but not without the advice and approbation of Mr. Jones: for which his lordship settled a pension on him of, I think, a hundred pounds per annum for his life, and lodgings in the house."

The arch on the summit of the Hill, which bears the equestrian statue often appealed to during the controversy on the discreditable occurrence at Hyde Park Corner, was designed by Sir William Chambers. Mr. Britton has in his possession a drawing of the arch, by the architect.

*The Gardens* of Wilton "were illustrated by a series of twenty-six folio copper-plates, with the following title: "*Le Jardin De Wilton, construit par le trés noble et trés puissant seigneur Philip Comte Pembroke et Montgomeri. Isaac de Caux invt.*" The above description is copied from one of these plates. Solomon de Caus was architect and engineer to the Elector Palatine, and constructed the gardens at Heidelberg in 1619. Walpole infers that Isaac and Solomon de Caus were brothers, and that they erected, in conjunction with each other, 'the porticos and loggias of Gorhambury, and part of Campden House, near Kensington.' (*Anecdotes of Painting.*) As the engravings of Wilton gardens bear the name of Isaac, he had probably some share in the arrangement of the grounds, and perhaps also in building the house. In Campbell's *Vitruvius Britannicus*, vols. II. and III., are several views, plans, and sections of Wilton House and grounds."

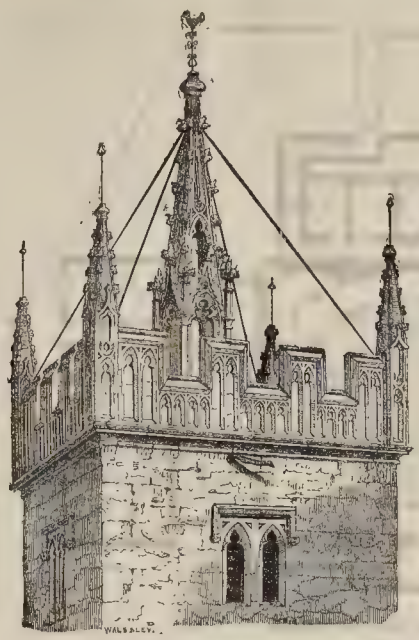
The stables were also designed by De Caus.

Aubrey, in his chapter on architecture, gives various traditions connected with the erection of Salisbury Cathedral.

'Tis strange (he says), to see how errour hath crept in upon the people, who believe that the pillars of this church were *cast*, forsooth, as chandlers make candles: and the like is reported of the pillars of the Temple Church, London, &c.: and not onely the vulgar swallow down the tradition gleb, but severall learned and otherwise understanding persons will not be perswaded to the contrary, and that the art is lost. [Among the rest Fuller, in his *Worthies of England*, gave currency to this absurd opinion. —J. B.] Nay, all the bishops and churchmen of that church in my remembrance did believe

* See p. 489, *ante*.

* There is no authority for the assertion that Holbein designed more than the porch in the courtyard.



TOP OF TOWER OF SUTTON BENGER CHURCH.

it, till Bishop Ward came, who would not be so imposed on; and the like errour runnes from generation to generation concerning Stoneheng, that the stones there are artificiall. But, to returne to the pillars of this church, they are all reall marble, and shew the graine of the Sussex marble (*sc.* the little cockles), from whence they were brought. [These pillars are not made of Sussex marble, but of that kind which is brought from a part of Dorsetshire called the Isle of Purbeck.—J. B.] At every ninth foot they are jointed with an ornament or band of iron or copper. This quarrie hath been closed up and forgott time out of mind, and the last yeare, 1680, it was accidentally discovered by felling of an old oake; and it now serves London."

"*Memorandum.*—About 1669 or 1670 Bishop Ward invited Sir Christopher Wren to Sailisbury, out of curiosity, to survey the church there, as to the steeple, architecture, &c. He was above a weeke about it, and writt a sheet or a sheet and a halfe, an account of it, which he presented to the bishop. I asked the bishop since for it, and he told me he had lent it, to whom he could not tell, and had no copy of it. 'Tis great pity the paines of so great an artist should be lost. Sir Christopher tells me he hath no copie of it neither.

This year, 1691, Mr. Anth. Wood tells me, he hath gott a transcript of Sir Chr. Wren's paper: which obtain, and insert here. I much doubted I should never have heard of it again.

[Soon after writing this passage Aubrey probably obtained a copy of Sir Christopher Wren's report, which he has inserted in his original manuscript. It is dated in 1669, and occupies eleven folio pages. In *The History and Antiquities of the Cathedral of Salisbury*, &c. (1723, 8vo.), it is printed, and described as 'An Architectonical Account of this Cathedral,' by 'an eminent gentleman.' Part of the same report was printed in Wren's *Parentalia* (1750); and a short abstract of it will also be found in Dodsworth's *Salisbury Cathedral* (witten by the late Mr. Hatcher), p. 172. In a communication from the last named gentleman in 1841, when he was engaged upon his *History of Salisbury*, he wrote to me as follows; 'I have lately fallen upon what appears to have been Sir C. Wren's *original report* relative to the cathedral; a very elaborate report on the state of the building in 1691, by a person named Naish; some good observations on the bending of the piers (anonymous); and several estimates and observations made by Price. What I shall do with them I have not yet determined.'—J. B.]."

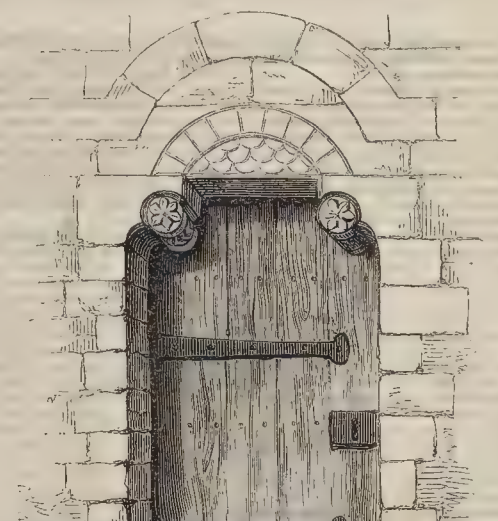
"The top of the tower of *Sutton Benger* is very elegant, there is not such another in the county. It much resembles St. Walborough's [St. Werburg's], at Bristoll." The tower of Sutton Benger church, here alluded to, has a large open-work'd pinnacle, rising from the *centre* of the roof; a beautiful and very singular ornament.

It is represented by the annexed engraving, from the title-page of the volume, with which we will end our notice of this interesting contribution to the history of Wiltshire. Mr. Britton has performed his task well, and deserves our best thanks. He remarks in his preface, that it is his intention now to devote himself to the autobiography which he has undertaken to write for the host of kind friends who have subscribed a large sum of money as a public testimonial to him. With all cordiality and sincerity, we wish him a continuance of good health and spirits to complete his retrospect, and enjoy the congratulations of a larger and more attached circle of friends than most men have the good fortune to possess.

## EARLY DOORWAY IN ELY CATHEDRAL,

RECENTLY DISCOVERED THERE.

The Norman, or early English doorway, which forms the subject of our cut, has been recently discovered in the wall of the north transept of Ely Cathedral. The straight top of the door is supported by a corbel, with a circular ornament on each side, which has been used as an authority for the restoration of the broken portions of the elegantly-sculptured Norman door, at the upper end of the south wall of the nave. The round head of the door is merely cut in the stone, to resemble radiated stones; the tympan beneath is slightly recessed, and the scale pattern within cut in low relief. This door had been concealed by mere modern plastering, and has been restored during the recent judicious repairs.



EARLY DOORWAY, ELY CATHEDRAL.

## NOTES IN THE PROVINCES.

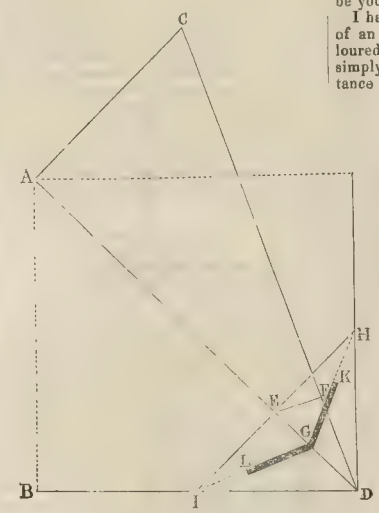
The new Congregational chapel at Brentwood, begun in April last, and recently opened, is a building in the Grecian and Italian style, of white brick, with front of compo: estimated cost about 1,300*l.*; architect, Mr. Bray, of Chelmsford; builder, Mr. Hogg, of Ingatestone.——St. Stephen's Church, near Canterbury, has been recently improved and decorated at the sole expense of the incumbent, the Rev. John White. All the old ornaments have been restored, and a stained-glass window has been added.——The Gipsey School at Poole, begun in 1845, was opened on 5th inst. ——An endeavour is being made to agitate the question of baths and washhouses at Bristol, where it is conceived there is much more need of them than at Bath. An Asylum for cases of suspended animation or doubtful death, in some cemetery beyond the limits, has been also suggested.——An engraving of the design, by Mr. D. J. Humphris, for the new hospital at Sandford-field, Cheltenham, according to the *Cheltenham Journal*, has been recently prepared.——The Birkenhead Docks are to be sold,—*not* to the Liverpool Dock Committee however. —— The foundation-stone of St. Mark's church, Bredbury, Stockport, was laid on Wednesday week: Mr. E. H. Shellard, architect; Mr. B. Graham, mason; Mr. H. Booth, joiner. It is to be in the early English style, with nave and aisles, chancel and vestry, and a massive lofty western tower. The walls will be supported by pinnacled buttresses, and have shafted windows. Internally, there will be two rows of clustered polished stone pillars supporting moulded arches, and an open timbered roof stained in oak. It is to have three galleries. Dimensions of nave, 62 ft. 3 in. by 22 ft. 10 in.; north and south aisles, 63 ft. 2 in. by 12 ft. 2 in.; chancel 16 ft. by 15 ft.; tower, 70 ft. 4 in. in height, as a fitting terminus to the vista through the long street of the township. The general appearance will be like that of Blackley church, near Manchester, designed by the same architect. The cost will be 3,000*l.*, and the work will be completed about this time next year.——St. Paul's church, Westleigh, was consecrated on Monday week, though still incomplete, being without a spire. The foundation-stone was laid on 22nd June, 1846.—— The Lincoln Council have resolved to apply to Parliament for a general cemetery Act.——A stained-glass window by Wailes, of Newcastle, has been placed in the chancel of Trinity Church, Gainsborough. It is a copy of one in York Cathedral. —— The small church of St. Andrew, Fencote, Kirby-Fleetham, was consecrated on Friday week. This building was designed by Mr. C. A. Cates, of York. The east window is of stained-glass. —— The Finance Committee of the Newcastle Corporation, have recommended the grant to the Antiquarian Society of the use of the 'Castle,' at a nominal rent of half-a-crown per annum, as a place of deposit for their antiquities, and also a grant of 250*l.* towards the renovations; the appointment of Warder, and admission to strangers to be under the control of the Town Council.——The town of Harrington, according to the *Carlisle Journal*, is being improved by the erection of new houses, a patent slip, an iron lighthouse, &c. The extensive chemical works are also in active operation. ——The site of the new wet dock, Leith, is staked off, and men under Mr. Paterson, resident engineer, have been boring to ascertain the nature of the ground for foundations. It is hoped, says the *Edinburgh Register*, that the specifications will soon be ready and contracts advertised for. The sooner the new accommodation is provided the better.— Lissanoure Castle, county Antrim, Ireland, under which a quantity of gunpowder was stored by its proprietor as captain of yeomanry, has been reduced to a mass of ruins, and the wife of the proprietor, who with a lighted candle was rashly crossing an open portion of the powder laid out to dry near the remainder, was 'blown to atoms' in the explosion.

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Bad Building in France.—According to *Galignani*, the tower of the church in course of construction at St. Simon, near St. Quentin, fell in last week, after having been carried a height of nearly 80 feet.

## TO OBTAIN SADDLE OF RIDGE STONE BY LINES.

Sir,—In answer to the inquiry of a "Carpenter," in your number for the 2nd,* I forward the annexed sketch. Let AB be half




the span of the roof, say six feet, and AC the rise to ridge, say four feet, then CD will be the length of the hip. On the line AD, at any distance from D, draw HI at right angles with AD: put your set square on the line CD, and from E draw the line EF. Set the distance EF in your compass, and strike the line AD, which will be intersected at G; then from GHI will be your bevel. Set the width of ridge stone on each side of G, and your thickness parallel with your bevels, and GKL will be your templet.

I have drawn it to a scale of three-eighths of an inch to a foot, so that the templet (coloured dark) is two feet each side, but that is simply to show it better than a shorter distance would do.

There seems to be a great want of improvement in the business education of carpenters in the matter of lines, &c., but then good works relating to these matters are so very expensive. Mr. Cubitt, of Thames Bank, has kindly opened a library, but only to the men employed on his premises: the mass of carpenters are unprovided for.

Could not the masters who mostly have good works by them, circulate them among the trade? The higher works, such as Tredgold's, Britton's, Cresy's, Pugin's, with Pasley on cements, and others, are entirely out of our reach. If our clerks of the works had such works as these to refer to, we should not have such blunders on record. I have had opportunities of glancing at a few of Britton's and Pugin's works, and I think the loan of such books would operate to keep many a man at home to peruse them. The amount of subscription at Mr. Cubitt's is almost nominal. I would not mind six times the amount, to have access to such works as I have mentioned. I am, Sir, &c.,

A Constant Subscriber.

*** Several correspondents who forwarded replies after the above was in type are thanked.

* See p. 474, *ante*.

## CORNISH MARBLES FOR DECORATIONS.

We are glad to learn from Cornwall that Prince Albert, having been led to examine the beautiful stones of that county, when his royal highness visited it last year, afterwards gave directions for various pedestals and dies for busts and statues, to be made for the residence at Osborne, which, by the way, is fast increasing in size, and will ultimately form a large pile of building.

According to our informant, the bases of the pedestals are of black and white crystal schorl; the shafts are of a beautiful variety of granite, commonly called red and black Cornish jasper; while the base and cap mouldings are of statuary marble. The jasper and schorl were procured from the northern part of the county, and being highly polished, the appearance of each of these varieties of stone is extremely beautiful. The jasper is so very hard, as to require the application of steam machinery to polish its surface properly. The pedestals are about 3 feet 4 inches in height, of the Roman Doric order, and weigh about 12 cwt. each.

By thus directing attention to the value of our own mineral productions for decorative purposes, the prince is conferring a benefit on the industry of the country.

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The Parish Church of Brenchley, near Tunbridge Wells, is now being restored, under the direction of Mr. Caveler. It is an interesting structure, principally of the thirteenth century, but has suffered much from neglect and injudicious alterations. The works have commenced with the rebuilding of the south aisle, which was in a dangerous state. The flat ceiling has been removed, and the tracery of the windows restored. The whole of the expense of this portion of the work will be borne by the parish. It is intended to restore the nave and chancel by subscription, and to proceed with the works as soon as a sufficient sum can be collected.

## PLYMOUTH BOROUGH PRISONS COMPETITION.

Fifteen designs were received in reply to the advertised premiums; and the plans selected by the committee, for the first premium, were found to be by Messrs. Fuller and Gingell, of Bath. The second premium of 30*l.* was awarded to a design marked *Virtus*; and the third (20*l.*), to one marked *Nil sine labore*.

A correspondent complains (with what truth we are not aware), that although competitors were not bound to an amount, the committee awarded the premium to the design having the lowest estimate, viz, 5,500*l.* He says:—"The estimates varied from 5,500*l.* to 20,000*l.*, for very nearly the same thing. For, be it remembered, the dimensions and number of the cells, &c., were all the same; the thickness of the walls alike; the description of work must be the same also; in fact, the quantity and quality of work the same nearly in all, and, consequently, the probable cost; and yet we see such variance in the estimates."

## New Books.

*The Assistant Engineer's Railway Guide in Boring, Stumping, and Nicking out Centre Lines, Setting out Slopes, &c.* By W. Davis Haskoll, C.E. Williams and Co., Strand.

A large number of young men employed by the engineers, the company, or the contractors on the various lines of railways now going on, will find this work of considerable service to them. It consists of five chapters. The first gives the general clauses for a specification for the construction of a line of railway; the second (and main chapter) treats of "boring," and on British strata as materials in construction; the third is on "stumping out;" the fourth on setting out slopes; and the fifth on setting out foundations, with hints on masonry, foundations, &c. From the latter, as an example of the character of the work, we take following useful hints.

*Setting out Foundations.*—When setting out the foundations for works of construction, too much care cannot be given to this being done with extreme accuracy; and if this important duty be not perfomed with due attention, the

works can never be what they were intended, and a slight error in setting out works may sometimes be of fatal consequence; no foreman should be intrusted with this task; and it will be found, even with all possible care, that mistakes will creep in. In setting out the foundations of bridges, care must be taken that piers and abutments are truly equidistant from the centres, and counterforts and wing walls must be set out with precision; the principal objects to be obtained first, are the longitudinal and transverse centre lines, and the greater the magnitude of the work, the more important this is: take, for example, a viaduct; the centres of the piers and abutments should be got in a thorough straight line, by means of pegs driven in with a notch in the head, to receive a line stretched tightly across, and all distances should be measured by means of two ten feet rods, which should be perfectly straight, one being moved after the second has been placed in line with it: and all measurements for masonry, brickwork, &c., should be taken twice *at least;* pegs should be driven to mark the direction of these measured lines, and they should be outside the works, that they may be preserved until the brickwork or masonry is set out; by straining a line tight over these pegs, the areas to be excavated may be easily nicked out.

*Tools used in Setting Out.*—Rods of ten and even twenty feet are far preferable to tapes in setting out, and in many cases a good 100 feet chain may be very advantageously used; the longitudinal and transverse lines marked out by these pegs, should alone be resorted to in setting out footings and walls. Besides the means above mentioned, we have the *line pins*, for stretching a line along a wall for keeping the courses of brickwork or masonry straight; the *large square* for setting out returns at right angles to the faces; *the level* for keeping the courses horizontal, which should be carefully looked to; a *templet* for measuring the header and stretcher; a mould to form bricks that are to be tapered; a square for trying the bedding of bricks, rubbing and bedding stones for rubbing cut bricks, and ascertaining their evenness of surface, &c."

*Dressing of Stone.*—"Whether granite, Portland, Bath, or sandstone, be used in construction, the dressing of the stone is a most important feature, and the larger the blocks used, the greater is the care required in levelling the beds and squaring the angles; if the beds are irregular, the bearing is unequal, and the stone tends to split and rend at bearing points, which act as fulcrums, but this cannot occur if the beds bear equally on their connecting surfaces. Unsightliness in appearance is the least consequence to be apprehended from such accidents; unequal settlement is far more dangerous, independently of the rent receiving rainwater and allowing it to lodge, exposing the structure in a dangerous manner to the effects of inclemency and change of temperature. If the blocks of stone be dressed with any degree of care, the trouble of laying them will be comparatively slight; care, however, must be taken that the layer of mortar exceed not ¼ of an inch in thickness, and that in order to disguise a thick or clumsy joint, the blocks be not made to lean forward on their edges, as they would then infallibly splinter from the greater part of the weight bearing on the angle. To disguise slovenly dressing of the blocks, and to level them when laid, workmen are very apt to underpin them with wedges of wood or splinters of stone, thereby laying the foundation of rents and fissures when the work settles."

*Execution of Brickwork.*—"Amongst the evils of omission or commission which we have to guard against in brickwork, the following may be enumerated:—the beds of mortar being very unequal in thickness, and exceeding ¼ of an inch; the introduction of bats or pieces of brick, except as closers, whereby the perpendicular joints in two courses may lie one above the other, which should not be; the absence of mortar in the joints, particularly in the interior part of the work, and neglecting to grout with fine mortar *at least* every fourth course; running up too great a height and too little width of work at a time, thereby injuring the connection of the courses by unequal settlement, and the neglect in dry weather of wetting the bricks before they are laid on the mortar, when if a brick thus laid be lifted up again, it will be found that the mortar does not in the least adhere to it; each brick, as it is laid, should be pressed into the mortar; the levelling of the courses should be attended to; in arch work, where the bricks should be cut, this precaution is often totally neglected, and so much so, that we have more than once seen joints, where the work was partially concealed, of one inch in thickness; in such cases, unless the mortar be of *very rare* quality, the consequences in a short time may be easily foreseen. All these evils bricklayers will introduce unless closely watched, and their work occasionally ripped up; and although each evil by itself may appear of trifling moment, it is only by avoiding one and all that good brickwork, as rare in modern construction as it is sound and deservedly admired when met with, can be built."

## Correspondence.

TREATMENT OF CONTRACTORS.

SIR,—I perceive an account in a late number of one of the numerous cases of tyrannical proceedings so frequently taken against contractors, though rarely to such an extent as therein mentioned in the case of Mr. Burton.* It is a cause of the deepest regret, that such a body of men as builders, through want of a good and friendly feeling, should attempt as they do to outvie one another in submitting so readily to the clauses which are now almost universally introduced in building contracts, whether they be of large or small amount, and whereby almost certain ruin will follow to the unfortunate contractor, should he displease or resist the views of the architect, or his agent the clerk of the works. When we read of such a clause as the following, which is rarely ever omitted being inserted:—"The works to be done to the satisfaction of the architect, and in all cases his decision shall be final and binding between the parties, and no payment shall be made at any time without his certifying all that has been done is to his satisfaction;"—and find men readily acquiescing, can we wonder at the disastrous results which so frequently follow? Is it reasonable that a builder should be called upon to find two securities for the performance of a contract, and thereby be put to the annoyance of soliciting his friends for that purpose, when much in value must be immediately placed on the works, and continue to be placed there, before he can receive a payment? It is a well known fact, that evils of a most serious nature are now existing, and will continue to exist, caused through the spirit of competition, now so rampant, which threatens to undermine all that is genuine as regards trade, and to instil principles of the blackest dye. The building trade is now reduced to a deplorable condition; insolvency in it is almost general; in reality, and until some decided and unanimous steps are taken for its benefit, there is but little hope of healthiness being restored. In order to accomplish this purpose (and in my opinion it only wants a commencement), I would propose the immediate formation of a society of master builders, inviting all, from the highest to the lowest, to come forward and join it, and frame such rules as would tend to the improvement of the trade, to which all should be invited, in order to carry out its intentions.

I shall feel favoured by the insertion of the above within your pages, which now circulate, I believe, in the hands of nearly all engaged in the building trades, through this and every other metropolis.—I am, Sir, &c.,

September 26th, 1847. WALTER.

UPRIGHT WALLS IN SEA—ORIENTATION.

SIR,—It is a pity that your correspondent, W. H. S., while standing upon the mural mole at Civita Vecchia, did not add to his "personal knowledge" the fact, that the Mediterranean is not a tidal sea,—a fact which enabled the ancients to build not only bridges and perpendicular moles, but, in more sheltered spots, houses projecting into the sea. Those who have seen the difference between a Mediterranean storm and an Atlantic one, will at once recognise the truth of Sir H. Douglas's declaration.

While on the subject of Italy, I would corroborate the statement of Mr. T. L. Donaldson concerning the orientation of churches there It is plain that it is a thing totally uncared for by Roman Catholics abroad. It seems to me that we derived the custom (together with the way in which the ancient British Church kept Easter, &c.) from the eastern churches.

I am, Sir, &c., PEDESTRIAN.

* See page 464, *ante*.

ORIENTATION OF CHURCHES.

SIR,—In your journal of this week I notice an article in which the writer endeavours to prove that it is not necessary, in the erection of new churches, to adhere to the invariable practice of the English branch of the holy Catholic church, and place the building east and west. To strengthen his position, numerous *foreign* examples are cited, and recourse is had to several writings on the subject, the most important of all, however, being singularly overlooked.

"The priest standing at the *north side* of the table, shall say the Lord's prayer."

Our Book of Common Prayer settles the matter; if the priest is to comply with the rubric, our churches *must* be placed east and west.—I am, Sir, &c., CHURCHMAN.

London, Oct. 4th.

## Miscellanea.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The first meeting of another session was held on the 8th inst., Mr. Pettigrew in the chair. A long list of new associates was read. A paper on earthworks at Amwell was read by the Rev. S. Isaacson. Mr. Whitesaid he considered he had established the Barrowfield to be a beacon hill, having cut through its centre 10 feet, and extended the trench 30 feet. He had opened several hundreds in his time, and was confident he was right.—A paper by Mr. C. R. Smith, on the discovery of Saxon remains at Northfleet, was then read. Sepulchral remains had of late been frequently found in the railway excavations in Kent, though such cuttings had not proved so useful or important to archæology as they might have been, from the absence of parties interested in them at the moment of discovery. He had therefore gone down himself, and had succeeded in obtaining several urns with human bones, iron shields, spear-heads, swords, &c. There were Roman urns and Saxon together, so as to shew that the Saxons had followed the Roman example, and used their burial-places.—Some remarks on early painting in oil were then read by Mr. Fairholt, in which reference was made to Mr. Eastlake's work and to Mr. Hendrie's translation of Theophilus, in order to shew the antiquity of the practice. Copies of several early paintings, from an ancient charter-chest, were exhibited, as probably the work of monastic artists, as early as the end of the 13th or beginning of the 14th century. At the close of the remarks a caution was given against the liability of antiquaries to carry every thing back to eras too remote, and thereby to overlook those to whom the real merit of bringing forward such discoveries as that of oil-painting was due.

KENT AND SURREY COURT OF SEWERS.—A court of the Commissioners of Sewers for Kent and Surrey was held on Thursday, at the Sessions-house, Newington: Mr. Nottidge in the chair. The surveyor of the South-Western Railway Company attended the court, and obtained permission, on behalf of that company, for the diversion of the sewer in York-road, to which point that railway will be shortly extended, and a spacious terminus, with all necessary offices, will be erected thereon. The surveyor also received permission, on the part of the company, to arch over 230 feet of open sewer in Vine-street, Waterloo-road, forming part of the line of the continuation of this railway to London-bridge. The court then proceeded to open the tenders sent in for making 2,050 feet of sewer in the Kent-road, which were as under:—Dethick, 2,905*l.*; Little, 2,580*l.*; Munday, 2,436*l.*; Bennett, 2,347*l.* 10s.; B. Wells (accepted), 2,281*l.*

COMPETITION.—A premium of one hundred guineas is offered for the approved plans for the erection of a workhouse for 600 persons at Aylsham, or the usual commission in its erection.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of an engine-house, boiler-house, and other works for the York new water works; the erection of a building for wards to the poorhouse in St. Martins-in-the-Fields; the various works necessary in finishing two villa carcases in Healing Park; the sinking of an artesian well at Nine Elms; the excavation of a patent slip and cutting foundation for sea wall at Harrington harbour; the execution of the works on 6¾ miles of the Midland Railway at Leicester; also for fitting up the vestry rooms in the King's-road, Camden-town, with gas-burners, &c.; and for a supply of British and best plate iron for the East-India Company.

VENTILATING BY JET OF STEAM.—At the Polytechnic Institution Dr. Bachhoffner is now illustrating the effect of the steam jet for ventilation, used, as our readers will remember, in the new House of Lords,—shewing how water, in its expanded state, can, by displacing large volumes of air, contribute to a purpose so desirable as that of renewing the atmosphere of crowded buildings. Dr. Bachhoffner, by several historical details, proves that the plan of ventilating by steam is not of a date so recent as many imagined, but was brought before the world in the year 1794. In order to shew the displacement of air by steam, the lecturer has a most complete set of mechanical apparatus, and, aided by the enormous hydro-machine of the institution, produced some astonishing effects. Among the results exhibited was the drawing, with immense velocity, of solid bodies, such as eggs and paper, through an iron tube, at the upper part of which a jet of steam was allowed to pass, while pieces of pasteboard and tin were, by the force of the external air, brought into such close contact with the orifice, that considerable force was required for their removal.

HINT IN DECORATION.—Much money, says a foreign correspondent of the *Athenæum*, has been devoted to the repair and decoration of the church of San Andrea at Vercelli: one of the most complete specimens of its style —late Romanesque on the outside, and early Gothic within—that I recollect to have seen. A simple and *probable* effect of colour has been insured by allowing or simulating the material of the walls, rich red brick, to be seen within: for instance, round the high windows, where the recessed arches and the many jointings take off that heaviness of effect which might have been looked for. Surely now-a-days, when the combination of cheapness and ornament is so difficult a puzzle for poor architects to unravel, and the churchwarden's panacea—whitewash—is so universally at a discount in favour of polychromy, this simple and natural device to enliven and enrich might be worth consideration in our village churches.

A QUERY.—SIR: Suppose (P) pounds raised one foot high per minute, represented the power required to roll a certain cylinder over a certain uniform inflexible road at a given rate. Also suppose ($p$) pounds raised one foot high per minute, represented the power required to crush a certain uniform substance placed equally throughout upon that road. [That is, the power required to crush just so much of that substance in any given time, as the cylinder came in contact with during that time.] Question. Would (however great the diameter of the said cylinder, and however great its weight) as much power as ($P+p$) pounds raised one foot high per minute be required to move the said cylinder on the said road over the said substance at the given rate, that substance being crushed thereby? J. W.

NEW BEACON ON THE GOODWIN SANDS.—On the southern extremity of the shoal, an application of Dr. Pott's pneumatic process for sinking piles has been made by the Trinity House corporation, in the erection of a beacon, the stability of which, it is said, 'is rendered a matter of demonstrative certainty.' For the foundation, five cast-iron hollow columns, the central one 2 feet 6 inches in diameter, and the others less, were made to sink by atmospheric pressure, while lifting the sand, to a depth of 32 feet, and were then all well secured together by wrought-iron rods and clips. On this the beacon has been erected. The Admiralty, says the *Journal of Commerce*, are adopting Dr. Pott's invention on various parts of the English coast.

EFFECT OF SMOKE ON BUILDINGS.—In a lecture by Dr. Guy last week, at the City of London Literary Institution, he directed attention to "the smoke nuisance," pointing it out as not merely a contaminator, to a considerable extent, of pure air, so necessary to good health, but as most expensive to the community at large, in relation to the frequent occasion which it gives for the washing of linen, for painting, and cleansing of paint and gilding, as productive also of disfigurement of our most beautiful public buildings. In illustration of the damages inflicted by the smoke nuisance he shewed, that expense, by the wear and tear of clothes incurred by washing, and of furniture by cleaning, amounts to half a million sterling per year, and that between the ill effects of the smoke, and of bad drainage, a million and a half of money has been computed to be lost yearly to the public. Now all that might be saved by a legislative enactment, which would compel manufacturers and others, on the one hand, to consume their own smoke, and which, on the other, would create a thorough system of good drainage in our towns, and compel an abundant supply of pure water to every house, with proper ventilation. As an instance of the disfigurement of public buildings by smoke, he directed attention to the new palace at Westminster, which, in the short space of a few years, has been sadly blackened by the volumes of dense smoke poured forth by our river steam-boats. And when they reflected on the immense sum of money already expended, and yet to be expended on that building, and on its costly carvings, and on the richly wrought works of art with which it is to be decorated, they must agree with him that measures ought to be enforced to suppress the smoky nuisance. The lecturer then pointed out the means of abating the nuisance, and as an example of the saving which large consumers, including manufacturers, might, on principles of science and economy, effect by consuming their own smoke, he instanced a manufacturer at Bradford, who saved fully 500*l.* a year by the adoption of the art. One means by which the dense volumes of smoke vomited forth from factory chimneys and steam-boats might be greatly abated, was by feeding the fire frequently with coals in small quantity, instead of at long intervals with a large quantity. Another reason why men should endeavour to suppress the smoke nuisance, was founded on the benefits which such an accomplishment would confer upon the spread and value of the arts. At present, in consequence of its deteriorating effects, men of taste in the arts were deterred from expending money on them to the extent they otherwise would.

'STEEPLE JACK' AT PETERHEAD.—The steeple of the parish church at Peterhead was recently pointed with Roman cement, and the vane repaired, by a native of Dundee, known by the sobriquet of 'Steeple Jack,' who, by means of a common kite, contrived to throw a cord, and by means of that a rope, over the cross-irons below the vane, and then, with a swinging seat at one end of the rope and a counterbalance at the other, running over a pulley on the vane spindle, leisurely accomplished all the necessary repairs.

BLIND BUILDERS.—Under this head sometime ago, we gave the tenders for painting Hampstead Church, which shewed a distressing difference in amounts. The builder, whose lowest tender was accepted, has written to say, that he has now completed the work to his own satisfaction as to profit, and that the other contractors must have misunderstood what was necessary, or something worse. Our heading was nevertheless the right one. Whether it applies to the highest or the lowest in cases where we use it, we do not pretend to say.

PROPOSED LUNATIC ASYLUM FOR MIDDLESEX.—Thirty-nine competitors have sent in plans in competition for the proposed asylum at Colney Hatch, with estimates varying from 40,000*l.* to 150,000*l.*!! We are informed that two or three of the architects have disgraced themselves, as was the case in the Army and Navy Club competition, by privately submitting their designs to some of the magistrates before sending them in.

DEATH OF MR. COTTINGHAM, THE ARCHITECT.—We regret to announce, that Mr. Cottingham, long well known as an ecclesiastical architect, died on the 13th inst. at his house, in the Waterloo-road, after a long and painful illness.

ENGLISH BUILDINGS IN CHINA.—A location on the Canton river for warehouses, &c., and a site for a church, have been at length obtained, and at Shanghai our people have got about 100 acres for building, with roads, drainage, &c., all their own. At Hong Kong, every public work and building is now either finished or in progress, except a government house, for which a site and estimates have been got. The Chinese people, however, at Canton, Shingansze, &c., still look upon the English 'barbarian' as if he were 'a Bull in a China shop,' and threaten that stone cutters will be cut all into small pieces, bricklayers 'broken like a tile,' and all and sundry 'looked upon as beasts,' who dare to lift a little finger either in 'supplying with tiles, wood, granite, or other building materials,' or in building for, or otherwise aiding and abetting this 'detested brood' in their 'design upon the country.'

LIGHTING BY ELECTRICITY.—A renewed attempt has recently been made to accomplish this great end,—the 'light of nature' itself, it may be;—a patent to that end having been taken out by Mr. Thomas Wright, of Cooper's-hill, Thames Ditton, the chief peculiarity of which consists in the method of producing a permanent light by continually presenting one or more points or surfaces of carbon, or other suitable material, to the path of an electric current.

PATRIARCHAL PLANE TREE.—In the grounds of Kippenross, near Stirling, close by the Scottish Central Railway, there is a magnificent old plane tree, of the following dimensions:—girth of smallest part of trunk, 19 feet; girth close to the ground, 42 feet; extreme width of branches from point to point, 114 feet; height, 100 feet. The cubic contents are 875 feet, and the supposed age upwards of 400 years.

STATE OF THE CHURCH OF ST. GEORGE THE MARTYR.—At a vestry meeting recently held, it was moved by the rector's warden, that a rate of 5d. in the pound be assessed for the repairs of the church, which is in a very bad state, and for the necessary improvement of which an estimate of 1,500*l.* had been obtained. An amendment, however, was moved, and the rate refused by the parishioners.

ARCHITECTURE AT UNIVERSITY COLLEGE.—The course of architecture and construction at University College will commence on Tuesday, the 19th, and will continue every Tuesday and Thursday, for the first year's class, at six, and for the second year's class, at a quarter-past seven.

PITT'S SELF-ADJUSTING LOCK FURNITURE AND SPINDLE.—An improvement in the mounting and fixing of door furniture, advertised in our present No., deserves notice. It is the best arrangement of the sort that we have seen.

## TENDERS.

THE following tenders for the erection of alms-houses, chapel, lodges, &c., to be built at Garratt, near Merton, were opened by the managers of the St. Clement's Danes Holborn Estate Charity, in the presence of the parties, at their offices, Essex-street, Strand, on Monday last:—

| | |
|---|---|
| Lock and Nesham | £16,195 |
| Kelk | 15,994 |
| Burton | 15,487 |
| Piper | 15,286 |
| Hayward and Nixon | 15,237 |
| Lawrence | 15,246 |
| Grimsdell | 15,153 |
| Myers | 14,890 |
| Andrews, Epsom | 14,882 |
| Hicks (accepted) | 14,420 |

## TO CORRESPONDENTS.

"*District Surveyors' Fees.*"—The award in question shall have early attention. It has but just now received the assent of the Commissioners of Woods and Forests. Correspondents should not be impatient with us: moreover, we reserve to ourselves a discretion.

"*J. W. L.*"—We will not venture to give an opinion. Its equal contraction to the extent of six inches seems unlikely.

"*W. A. S.*"—The MS. was returned, with thanks.

"*Constant Subscriber.*"—The work on "Kitchens" has not been published.

*Received*—"B. B.," "Carpenter," "F. H. J.," "A. A.," "W. A. B.' (out of our province), "W. G. B.," "J. R. C.," "Subscriber for 3½ Years," "P. B.," "F. S." "B." (next week), "Principles of the Mechanics of Machinery and Engineering." By Julius Weisbach. Vol. I. (Hippolyte Baillhere, Regent-street, 1847.)

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

## ADVERTISEMENTS.

TO THE BUILDING PUBLIC.

**FIRST-RATE ORNAMENTS** in ROMAN and other CEMENT and PLASTER OF PARIS, at reasonable prices, consisting of Vases, Ballusters, perforated Panellings, Capitals, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Shafts and other Chimney-shafts, Soffits Bed moulds, Paterae, &c. &c. &c.; 36-inch Centre Flowers fixed complete, &c. can be accommodated with promptness and economy of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

TO BUILDERS, CONTRACTORS, &c.

**GREY STONE LIME** of the best quality will be delivered alongside any wharf in London at 7s. per yard of thirteen bushels—carts or barges to be accommodated with promptness and economy of a freight.—Apply to CHARLES FORMBY, Esq., Halling, near Rochester.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 14 across the bilged, ustsole measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT.** — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**PORTLAND CEMENT.**—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes—such as the Building and Lining of Reservoirs, Cisterns, Baths, Fishponds, &c. For External Plastering and Ornamental Castings, it requires neither Colour nor Paint; it never vegetates, and will carry from three to four times its own body in sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it stocks the progress of fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seal-street, Liverpool.

**BATHSIDE CEMENT WORKS,** established to supply a genuine quality of ROMAN CEMENT. THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon street, London. Depôts: Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON** having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILLWALL, POPLAR enables him to execute orders on an enlarged scale. He therefore solicits the favours of Engineers, Builders, and others, interested in Works, to say that he can supply the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dockwalls, in drains, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water using one bushel of lime to eight of gravel

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.**—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description; and they repledge themselves that MARTIN'S CEMENT is totally dissimilar in its construction and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely excludes the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other cementitious materials, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, with oil peeling, when put upon dry work.

It is peculiarly adapted as an internal coating for walls, ceilings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its hardness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE, Agent for Liverpool and Manchester, Mr. R. PART, 98, Canning-place, Liverpool.

**LONDON and PROVINCIAL JOINT STOCK LIFE INSURANCE COMPANY.**—The Directors invite the Public generally, also Building Societies, to call and inspect, through them or from other parties, to examine the peculiarly safe and striking advantages offered by this Office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE FOURTHS of PROFITS divided.—For Prospectuses, &c. apply to JOHN MANSON, Secretary.

Offices, No. 39, Nicholas-lane, Lombard-street.

**LONDON ASSURANCE CORPORATION.**—Established by Royal Charter in the Reign of King George the First, A.D. 1720. 7, Royal Exchange, Cornhill, and 10 Regent street.

LIFE DEPARTMENT

Two-thirds of the Gross Profits are given to the Assured, the Corporation taking the remaining third, out of which they pay the expenses of carrying on this department, thus giving the public all the benefits derived from Mutual Assurance, and all the security afforded by an old and opulent Corporation. The Profits are added as a Bonus to the Policy, or paid in Cash, or applied to the reduction of the future Annual Premiums.

A lower fixed rate without abatement.

ANNUAL PREMIUMS FOR THE ASSURANCE OF £100.

| Age | Participating. | Non-participating. |
|---|---|---|
| | £ s. d. | £ s. d. |
| 20 | 2 0 2 | 1 15 11 |
| 30 | 2 10 8 | 2 9 11 |
| 40 | 3 7 1 | 3 0 0 |
| 50 | 4 10 7 | 4 5 7 |
| 60 | 6 12 5 | 6 5 11 |

Prospectuses, containing a variety of modes of effecting Life Assurance, and all information, may be had by a personal, or written, application to the Actuary.

Fire Insurances on every description of Property at Moderate Rates, and Marine Assurances at the Current Premiums.

JOHN LAURENCE, Secretary.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS** and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1½ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

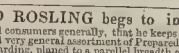
Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

**ALFRED ROSLING** begs to inform the Trade and consumers generally, that he keeps constantly in stock, a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship. Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

**T. ADAMS** (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Ash, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

TO BUILDERS, PLASTERERS, AND OTHERS.

**A. PAUL and SON**, Nurserymen, &c., Cheshunt, Herts, have a LARGE STOCK of ELMS, ASH, BEECH, BIRCH, CHESTNUTS, OAK, POPLARS, THORNS, &c., &c., from 6 feet to 12 feet high; also Evergreens good and cheap, for Cash.

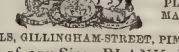



SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER** of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company** beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East County Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the grains, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and consistence to the material, all of essential importance for floor boards, doors, shutters, and similar work. Licences to work the patent, scale of prices, or any further information, address, post-paid, to JOHN W. H. TANQUERAY, res retary, at the temporary offices of the Company, 23, New Broad-street, City.

N.B. It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

**PAVING, 2s. 9d. PER SQUARE YARD.**

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILLINGTON, POLONCEAU'S BITUMEN and CEMENT WORKS, 25, WILLIAM-ROAD, CITY-ROAD, N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

QUEEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Nottingham Wharf, Greenwich, the whole of their Stone business, to the above extensive premises, where a large Stock will be kept up for continual fresh arrivals from their quarries at Allenstone. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY** begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stonework, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BURTON and ASSOCIATES can have every description of Stone to the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the dock or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

**ANSTON QUARRIES.** — Messrs. Wm. WRIGHT and Co beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining the Rs of Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all other in England, by the Commissioners of Woods and Forests for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the Kingdom.

Application to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

**MAGNUS'S ENAMELLED SLATE.** — Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful Slate has been introduced into Buckingham Palace, the drawing rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the manufacture of the public generally. It is also extensively used in Government offices, the principal railway stations, and in private buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold, sienna, jasper, very antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy shelving, and plain slate work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices. N.B. The trade supplied with whole carcases, self-faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

SEWERS, MIDDLESEX HOLBORN AND FINSBURY DIVISIONS.

**NOTICE IS HEREBY GIVEN**, that a Court of Sewers for Holborn and Finsbury Divisions, in the County of Middlesex, will be holden at the Sessions House, No. 7, Hatton Garden, on FRIDAY, the 30th day of October, 1846, at Two o'clock in the afternoon precisely.

JOSEPH UNWIN, Summoner and Crier.

Sewers' Office, for Holborn and Finsbury Divisions, &c.
No. 7, Hatton Garden.

TO BUILDERS AND OTHERS.

Interested in buildings, or in ground for building upon, within the District of Holborn and Finsbury Divisions, the Parish of St. Leonard, Shoreditch, and the Liberty of Norton Folgate, in the County of Middlesex, and the borders and confines of the same.

**THE Commissioners of Sewers for the above** Limits, DO HEREBY GIVE NOTICE, that previous to making any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, application must be made by petition, the form of which may be had at their office; to which must be attached, a plan of the intended line of sewer; and which must be constructed conformably with them regulations

And, in order to prevent the serious evils and inconveniences that must arise if no ground proposed to be built upon being excavated to two great a depth, the Commissioners have directed that, upon application being made at their office, previous to the excavation of such ground, information shall be given as to the exact depth at which the same can be drained.

And the Commissioners do also give Notice, that when ever the lowest floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings: and further, that no buildings or erections of any kind will be permitted to be made upon or over any sewer.

All communications made with any public sewer, without previous application, as aforesaid, will be stopped out; and the parties making the same will subject themselves to a fine. By the Court,

STABLE and LEIGH, Clerks.

*** The public is also informed, that all rates imposed by the said Commissioners are to be paid by the tenant, and allowed by the landlord out of the rent, except where the tenant, by special covenant or agreement, is bound to defray the same

GAS MOVEMENT.

**THE NATIONAL ECONOMIC GAS-BURNER** is acknowledged by the highest authorities to be the greatest improvement hitherto effected in the means of producing Artificial light. Architects and Builders, Landlords, and the public, are respectfully invited to inspect this new burner, the modus operandi of which is totally different to that of the many burners lately brought into notice. The patentees of the National Economic Burner are desirous that the most rigid test should be applied to the same, and unhesitatingly assert that it possesses the greatest amount of illuminating power at a lesser consumption of gas than any other burner in use. It is excellently well adapted for churches, chapels, and public buildings, as well as for private dwellings. To be seen in operation, and may be tested by an experimental meter, at the Office of PAUL and Co., GAS ENGINEERS, 12, Leather lane, Holborn. A description, diagram, and testimonials forwarded free.

**LESLIE'S PATENTS.**—GAS CONSUMERS guaranteed the following important sanatory and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; also to expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made to adapt for the ECONOMICAL PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty eight tales.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, to the equal quantity of gas over every burner yet offered to the public; and over the Fish tails and Batswing the increase of Light is about 100 per cent.

4. His new Patent ATMOSPHERIC ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Argand Lights, Burners, and Globes last one half longer; these will vary in price according to the duty they have to perform, from 1s. upwards.

PRICES. Bright Burners, with Convuchan Sprung Glass Holders, with either steel glass, Combustion Chamber included, 7s. each; Side Burners ditto, 8s. each; extra Glass Combustion Chambers, 2d. each. SAMPLE PACKAGES, with one burner and a set of 6 glasses for inspection, handbers, will be forwarded on receipt of a post-office order, parable to JOHN LESLIE, at the Charing Cross office, for 9s. If a side burner, or 10s. if the upright be desired

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION

Coal Consumers with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.

Offices and Manufactory, 59, Conduit-street, London

TO ARCHITECTS, BUILDERS, AND OTHERS.

**ENCAUSTIC, VENETIAN, BATH, and** other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Ware house, 9, Albion-place, Surrey side of Blackfriars-bridge, and at the Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Floor Furniture, &c.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agency, GREEN and SOUTHALL, 3, Southampton-buildings, Holborn-hill, Belvidere-road, near Waterloo-bridge, and Mr SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE MACHINE COMPANY** (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alpert-n, and at the Company's office, 123A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 123A, Piccadilly, March 1, 1847.

These Machines may be seen at work at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE'S, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. COUNSEL and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS**, Southwark-bridge road, Nos. 2 and 3, Southwark, At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing iron as first introduced into this Country, with many improvements, a supply can be had for Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Wood Roofs for Railway Stations supplied.

**PATENT COPPER-WIRE CORD.** — Manufactory, Gateshead-upon-Tyne.—R. S. NEWALL and Co.'s PATENT IMPROVED COPPER WIRE CORD for Window Sash Lines, Hothouses, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen rope has hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above. Specimens of the Wire Cord may be seen at the office of the Patentees, No. 163, Fenchurch-street, London; W. T. ALLEN, Agent.

# PEAKE'S TERRO-METALLIC, DRAIN, AND CONDUIT PIPES;

**ROOFING, RIDGING, PAVING, AND OTHER TILES;**

## BUILDING, PAVING, AND MANY-FORMED BRICKS, &c.

*Of at least One Hundred Sorts and Sizes.*

## THOMAS PEAKE,

**4 WHARF, MACCLESFIELD-STREET SOUTH, CITY-ROAD BASIN, LONDON,**

A CENTRAL SITUATION,

**AND THE TILERIES, TUNSTALL, STAFFORDSHIRE POTTERIES,**

Begs to remark that his Establishment was founded upwards of a century since, and for forty years has been carried on by his late Father and Himself. That during the last thirty years he has introduced his Manufactures into the metropolis of the Cotton Department of British enterprize, Manchester, and other parts of the Country, with complete success, where they continue to be duly appreciated. That the cost of transit has been of late so reduced, as to enable him to keep a respectable assortment in London, where he used to supply Messrs. Wyatt, Parker, and Co., as agents, but now superintends the Depot personally, and from what he has observed in Town as well as in other places he cannot doubt but that his Terro-Metallic goods will be as generally adopted as they shall become known. That he is sincerely grateful to his numerous customers for their favours during so long a period, and respectfully assures them, as well as the Public generally, that they may rely upon the advantages derived from his extensive experience for a third of a century being continually exerted to merit their future confidence and support. No MATERIAL, he submits, can be more desirable than his Terro-Metallic to mould into an almost infinite variety of articles, required either at home or abroad, by the Nobility, Clergy, Gentry, Civil Engineers, Architects, and Builders; also by the Owners and Occupiers generally of Land, Mines, Buildings, Gardens, and other Property. The late Mr. Loudon, the late Mr. Telford, C.E., and the Incorporated Church Building Society (amongst other persons and institutions), have borne very important testimony to the excellence of this material. Its colour, cleanliness, strength, efficiency, durability, and easy adaptation, are great desiderata; and the surveyor to the Honourable Court of Sewers for Westminster, in 1846, writes, "I consider they," viz., the Terro-Metallic Pipes, "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains." Surely STRENGTH, STRAIGHTNESS, and SMOOTHNESS, are not unusual characteristics! The Terro-Metallic has NECESSARILY a firm Body, but [illegible] its surfaces, forming thereby a natural and [illegible] glaze, [illegible], however, [illegible], will expand or contract with the body, and consequently the articles will remain uninjured; but this is not always the case when bodies are covered with artificial glazes. The variety of ordinary and unsolid earths, of which bricks are formed, to resist the surfaces [illegible] by means of foreign agents,—such as salt or a [illegible] wash, will not stand the great degree of heat essential to bring the Terro-Metallic to its admirable compactness, solidity, and strength, and many clays would be thereby reduced from a large article or vessel into a bit of shapeless scoria. Experiments have demonstrated this to be a fact, and they could be easily repeated. Indeed, persons in the habit of using brown glazed bottles, milk pans, stones, pots or crocks, need not be informed of the DIFFERENCE of body, texture, prevalent in such articles, and inseparable from UNCERTAINTY as to their durability, an uncertainty which increases by competition, but is by no means so important in household vessels as in articles required for permanent work beneath our streets and buildings. It is submitted, therefore, that Terro-Metallic Pipes are, for obvious reasons, a desideratum for purposes such as drains or conduits, not only on account of acids being innocuous, even to the body, or that the pipes may be laid near the surface of any street or road without risk of injury by heavily laden carriages passing over them, but also because they may be laid in newly-formed ground without danger of fracture or breaking line by subsidence. The sockets of these pipes are roomy and deep, with well-formed shoulders, which are of a piece with them, not stuck to them after they are made. It is also further submitted that the Terro-Metallic cannot fail to take preference against every other material of inferior firmness, solidity, and strength of bodily texture, in proportion as the Public shall severally have an opportunity to judge for itself by examining and comparing it in every point of view with all competing materials, and deciding according to their intrinsic merits respectively.

The colours of the PLAIN TILES for roofs are either Blue, Brindled, or Red. They are neither nailed nor pegged, but are hung upon sawn laths, 1 inch by 3-8ths of an inch, by knobs, which take firmer hold, as the wind lifts the lower end of the Tiles. Hence, and considering the fold of 7 inches, the security of such covering in exposed situations and stormy weather. RIDGES, HIPS, AND VALLIES are neatly tiled, superseding the use of Lead, which is liable to be either stolen or perforated by worms. Plain Tiles, of some antiquity and comparatively rude manufacture, in the Midland Counties, are still efficient upon roofs where they have lain undisturbed for 150 years; and a mansion called Turnhurst, the last residence of the celebrated civil engineer, Brindley, is a remarkable instance. Sudbury Hall, lately occupied by Her Majesty the Queen Dowager, the seats of Earl Talbot and Lord Hatherton, also churches and other valuable buildings, are covered with Plain Tiles 11 inches by 7 inches by 7-16ths of an inch, of which 1,000 lay 200 square feet, at 5 inches gauge, and weigh from 20 to 25 cwt. Bricklayers usually do both tiling and plastering. The Incorporated Church Building Society prefer these Tiles to all other materials, excepting Lead and Copper. The Dukes of Devonshire and Sutherland are in the habit of using Terro-Metallic articles, and possess in the neighbourhoods of Chatsworth and Trentham, of Mr. Peake's manufacture, probably the best as well as most varied specimens of their kinds in the world. Travellers, who immediately after hurricanes have traversed districts where Thatch and all kinds of Slates have been used, as well as these Tiles, have no doubt observed the damage sustained by roofs of other materials, whilst Terro-Metallic Tiled Roofs were uninjured. Consequently, the latter are preferred in the bleak moorlands of Staffordshire, Derbyshire, &c. In regard to the strength of timber required for Plain Tiles, it may be acceptable to describe one of two similar roofs, which stand perfectly, although affected by very different degrees of heat and cold from the manufacturing operations carrying on under them. The building is 120 feet long and 18 feet wide, without partition. No stronger timber is used than red deals, 11 inches by 3 inches. The principals are 10½ feet apart; there are two side trees on each side, 5½ inches by 3 inches; the spars are 3 inches by 2½ inches, and 18 inches apart. The laths are sawn 1 in. by 3-8ths of an inch. The pitch is between a third and a square. These Tiles keep the interior of buildings comparatively warm in winter and cool in summer, and thereby preserve the timber of the roof. Their appearance in perspective upon buildings erected in the Early English style is approved; the effect is varied also by the drips, or lower ends of the tiles, being moulded to numerous devices, "shewing off some of the most pleasing alternations of straight and waved lines." The PAN TILES are both of the usual form, and of a new pattern, which (at light cost) give a marked character to the roofs of such edifices as they suit, the curves, both concave and convex, being much larger and bolder than has been the case usually. GRECIAN AND ITALIAN TILES are furnished, with weather stop or rib and groove in the lap, forming a beautiful and almost everlasting covering. Of the different kinds it has been said, "In short, we consider them as the best of all coverings for roofs, whether of small or large buildings." RIDGE AND HIP TILES are plain, capped, rolled tops, also grooved to receive various patterns of vertical ornaments; the saddles are moulded to suit the angle formed by the roof; they are made in one piece, and not fastened at the angle with bits of iron, like slate ridges, to come apart as soon as the clips shall rust away: the pitch should be stated in the order. The rolls are hollow, admitting a circular rod of any length to be passed through them. VALLEY TILES are equally efficient and more economical and durable than Lead, Zinc, &c. PAVING TILES consist of Squares, Blue and Red, of several sizes, of octagon and small squares of different colours; of hexagons, of diamonds, and neatly-worked thin floor-bricks, for intersertion with each other, to form a variety of pleasing pavements. To lay these Tiles, make the ground solid, and spread a little sand or fine furnace ashes over it; place the Tiles upon mortar, or other material, thinly spread, but keep the joints free, and fill them afterwards with sharp sand, which should be spread over the Tiles, and swept to and fro for a few days with a besom. Lay boards upon the Tiles to walk upon until the mortar, or other material in which they shall be laid, is set firmly. Square Tiles, 9 inches by 9 inches, and 1¼ to 1½ inches thick, are extensively used in the floors of Fireproof Warehouses at the ports of Liverpool, Hull, and Preston; also for all the floors of Fireproof Cotton Mills and other large buildings. Comparatively speaking, these tiled floors yield neither sand nor dust; the bearings and axles of machinery, therefore, as well as the cotton, silk, woollen, or other fabric being wrought by it, suffer less injury by these floors than any other. Smaller squares, and other forms of Tiles, are used to pave Aisles in Churches, Entrance-halls, Household Rooms in Farm-houses, and other respectable Dwellings, Cottages, Kitchens, Cellars, Schools, &c. They are easily cleaned, even from grease.

BRICKS, to any reasonable dimensions, are supplied; those 9½ inches by 4½ inches by 2 7-8ths, are in great request for Tunnels, Bridges, Canal Locks, Breast walls, and various works upon Railways, Canals, &c. In distant localities, where the carriage is expensive, these bricks are restricted to a facing of brick-breadth. Also, FIRE BRICKS, FRONT BRICKS, CLINKER BRICKS, WAREHOUSE, and BARN FLOOR BRICKS, and PAVING BRICKS for Courts, Areas, Cottages, Foot-paths, and Channels, NOSED BRICKS, i.e. one corner rounded; SEMICIRCULAR BRICKS, to erect Columns or Cope walls, Bricks chamfered to the angle of an OCTAGON, Bricks chamfered to angles of Gables, and useful to draw covering over horizontal Flues, Bricks for PLINTHS to Patterns; KEY STONE or WEDGE-LIKE (longitudinally or transversely), BRICKS for Arches, Culverts, or Curves; other forms would be made to Patterns or Sketches.

SOCKET PIPES for DRAINS, CONDUITS, FLUES, &c. may be had of different diameters, from 2 inches to 18 inches, increasing in thickness in proportion as the diameter is extended, and in lengths not exceeding 27 inches; the Sockets are deep, neatly formed in the substance of the Pipe, and not stuck to it afterwards. The joints are made tight with a little Roman cement or good mortar. If desired, any form or size of Pipe would be perforated with holes, wrought from the exterior to the interior surfaces. Being of true circular form and neat workmanship, smooth inside, which is well covered by a natural, efficient, and durable glaze, they resist the corrosive injurious effects of atmosphere, and of mineral or other fluids or acids. These Pipes are very desirable, as they are in extensive and increasing demand, for small Sewers, Drains, Conduits, Flues, &c., instead of Brickwork, which must be erected of a bore fifty per cent. larger than the Pipes in order to be equal in efficiency. Also, CONICAL, REBATED, and PLAIN PIPES, of various diameters and lengths. The different forms of Pipes when divided longitudinally into halves before they are fired, make open surface Channels, especially adapted to convey water down the slopes of railways and other works. The Pipes, Bricks, and other articles have been, and continue to be, extensively used in the construction and draining of railway and other important works, a proof of the estimation in which they are held by the Engineers.

THE SKIRTING TILES protect the Plaster on the Walls, and make a neat and durable finish. Vermin cannot harbour about them, and Oil-paint of any colour they will take and retain for a long time. GARDEN-WALK EDGING, either with a bead along the top or an OG, has a neat appearance, and it does not shelter insects; it is the best and cheapest material for the purpose on account of its durability. DRAIN GRATES are intended to prevent Leaves, Straws, Sticks, and other things from choking Drains; they are suited to gravelled-walks in Parks, Pleasure-grounds, Gardens, Cemeteries, as well as Streets, Sculleries, Courts, Areas, and all other places where water enters Drains. CHANNEL BRICKS supplied of different lengths, breadths, and patterns, to lay in any place paved with flag or other material where water is to be carried off. WALL-COPING, of several patterns and dimensions, calculated to preserve walls, and especially those built of bricks of questionable durability; one of the patterns, with Bridge Tiles over the joints, is uniform with the Grecian Tiles for Roofs. CHIMNEY-TOPS are manufactured to suit Customers, a few patterns are always ready for sale. Many smoky chimneys, which had not been benefitted by any other means, have been cured by a roomy Pipe three feet long, pierced all over with holes of inch diameter.

PUGGING TILES are of various patterns, to place in partitions; also, under chamber floors to prevent the noise of one room from being an annoyance in others. KILN-FLOOR TILES are of two sizes, viz., 9 inches and 12 inches square, and well pierced; they are used to pave kilns for drying and seasoning Malt, Grain, &c., as well as Wool and other materials used by manufacturers and others. FLUE COVERS are either oblong or square, about 2 inches thick, and of different sizes; they are used to lay over horizontal Flues, extending from centre to centre of the mid-feathers or partition walls. DRAINING SHELLS, whose form is well known to be like a horse-shoe, if one looks at the end or transverse section of the Tile, are of three sizes, viz., 2½ inches, 3 inches, and 4 inches across the feet or bottom. Of Terro-Metallic the shells are very durable, and are usually placed in the drains upon drainage Roof-tiles of the same material.

CHIMNEY AND OTHER FUNNEL LININGS instead of parget, are a desideratum in consequence, 1st, of its being illegal as well as inhuman to employ climbing-boys; 2nd, of smoky chimneys and down-draughts, owing to defects in the joints of the brickwork between the flues, and the parget having perished; and, 3rd, of many and disastrous fires attributable to the latter defects. These linings are made of a peculiar mixture of materials to bear heat and cold; they are of different dimensions and forms of area, and are unquestionably deserving of attention from all who are erecting or altering chimneys; they have been extensively used in some parts of the Kingdom for many years past, and with entire satisfaction.

HOW TO CUT OR FIT TERRO-METALLIC WARE: rule upon the edges and surfaces of the article the line of division proposed, then with the cutting-end of a brick-hammer, or other instrument made as sharp as possible, chip along said lines to the depth of one sixteenth or one-eighth of an inch, without omitting any part, and always deepest at the arrisses. This done, the article will divide under a few slight taps with the edge of a trowel, or other similar tool in weight proportioned to the size and thickness of the article. TO PRESERVE THE COLOUR of the articles care should be taken not to expose them to lime or other similar dust,—or to mortar, the stains from which cannot be removed. Ridging or Hip Tiles should be pointed early on a fine day, and in mortar almost black with smith's refuse or furnace sand.

THE TILERIES ARE SITUATED near the centre of the Kingdom, about Three Furlongs from the Main Line of the North Staffordshire Railway, with which it is to be connected as soon as finished by a private branch, and along the margin of the Grand Trunk Canal from the Trent to the Mersey, rendering transit both expeditious and cheap to the port of Liverpool, and moderate to all other parts of the empire. FOR EXPORTATION TO THE BRITISH COLONIES, and Foreign Countries generally, MERCHANTS in Liverpool and Glasgow especially, will find these goods susceptible of extended and lucrative commerce. THE MANUFACTURER IS NOT IN THE CARRYING TRADE, and therefore cannot undertake carriage of his goods, excepting to deliver them alongside of carriers, boats, or railway trucks at his own wharfs or branch railway, at which time he expects them to be signed for "in good condition," and responsibility to end so far as he is concerned. POSSIBLE VARIATION IN SIZE OF ARTICLES. PIPES, as well as the others, as contained in the lists, may vary more or less from the stated dimensions and weights; they are, however, as accurate as circumstances permit, and sufficiently so, it is hoped, for general information. PURCHASERS NOT TO PICK THE ARTICLES, which are sorted "ACCORDING TO THE CUSTOMS OF THE BRICK AND TILE TRADE" as soon as drawn out of the ovens, and having been placed upon the works or other premises in the usual manner, they are not to be picked, but taken all together as far as the number required; still, purchasers may select any of the lots to be supplied from, provided they do not reject any of the articles. NEWLY-DESIGNED ARTICLES, AND ALTERATIONS SUBJECT TO EXTRA CHARGES for new moulds or altering others, and for extra labour in piercing, nicking, dividing, or altering any article from the established form or size. NUMBER IN COUNT is ten times ten in a hundred, ten of which make a thousand. TERMS RESPECTING CREDIT, SPECIAL CONTRACTS, AND PAYMENT, must be regulated principally by the nature of the disbursements in the trade, and partly by such special bargains as the manufacturer may enter into; Excise, Wages, and other out-goings, are prompt and without abatement, consequently special bargains are to be strictly fulfilled by purchasers in all points of view, payment to be made punctually and without abatement, according to such special contract, and generally in all other cases the prices as per lists respectively, as well as charges for new or altered moulds, are to be paid for on or before delivery in cash, without discount, premium, or abatement, or the respective items to be subject to interest at the rate of 5 per cent. per annum, until paid. REFERENCE INDISPENSABLE in special bargains, or any other instance where goods are to be delivered before they shall be paid for. LETTERS MAY BE ADDRESSED to either No. 4 Wharf, Macclesfield street South, City road Basin, London, or to The Tileries, Tunstall, Staffordshire Potteries.

## UNSOLICITED TESTIMONIALS, NOTICES, &c.

"I consider they," the Terro-Metallic Drain Pipes, "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains." *Extract from a letter by John Phillips, Esq., Surveyor to the Honourable Commissioners of Sewers for Westminster and part of Middlesex*, 1846.

"I beg to call the attention of the Court to the necessity of its taking steps to procure immediately a further supply of Straight and Curved Lengths of Terro-Metallic Drain Pipes, of 6 inches diameter, with Socket Joints, as those now in store will soon be worked up. It is also desirable to procure some with Bevelled Ends to suit the sides of the Sewers * * * and others of a funnel shape, similar to the model presented herewith, for the Gullies and Gully Drains. Fig. 2 shews the mode, by means of pipes, of connecting private drains with new sewers; and as it is essential, both as regards economy and sound construction, that these should be worked in the new walls whilst sewers are being constructed, I propose that a large quantity of them should also be procured. * * * I also propose that in lieu of [illegible] at present, for connecting private Drains with the sewers already constructed, the connections be formed, after Midsummer day next, by means of Terro-Metallic Pipes." *[illegible]*, 1846.

"The Bricks, being made of clay peculiarly good in quality and triturated by machinery." (The peculiar machinery for this process was erected by Mr. Telford, but was removed at the completion of his work. The advertiser has not seen such machinery, either before or since.) "and, being carefully moulded and burnt, are, in fact, the best Newcastle blue brick, the hardest and most durable of any made in England."—*Life of Telford, page 77.*

"The best external covering is Lead, which should be not less than seven pounds to the foot, or Copper of not less than twenty two ounces to the foot. Blue Tiles * * * are perhaps the next best covering." *[illegible] of the Incorporated Church Building Society, published in "The Builder" of the 16th of May, 1846, page 232.*

"On the western side of Tunstall, on the long declivity which reaches to the banks of the canal, are the extensive works called THE TILERIES. The clay on this brow has a semi-vitreous quality; it has been partially worked for a century past, but of late years its manufactured products have risen into increased importance, and are forwarded to distant parts of the kingdom; consisting of Tiles, Quarries, Building and Flooring Bricks, Pipes for conveying water, and other similar articles of very superior hardness and durability. At these works steam-engines are used for crushing and preparing the clay." *History, &c., of the Borough of Stoke-upon-Trent, by John Ward, Esq., page 100. [illegible]*

"A mode of Tiling adopted by the ancients, and of which there are specimens still to be found in Rome, is thus described by Borgnis ('Traite de Construction,' p. 253), a description follows, with plans and sections of the 'Italian' Tiles, 2 B and 2 C, p. 956, and sec. 1924: 'the mode of Tiling exhibited in the Temple of Diana Propylea, is given in the engravings of that Temple in the Unedited Antiquities of Attica.' After describing this mode of 'Grecian Tiling,' D 2 and E 2, with plans and sections, it is stated that "the effect of these Tiles is remarkably good, and imitations of them might be introduced in Villas and Cottages with excellent effect." P. [illegible], and sec. 1852.

"Which [illegible], Flat or Plain Roof Tiles, with lower ends ornamental, would produce an agreeable shade, shewing off some of the most pleasing alternations of straight and waved lines that this species of material is capable of producing." P. 229, and sec. 459, where the Tiles are figured.

"The Tiles being formed of Terro-Metallic Earth, have somewhat of the colour of Cast-iron; they are also [illegible], and must, from their nature, be incomparably more durable. In short, we consider them as the best of all coverings for roofs, whether of small or large buildings. * * * * There are suitable Ridge-Tiles, Hip-Tiles, Valley-Tiles, and many others, all manufactured by Mr. Peake, in the same superior style." *Page 648, and sec. 1368, Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture. Longman and Co., 1833.*

"Every thing tending to facilitate the sweeping of chimneys by machinery is now peculiarly deserving of public attention. We have been much interested by the sight of a newly-introduced material for lining flues, invented and manufactured by Mr. Thomas Peake, of Tunstall, Staffordshire, whose various important Terro-Metallic improvements are so popularly known through 'Loudon's Encyclopædia.' This species of piping is so exceedingly cheap that it will cause no very material additional expense in the construction of chimneys; it can sustain no injury from the action of fire, and as it presents a perfectly smooth channel for the sweeping machine, so it also requires less frequent cleansing than a common chimney, as it affords no lodgment for soot."—*Sheffield Iris, [illegible]*

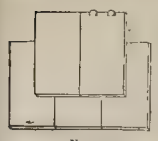
## LISTS TO CONTAIN NEARLY ALL THE ARTICLES, WITH OTHER DETAILS RESPECTING THEM, ARE TO BE READY FOR DISTRIBUTION IN A SHORT TIME.

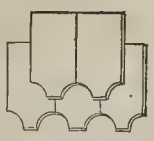
*Reference to sketches of some of the articles:—They are to a scale of 3-4ths of an inch to a foot, or thereabouts.*

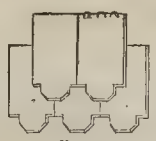
- No. 1. Plain Roofing Tiles.
- No. 2. Ornamental Roofing Tiles of six patterns.
- A A 2. Pan Tiles.
- 2 B, 2 C } Italian Tiles.
- D 2, E 2 } Grecian Tiles.
- 2 D. Grecian Ridge.
- 2 E. Grecian Eaves Tile.
- 3. Plain Gable Tile.
- A 3. Italian Ridge.
- No. 4. Capped Ridge Tile.
- 5. Plain Ridge.
- C 5 to F F 5. Plain Saddle, grooved for ornaments.
- C 5 to F F 5. Rolled Saddle, grooved for ornaments.
- B 5. Pyramid Ridge.
- C 5. Vandyke Ridge.
- D 5. Trefoil Ridge.
- E 5. Fleur-de-lis Ridge.
- F 5. Fleur-de-lis Ridge.
- F F 5. Fleur-de-lis Ridge.
- G 5. Inverted Arch Ridge.
- 6. Capped Ridge.
- A 6. Gothic Cap Ridge.
- 7. Rolled Top Ridge.
- 10. Quoined Hips.
- 11. Quoined Vallies.
- A 13, B 13 } Paving Tiles.
- C 13, D 13 } Paving Tiles.
- 15. Paving Tiles.
- A 15. Paving Tiles.
- No. 16. Paving Tiles.
- 17. Skirting Tile.
- 18. Skirting Tile.
- 19. Skirting Tile.
- 21. Paving Bricks.
- 30. Channel Brick.
- D 30. Channel Tile.
- 33. Kiln floor Tile.
- 40. Wall Coping.
- 41. Wall Coping.
- No. 44. Drain Guard.
- 46. Garden Edging.
- A 46. Garden Edging.
- 48. Drain Shell.
- 51. Plain Pipe.
- 52. Rebated Pipe.
- 57. Socket Pipe.
- 61. Conical Pipe.
- B 64. Flue Lining.
- C 64. Flue Lining.
- C 65. Chimney Top.
- 66. Chimney Top.
- 67. Chimney Top.

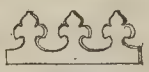
[Entered at Stationers' Hall.]

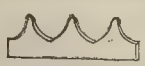
**PEAKE'S DRAIN PIPES, TILES, &c.—Continued.**

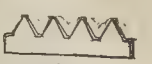

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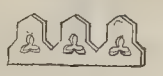

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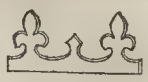

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E 5.

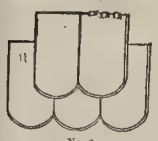

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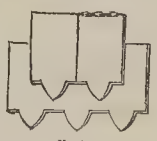

C 5.

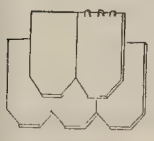

D 5.

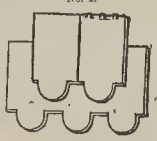

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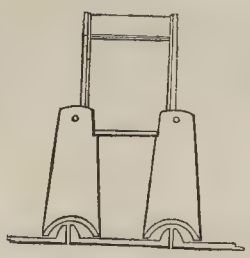

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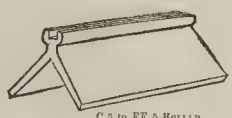

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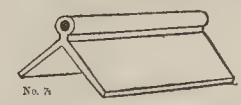

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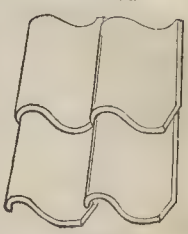

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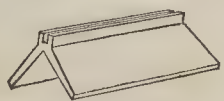

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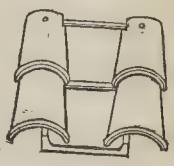

D 2 and E 2.

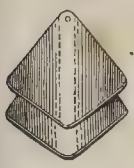

C 5 to FF 5 Rolled


No. 7.


No. A A 2.


C 5 to FF 5 Plain.


2 B and 2 C.

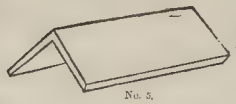

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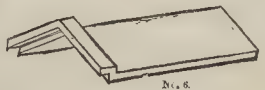

A 46.


B 5.


No. 19.


No. 5.


No. 4.

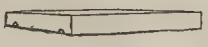

No. 6.




No. 3.

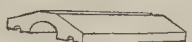

No. 18.


No 17.


No. 40.

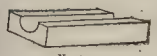

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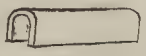

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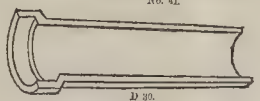

No. 41.


No. A 6.


No. 44.


No. 30.


No. 48.


D 30.


2 D


A 3.


C 65.


No. 67.


No 51


No. 52.


2 E.


No. 61.


B 64.


C 64.






No 15.


A 13.


A 13 and B 13.


No. 60.


No. 67.


No. 16


No. 21.


C 13 and D 13.

[Entered at Stationers' Hall.]

A MOST ADVANTAGEOUS INVESTMENT. To Pay at least 10 per Cent., in an old-established business, neighbourhood :—TO BE SOLD, THIRTY EXTRA SUBSTANTIALLY BUILT STOCK-BROKER CARCASSES, complete, let for a term of nearly Seventy Years, at low Ground-rents, first-rate Insurance Company. For particulars, apply to Mr. SAUNDERS, Langton Arms, Walnut-tree-walk, Lower Kennington-lane (back of the Church).

N.B. A respectable party upon the Premises ready to finish them in the best manner, to pay interest as above.

BUILDING LAND TO BE LET, Paul's-terrace, Ball's-pond, Lower-road, Islington. A most desirable freehold site, to be let in lots, for building third-rate detached villas, also class of houses being very much required in this neighbourhood, both old, bricks and money advanced, if required. For further particulars inquire of Mr. R. WEBB, 13, Spencer-terrace, Lower-road, Islington.

IMPORTANT TO BUILDERS.

BUILDING GROUND TO BE LET in all parts of London and suburbs, upon very favourable terms, and in most cases liberal advances. List can be had, and every information free of charge, or by post, upon inclosing two stamps. Our offices also afford peculiar facilities for quickly disposing of Houses and Estates, which Builders generally will do well to avoid, them-selves of, as they will be subject to no charge whatever, unless a sale be effected through our means, and then only the usual moderate commission.—BECKWITH and SALMON, Land and Estate Agents and Auctioneers, 23, Bucklersbury.

TO BUILDERS AND OTHERS.

CAPITAL PREMISES at Camberwell, in the immediate vicinity of Peckham, and in a highly improving neighbourhood, TO BE LET ON LEASE, on very moderate terms. They comprise a good Family Dwelling House, Two Good and Light Workshops, Saw pit, Standing Shed, Stable and Yard; are well adapted for carrying on an extensive business, and present an opportunity for enterprise not often to be met with. Apply to Mr. W. F. MEAKIN, 6, Albion-place, Blackfriars-bridge.

TO BRICKMAKERS AND OTHERS.

TO BE LET, with Immediate Possession, upwards of 100 ACRES of deep and Valuable BRICK and MALM EARTH, with water communication into the Grand Junction Canal and within a mile and a half of the Southall Station, on the Great Western Railway. Apply to Mr. JONATHAN PASSINGHAM, Heston, or at No. 4, Red Lion-square, Bloomsbury, where Plans may be seen

RESIDENCE WITH LARGE BACK PREMISES, WORKSHOPS, &c. suitable for a Builder.

TO BE LET OR SOLD, in the vicinity of Dorset-square and the Regent's-park, a very excellent Residence with commodious back Premises, Workshops, Saw-pits, Stabling, Machinery for sawing and Planing, &c. To view, apply upon the Premises, No. 32, Dorset-place, Dorset-square. For terms and particulars, of Mr. H. BIERS, 14, Carlton-villas, Edgeware-road. Written applications cannot be attended to.

TO BUILDERS AND CONTRACTORS.

TO BE LET on Lease from Christmas next, the complete BUILDING PREMISES of the late Firm of GRISELL and PETO, of Lambeth, and the Premises thereunto connected, on moderate terms. The Premises have a Wharf on the River, with Steam-engine and Sawing Machinery. A Premium will NOT be required; and the party taking the premises will only be required to pay for such portion of the Plant as may be agreed upon—Apply, for particulars, to Messrs. WINSTANLEY and Co., Paternoster-row

TO BUILDERS AND OTHERS.

TO BE SOLD cheap, Two Blocks of GRANITE, each 7 ft. by 2 ft. 3 by 2 ft. Also a large quantity of useful PORTLAND, suitable for several building purposes. The above is worthy of the attention of any building firm, as it will be sold a bargain.—For particulars, apply to Mr. ANDREWS, Langt n Arms, Wenlock-street, St Luke's, back of the church.

TO CARPENTERS

TO BE SOLD, the Lease, dated 1845, for Seven Fourteen, or Twenty-one Years, and Goodwill of a CARPENTER'S BUSINESS, [illegible] in consequence of the death of the Proprietor. The rent of a year, with good Workshop, Yard, &c.—Particulars may be had by application to Mrs. PILBROUGH, New Millman-street, Foundling Hospital.

TO BUILDERS, CABINET AND COACH MAKERS, Timbridge Ware Manufacturers, and others requiring roomy Premises, with valuable Machinery for Sawing, Planing, Turning, &c.

TO BE SOLD OR LET on Lease, most ELIGIBLE PREMISES, situate No. 12, Peter-street, Dorset-square, in the immediate vicinity of the Regent's Park, comprising a most commodious dwelling-house replete with fixtures and fittings; at the rear of which, with a back entrance into New-street mews, are premises adapted to a large trade, and consist of a large yard, excellent workshops, counting house, saw-pits, deal and other sheds, stabling, and an abundant supply of spring water. There is also the advantage of the machinery, which has been very recently erected for sawing, planing, corkcutting, turning, &c. by horse-power, and which will be sold or let on a most moderate price. For further particulars and to view, apply on the premises between 10 and 4. No written applications can be attended to.

## SALES BY AUCTION.

THE FIRST PORTION OF A BUILDER AND BRICKMAKER'S STOCK, HOLLOWAY, MIDDLESEX, by

MR. RICHARDS, on the Premises, Queen's-road, near the Railway, Holloway, on TUESDAY, October 19th, and following day, at Eleven o'Clock each day, by order of Mr. George Flowers, retiring from the building business, FOUR CART-HORSES and CHAISE MARE, TIMBER CARRIAGE, Van on Springs, Four Brick Carts, Lay and Pony new, Chaise and Cart Harness &c. The stock consists of 50 Lay Deals, 200 Battens, and Planks, prepared Battens and Floor Boards, Sashes and Frames, with Weatherstripping, and various useful materials; Patent Weighing Machine, Twelve Carpenters' Benches, 80,000 Stock and Plan Bricks, Patent Tiles, Pan and Ridge ditto, Hearth-ing, Quarries, Lathes, Slates, Stone, Saw-pits, large Scaffold Poles, Pudlocks, Scaffold Boards, Hoarding ditto, 80 Navvegars' and Brick Barrows and Planks, one Ton and a Half of Nails and various Ironmongery, Lead, Old Iron, &c.—View on Monday and mornings of sale; Catalogues on the premises, and of the Auctioneer, Tottenham.

N.B. A deposit of 25 per cent. at time of sale, and approved bills at two months on the remainder.

TO MASONS, BUILDERS, AND OTHERS

MESSRS. EVERSFIELD and HORNE will SELL by AUCTION on the premises, Belgrave Wharf, Grosvenor Basin, Pimlico, on TUESDAY, October 26th, and following days at Twelve for One o'clock precisely each day, without the least reservation, by order of the proprietor, who has already published the sale, THE VALUABLE STOCK, comprising PORTLAND, BATH, and CAEN STONE, in Block, Scantling, and Slab, Tooled York Paving, York and Portland Coping, Cills, Curb, Sinks, Steps, and Landings, prepared Headand Foot Stones, Parkening-lane and Grate Curb, York Jambs and Hearths, also Statuary, Veins Black, and other Marble Slab. The remainder of the Show Room, consisting of Superior Chimney pieces in Statuary, Veins Black, Brown, Black, Green, and other Marble, and Coloured Marble, Hands on Statuary Chimney pieces, Bath Chair and Porcelain Vases, Gothic Fonts, Monuments, and Chimneys, in Carrara, Marble Tablets, Friezes, Tables, Washhand Tops, and Mortars, Plaster Casts, Models, Figures, and Pedestals, Glass Milk Pans, and numerous other items; also the Trade Implements, consisting of Stone Waggons, Carts, and Trucks, Hoisting Jacks, Crab Engine, Blocks and Falls, Scaffold Poles, Cordsand Pulleys, Boards, Ladders, Mortar Boxes, Sand Screen and Measure, Scale Beams and Weights, Carpenters and Plasterers' Benches, Drawing Boards, Saw Tackle, &c., also a Four-wheel Chaise, Seat, Built Chaff Machine, Brewing Utensils, Old Iron, and numerous other effects.—N.B. Approved bills at four months will be taken from buyers to the amount of £20.—May be viewed one day prior, and catalogues had upon the premises, and of the Auctioneers, Coal Exchange; or 1, Little Smith-street, Westminster.

## SALES BY AUCTION.

FOR SALE, by PUBLIC AUCTION, at Garraway's Coffee House, 'Change Alley, Cornhill, on FRIDAY, 22nd October, 1847, at Five for Six o'clock precisely, for account of the importers.

1,200 Loads Colonial Red and Yellow Pine } Timber.
Ditto Oak and Elm
90,000 Colonial Pine and Spruce } Deals and Battens
1000 Baltic Yellow }

And other Wood Goods.

T. and I. SIMSON, Brokers.
'Change Alley, Cornhill.

EIGHT SUPERIOR TURNING LATHES, VARIOUS TOOLS AND IMPLEMENTS OF AN ENGINEER.

W. and C. PUGH are instructed to SELL by AUCTION on the premises, No. 4, Gibson-street, near the Victoria Theatre, Waterloo-road, on WEDNESDAY next, at Twelve o'clock, the VALUABLE STOCK of Mr Bateman, retiring from business, which consists of a 6-inch Double V Lathe with Doubleacting Crank and Appendages, Two ditto Flat Bed Turning Lathes, a Triangular ditto, a Crutch Lathe, a Powerful Bench Centre Lathe, a 14-inch ditto, several others; Drill Machine, Chuck, Vices, Forge Bellows, Large Grindstone, Anvils, &c.—May be viewed and Catalogues had on the premises, and of W. and C. PUGH, 6, Blackman-street.

SOUTH WESTERN RAILWAY.—Metropolitan Extensions. The Materials of Thirty Houses, York-road, Lambeth.

PULLEN and SON, in conjunction with Mr. R. CHADWICK, will SELL by AUCTION, on the Premises, on TUESDAY, October 19, at Twelve in lots, by order of the Directors of the London and South-Western Railway Company, all the valuable BUILDING MATERIALS, Fixtures, and Fittings, up of Thirty Houses, in Granby-street, Union-place, Millstreet, Ann's-place, and Harlington-street, York-road, Lambeth; comprising about 220,000 capital Bricks, Oak and Fir Timber, Tiles, Slates, Sashes, Doors, Partitions, and Inferior Fittings, good Floor-boards, Stone-paving, Coping and Cills, Shop Fronts, several Tons of Lead, Stoves, Coppers, and useful Fixtures and Fittings. —May be viewed the day prior, and Catalogues had of Messrs BIRCHAM and Co., Solicitors, 13, Bedford-row; of WM. TITE, Esq., 17, St. Helen's-place; of Mr. R. CHADWICK, 35, St. Martin's-lane; and of PULLEN and SON, 80, Fore-street, Cripplegate

MR. GRISSELL'S PREMISES IN YORK ROAD, Close to the New Metropolitan Terminus of the South Western Railway, with a Capital Wharf, on the River.

MESSRS. WINSTANLEY are instructed to LET on LEASE, these very complete and extensive Premises, which occupy a large area of ground, with a frontage to both sides of Guildford-street, with an entrance into the Belvidere-road. The buildings are most substantial, and admirably arranged for the purposes of a builder and contractor, but are easily convertible to suit the business of a Railway Contractor, Railway Carriage Builder, Railway Carrier, Founder, or Manufacturer. They consist of a lofty Range of Offices for Principals and Clerks, Workshops for Joiners, Carpenters, Painters, Plumbers, and Plasterers, Stone Masons' Yard, and Smiths' spacious covered Sheds, Stabling, &c. An excellent Residence for a Partner adjoining the Premises. On the opposite side of the street are the Sawing Mills, with large Yard, Shed, Workshop, and Counting House, and in the Belvidere road is a Timber and Stone Wharf, possessing a large frontage to the river.—To be viewed by cards only, which, with terms, may be obtained of Messrs. WINSTANLEY, Paternoster-row

WALLIS'S PATENT LIQUID WOOD KNOTTING. This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating their way and disfiguring the paint above

Many substances have been used and much time spent in endeavouring to find a cure for a bad knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 84, Long Acre.

STEVENS'S PROCESS for DYEING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitations are poor and meagre when compared with the continued variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of the process which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains for par ts and sold by HENRY STEPHENS, 54, Stamford street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and 1s. per pound. The oak colour may be obtained in powder at 1s. per pound, which dissolves in water to form the liquid, and 1 pound will make one gallon of stain.—N. B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

TO ARCHITECTS, BUILDERS, AND GENTLEMEN FITTING UP THEIR OWN HOUSES.

PRETYMAN and HOBSON, Furnishing Ironmongers, 17, Cornhill, being about to RELINQUISH the STOVE TRADE, have on hand a variety of the most Modern Drawing and Dining Room Stoves, which they will sell at Prices well worthy the attention of every Purchaser.

WARMING by means of the circulation of WARM AIR.—BURBIDGE and HEALY beg respectfully to inform the public, that they are prepared to undertake the warming of churches, hot houses, &c. with a new apparatus of the most simple and durable construction, which they can warrant to keep in order any length of time, and which is capable of effectually warming buildings of any magnitude in a most economical manner. BURBIDGE and HEALY, 130, Fleet-street.

PATENT BELLS.—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new material, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal. Orders received at the Bell Foundry, Whitechapel, for House, Castle, Clock, and other Bells.

PATENT METALS for Bearings.—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort for bearings and engineering purposes generally, will be found superior in quality and cheaper, than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any ordinary brass.—Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth, SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LANE HANCOCK, Goswell-mews, Goswell-road, London.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
|---|---|---|---|---|---|
| 6d. | 7d. | 9d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 9½d., 7½d., 8d. per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.
3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7½d., 8d., and 9d. per inch.
Do. Elliptic do., at 9½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. They may be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD ESTABLISHED, WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

JOHN RICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in and upwards.
Bright ditto with Black and Bright Bars, 8d. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| £3. 3s. | £3. 14s. | £4. 6s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 2s. per pull.

THE most perfect DRY GAS METER in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 19, Hampstead-road, in conjunction with his old-established premises, 67, St. Martin's-lane, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unbiassed by weather, by time, or by injurious gas. He invites attention to the fact of many of his large meters being in successful action at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club-houses, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

IRON-WORK FOR BAKERS' OVENS.

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And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Kent and Sussex Horse, in Hanover-square.

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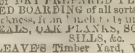
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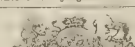
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The Builder.

No. CCXLVI.

SATURDAY, OCTOBER 23, 1847.

OCTOBER though it be, the day is warm and bright; what say you then, reader, to a Walk and a Talk? In spite of the dreadful doings in the city,—consols lower than they have been for many a year, large commercial firms failing, confidence weakened, requisitions to prime minister for some immediate effort on the part of Government to avert difficulties,—building operations appear to be going on vigorously in the metropolis; and it may be well to stroll round to some of our new public buildings, and note the progress which has been made in them. Shall we take Palace-yard for our starting point, and see what has been done in the new Houses of Parliament since our lengthened examination in April?* Visitors, taking off the attention of the workmen, are not desiderated here, but Mr. Barry knows our purpose, and lets no door be shut against us. We can't say this of all our professional friends, by the way; some few of whom are either so afraid that others should become as clever as themselves, or so thoroughly ashamed of their own works, that they dread examination, will afford no information, and yet are astonished if incorrect statements go forth. Open your doors, gentlemen, and let in the light, to shew you are not afraid of it.

In the words of the architect's midsummer report, "The carcase works of the portion of the building towards New Palace-yard are entirely completed. The Victoria Tower is about 90 feet high; the carving of the stone groin within it is completed, and the scaffolding is removed. The Clock Tower is also about 90 feet high. Framed scaffolding and hoisting apparatus have been prepared, and are now being fixed for the upper portions of those towers which are not yet contracted for. St. Stephen's Hall is in part carried up to its full height for the roof, and the remainder is, upon an average, within about 10 feet of the same level. St. Stephen's porch and the western entrance of the building is carried up to the height of about 30 feet above the ground."

St. Stephen's Porch and Hall, our readers will remember, form the entrance from Westminster Hall to the Central Hall of the new building, from which, north and south, extend the Peers' House and lobbies, and the Commons' House. Since the date of the above report, considerable progress has been made with the upper part of the Central Hall. The groined vault, 70 feet over (an immense work, spoken of in our former account), is nearly finished, and over it has been built a brick cone, to carry a spire, only recently determined on, if we understand rightly. This cone is three bricks thick, with buttresses, and will be faced with masonry.

Standing on the scaffolding here, it will be observed that the whole of the roofs are now nearly finished; those of the corridors north and south of the Central Hall, connecting it, as we have said, with the Houses, on either side, alone remain unfinished, and are now rapidly in progress towards completion. It is scarcely necessary to say, at this time, that these roofs are wholly of iron, including the external covering.

A peep inside the House of Commons is not satisfactory. The ceiling, it is true, is finished, ready for the painters, and the stone screens at the north and south ends of the House are completed; but in other respects it is as it was long ago,—the walls are bare, and the floor, even that which is to carry it, not commenced. The explanation of this seems to be the old story,—no certain decision is yet come to respecting Dr. Reid's plans for warming and ventilating it, and if the architect were asked to state when the House will be ready for the members, he would probably reply it was quite out of his power to do so.

The Victoria Tower will be a grand thing when finished: the 90 feet which it has attained, out of the 346 to which it is to rise, afford enough to judge by. With the Clock Tower at the other end of the pile, and the spire on the Central Hall, it will entirely alter the character of the building externally, and remove the objection of want of variety of outline, which is now occasionally urged.

On a turret behind the Victoria Tower the model of a short spire, apparently for metal, is set up, terminated with a large crown and vane, the effect of which is unsatisfactory,—the vane is too large, and the outline not harmonious. Fortunately, it is but a model. The practice of essaying the appearance of the proposed decorative portions of a building when in their place, by means of models, is much more followed by the French architects than amongst us: it is greatly to be recommended. The working of mouldings and enrichments at their intended height, too, as done by our foreign neighbours (the stone being put up in blocks) has its advantages.

Let us cross the road, and see what is doing in Westminster Abbey, and in passing Henry the Seventh's Chapel, just observe the state of its *new* outside. In another twenty years it will be a ruin. The application of a chemical solution would probably do much to delay its destruction, and ought certainly to be tried.

In the Abbey the dean and chapter are going their own way, notwithstanding the tolerably loud dissent from it which has been expressed in all quarters. Nothing has yet been done in the transepts, but new carved stalls are being put up, down to and against the east side of the organ-screen, so as to get fifty, instead of thirty, as before. They seem to be nicely drawn and carved. The organ, which formerly surmounted the screen, is to be divided, and placed half on each side of it under one of the main arches. Additional room is to be gained, they say, for 800 persons, by the alterations in progress,—how many of them will see and hear what is going on is another question.

Westminster-bridge, whither we wend our way, presents a miserable aspect. Denuded of its parapets and alcoves, the masonry below left ruinous, and some of the arches, miserably distorted, shored up to prevent accidents, it must serve to astonish foreigners, who have heard so much of our superiority in this class of constructions, if in none other. Its rebuilding at present, nevertheless, seems unlikely.

We were amused recently by a "Copie of Reasons, presented by the Lord Mayor and Aldermen of London, in 1664, against the proposal of building a new Bridge over the Thames, between Westminster and Lambeth, *wherefrom further proceedings were stop'd.*"* Amongst them were these,—that it might prove perilous to his majesty to have so near a passage over the river for malefactors, in case of insurrection; it would divert trade from Southwark; lessen the revenue of London-bridge, and lead to its ruin; it would obstruct commerce, cause the river to flood adjoining lands, and "dampnify and diminish the number of watermen." A concluding reason is sufficiently amusing and suggestive to be quoted entire:—

"The erecting of this Bridge would much advance the Increase of new Buildings in the Parts adjacent, which hath been carefully and continually provided against by Commissions, Proclamations, Decrees of Starr-Chamber, Orders, and Instructions of the Councell-Board, in the Reigns of Queen Elizabeth, King James, and his late Majesty (of ever blessed Memory) as well upon Rules of Law and Justice (as against publique Nusances) and upon Reasons of State and Government, as from a particular Regard to the Honour, Government, Health, and Safety of the City of London (their Majesties Royal Chamber and Imperial Seate of the Kingdome) which they judged and declared to be of great Consequence to the Crowne, and in much Danger by the Multiplicity and Encrease of new Buildings, as the Cause and Means whereby the Citizens would be deprived of the Benefit of their ancient Priviledges and Trades, and the Freedome of the City (which hath once been of great Esteem) will become of no Value, when Tradesmen in the Suburbs (which are since growne bigger than the City) may without Charge enjoye equall Benefit with the Freemen in London, their Markets being forestalled, and the prices of Timber, Fuell, Victual, and all other Provisions inhansed, their Conduit-Pipes built upon, stopt and destroyed, the Streets become Nusances to the City and Court, the Thames annoyed and choaked by the Encrease of Sewers, and the Abundance of Soile and Filth carryed and washed into the River, to the Hindrance of Navigation, the City infested with great Numbers of idle, loose, and dissolute Persons resorting thither from all Parts of the Kingdome, to live by begging, cozzening, Pilferyrs, Rapine, and other lewd, filthy, and unlawful Practices, and exposed to unspeakable Danger in case of popular Sickness and Infection, and infinite other Detriments and Inconveniences which have since insued, and do daylie grow (as the new Buildings have increased) upon the City."

The ignorance and prejudices of our ancestors are not much more striking to us than our own foolishness will appear to the next generation.

This quarter where increase of building was so much feared, and which is now of such importance, will soon be greatly changed by the extension of the South Western Railway on a viaduct. The enormous shew arch which will cross the Westminster-bridge Road, is being rapidly prepared for, indeed the abutments already appear above the foundations, and for one closely adjoining it, the piers are nearly completed. The viaduct will go on to Hungerford Bridge, near which there will be a station, and will form in the whole a great work. We will not divert our way to trace it back, or we should find some arches turned over roads in Lambeth worth examining. One over Paradise-street has ten iron girders, each 30 feet in length.

Our course must be westerly; we would see what progress they have made at Buckingham Palace. Our brief criticism on the addition now in course of erection, made when we, first, gave a view of the intended building,* has been adopted and amplified in every journal wherein mention was made of the structure,—"It *is* little more than an ordinary piece of street architecture in stone instead of stucco." The building has been carried up very rapidly, and has now reached its height, with the exception of the central portion. We regret to say that its effect is even less satisfactory than

* See p. 177, p. 189, p. 230, p. 284.

* Reprinted in *Morning Advertiser*.

* See p. 405, *ante*.

it was in our engraving. Its characteristic is littleness: of monumental character, originality, elegance, there is none. So far from being *more* than an ordinary piece of street architecture, it is infinitely less striking than some that could be named. The state entrance is singularly mean and shabby.

Suggestions of what might have been done with the building are now not wanting, but are useless excepting as matter for thought. Thus, for example, a writer in the *Mechanics' Magazine* says:—

"The architect, by shaping his plan accordingly, might have produced a very powerful degree of picturesque effect, by admitting the light from behind through one or more colonnaded openings, as the case might be, in the façade, after the manner of the two open loggias in the terrace front of Somerset-place. A central colonnade over the ground-floor, forming a terrace-garden on the level of the principal floor, would, if executed on a majestic scale, not with such a puny order as the portico within the court, have been attended with strikingly scenic effect in whichever direction it was viewed. As seen from the apartments around the court behind it, it would have shewn itself admirably, and have admitted a peep through its colonnades into the park; whereas now those rooms will be entirely deprived of the cheerful prospect hitherto presented to them, which will most assuredly be the reverse of improvement as far as they are concerned. As regards the external façade, an open colonnade of the kind here hinted at would have imparted piquant vivacity and expression to the whole. Of course, it would have been necessary to prolong the façade in order to make up for the space occupied by the centre opening; but that, too, would have been an advantage, not only by producing greater extent of front, but also by screening the rest of the building, especially the south side of it, with which the portion now added does not connect itself at all; on the contrary, shews itself to be stuck on in the most awkward manner. Again: had the façade been prolonged,—carried out as far as the two diminutive Doric wings, which are left standing, now are,—the extremities might have been a story lower than the rest; which would have produced variety of component masses. Matters were managed cleverly enough in one respect. By ensuring as much secrecy as possible, the works were commenced before there was time for the public to inquire into, or even ask, what was about to be done. Urgent indeed must have been the necessity that occasioned such unfortunate precipitation, the consequences of which are now likely to be felt rather severely in the shape of very ungracious criticism."

The exterior of a portion of the Carlton Club is finished, and looks very well. The contrast of the polished granite columns with the light stone of the rest of the building being unusual amongst us, the opinion of the majority is adverse as to its good effect.* One of our correspondents remarking on this, says:—"But if it be difficult to reconcile the mind to the different colour of the two stones, how much more difficult must it be to do so in respect of the introduction of the most durable in connection with the most perishable stone that has ever been used in London, and which, in the course of twenty years, will be swept by the hand of time with the besom of destruction."

If the fronts be of *Caen* stone, as we believe they are, we know nothing to justify our correspondent's opinion. All that we have seen of this stone leads us to entertain a high opinion of its durability when properly selected;—for example, the two great churches in Caen, built by William the Conqueror and his wife, which we examined some years ago, have endured remarkably well:—but we insert the remark with the view of eliciting facts.

*Apropos* of building materials, before concluding our present ramble; a reader, pointing our attention to flaming accounts, which have appeared in some of the morning papers, of an artificial stone, equalling, if they might be believed, granite and other cognate formations, in solidity, specific gravity, power of resistance, and *durability*, inquires why we also have not looked at and described the invention. Looked at it we have, that is, as well as it can be looked at, while all the arrangements are yet in embryo; but as it is not our practice to offer hasty opinions on such matters, we must see and hear a little more about it before we indorse the panegyrics. The very transparent puffs in question will simply have the effect, of making those who know any thing of the subject more cautious and sceptical.

* A view of the building is given p. 219, *ante*.

## MEMOIR OF THE LATE MR. COTTINGHAM, ARCHITECT, F.S.A.

The late Mr. Lewis Nockalls Cottingham was born at Saxfield, in Suffolk, October 24th, 1787, and died at his residence, in Waterloo-bridge-road, Lambeth, on the morning of Wednesday, the 13th instant, after a long and painful illness.

He was of an ancient family. One of his ancestors was abbot of St. Marie's Abbey, at York, in the year 1438, and many early documents and contracts for works in the palmy days of Gothic architecture, which are in possession of his family, contain the name of Cottingham honourably mentioned as artists of merit, engaged in rearing the matchless ecclesiastical edifices of England in the middle ages.

He very early in life evinced marks of a taste for science and the arts, and was in consequence, according to the frequent practice of those days, apprenticed to an extensive builder at Ipswich, in Suffolk, where he acquired that practical knowledge which was afterwards so useful to him. After several years spent industriously, he proceeded to London, and there placed himself for improvement with an architect and surveyor.

He commenced his career in 1814, and for many years steadily worked himself up in his profession.

His first public appointment was that of architect and surveyor to the Cook's Company in the year 1822, which he held for a number of years, and soon after this Mr. John Harrison, of Snelston Hall, Derbyshire, became one of his principal patrons. He erected for this gentleman the above-mentioned mansion in the perpendicular style of gothic architecture, with its offices and lodges. In the year 1825 he was nominated by the Dean and Chapter of Rochester architect to their cathedral, and there effected extensive works, including a new central tower, with restoration of many portions of the fabric; and on the completion of the works received a flattering testimonial, accompanied by a handsome pecuniary compliment, in addition to his professional charges. In 1829 he was the successful competitor for the restoration of the interior of the chapel of Magdalene College, Oxford.

In 1833 he was intrusted with the restoration and repairs of St. Alban's Abbey Church, and there carried out very considerable works. The next large work on which he was engaged was the cathedral at Armagh, in Ireland, which, with the exception of a very small portion, was rebuilt from his designs. This elaborate undertaking occupied him several years, and gave good opportunity for a display of mechanical skill and taste.

In 1840 he was called in by the societies of the Inner and Middle Temple, to report upon the then proposed restoration of the Temple Church, and he afterwards in various ways aided in the restoration there accomplished.

The reparation of the tower and spire of the church of St. James, Louth, Lincolnshire, which had been rent from the top to the foundations by lightning, was confided to his care, and has been completed. The extensive restorations at St. Marie's Church, Bury St. Edmunds, the Norman Tower in the same town, which has been completely restored, the new Bank adjoining, which he has erected, with other works in churches, &c. in the neighbourhood, will long cause his name to be honourably remembered in his native county.

Among his other works may be mentioned the following:—The restoration of the churches at Ashbourne, Derbyshire; Chesterford, Essex; Milton Bryan, Beds, where, in addition to other works, he erected a new tower at the north-west angle of the nave; Clifton, Notts; Roos, Yorkshire; Theberton, Suffolk; Horningsheath, Suffolk; Market Weston, Suffolk: and works for Lord Brougham, at Brougham Castle, Westmoreland; the Earl of Harrington, at Elvaston Castle, Derby, and others.

In the years 1824 and 1825 he published several valuable works connected with the study of Gothic Architecture, among which may be mentioned his large folio on Henry the Seventh's Chapel, Westminster, as restored; a folio work on the details of Gothic Architecture; and a quarto work on ornamental metal work.

His last great work remaining to be completed, was the restoration of Hereford Cathedral, to which all his efforts have been directed for some years past. So much had been done in former times to deface and destroy the proportions and detail of the early portions of the building, that authentic renovation was considered almost beyond possibility. All difficulties have, however, been overcome, and those who have seen the works, consider they may be appealed to as his best monument.

The great central tower had been disfigured internally by unsightly modern groining, and the introduction of barbarous supports under the great north and south arches, together with the mutilation of the four grand piers sustaining the tower, by the insertion of large blocks of masonry of the rudest description; all this, together with most serious fractures, made the work one of no ordinary difficulty.

The four main piers of the tower, with the aid of skilful shoring, have been re-instated with new ones of the original Norman design, sufficient remains of which were discovered to decide every moulding. The modern groining has been removed, and the four great Norman arches, with the interesting stone lantern above, restored; and a new timber ceiling, richly decorated in gold and colour, placed under the bell-chamber floor.

The work of restoration was next proceeded with in the Ladye Chapel, with its rich and beautifully designed east end, of early English date. This latter had become so dilapidated from the hand of time exercising its effects on a stone of inferior quality, that what the carved work and mouldings had originally been was with the utmost difficulty ascertained. The roof has been raised nearly twenty feet to its original pitch, covered with lead, and surmounted with a rich metal cresting with pierced inscriptions and glory; and at the west end terminated by a metal cross of early character. The eastern gable, which was of very low pitch, to correspond with the former roof, and with embrasures in its copings, has been also raised, and an elaborate wheel window, with vesica panel above, and arched panels on each side introduced, the whole surmounted with a stone cross, embodying in its design appropriate emblems.

In the interior, the entire Ladye Chapel has been completely restored, and has received the applause of those well calculated to judge.

The third contract, which is now in progress, comprises the complete restoration of the choir, with its fine east end.

We have been thus particular in describing this work, as only the day before his decease a county meeting was held to raise the funds for the several works required to complete the building fit for divine service, for which the sum of 25,000*l.* is required. This, however, it appears from the published accounts, there is every probability will be raised, and it is to be hoped that the late architect's son will be permitted to finish a work in which he has been engaged with his father, with whose views he is of course fully acquainted. In consequence of Mr. Cottingham's long illness, the conduct of his practice in reality devolved on his son long ago.*

The late Mr. Cottingham was a member of many of the scientific societies, and had from a very early period been on intimate terms with the artists and scientific men of his time, among whom may be mentioned Flaxman, Stothard, the well-known John Carter, Mr. Gayfere, who restored Henry VII.'s Chapel,

* A church is now erecting near Lincoln, exclusively from the younger Mr. Cottingham's designs, though not hitherto so stated.

Westminster, Mr. Capon, the antiquary, and others, now no more.

"In connection with his residence, Mr. Cottingham had a suite of apartments, partly underground, fitted up to receive a noble collection of architectural specimens and works of art, which is probably unique.

His remains are to be interred to day, Friday the 22nd, at the east end of the north aisle of Croydon Church, Surrey.

## DISTRICT SURVEYORS' FEES.

A PRETTY SPECIMEN: AND IMPORTANT AWARD.

WITH regard to various building operations on the property of Mr. W. H. Whittell, of Sydenham, the district surveyor of Lewisham made the following demands:—

*No. 1.—At two newly built first class second-rate buildings, Albert-road, Sydenham:—*

| | £. | s. |
|---|---|---|
| Fees of additions (front porches, &c.): at 1*l.* 10s. each | 3 | 0 |
| Fees of attached buildings (privies): at 1*l.* 10s. each | 3 | 0 |
| Fees of additions (rear front, verandahs): at 1*l.* 10s. each | 3 | 0 |
| Fees of party fence walls: at 15s. each | 1 | 10* |
| Fees of new buildings of second class fourth-rate (stables, &c.): at 2*l.* 2s. each | 4 | 4 |
| Fees of raising on party fence wall | 0 | 15* |
| Total | 15 | 9 |

*No. 2.—To premises in Mr. W.'s own occupation, Forest Hill:—*

| | £. | s. |
|---|---|---|
| Fee of alteration of second class, fourth-rate building (greenhouse) | 0 | 10 |
| Fee of alteration of first class, extra first-rate building (chimney-breast, &c.) | 2 | 10 |
| Fee of new building of second class, fourth-rate (hot-house) | 2 | 2 |
| Fee of alteration of second class fourth-rate building (greenhouse, flues, &c.) | 0 | 10 |
| Total | 5 | 12 |

No. 3.—*To premises situate in Albert-road, Sydenham:—*

| | £ | | |
|---|---|---|---|
| Fee for raising on party fence wall | 0 | 15* | |
| Fee for raising on party fence wall | 0 | 10* | |
| Total | 1 | 5 | |

These charges the owner refused to pay, on the ground that some were excessive, and others could not be legally claimed, and sent the matter to the official referees. At the hearing, the district surveyor having first objected that the referees had no jurisdiction in the matter, it was explained, that the item, "raising on party fence wall" (account No. 1), applied to a wall built partly before the Metropolitan Buildings Act came into operation, and that the two houses in question were commenced and built after that period, and that the porches, the subject of the first item, were not carried up at the same time as the houses, but that the houses were not finished for occupation before the porches and verandahs were put up; and the surveyor stated that the houses were commenced under notice to him in 1845, and completed 5th January, 1846, and that the "porches" and "verandahs" were not carried up and covered in until after the roof of the building had been covered in, although cantilevers had been thrown out in the first instance for the verandahs, and Mr. Whittell admitted that the stables, being the "new buildings of the second class," referred to in the said account, were built after the houses had been completed for occupation, and the surveyor stated that the "party fence walls" were in progress for six or seven months, and were made complete on the 19th January, 1847, and that he received notice of the raising of the "party fence wall," and that the party fence walls were raised for the convenience of the tenants. It was shown by a drawing put in, which had been prepared by the district surveyor, that the "porches" formed part of the original design, and it was admitted that toothings had been left in the walls for these porches; and it was contended on the part of the owner, that the privies are "attached buildings," and that the stables are "detached buildings," and that a fee of ten shillings only is payable for each of the privy and stable buildings; and with respect to the party fence walls, that by reason of the grounds thereby divided, belonging to the same owner, the district surveyor was not entitled to any fee in respect thereof.

Upon the second account (No. 2), the district surveyor explained, that the first item, having reference to the "greenhouse," was claimed under an award of the official referees, "Whittell and Badger, district surveyor" (May 27, 1846); that the second item, termed "alteration of first-class extra first-rate building (chimney breast,)" comprised the taking down and entire rebuilding of a chimney-breast eight feet high, in an internal cross wall, and that the work was begun without notice to the district surveyor; that the third item, termed "new building of second-class, fourth-rate," was a hot-house 30 feet by 20 feet, with a doorway, formed to communicate with the greenhouse above-mentioned; and that the fourth item had reference to the flue of this greenhouse, and that he had notice after the other works were completed, but Mr. Whittell proved that the doorway was made and the flue carried round the hot-house during its erection, and contended that the hot-house was not a new building, but that supposing it to be a new building, the fee payable thereon was not more than 10s.

The referees awarded as follows:—"With respect to the account (No. 1), that notwithstanding that the statute provides that the district surveyor may receive the fee payable to him for any new building upon the expiration of one month after the roof the building shall have been covered in, the district surveyor is not by the circumstance of his becoming entitled to receive, or by the receipt of the fee, discharged of the duty of causing the rules, regulations, and directions of the statute to be observed as to any matters incident to the original erection and completion of the building, which may not have been performed within such period of one month after the roof shall have been covered in, but it is his duty to continue to survey any building erected under his supervision as district surveyor, until the final completion of such building, without becoming entitled to any further or additional fee in respect of any matter or thing incident to the original erection and up to the final completion of the building; and inasmuch as the 'front porches,' &c., 'privies,' and 'rear-front verandahs,' in respect of which fees are claimed as 'additions' to buildings, or as 'attached buildings,' and 'the party-fence walls,' in respect of which fees are claimed, are matters and things incident to the original erection and essential to the completeness of the buildings of which they form parts, or to which they are attached, or with which they are connected, and such buildings had not been completed, although their progress may have been suspended,—we do hereby determine and award, that no fees had become payable to the district surveyor in respect of such works as the works named in the account and last recited, or any of them.

And with regard to the 'new buildings' of the fourth-rate of the second class, in respect of which a fee of two pounds and two shillings is claimed upon each of such buildings, we are of opinion that a fee is payable for each of the buildings in question, inasmuch as they were not built at the same time as the buildings to which they respectively belong, nor carried up and covered in within twenty-one days after such buildings respectively had been covered in within the meaning of the Metropolitan Buildings Act. And we do hereby determine and award, that the fee payable for each of such 'buildings' being detached buildings distinctly rated, and the rate being the third-rate, is one pound and five shillings for each of such two buildings, being the fee imposed by Schedule L, of the Metropolitan Buildings Act, in respect of additions to or alterations of buildings of the rate to which the buildings in question belong.

And with regard to the fee claimed in respect of 'raising on party fence wall,' inasmuch as it does not appear that the wall in question was raised to a height exceeding 9 feet by virtue of any authority given by the official referees in that behalf, or otherwise so as to impose any duty in respect thereof upon the district surveyor,—we are of opinion that no fee is payable to the district surveyor in respect of the service set forth in the account and hereinbefore last recited.

And with regard to the account (No. 2), we do hereby determine and award, that the first item viz., the fee of ten shillings, being the fee made payable to the district surveyor under an award of the official referees, if it has not been paid and if the directions therein contained have been fulfilled, is still payable to the district surveyor. And with regard to the second item, viz., the fee of two pounds and ten shillings in respect of 'alterations of first-class extra first-rate building (chimney-breast, &c.),' that the work in question did not constitute an alteration, but was a repair, in respect of which no fee is provided; but inasmuch as we are of opinion that the supervision of such repair is a service required of the district surveyor by the Metropolitan Buildings Act, we do hereby order and appoint, subject to the consent of the Commissioners of Works and Buildings, a fee of ten shillings for such special service; and with regard to the third item, viz., the fee of two pounds and two shillings for a 'new building of second-class fourth-rate (hot-house)' we hereby determine and award, that the works in question did not constitute a new building but an addition to a detached building, of the third-rate; but inasmuch as no fee is expressly provided for such operation, and we are of opinion that the supervision thereof is a service required of the district surveyor by the Metropolitan Buildings Act, we do hereby order and appoint, subject to the consent of the Commissioners of Works and Buildings, a fee of fifteen shillings for such special service; and with regard to the last item, viz., a fee of ten shillings in respect of 'alterations of second class fourth-rate building (green-house flues, &c.),' we hereby determine and award, that the works in question are included in the last recited item, and therefore no further fee is payable thereon.

And with regard to the last account (No. 3), we do hereby determine that the foregoing part of this our award, with respect to fees for 'raising on party fence walls' is applicable thereto, and we do hereby award thereon accordingly."

The costs and expenses to be paid by the district surveyor.

The Commissioners of Works having signified their consent to the fees, the seal was affixed on the 7th inst.

* Or such other fees as shall be appointed by official referees: vide schedule L.

THE BEDFORDSHIRE ARCHÆOLOGICAL AND ARCHITECTURAL SOCIETY held their second meeting at the Bedford County Library, on Monday week, the Archdeacon of Bedford in the chair. Mr. E. W. Smith, an hon. secretary, read a number of letters from new members, and the archdeacon read one from Sir Harry Verney, Bart., M.P., suggesting that Buckingham should unite with Bedford. It was ultimately resolved, however, "That in the infant state of the society, it would be difficult to extend its proposed operations; and that, therefore, Sir Harry Verney's proposition be thankfully but respectfully declined." A 'general committee,' and an 'editorial committee,' were then appointed, and a sub-committee formed for drawing up a code of laws. It was further resolved that four quarterly meetings should be holden; viz., on second Tuesday in February, May, August, and November, at twelve o'clock; and that committee meetings be held on first Friday in every month, at twelve o'clock. Subscriptions in advance, on 1st of January in every year. Several rubbings of brasses, and drawings, were exhibited; and it was intimated, that at future meetings papers would be read. The members were invited to obtain objects of interest to form a collection for the society.

BREEZE FOR BRICKS.—The contracts recently entered into by the metropolitan parishes for the sale of their dust are singularly different from those of last year, when the competition was enormous. For pounds they will scarcely get shillings, and some of the parishes are even paying for its removal. The market for ashes is at a stand still, and instead of 14s. a chaldron, which the enormous consumption of bricks last year brought it to, 3s. 6d. is spoken of as a large price. The stock on hand is said to be sufficient to make more bricks than will be needed for years.

## WILLIS ON ELY CATHEDRAL.

At the time that the Archæological Institute visited Ely, we gave some views of the cathedral, and alluded briefly to the lecture which Professor Willis delivered there.* *The Norfolk Chronicle*, a well-conducted paper, gave last week a full report of this lecture, and mentioned, *en passant*, that the ceiling of the north transept is undergoing the process of repainting, after a new design. It will be divided into forty-eight compartments, but only one of these is at present finished. It is well executed; but the patterns are too minute in their details of figures and ornaments to be properly appreciated at the great altitude at which they present themselves to the eye of the spectator.

After commenting on the octagon lantern, the professor said:—This church had, in addition to the great cross, or transept, a western transept, occupying the extreme western end. This was a magnificent introduction,—a kind of hall,—to this lofty church. This kind of transept was not often found. At Peterborough there was an example of it, and another existed at St. Edmund's Bury. Only a part of this transept now existed; the northern wing was either pulled down or fell down, at what period was not known, history having left no trace of it; but there was evidence, that up to the Reformation the transept existed, and was then perfect. At the intersection of the western transept with the nave, was a lofty tower, built by Bishop Ridel. At the period immediately following the Norman conquest such towers were common; some remained at Canterbury; and the cathedrals were flanked with towers of different magnitude, like the churches we see on the banks of the Rhine. On entering this cathedral, they found themselves in a porch, or portico, of the old English period, called the Galilee;† that was the name it was mentioned by in the ancient records. A building at the western end of Durham Cathedral was also called a Galilee: why, he could not tell. Various opinions had been given by writers on ecclesiastical architecture as to the *unde derivatur* of this term, as applied to such porches; but they were conflicting and unsatisfactory.‡ A Saxon church early stood here. The first Norman abbot, Simeon, built an entirely new conventual church, and the monks removed from the old to the new one. This abbot Simeon was brother to Walkelyn, bishop of Winchester. He began to erect the church soon after the cathedral at Winchester was commenced; and there are many resemblances between the two edifices, especially in the triforium, and the clerestory. There is the same boldness of design pervading the two cathedrals,—and they serve as a key to assist in forming a history of church architecture in this country. Abbot Simeon only completed as much of the church as was required for the performance of Divine service.—The nave was completed before 1174: it was protected by a timber roof covered on the outside with lead, but left unceiled within; notwithstanding this want of interior finish, the circular arcades had a grand effect. The choir was originally under the tower, or to the west of it. It was at first called the presbytery, because priests only entered it; it was then set apart for such of the monks as sung the service; and it afterwards became the fashion to get room for the choir to the east of the transepts, and to leave the transepts clear for chapels, &c. As the first object of the founders was to erect so much of the building only as was sufficient to carry on the service, they had leisure to take what steps were most conducive to finish it; and as they obtained the offerings of the pious, the design was carried out with increased magnificence; the devout public was also attracted to subscribe, and thus money was obtained for its completion.

Coming to the western transept, they found the pointed arch introduced. This part of the building was evidently erected when the pointed arch began to come in, before the florid pointed arch was introduced; it was not till some time after the pointed arch came in, that it received its appropriate capital, shafts, and mouldings. If they recollected, that Bishop Ridel, who built the tower, occupied the see from 1174 to 1189, they would have a pretty good notion of when the pointed arch came in. Bishop Eustachius, about 1200, built the spacious and elegant vestibule, to which reference had already been made under the appellation of the Galilee. The presbytery now occupied by the present choir, was built by Bishop Northwold, who must, for that purpose, have taken down the *apse*, or circular end of the original church. It was finished in seventeen years. This part completed, the next thing was the destruction of the original church, in 1235; during Bishop Northwold's episcopacy, the object of doing so was to provide a more fitting shrine for the relics of Etheldreda, Withburga, and other Saxon saints; and it was evident, that this shrine was placed in the middle of the works, behind the high altar. It was placed in the extreme eastern end, as being the holiest. That it was so was boldly asserted by the medieval writers. Matthew Paris, speaking of St. Alban's, said, that the shrine was placed at the east end, because the "more to the east, the more holy." In 1321, an accident happened by the fall of the central tower, which was described as standing on four piers. It fell to the east, and destroyed all that part of the church; and had to be cleared away, and rebuilt. Allan de Walsingham, at that time sacrist (afterwards prior of the monastery) a man of high repute for mechanical knowledge and skill, was the architect; and the idea occurred to him, that by forming an octagon, and placing the weight upon the eight piers, instead of four, all future danger from accidents might be avoided: instead therefore, of the usual square tower, we have here one of octagonal form, surmounted by a glazed lantern, of wonderful lightness and symmetrical beauty. Sir Christopher Wren had taken the idea of the Cupola at St. Paul's from the way in which this octagon lantern was supported. The lecturer said, that, it being found, that, if the roof of the octagon was made of stone, it would be too heavy, a wooden roof was put on. This was the work of Allan de Walsingham [between 1321 and 1341]; and they knew from the records he had left, how much even the rope cost by which the painter was suspended, who painted the central boss. The stonework of the octagon was erected from the resources of the convent, and he supposed from the contributions of the faithful. A portion of the work beyond was carried on by Bishop Hotham [1316 to 1337]. It was usual, that a part should be done by the bishop, and a part by the prior and the convent.

The two chapels of Bishop Alcock and Bishop West, are at the extremity of the choir, the former on the north, the latter to the south of the communion table. That of Bishop Alcock, who was the founder of Jesus College, Cambridge, is full of floridly-ornamented tabernacle-work, with niches, for the statues of saints and angels; and was begun about 1488. Bishop West's chapel is of later date [between 1515 and 1544.] That, also, is a work of elegant workmanship, full of numerous niches, exquisitely carved,—which had formerly been occupied by statues.

The Lady or St. Mary's chapel, on the north-west side of the choir, is a monument of architectural splendour coëval with the reign of Edward III. It is now used as a parish church, and called Trinity Church. The stone seats continue round the floor of the edifice. The canopies over these, which consist of an ogee head, of remarkable elegance, much radiated, and inclining forward, are striking objects in this place. These seats are surmounted by ogee arches, which are divided by a spandril pier, making two seats under each arch.

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Mural Paintings.—Extensive remains of paintings have been discovered in the old church of Catherington, Hants.

## ORIENTATION OF CHURCHES.

Sir,—Your correspondent, Colonel Mason, will probably excuse me if I prefer the reasoning of Professor Donaldson to his own upon this point, with the practical inconvenience and questionable origin of which he appears to be unacquainted. Even assuming with him that it originated with the Christian religion, and distinguished its votaries from the surrounding heathen, that surely is but a poor argument for rendering it obligatory upon us to whom no such reason could be apparent, even though it once existed. Such a practice partakes far more of the character of a blind and superstitious adherence to an ancient but unmeaning, and therefore irrational observance, than of the service of an intelligent follower of the simple doctrines of the Reformation.

But so far from the orientation of churches or of worship, distinguishing "the Christian from the heathen," it requires but little evidence to shew that the former actually adopted it from the latter, who practised it long before the commencement of our present era. Certainly the Christians did not borrow the idea from the Jew, who always prayed towards Jerusalem in whatever quarter he might be, the origin doubtless of the custom of turning towards Mecca inculcated on the followers of Mahomed. And whatever the aspect of Solomon's temple, its prototype reared by Moses in the Wilderness, had its entrance on the east side, and consequently the Holy of Holies at the west, as clearly seen in the description of it given in Exodus xxvii. But the beautiful sentiment contained in the words of Catulus, *exorientem auroram forte salutans*, and so prevalent in the Greek and Roman poets, seems to have pervaded the religion of the nations of antiquity. Probably it had its origin in the most primitive and simple system of false religion, the Magian, the rites of which were conducted upon the highest hills and addressed to fire or the heavenly bodies, and whose votaries naturally acquired a veneration for the east, from whence, as Dionysius observes, when speaking on this subject, the sun, moon, and all the stars commence their courses. At all events, if the Scholiast on Pindar, and Clemens Alexandrinus are to be credited, it was usual for the Greeks as well as the Romans to turn their faces towards the east when addressing the gods; and Dionysius and Livy inform us that the Roman Augur in waiting for the omen, turned himself towards the same quarter. With this agree the directions given by Vitruvius in book iv., chap. 5, for the aspect of temples, where he observes, that if nothing prevent, the temple should be so arranged, that the image within may look towards the west, *uti qui* adierint *ad aram immolantes, aut sacrificia facientes, spectent ad partem cæli orientis et simulacrum.*

As then this orientation was prevalent with the heathen, may we not suspect that before A.D. 390, sixty years after the destruction or conversion of pagan temples by Constantine, the Christian churches had adopted an *innocent* custom which they found existing; and that it is to the Crusaders rather than the primitive Christians, that we are to ascribe the reason that in later days has been given for this practice in the west of Europe?

I am, Sir, &c.

Wm. Willmer Pocock.

Brompton, Oct. 16th, 1847.

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'Steeple Jack' excelleth himself at Perth.—The kite, cord, and rope scheme having failed at Perth, where Wright had engaged to remove, repair, and replace the vanes of the city churches,—'Steeple Jack' was nevertheless determined not to be outdone even by himself. He therefore procured a stout though slender pole, 15 feet in length, and a rope, which he thus managed to stretch out of the belfry window of one of the spires, and loop over one after another of a series of accidental projections, in the shape of copper spikes, in four tiers, about 15 feet above one another; mounting by aid of the rope to each little projection in succession, whence he hoisted his pole, and looped his rope, and mounted again, 'like a squirrel,' until he reached the vane,—and all, it seems, 'for a trifle,'—nay for a fraction of the 'trifling sum' for which he offered to 'bring down' all the 'weather cocks' in the city.

## FREEMASONS OF THE CHURCH.

PROGRESS OF ART IN ENGLAND.

At a meeting on the 12th inst., Mr. Price exhibited a drawing of an incised slab, recently discovered beneath the flooring of Chippenham church, Wilts. It represents a female beneath a canopy, with part of an inscription in Lombardic capitals. Mr. William Fisk then delivered a lecture "On Historical Art," in which he contended that mind, intellect, soul, were the essence of the painter's art—an art which could not be forced, or, if attempted to be forced, its produce was worse than nothing; it was inborn, a portion of the faculties, and was not to be created, although its tone might be refined, and in many cases perfected; it was in this perfection of mind that the greatest results, the grandest works, were to be found. The art of the painter was essentially ideal when born of the mind; great, when the offspring of intellect; and sublime, when the creation of the soul. The mind imbued with poetry, whose joy was idealism, would charm the spectator with a fascinating pleasure, presenting pictures of life robbed of its coarser nature. But how great the difference between mind and intellect! The latter, as it were, formed the substance of the former. Its study of human nature was deep, not figuring it what it should be, but rather what it is, and to develope what with culture it may be. By a creation of the soul, the lecturer said, he wished to be understood as meaning a creation more noble, more exalted than that emanating from intellect. Those were the creations of the soul which were essentially sublime. It was the influence of the soul which enabled an artist to depict religion in its mighty divisions of faith, mercy, charity, love, and hope. The soul only could embody on the canvas sacred history. The art of painting, remarked the lecturer, was evidently derived from, and had its existence in, the passions of the mind; and the idea which ascribes its birth to love—at once the most elevated and tender impulse of our nature—might not be harshly discarded. To this passion art not only owed its birth, but its progress and perfection also. The love of national glory, and the desire to transmit the deeds of their heroes, were doubtless the great ambition of a rude and warlike people, and the art of painting was resorted to. Afterwards art was encouraged and fostered by the church; and until that was the case with ourselves art would never reach a climax. This was, indeed, one means to an end; but there was another equally great; that was, that art should be made a part of a liberal education.

The concluding part of the discourse, urging this point, we give in his own words.

"In an early part of my lecture I observed, 'To Pamphilus we are particularly indebted; as it was he who endeavoured, and succeeded, in establishing a knowledge of the rudiments of drawing as a part of a liberal education.' I would draw your attention to this point in particular. It is one I have, during many years, unceasingly endeavoured to enforce, on every occasion where the advance of art has been the theme of discussion. If it be, and most surely it is, that the state of the times produces the master spirit, should we not endeavour by every means in our power to take advantage of, and help along the times? But how? How is art to become truly great? What is necessary that the mind of the nation shall make a demand for the advance of high art? It is education that is needful. Make the art in all its forms part of a 'liberal education;' let it be introduced into our colleges, and become a portion of their system, as it is in some already. Though on a very confined scale, yet it is the welcome dawn of what may prove a cloudless noon. Let our nobility be taught, whether they be educated for the senate, the church, the army, or the bar, or for the adornment of private life, and so elevate them above the impositions of crafty picture dealers, and the charlatans who infest the walks of art, perverting and destroying the taste of the wealthy. Let them be imbued with the true principles of art. And what will be the consequence? Necessarily they will understand what art is, and appreciate it in all its forms. Again, I say, educate the lords spiritual and their clergy. The laity of the nobility have, not only in their private collections, but in the fine arts commission, set them a vigorous example. Let them follow it, and they will do yet more for art, by raising it from the intellectual to the sublime, and so place it on an equality with the zenith in Italian art; making, in this respect, the names of Italy and England synonymous. But is this all that is to be looked forward to? Are we to regard this as the utmost extent of, and the limit to the advance of art? Is the progress and attainment of another nation to be the impassable horizon to our own? No! Like the ancient Britons we shall find that beyond the horizon there is land which may yet be trodden over, and not only trodden over, but cultivated. Nay, even now that land is in our possession! Educate the MASS. Make the maxim of the great Apelles, '*nulla dies sine linea*,' the motto of all classes, for not even genius can succeed, or arrive at a correct knowledge, without constant and patient application. Instruct not only the nobility, but every class of society. Teach them all to know when they see a good picture, and to know why it is good. They will then discard inferior productions; and patronage, from the lowest to the highest scale, being based on principle, will be such as shall tend to elevate, purify, and perfect art in all its branches. So may we arrive at a state, the glory of which was never even dreamed of in the reign of ancient art. So shall we extend the confines they have gained, and make the encouragement of art the ambition of the mass, and the highest ambition of artists the patronage of an educated people."

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Dome of Cologne.*—As the chief entrance to that building is encumbered by an unsightly private house, the common council have empowered the dome-building administration to buy it for 15,000 dollars, towards which the latter body subscribed themselves 5,000 It is probable that the statue of the old Cologne architect, Johannes Hüls, of which a beautiful sketch has been already completed, will be set up here.

*Memoir of Reinhart.*—Born at Hof, in Upper Frankonia, he *walked* in 1788 to Rome, a young, life-joyous artist, whose resources, however, were *nil*. But he possessed unpurchasable goods—a robust constitution and a wondersome talent to *copy* nature. The sky of Italy, Rome's unmatched art-ruins, the stern, yet noble characters of the *campagna di Roma*, all this elated the young artist, as it *had* others before; but his love was one lasting for ever, and impelling him to great scope and exertion. He left Rome no more; and however hard and ominous subsequent times turned out, his *trade* still afforded him bread. At a later period, the wealthy and mighty visited his atélier—even princes and kings, amongst them Ludwig of Bavaria, to whose munificence he owed a care-*less* old age. Reinhart painted up to his death; and even these works of a man near ninety bespeak a great, vigorous, and youthful mind. His last picture was for the King of Bavaria, representing the "Invention of the Corinthian Order," a southern scene, full of nature and nobility. His works are scattered over all the world, the galleries and palaces of Germany, France, Russia, England, &c.

*Old Chinese Art and Industry.*—According to the late researches of Mr. Stanislas Julien, of the F. I., the making of iron or other metal ships is not a discovery of the present century. The celebrated Chinese philosopher, Hoai-Haw-Tse, speaks of vessels made entirely of iron 156 years before Christ. Moreover, the historians of the province of Kiao-tcheou state, that in the district of Nang-ting is yet to be seen the copper craft of King Keon-tsien, who reigned 765 years before Christ. This vessel, buried in the sand of the sea shore, was visible at low-water mark. It is, in fine, recorded in the work called "Chi-i-ki," that when King Yen-Kien (about 265 or 419 B.C.) sent his tribute to Peking, his ambassador embarked on board of a vessel entirely composed of copper sheets, in which he reached the capital.

*The Aqueduct of Rio de Janeiro, Brazils.*—If a plentiful supply of water is indispensable in our northern climates, it is, certainly, a matter of absolute necessity under the tropics. Thus, most large cities have been built on the banks of rivers or brooks, or, like Mexico, on those of an extensive lake. The capital of the Brazils does not enjoy that advantage, but the wreath of mountains which surrounds her, all covered with luxuriant vegetation, pour forth (from its granite cliffs) an abundance of springs, to which, in and near the city, the negro water-carrier is resorting. In many houses, moreover, cisterns and wells are to be met with. All this, however, would not suffice for an increasing population; and it was in the middle of the last century that one of the viceroys, we mean Conde Laoradio thought of providing it with that splendid aqueduct, which even now deserves the admiration of the traveller. Few towns also possess such splendid material for architectural purposes as Rio de Janeiro,—the granite alluded to being a very even-grained, ornamental, yet easily cut rock, of a bluish-grey colour. The imperial palace, most of the churches—nay, even most of the private houses, are built of it, which impart to them a certain aspect of solidity and sterlingness. The facing of some of the churches, however, has been brought here (as is the case in Bahia and Mexico) from the quarries of the mother country. The plan of M. Laoradio required great skill and perseverance in the surveyor, as most of these springs are not very plentiful (still, constant the whole year round), and had to be traced and combined with much labour. Of tunnels, or even costly canals, there was no idea in these times in South America, and perhaps there was no scope for it. Sources and springs were, however, to be brought to the city from all points of the compass, and some from a considerable distance—of six or eight miles. Thus, while perambulating the primæval brush-wood and forests of the Serras about Rio, the traveller perceives the long lines of the aqueduct, running along hill and dale—consisting of an open, square canal of six or eight inches breadth, by even less depth, and merely constructed of good substantially-burnt bricks, well bound by cement, and equally well embanked. Thus, it runs on for miles and miles—over spots rarely trodden but by the feet of the distant traveller. In many places these narrow canals are combined into larger reservoirs—and in approaching the city, the water had to be carried over the opening between two granite hills, which has been done by a very showy piece of architecture. It consists of a double row of arches, one built above the other,—the inferior very lofty and of narrow span,—through whose arcades the traffic of the Rua de Laoradio is carried on. Thus it proceeds to the very centre of the city, where, from a huge granite reservoir, the water is distributed.—[*Brazilian Reise.*]

## BUILDERS AND ARCHITECTS.

SIR,—I was glad to see the letter headed "Treatment of Builders."* The building trade in this city has been ruined by the very treatment builders have met with from architects within these ten years. Several have been insolvent, and nothing like a fair price can be obtained for work. Every thing is put to contract, and the long connection between the nobility and tradesmen is entirely set aside by the interference of architects, who term the long standing and highly respectable builders, *dear men*, and induce employers to put every thing to contract. The *system* is notorious, and if it is not altered, the trade can never be good for any thing again.

I am one who began upwards of twenty years ago, and then there was but one architect in this city,—a man who did not encourage cheap or low contracts. Work was then paid for at a reasonable and fair price. There are now ten or twelve architects, or persons calling themselves such, many of whom glory in catching a contractor with sureties, at a 25 per cent. contract *under its value*.

If you can *stir* the master builders in every city and town in the kingdom to counteract ruinous competition, and bring work to be paid for at equitable prices, you will confer a very great boon on the trade, and prevent many worthy tradesmen's insolvency.

With thanks to "Walter" for the paragraph, and you for its insertion,—

I am, Sir, &c., WILLIAM BUSSELL,
Gloucester. Builder, &c.

* See page 497, *ante*.

## THE GAS MOVEMENT.

MISCELLANEOUS NOTES.

Previous to offering a few observations on the purification of gas and its domestic and other uses, as already promised, we may in the meantime remark, that the rudiments of an anticipated metropolitan association for the reduction of the price of gas may be said to have assumed something like a definite form,—although as yet but a gentle, inefficient, and embryotic one,—since the publication of our last article, when one of the members of a committee at Camberwell, in thanking us for the information given by The Builder, announced to us the design of the committee to endeavour to induce the gas companies of the southern districts of the metropolis, including Southwark and Camberwell, to reduce their prices at least to the average of the other metropolitan companies, if not to that of many provincial towns, which are supplied with gas so much lower than the metropolitan companies are charging. A preliminary meeting was accordingly held, and afterwards a more matured association of gas consumers met at the Elephant and Castle, when much statistical and other information, most of it already incorporated in our continued series of papers on this subject, was brought forward in support of their, as yet, far too moderate demands,—or rather expectations, though in all probability they are the utmost thus realizable in the outset, from the mere voluntary offering of the companies themselves. A resolution was then moved by Mr. E. Chamberlain, seconded by Mr. J. Savage, and unanimously agreed to, "That, in the opinion of this meeting, 6s. per thousand cubic feet is a remunerative price for the companies supplying the southern portion of the metropolis with gas, and that such being the case, a deputation be formed to wait on them, and request them to reduce their price accordingly," representing to them at same time, that the increased consumption would more than compensate for the apparent loss. A deputation, consisting of Messrs. Jones, Chamberlain, Kenyon, Pash, Sinclair, Thwaites, Ward, Stagg, Mitchell, Wain, and Hodges, was then appointed, and a vote of thanks returned to Mr. Browne, the chairman, when the meeting separated.—— The Southampton new Company's bill will positively be resumed by the old promoters, in the forthcoming session of Parliament, where the great battle must be fought. The shares have already been largely taken up, even as far off as Edinburgh, where there is now to some extent a practical knowledge of the endless expansibility of gas, according to the opening up of domestic and other space for its diffusion, by a diminution of its cost, and an increase of its purity, and where there is consequently a well-founded expectation of an equivalent increase of permanent profits to shareholders themselves from so inexhaustible a source.——At Keswick a most commendable and exemplary movement has been made by the gentry for the exemption from gas rate of not less than two hundred of the poorer class of the inhabitants.——At Romsey, lately, the Lighting Commissioners resolved to resist the exorbitant charges made by the gas company for lighting the town, even though to some extent reduced, so that the fear of darkness through the winter was before the eyes of the people in that quarter: we have not yet heard of the more immediate result.—— Further extensions and improvements of works, in consequence of great and increasing demand, induced even by the partial moderation of old prices, have been going on in various quarters, as at Worcester, Manchester, York, Whitehaven, &c.; and gas is also pushing its way into more of those primitive places where, diffusive as it is, it had not hitherto penetrated. Such is about to be the case, too, at Malvern, and elsewhere. The masonry of the Shipley works is nearly completed, and Shipley will be 'in the light' in course of a month.——The Manchester consumpt and profit are ever on the increase,—and the cost ever on the decrease,—even though the profits be there expended on magnificent improvements of the town itself. The yearly gas rental is now about 80,000*l.*, from which the town still derives the splendid profit of 37,000*l.* a year, although the price (5s.) has been 1s. 8½d. below the average of forty-one English towns, viz., 6s. 8½d., and now appears still further reduced to 4s. 8d. There are now nearly 10,000 gas tenants, and 110 miles of gas mains in Manchester.—— It appears that since our late exposure of the secrets of the gas-house at Wakefield and elsewhere—not a shadow of contradiction to which, in fact, has ever appeared, although, according to the organ of the companies themselves, that exposure has now been 'published to the end of the world,' and 'read by all,' to the 'imminent danger' of the 'gas companies,'—various proprietors of establishments, such as those at Lincoln, alluded to by the *Stamford Mercury*, have prepared to erect apparatus of their own for the manufacture of their gas; and the proprietors of Vauxhall, also, taking the hint, at once erected a gas work of their own for filling their balloons, and at the very first off-go, nevertheless, saved 400*l.* out of 600*l.*!—the quantity for which the gas companies charged 600*l.* costing them thus only 200*l.*—Some of the companies, too, it appears have been blaming their own 'watchman,'—for his very fidelity in warning them of 'coming events,'—"as being too truthful,—as revealing too much," and thus creating "dissatisfaction and disaffection amongst the gas consumers;" and the proprietors of the publication have been hence obliged to furl their standard as a signal of defeat unless their blind and deaf supporters come to their senses: meantime the more far-seeing protector of monopoly only all the more sternly repeats his warning, that "if reductions be not *voluntarily* made, they will be *forced*, and that quickly, under serious disadvantages; and we repeat, says he, that "*we fight not with shadows.*"—— At one of the towns in Lincolnshire, it appears that gas is now admitted to be made at least as low as 1s. 6d. per 1,000 cubic feet.—— The Maidstone company, on the other hand, have graciously condescended to reduce their figure from 8s. 4d. to 7s. 6d.:—8s. 4d. to 7s. 4d. at once, would not have looked like close enough calculation and fractionizing of profits, we presume. There is some little ingenuity in this, as there is even in the 11½d. haberdashery invention. It is clear that between Lincolnshire and Kent, the price of gas is far from having yet reached its *level*, and certainly that level is not to be traced on the banks of the Thames. But as 'all things tend to an equilibrium,' so will gas now not be long, any more than water, in finding its ultimate level.——At Harrogate, the level of this most anomalous fluid has just been *reduced* to the Maidstone maximum,—8s. 4d.! and, considering the temptation to purchase it probably now irresistible, the directors have forthwith ordered, "that service-pipes be laid by the company, through the walls, into private houses, shops, &c." With a slight misgiving, however, of the public penetration, they have also resolved,—"That 500 circulars be printed and distributed, describing the great advantage of gas over other lights."——Explosions of pent-up gas have not been unfrequent of late, and no wonder, seeing the embargo placed on its free diffusion by such stopcocks as those at Harrogate and elsewhere. Seriously, however, we have even heard of a prudent 'consumer' taking a lighted candle into his cellar *to see* where the gas 'escaped so confoundedly!' It would be well that more reliance were placed on the sense of smell than on that of vision, in such cases, at least in the first place. The beadle of Walsall Church was killed the other day, and damage to the extent of 1,000*l.* done to the church by such incautious conduct: and a servant girl lately made a narrow escape, but not without injury, in a cellar at Charles-street, Middlesex Hospital, in the very same way.——The gas now distributed in the metropolis by some of the companies, by the way, is shamefully bad. Of this, however, anon.

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Curious Discovery in Durham Cathedral.—In the course of the restorations going on here, a large fire-place and chimney, as we understand, have been discovered in the thickness of the wall, at the south-west corner of the south transept. The fire-place opened into the transept, and although not coeval with the Norman work in which it is formed, is at all events earlier than the beginning of the fifteenth century, provision having been made for the chimney of it in the cloisters begun at that time. Its purpose is doubtful.

## RATING WATER COMPANIES.

MILE-END OLD TOWN AND THE EAST LONDON WATER COMPANY.

It appears from a report of a meeting of the inhabitants of Mile-end Old Town, recently held, to determine as to the rating of the East London Water Company, that the parish have obtained a decision of the Court of Queen's Bench in their favour, and which defines the principle on which the company was to be rated to be on the net residue of its yearly receipts, after making certain deductions specified on the award.

Mr. Morse, one of the speakers, after referring to the decision of the Court of Queen's Bench on the subject, and stating it to be the principle on which they were to rate the company, referred to the yearly receipts and expenditure of the company as shewn in the documents produced, while the suit was pending in the Queen's Bench. From these it appeared that the receipts amounted to 54,000*l.*, and the expenditure to 18,000*l.*, leaving a balance of 36,000*l.*, but from which they were entitled in terms of said decision to deduct 12,000*l.* more, which left a net balance of 24,000*l.* to be rated for, and which, according to the principle proceeded upon, would yield a rental of 3,982*l.* He, therefore, moved, that in consequence of the decision of the Queen's Bench, it be recommended to the overseers to raise the rate of the company from 1,473*l.*, against which they complained three years ago, to 3,982*l.*

This was carried unanimously; but Mr. Head, the churchwarden, who was in the chair, was empowered to accept any liberal offer from the company, to prevent further litigation.

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## THE DECORATIONS OF THE ROYAL LYCEUM THEATRE.

In accordance with our promise last week, we now give a view of the Lyceum Theatre, as decorated for Mr. Charles Mathews by Mr. Bradwell. It will be found to agree in every respect with our detailed account of the arrangements last week, which, as that was written before any part of the applied decorations were fixed, says something at all events for our care.* The front of the dress-circle, however, is more fully ornamented than was then intended, a continued festoon with birds and squirrels, having been introduced in addition to the scroll; and, singularly enough, this is, perhaps, less satisfactory than any other part; there being rather too much "flurry," so to speak, caused by the number and size of the birds.

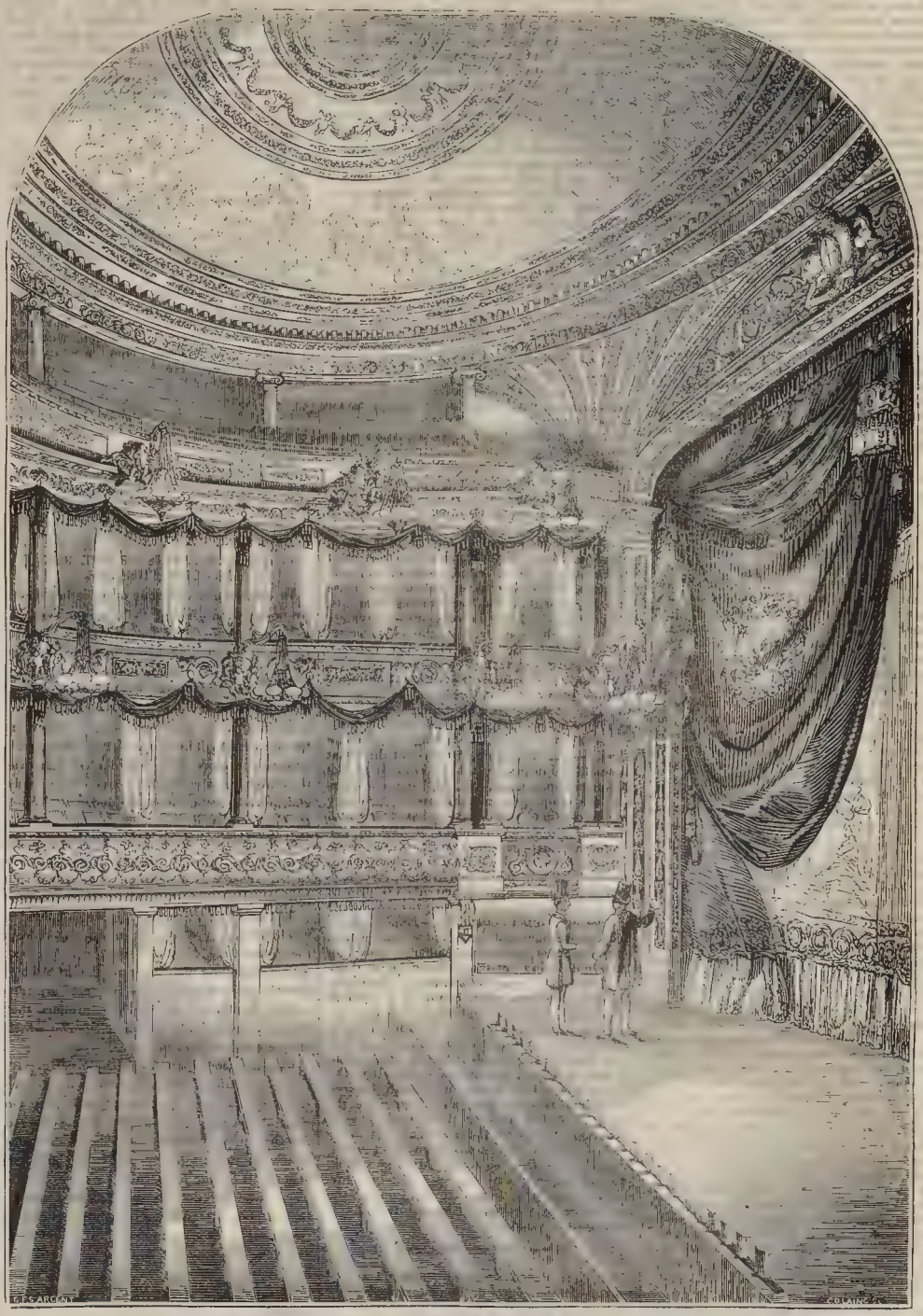
The effect of the whole, as we supposed it would be, is exceedingly charming, and reflects the greatest credit on all concerned. The excellent modelling and finish of the ornaments, forcibly brought forward as they are, are very striking, and tend materially to produce that degree of completeness and elegance which characterise the house.

The new act drop painted by Mr. Beverly, to whose rising abilities as a scene painter we referred some time ago, accords well with the general design. Two sweeps of massive red drapery, boldly handled, looped up, discloses beneath, satin tapestry with mythological groups; the large folds in the centre of this were better out than in, but the drop nevertheless claims high praise for most artist-like treatment. The scenery in Mr. Planché's excellent little piece "The Pride of the Market," with which the house opened on Monday last, fully justifies our good opinion of the painter.

In the Queen's box, Mr. Bradwell has ornamented the ceiling with a painting of the Genius of Britain rewarding Architecture, Painting, Sculpture, and Music.

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* The adoption of our accounts and opinions by the majority of our contemporaries of the press always gives us pleasure, honourably acknowledged as the source usually is. To two or three, who on this and some other occasions, have forgotten to add the word *Builder* to the article, we are less obliged.



INTERIOR OF THE ROYAL LYCEUM THEATRE.

## ST. PHILIP'S CHURCH, LEEDS.

This church, relative to which we inserted a letter from a correspondent two weeks ago, was consecrated on the 6th. The architect is Mr. R. D. Chantrell; the foundation-stone was laid on the 10th of November, 1845.

Another correspondent has favoured us with the following descriptive particulars:—

The nave is 69 feet long within, and its side aisles 60 feet. The respective breadths are 22 feet for the centre or nave, and the side aisles are each 11½ feet, so that, with octagon pillars 2½ feet diameter, the breadth within is 49½ feet. The chancel at the east end is 30 feet long and 20 feet broad. The church contains 580 sittings. The chancel is raised above the nave by one step, the rail or screen before the altar is raised by a second step, and the table stands on the third. The pulpit is on the north side by the vestry door, and the reading-desk is at the south-east corner of the nave. The chancel has an eastern window of five lights, three of two lights on the north side, and three of two lights on the south. The pillars, arches, and mouldings are all of hewn stone, and all brackets and other ornaments are carved in stone. The only plaster is upon the walls, but those of the chancel are covered with Martin's cement. The roof is open framed on the old principle, with arched ribs and hammer beams terminated with carved figures and foliage. The proportions are obtained on the system concerning which the architect read a paper before the Institute of British Architects, some time ago, which was printed in The Builder. The nave is separated from the aisles by five arches, over which is a clerestory, the walls nearly 3 feet thick. The walls are generally 2½ feet thick, and built of properly squared and coursed stone, the same as used in all ancient buildings of the stone district from time immemorial. The exterior is plain and simple as the interior; the tracery of the windows, the canopied buttresses of the chancel, roof corbels, the stone ridge, and the few decorations of the tower and spire being the only ornaments. The north and south aisle walls are 19 feet high, the nave 37 feet, and the chancel 27 feet, the rise of the roofs being 19 feet on the nave and 17½ feet on the chancel. From the ground to the top of the tower parapet is 60 feet, and the spire 60 feet more, making a total of 120 feet to the top of the stonework. The windows of the aisles have each two lights, and the west end has a spherical triangular light, the place of a window being blocked by a building. The entrance-gates are in an open portal on the south of the inclosure. The tower forms a porch on the south side, being entered on the eastern face, as the most convenient position upon the site. This is the general entrance, but opposite is a north door for egress, and a north staircase to the organ gallery gives further accommodation. The chancel has a priest's door on the south side, and the vestry is entered from the north side, having an external door also. The tower contains three fine-toned bells and a clock which has an internal dial only. The style of the building is after the earlier part of the fourteenth century, when pointed architecture was rising towards perfection. The entire cost of the erection, including a powerful organ, the fittings, stained-glass windows, bells, &c., has been upwards of 5,000*l*.

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Keep the Rain from New Work.—The necessity of this was exemplified the Sunday before last, at Bradfield Church, Berks, now being restored under the direction of Mr. Scott. Between the nave and the south aisle, according to the *Berkshire Chronicle*, are three new arches, surmounted by a wall; these had just been finished, and covered by an oaken roof, upon which the tiles had not yet been laid. In consequence, the heavy rains which fell on Saturday night and Sunday morning last, were conducted on to the rafters between the wall-plates. The pressure, acting on the new and unfinished work, caused the wall to give way, and with a loud crash it fell, the materials descending into the church, and injuring the pulpit. After the conclusion of divine service, which has lately been celebrated in the school-room, assistance was given by the workmen, who shored up the walls under the wall-plates, which had sunk several feet, and would soon have given way entirely.

## NOTES IN THE PROVINCES.

The Windsor authorities have submitted a plan of improvements, embracing a great variety of alterations in the town, to the Commissioners of Woods and Forests for embodiment, if approved of, free of expense, in the "Windsor Castle and Town Approaches Improvement Bill," which is to be presented for reconsideration at an early period of the ensuing session of Parliament. In this plan several new thoroughfares and lines of streets have been marked out, so as to accommodate a large class of the inhabitants, in connection with the extensive alterations and improvements intended by the Crown. A scheme for an improved system of drainage has also been submitted to Lord Morpeth.——The *Cambridge Advertiser* states that a bet to mould 700 bricks in an hour (nearly one every fifth second, or twelve every minute), was lately made by a brickmaker, who was moulding the 702nd at the expiry of the hour!——The new church lately erected at Huntingdon by Lady O. B. Sparrow, was opened on Sunday week for the use of the railway labourers in the vicinity.——Bottesford Church has been re-opened. The transepts and nave have been fitted up with solid oak seats, and the chancel with oak stalls, in place of high pews. The transept and nave seats are less ornamented than those in the chancel. A new oak screen separates the nave from the space beneath the tower. The whole area has been repaved with black and red tiles, and the roof of each part repaired. The exterior has also been repaired. The architects employed were Messrs. Sharpe and Paley, of Lancaster, and the expense 1,700*l*., about 400*l*. of which have yet to be raised.——The decoration of the Roman Catholic church of St. Chad, Birmingham, has recently been effected, the designs of the ornaments being by Mr. Pugin. The roof has been diapered throughout, the groundwork being blue, and the prevailing colours crimson and green. The roof of the nave is adorned by a glowing geometrical pattern, and enriched with monograms. The aisles are powdered with stars between lines of trefoils. An inscription in gothic characters forms a border to the whole.——An additional stained window is to be placed in the Convent Church, at Handsworth, from a design by the same architect, to be executed by Mr. Hardman.——The new district church at Little Drayton, built by subscription, aided by a donation of 1,000*l*. by Mrs. Nonely, was consecrated a few days ago. It is a stone building, in the early English style, with side aisles, and a tower at the north-west corner. The interior is fitted up with open seats, as of old, and mostly free, for 600 persons.——The re-opening of Duffield Church, after its entire restoration, under the direction of Mr. St. Aubyn, took place on Monday week.——The first stone of the new post-office at Nottingham, has been laid.——The parish church of Brimington, near Chesterfield, was opened on Thursday week, after being rebuilt from designs by Mr. Mitchell, architect, Sheffield. It is in the decorated style. The plan is a double rectangle, having a nave with clerestory, 57 feet by 32 feet, side aisles 57 feet by 12 feet, and chancel 21 feet by 16 feet. The old tower at the west end is retained, but has been raised 12 feet, terminating with a parapet, and four pinnacles. The church is fitted up with open benches throughout, and contains 500 sittings, of which 300 are free, besides a commodious gallery in the tower, and seats in the area underneath for children.——The foundation-stone of the partly-erected church in progress at Walker, Newcastle, was laid by the mayor on Monday week. It is in the early English style, with double and single lancet windows; the eastern one, of three lights, with circular centre, probably with stained glass. There will be a chancel, nave, north aisle, east porch, and belfry: estimated cost 1,300*l*.,—1,000*l*. already contributed. Mr. A. B. Higham, of Wakefield, is the architect, and Mr. Richard Cail, of Newcastle, the builder.——The Glasgow magistrates have authorized the Lord Advocate to bring in a bill for the establishment of baths and washhouses, in towns in Scotland, similar to the measure brought before Parliament for England and Wales.

## RAILWAY SIGNALS AND BREAKS.

Since the occurrence of so many recent accidents, and the hint to jurymen on the responsibility of railway directors for the result of such accidents, a movement has begun to manifest itself, among the railway authorities, in the right direction, though not exactly where it was most required. They have plenty of materials, present and past, the results of ingenuity more or less practical or visionary, on which to work, and it is earnestly to be trusted that the present agitation will not die away without further sign of amendment. The *Leeds Intelligencer* recommends the offer of a prize for the best invention to secure the mutual communication of passengers, guards, and engine drivers; but really there has been no want of invention. The chief want has been a willingness to adopt one or other of the best already recorded. A recent one, however, by a lady, merits further notice; namely, the insertion of speaking tubes into each carriage, through which the passengers and guards might mutually converse in the event of the occurrence of any apparent necessity for stopping the train, which, as we have long since suggested, ought to be a power consigned to the guards alone, to the exclusion of every passenger. If the foot-boards cannot be modified into a gangway, or a communication made, as a Mr. Hughes suggests, *through* the carriages themselves, and along which the guards might move with safety towards any point where their immediate presence might be called for by one of the many contrivances already suggested, and if even the voices issuing through such a speaking trumpet as the amateur lady-engineer proposes, would not be unheeded in the din and racket of railway transit, 'her ladyship's' contrivance certainly deserves one of the first prizes; and at all events the *Railway Chronicle* thinks she 'has at length solved the problem.' By means of india-rubber junctions, with bayonet joints, one continuous tube along the train, it is thought, may be of practical use, together with carriage numbers under the notice of the passengers at the interior orifices. Perhaps the only question here is whether the comparatively soft junctions of caoutchouc would not deaden the voice, instead of distinctly conducting it. No mode of subsequent communication between the guards and the engine-drivers seems to be suggested, unless it be thought that a voice would be heard in this way even on the engine, but there has been no want of such suggestions either.——Mr. E. J. Hughes, a correspondent of a Manchester paper, suggests that Parliament itself should appoint a competent tribunal for the examination of all inventions for increasing the safety of railway travelling, and the award of compensation [out of the railway profits?] to the more deserving. This he feels compelled to suggest, from the indifference which he has known different plans to have met with from directors.——The same gentleman, revives the suggestion of bells [spring bells they ought to be] as the most effectual signals between guards and passengers, the guard answering the call in person through a passage made along the line of carriages, opening from one to another,—almost, by the way, as already in practice on canals, where a passage is opened along the interior of the different divisions of the swift boats.——Several of the Great Western porters are said to have already successively resigned, or refused the office of 'travelling porter,' on account of the irksome and uncomfortable position in which it places them day and night. Further protection, and a more comfortable seat, appear to be requisite, although the object in arranging to the contrary, was probably a good one. Some such post is already continually occupied on the Austrian lines.——Many suggestions have been offered for the improvement of the system of breaks, such as the self-acting one, invented by Mr. George Stephenson, and also claimed in the *Albion* by Mr. T. H. Myers, of Birkenhead; the self-acting one invented by Mr. Richard Ayre, of Newcastle, described in the *Gateshead Observer;* the self-acting or hand-worked one, invented by Mr. Hughes, and described in the *Manchester Guardian;* the hand-worked yet self-acting one, invented by Mr. Alfred Knight, of Birmingham, &c. We have also been requested to give an opinion on the comparative merits of some of those suggested, but our duty is chiefly to record such suggestions for the

opinion or adoption of others, who ought at once either to come to some decision on the multitude of inventions already thrust upon their notice, or to offer premiums for, or call upon engineers or others to invent, the requisite mechanism or apparatus, for immediate adoption. We shall therefore in the meantime only state, that Mr. Alfred Knight's scheme, so far as we can describe it without the aid of copies of the plans sent us, consists in the transfer of power from the axle of one carriage in motion, through a set of bevel-wheels, &c., worked by a vertical shaft in the hand of the guard, to a breaking apparatus applied to an adjoining carriage, such as a luggage-van, and communicating the power of the motion itself, according to its measure, to the peripheries of the van-wheels for the arresting of their motion. This idea of the self-acting break, if the mechanism in which it is embodied be effectual, seems to be one of those wearing the stamp of that higher order of ingenuity which renders the power of evil itself the agent of its own destruction, so that the greater the imminence of peril the greater the power to overcome it.

We have received the following letter, which bears on the subject:—

Sir,—In the *Newcastle Chronicle* of the 8th instant the following paragraph appears:—"Mr. George Stephenson's new break is a self-acting apparatus, connected with the buffers by means of a rod or bar, around which a spiral spring is wound. Both rod and spring are attached to a perpendicular lever or beam, affixed to the customary break. The effect is instantaneous. The stoppage of the locomotive, as it is known to every body, causes the buffer to press inwards the beam or lever connected thereto, pressing up the break, and clasping both wheels at one and the same time upon every carriage throughout the train simultaneously. The stoppage of the entire train is effected within a very much shorter space. The invention is the most simple and effective that can possibly be conceived; and Mr. Stephenson, with great liberality, has thrown it open for the benefit of the public." Upon the subject of this paragraph I think it due to myself to state, that having last year found out the same thing, I claim the merit of being the *original inventor*. I, at the time, mentioned to a friend the discovery I had made, and subsequently wrote about it to a distinguished member of her Majesty's Government, to whom I had afterwards the honour to shew and explain it personally; which I did, in the hope he might be able to recommend it to the attention of one or other of the railway companies; but not having any influence in that quarter, he regretted that it was not in his power to assist me. I might have applied to them myself direct, but I felt it would be of no avail, being aware that an ingenious individual whom I have the pleasure to know (a poor man, struggling with adversity, though a legitimate descendant of an illustrious ancestor, Alfred the Great, whose noble qualities and patriotic spirit he inherits), had written to every one of the railway companies, offering to them certain of his inventions, but without effect, not one of them condescending even to give him an answer. Of course, I was deterred from following his example, as I could only expect, had I done so, to meet with similar treatment.

Such conduct on the part of the railway authorities, is, to say the least of it, most reprehensible. Instead of discouraging ingenious men in their benevolent attempts to abate the defects and dangers of railway travelling, they ought rather to invite them to do so; urging, moreover, their zeal and their ingenuity into more active operation, by the stimulus of a munificent reward. If they felt the tremendous responsibility they are under to the millions that intrust to them their lives and their property, they would adopt this course; and, most assuredly, it is that which humanity dictates.—I am, Sir, &c.,

Edmund Hepple.

Blackheddon House, Northumberland.

Enamelling Metals.—Mr. Walton, of Wolverhampton, has obtained a patent for coating copper, iron, &c, with an enamel, which will stand a red heat, without any injury, even if the enamelled surfaces be profusely ornamented.

## THE SANATORY STATE OF SHEFFIELD.

At a recent meeting of the town council of Sheffield, it was stated that copies of an elaborate report on the sanatory state of the town—or rather, on its insanatory state—had been sent to many persons, and, amongst them, to Lord Morpeth and Mr. Cobden, to the Improvement Commissioners, town trustees, &c., &c., and that as far as answers had been received, the committee had been thanked for sending them. We have ourselves to return thanks for our copy of this searching and valuable report, albeit even the mere perusal of details so patiently and personally investigated was by no means the most pleasant of tasks. In truth, the mass of evidence, as observed by the *Iris*, is at once 'frightful and most humiliatiog,' and such as even a local authority, like the *Iris*, was 'not prepared to encounter,'—town councillors themselves, indeed, being 'wonderstruck.' Though imperative on leading local authorities, however, to look dread evils such as these in the face, with searching penetration; still to us the necessity is not so paramount, and we shall therefore spare our readers and ourselves the harrowing process of detail, which nevertheless cannot fail to open the eyes of the more influential and able portion of the population of Sheffield, and not of it alone, to the enormity, not only of the evils which have hitherto existed, and which still exist, but to the intensified horrors which,—if effectual preventive and remedial measures be not instantly and earnestly adopted,—may be further and most assuredly anticipated on the speedy and inevitable advent of that virulent modern inoculation of little less than the active plague of filth, named cholera, which is now so steadily stalking westward from the foul and crowded poorer districts of the towns and cities of the east.

This sacred cause of cleanliness ought now to be perpetually agitated as a duty, as a household and a municipal virtue,—nay, as an observance of natural religion itself for the physical salvation of the human race. And not only as such, but as a matter of obvious self-interest to all, and to employers of human energies in particular, such as those in Sheffield, and, in fact, in every town and city in the empire; for no axiom can be clearer or more conclusive than this: that cleanliness and purified air give health and strength as these give mental elasticity and active habits, leading at once to economical and profitable labour. Fresh and vital air unpoisoned by the deadly and benumning influence of town excretion is, as it were, a perpetual spur to the vigour of will and action, worth whole oceans of artificial *spirits*, without their exhausting influence. To the obtainment of such ends as these, and those of the improvement of the taste and morals of the working classes,—to all of which the enlightened authors and collaborateurs of the Sheffield Report, Messrs. Haywood and Lee, are fully alive,—the adoption of the following measures are recommended, namely:—"Better constructed dwellings, both as regards light* and ventilation, and a liberal supply of water; the substitution of water-closets for the present open privies, and as many as possible of them in relation to the number of houses; also more spacious and commodious yards, well paved and drained, with public washing houses and baths in populous districts—and, above all, places for proper and rational recreation." The drainage and other improvements to property, they recommend should, in the first place, and at once, be undertaken by the corporation; and the sewerage and litterage of the town properly regulated so as to yield a free profit of at least 16,000*l.* to 18,000*l.* a year, for the carrying out of further improvements; while the lighting and supply of water, &c., should also be undertaken by the corporation. Owners of property, they suggest, should only be called on to repay improvements in drainage, &c. by small instalments over a long course of years, and tenants to pay a small per centage for cleansing, &c. amounting probably, on an average, to 1s. per annum on each house, a respectable artisan being thus only required to pay something like 3d. and ¾ths per week, for thorough cleansing, paving, and draining, and for a supply of water at 1d. per 1,000 gallons, or also per week, inclusive.

* We may here remind our readers, that it has been actually proved that individuals born and bred on the dark sides of streets, or otherwise to the exclusion of *light*, are liable to many evils and defects, and even to permanent decrepitude. What a tax then on the health of towns is the Window Tax! The powerful and peculiar influence of light on animal life, we may add, has even been noted in the curious fact, that tadpoles, if screened from light, will not grow up into frogs at all, as usual, but will merely continue to grow into the lower organization of enormous tadpoles!

## WESTMINSTER COURT OF SEWERS.

A general court was held on Friday, 15th; Capt. Bague in the chair.

A great number of petitions for new sewers having been received, the court proceeded to receive tenders for covering over about 300 feet of *the Ranelagh Sewer* northward of Grosvenor-bridge, King's-road, Chelsea. A commissioner tendered a protest by letter against the proposed work, but the court decided on not receiving it. The following tenders for the performance of the work were then received:—

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|---|---|---|
| J. and S. Williams | £798 | 0 |
| Scisson and Co. | 780 | 0 |
| Dethick | 743 | 0 |
| J. Yeoman | 728 | 0 |
| H. Perkins | 725 | 0 |
| Watts | 719 | 9 |
| Hutton | 705 | 0 |
| Humphreys and Thirst | 699 | 0 |
| W. Hill and Co. (accepted) | 690 | 0 |

Messrs. Newton and Felt, who had neglected to insert a door in the wall over the sewer, in an intended road by Lord's Cricket Ground, were also summoned, but did not appear, and an order was given to the officers to prostrate and destroy all obstruction over the sewer.

*The Surveyor's Department.*—Alderman Johnson said, in moving the resolution of which he had given notice, he should abstain from any observation, as he had no wish then to go into a discussion upon the subject. His resolution was, "That a committee be appointed to inquire into the surveyor's department, with a view to consider and report to the court whether the public exigencies require the affording additional assistance to the surveyor, and as to the best mode of making this department efficient with reference to the enlarged duties of the surveyor."

Mr. John White seconded the resolution, and in doing so alluded to the inconvenience that was constantly experienced, both by that court and the surveyor, from the absence of any regular plan or sections of the principal sewers, from their source to their discharge. He trusted that a regular and defined plan of the main lines of sewers would be laid down, so that the fullest information might be obtained. With these remarks he had great pleasure in seconding the resolution.

Mr. Le Breton wished the matter to be referred to a special court, and hoped that its consideration would not be left to a committee, as he thought it was opposed to the practice of this court to act by committee at all. He was in favour of open doors to the most important proceedings, and the business of detail by an open special court would prove more satisfactory, both to themselves and the public, and by the result thus arrived at, they might give additional power and force to the surveyor's department.

Mr. T. L. Donaldson was decidedly in favour of the matter being referred to a select committee, and considered that it was the every-day practice, even in the House of Commons, to refer matters in the first instance to a select committee. They all knew the evil and the delay of business when a court was too numerous, and that decisions were frequently come to upon the impression of some striking fact, which afterwards, upon a calm consideration, was not found to be so satisfactory, as it had previously appeared. Besides, their deliberations would not be closed to the commissioners, any of whom that pleased would be at liberty to attend.

Mr. Hawkes looked upon the chief evil to arise from having but one surveyor, and thought they should divide the duties, especially as they were told by the surveyor that he was frequently unable to go to rest before four o'clock in the morning, in consequence of the heaviness of his duties. He had another objection to their proceeding in the matter, when it was known that they were an expiring commission, and had scarcely two months to live, as it was pretty well understood that the commission would not be renewed, and it would be for the public benefit that it should not be renewed. Indeed, he had heard that one gentleman of the commission was preparing the specifications of a patent for a new court, to form an entirely new one on a much better plan, and composed of better materials than the old one. As to their death-bed repentances, he had not much opinion of them, and he thought it was much better for them at once to wind up their affairs, so that they might be able to retire from the scene with something like decency.

Mr. Alderman Johnson said he should not be deterred by the ridicule with which the honourable commissioner had thought fit to receive his motion,

from doing that which he conceived to be his duty, even although he might be a commissioner only a month, which he should perform to the best of his ability.

The Chairman then put the original motion (an amendment of Mr. Le Breton for an open court having fallen to the ground for want of a seconder), which was carried, and the following gentlemen named as the committee:—Mr. Alderman Johnson, Mr. J. White, Messrs. H. Harrison, Le Breton, Chalmers, Hawkes, T. L. Donaldson, Moss, Wood, Crace, and Cumberlege.

*The late Illegal Conduct of a Commissioner.*—The next order of the day was "to consider as to certain notices issued contrary to Act of Parliament, calling upon persons in Robert's-terrace, Chelsea, to communicate with a sewer, and other matters connected therewith. The solicitor to report thereon." Mr. Farlar was summoned to attend.

The Chairman announced the receipt of a letter from Mr. Farlar, who admitted receiving the resolutions of a former court, and stated his inability to attend the court this day.

The solicitor then presented his report, which, after reciting the progress of the question, stated that there was no legal ground whatever to support the proceedings of Mr. Farlar; that it rested with the commissioners alone to require parties to make sewers and to drain into them; that the court only could make an order, decree, or settle the payment to be made; and that an opposite course had been usurped by Mr. Farlar, who had no right whatever in the sewer. That it was the duty of the court to prevent the recurrence of such conduct, and that any party assuming, without authority, the powers of the court, to coerce individuals into the payment of sums of money, might be criminally proceeded against in the Court of Queen's Bench.

Mr. Donaldson said the sewer in question was built while he had the honour of occupying the chair of that court, and he was of opinion that it was then built for the benefit of the district. Mr. Farlar was wayward of mind, but he (Mr. D.) knew nothing injurious to his moral character in this case: still there could be no doubt that in his claim to this sewer he had proceeded with great irregularity. Mr. Farlar had no interest in the line of the sewer; but he would have it done, and came to this court in a chivalrous spirit to require it to be done, and for which then it was not expected there would be any return for the money. Mr. Farlar had legally no right in the sewer, and even now it stood in Mr. Signer's name,—and had availed himself precipitately and illegally of the powers of the Act for the recovery of the money. One feature in the case, and which made a deep impression on the public, was the part taken by a Commissioner of Sewers in these proceedings, to awe parties into the payment of money. He trusted the court would take up the subject, and do justice to the parties who built the sewer.

Mr. Goderich remembered the sewer being built on the west side of Chelsea Church, and that 500*l.* was paid by this court towards the same.

Mr. Broughton said, the clear statement of their solicitor set forth, in words of strong character, that any person doing so and so is liable to such and such penalties, and called upon them to take such steps as are due to their own dignity and efficiency, to put a stop to such practices for the future. His (Mr. B.'s) opinion was, that they should take no steps till they had submitted the report of their solicitor to Mr. Farlar. It was a very grave matter for any member of this or other constituted court, to seek by means of its papers to enforce payment of sums of money, and he ought to know, however morally correct,—however strong the right,—that no individual member can use the process of a court without the sanction of the court; for let the public once know such process to be so used, and none would be respected. He concluded by moving,—"That a copy of the report drawn up and read by the solicitor, be sent to Mr. Farlar, and that he be required to send to the court any explanation of the part taken by him in connection with these proceedings:" which was carried.

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Association for the Erection of Churches and Schools.—An association is now forming, we are told, for the erection of either temporary or permanent churches and schools, for such parishes or clergymen as may require them,—and to rent or lease them, as is done in the case of buildings intended for temporal purposes. The plan has been pursued (as an individual enterprize) for some time, and various churches have thus been constructed, including one for the Hague (which was commenced and finished within fourteen days). The rent has, in no case, been calculated at a higher average than at a rate of 2d. per week, or 8*s.* 6*d.* per year, each sitting.

## WESTMINSTER HALL.

Sir,—Now that the great experimental exhibitions of British art are closed for ever, we naturally reflect on the various results with a mixture of regret and of pride; of regret for the sacrifices that many of the artists could but ill-afford, but of honourable exultation at the improved position of the profession generally. There is, however, one thing as yet undone by the competitors, which as gentlemen, they will consider an agreeable duty: it is also a judicious encouragement to good conduct in those who have the subordinate management of exhibitions. After the competition for the Nelson testimonial, a written acknowledgement of the civility and attention of Mr. Rainey's clerk, signed by nearly all the candidates, was presented to that gentleman with a more substantial compliment; this was done in a way that contrasted well with the neglect to which they were themselves consigned on that occasion. Every competitor at Westminster Hall will, I am sure, agree, that on no former occasion were their thanks and approbation better deserved than by Mr. Peckham during the four exhibitions at Westminster; his care, his attention, and civility, have saved us much trouble and annoyance, and converted many little inconveniences into comforts. Those who have, I fear it must be said, at every other exhibition had to lament the dirty condition of their pictures and the severe injuries done to their frames, must be both surprised and delighted to find them returned from Westminster Hall, after being seen by a million of visitors, as clean and free from dust as they went there, and without a scratch. Such an example ought not to pass unrecorded by our marked approbation:—our interest, our good sense and proper feeling require at least a written testimonial in favour of the person to whose care we are indebted for this proof of the possibility of these matters being well managed. After the heavy trials that we have passed through, a costly present cannot be expected, and to some it might be a severe tax on their exhausted means, but their signature to a written approbation would no doubt be as gratifying as gold, and to one who depends on his good name, perhaps more serviceable. However, if others think that some additional token of our generous and gentlemanly feelings is required, though one of those who have sown largely and had their prospects blighted, I shall be happy to join in any small contribution that will do honour to both parties without injury to any. If artists feel on this subject as I trust they do, a mode of carrying it out will, no doubt, be suggested by some correspondent, and be realised without delay.

None can understand the importance of a generous and proper feeling on the part of competing artists more than yourself, for none has done more to improve a system under which modest talent has often sunk and empiricism and intrigue have flourished.—I remain, Sir, your very obedient, and, as an artist, your obliged, humble servant,

Oct. 20. One of the Competitors.

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# Correspondence.

## THE LIGHT AND HEALTH TAX.

Sir,—Whilst the inhabitants of the crowded cities still breathe the foul atmosphere, and gradually decrease the otherwise natural duration of their lives, the wise and anxious guardians of the people's happiness,—the balm of the nation's woes,—take their pleasure where the "air smells wooingly," and where they hear not the brayings of the corporation ass that (as in the old fable) frightened the (British) lion into a temporary desertion of its offspring,—the Health of Towns' Bill.

The component parts, which are necessary to render the bill of service, have not been, to my mind, sufficiently discussed. It is true, many have come forward and proved the foul state of the sewers and drains, and the unfortunate results of a neglect of them; courts and alleys where there is a total deficiency in this respect have been mentioned, and statistical accounts defy contradiction as to the loss of life which these evils occasion. But there are other reforms which the bill must include to render it effective, in which list the Window Tax stands prominent. It is unjust, for light and air are the common gifts of Heaven, and "we will nothing pay for wearing our own noses." If our rulers can prove that the pure air is not essential to the proper action of the body, and that, neglecting to provide it, does not occasion disease and death;—if they can also prove their right to that for which they exact a tax, by hiding (to use the words of the wisdom-besprinkled fool, Cloten) "the sun from us with a blanket, or by putting the moon in their pocket, then we will pay them tribute for light; else, sir, no more tribute."

It is impolitic; for, as labour produces wealth, and this tax enfeebles both mind and body, the labour of the man is lost when he is stretched upon a bed of sickness; and the additional expense it brings upon the poor-houses is greater than the sum it yields to the revenue.

That it is detrimental to health, the statistical comparison between the mortality in town and country, in agricultural and manufacturing districts, or even in the crowded and uncrowded parts of London, is indeniable evidence.

Whilst education is justly lauded as the best preventive of crime and folly, and is so generally admitted, that the fight is removed to the minor points of the bill, and the voluntary, or State principle, was made the subject of hostility by the contending parties, it seems to be forgotten that the *physical* powers must be strengthened and sustained before the *mental* faculties can be brought into action; for of what use is education, if the soil over which the seed is to be scattered is, from neglect, weak and unproductive?

The fresh air is not only needed in the streets and parks, but it is required also in the workshop (for without the latter they will have no spirit to enjoy the former).

There they have, in addition to the foul effluvia from the streets, the consequences of unventilated gas-lights; and there being often no circulation of air through the apartment, they have to rebreathe the air that has previously passed through the lungs. A proper ventilation of manufactories is most necessary. Where the Window Tax presses most grievously is where large houses, whose summits almost meet, are let to a number of the poorer classes, where the windows are blocked up to save the expense, and where every cleanness is to be seen inside,—water being scarce, and dirt most plentiful.

Lord Morpeth will doubtless have enough to do; but, like Blue Beard's wife, unless he can remove the "damned spot," all his laborious cleansing will be of no avail;—

> "For since the more fair and chrystal is the sky,
> The uglier are the clouds that in it fly."

Should he, however, remove it, he will receive as much praise as the memory of the man who imposed it deserves execration.

I am, Sir, &c., B.

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## LODGING-HOUSES FOR MECHANICS.

Sir,—I beg to apologize for the liberty I have taken in addressing you, but knowing you to be a staunch advocate for the improvement of mechanics, I have ventured to send this letter, and trust you will consider it of sufficient importance for insertion in your valuable journal, and that some of your liberal readers will give it their attentive perusal, and further the suggestion. My objects are the health and domestic comforts of the respectable unmarried mechanics and clerks, who pay on an average about 5*s.* per week for a lodging, a mere sleeping room, without any other accommodation. Many there are who come to town with no relations or friends to go to, and who have no alternative but to take shelter in the poor apartments provided for them by the lodging-house keepers, and for want of comfort at their homes, are often induced to accede to the temptations of the streets or public-houses, or are led to improvident marriages, which are destructive of happiness.

I have read with much pleasure the reports of the model lodging-houses, which are being erected for the labouring classes, combining the comforts of baths, a reading-room with an appropriate library, &c., with other conveniences, at the small yet remunerative charge of 1*s.* 6*d.* or 2*s.* per week; so the thought has struck me that something of this kind might be established on rather a superior scale at

about 3s. 6d. per week for the respectable mechanics, and I think I am justified in anticipating from such establishments more than individual comfort to those who would avail themselves of their advantages. By bringing together persons who have practical knowledge, good could scarcely fail to result. Hoping that some of your scientific readers will see the practicability of the idea, and lend a helping hand to improve the condition and increase the comforts of this very important but hitherto neglected class of the community, I am, Sir, &c.,

Oct. 18th. E. D. Horlock.

TO AVOID SMELLS IN HOUSES.

Sir,—I have the ill-luck to be a poor man, but I have a great affection for pure air. I live in a little house; but though it is small, the largest nose in London could not detect the trace of a smell in it. This has been managed by some sensible builder in the easiest way in the world. The house itself is unconnected directly with any drain,—a little washhouse, in a garden at the back, being the only place where the women can get rid of their dirty water. This is a secret worth attention: keep the women out of doors with their "slops," and you effectually get rid of smells. Any thing short of this will prove a failure. This hint will be thrown away upon wealthy people, who prefer what is called *comfort* in their houses to cleanliness; but it may be useful to many of your building friends, who are employed in erecting small houses for people in humble life.—I am, Sir, &c.,

One of the People.

*** This reminds one a little too much of the popular prescription to cure smoky chimnies,—put out the fire!

STREET RAILWAY FOR THE METROPOLIS.

Sir,—I believe it is in contemplation to construct a large sewer through London, for collecting the sewage manure, which at present is discharged and lost in the Thames, polluting its waters and the atmosphere.

If this be true, could not two other great improvements be carried out at the same time, as, a noble street made, worthy of the first city in the world, directly through London, with a sewer along the centre, deep enough down to allow a trench or cutting to be left above it, for a railroad to be constructed therein? The trench should be of sufficient depth to allow the rail-carriages to pass under level bridges from the cross streets. Rail-carriages could be made much lower and much lighter than they are at present, so that a very deep trench would not be required. Surely it is high time that the citizens of London had some speedier mode of conveyance, where there is so much business to be transacted daily, than they have now.—I am, Sir, &c.,

Brompton. F. S.

New Description of Fuel.—We learn that a discovery has been made, which promises to be of great advantage to all descriptions of manufacturers and artizans who use fuel either for the production of steam, for the fusion of metals, or for scientific and manufacturing processes. The inventor produces fuel of several different descriptions suitable either for domestic purposes, for engines, or for the production of great heat, and peculiarly valuable for the furnaces of foundries, as even at a white heat, with most perfect combustion, the material is consumed but very slowly. The great advantage of this material at the present time, when so much attention is paid to the health of large manufacturing communities, is, that it burns without any visible smoke, or with so little, that it is scarcely perceptible. Its introduction into general use will, therefore, supersede all the numerous expensive contrivances for consuming smoke which have hitherto been brought before the public, and used, for the most part, with but small success. In steamers it will be particularly valuable, as, we understand, it burns readily, with great and durable heat, and does not send up even the smallest quantity of that nauseous and unsightly black vapour which occasionally poisons the atmosphere of our river.—*Liverpool Albion.*

## Miscellanea.

History of Yarmouth Church.—When the Archæological Institute were at Yarmouth, Professor Willis, in giving an account of the old church, expressed his opinion that no part of the original fabric commenced by Herbert de Losinga, about 1096, remained,* and that the tower was erected at a later date. Some recent discoveries appear to contradict this opinion. Some arcades, containing a series of circular arches, surmounted by a larger one, have lately been found in the walls of the tower of this church, within the span of the transept, and the chancel roofs; and drawings of them, by Mr. Winter, were exhibited at the last meeting of the committee of the Norfolk and Norwich Archæological Society. The *Norfolk Chronicle* says:—"The correspondence of these with the semi-Norman arcades of Croyland Abbey, and other buildings, and the apparent admixture of pointed with circular work, led the observer, in the first instance, to the conclusion, that the tower was of the transition period, between the circular and the pointed styles, and, at least coeval with the most ancient parts of the church. Since that time, it has been found, that the pointed work above referred to is built within the opening of a Norman arch, and several tiers of circular arches, of a decidedly Norman character, have been brought to light; which indicate, that the tower is of greater antiquity, and is a remnant of the original church built by Herbert de Losinga.—A fractured portion of wall at the north-west angle of the tower, apparently marking the point of junction with a former building, favours this opinion; and a satisfactory reason is afforded for the extreme narrowness of the present nave, namely, that its width was accommodated to that of the tower, which was retained from the older fabric.—The upper tier of pointed arches in the tower, from their more perfect preservation, presents the appearance of later work, and it was probably added to the Norman tower when the second or present church was built." A favourable opportunity is now afforded for examination by the clearing of the walls of plaster; and it is desirable that attention should be paid by professional and competent persons to the mode in which the present lofty pier arches of the tower have been inserted in the place of more ancient ones, which, probably, were of insufficient size for the admission of light. The mouldings of these arches are of more modern date than the work above them.

Exhibition at the London Mechanics' Institution.—A correspondent says,—The friends of mechanics' institutions must have attended the exhibition of the productions of the drawing and modelling classes of the above institution with feelings of great satisfaction; not so much that it presented any startling emanations from the pencils of the exhibitors, as that they must have felt that the projectors of the scheme had taken a step in the right direction. Hitherto the managers of this and similar institutions have imagined that, in the endeavour to create and encourage a pure literary taste in their members, or to give such a knowledge of the sciences as can be gleaned from the pretty experiments shewn during the lectures on the mere alphabet, of the most pleasing of them, they were doing all that was required of them; but now they must feel, that of whatever importance one or both these practices may be, the artizan, for whom certainly these institutions were mainly intended, demands some attempt on their part to instruct and improve him in such of the arts as bear upon the particular handicraft he may be engaged in; and now that the London Mechanics' Institution has given an example of what can be done towards this, although without such a defined course of study being practised as can lead effectually to such objects, other institutions may improve and further the idea given them in the present exhibition. This being the first attempt, severe criticism would be unfair: suffice it to say, that many of the productions evinced considerable cleverness, and gave every reason for hope.

Public Gymnasium in the Regent's Park.—The Commissioners of Woods and Forests have formed a gymnasium on the ground at the foot of Primrose-hill, which will be open to the use of the public under certain regulations.

* See p. 383, *ante.*

St. Cuthbert's Church, Bedford.—St. Cuthbert's, at Bedford, consecrated in July last, is Anglo-Norman in style, and the plan of it is a Latin cross. The length of nave and chancel, as we learn from the local press, is from east to west about 90 feet; the transepts, from north to south, about 65 feet. There are three entrances, the principal one being at the west end. At the intersection of the transepts, nave, and chancel, the tower is supported on massive pillars with carved capitals. The arches are carved with moulded cheveron and billet moulding. The roof is framed, open, and boarded diagonally, stained oak, with moulded cornice at the foot of the rafters. The principal rafters form a circular rib, and are supported on columns, standing on carved corbels of curious workmanship. The organ stands on a slight elevation at the west end of nave, on south side, and the font on the opposite side; the pulpit is on the south side, at the junction of the chancel with the nave and the transepts; and the reading-desk, which, like the sittings, is open, stands on the north side to correspond. The organ-case, pulpit, communion-table, with chairs, reading-desk, clerk's desk, and all the sittings, are of English oak, grown in Chicheley-park, and are all carved. The flooring of the nave and transepts is of plain stone from the Stageden Quarries; but the chancel and the step at the communion rails are laid in figured encaustic tiling, by Minton, of the Potteries: on one of the tiles is an emblazonment of the Archidiaconal Arms. The rising of the steps at the communion rails presents a continuation of the encaustic tiling. There are triple lights at the east and west, and also at the north and south ends. The east window is entirely glazed with stained glass; here, each of the three lights contains two figures,—in the centre light is St. Paul, the great apostle of the Gentiles; in the others are the four Evangelists; and beneath St. Paul is a figure to represent St. Cuthbert, to whom the church is dedicated. The whole of the stained glass is by Baillie. The reredos under the eastern lights, and extending down to the communion table, consists of five arches, with pillars and mouldings to correspond with the principal arches. The front of the table is divided into three arches, which are filled in with velvet, and in the centre arch is introduced the sacred monogram, embroidered in gold silk.

Restoration of Elkstone Church, Gloucester.—In reporting a recent meeting of the County Archæological Society, who visited the curious Norman church at Elkstone, the *Gloucestershire Chronicle* says,—"*Apropos* of Elkstone Church. We understand that the restoration or repair of this interesting structure is contemplated, and we take this opportunity to express the hope that *restoration* only will be attempted, and not *improvement*, which is so frequently fatal to our ancient churches when effected by churchwardens and other persons under whose authority they are generally unfortunately placed—persons, no doubt, of the best possible intentions, but whose previous and ordinary pursuits cannot possibly qualify them for the responsible station of architectural critics. This church, of which we write, is not so much of local as of national interest, and therefore we hope that before it is touched by a single artizan, the very best, and *only* the very best, authorities may be consulted, and their recommendations strictly attended to."

Swansea Town Hall Competition.—We learn from the *Cambrian*, that the prizes for designs for the improvement of the Swansea Town Hall, have been awarded, the first, twenty guineas, to Mr. Taylor, of Stratton-street, Piccadilly; and the second, ten guineas, to Mr. Mair, of Charlotte-street, Bedford-square. There were upwards of sixty competitors.

Another Cement.—A cement is being used, we are told, at the new station at Chester, which is found in the vicinity of Holywell, Flintshire, known as the Carth-y-foel quarry. According to our authority, the cement has superior qualities, and may be moulded.

Foreign Bricks.—A large cargo of bricks and tiles arrived here a short time ago, intended for exportation to some foreign country. More recently a vessel from Havre and Bremen has reported, in her cargo, 20,000 bricks from each of these places, which are to remain on board for exportation elsewhere.

PROJECTED WORKS, &c.— Tenders have been called for by advertisement, for the whole of the work in excavating and forming embankments for reservoirs and for sundry masons' work, iron-founders' work, fencing and road-making, and building a cottage for the Bath Water Works; for the erection of an infirmary and other wards at the Union Workhouse, Wallingford; the erection of wards in the workhouse yard, St. Martin's-in-the-Fields; taking up and removing pavements at Limehouse; the execution of 6¾ miles of the Midland Railway, Leicester and Swannington extensions; also for 200 tons of tough cake copper, for the navy.

ANCIENT BRITISH BARROWS.—The circumference of the smallest barrows is about thirteen or fourteen feet; that of the largest thirty-three to thirty-five feet; and they are generally surrounded by a shallow trench. The cists in which the bodies are deposited, usually vary in depth from one to six feet. Douglas states that he found some which exceeded ten feet. More recent excavations on the downs beyond Canterbury, under the direction of Lord Albert Conyngham, have added a few new objects to those already discovered, proving incontestably that these barrows are not the burial places of the slain, but the sepulchres of a people in quiet possession of the country. "Their situation," observes Douglas, "near villages of Saxon names, their numbers proportioned to a small clan of people existing at a peculiar era, afford the critical evidence of their owners. They are scattered all over Britain, in places which the Saxons occupied, and are not discovered in the parts of Wales which they had not subdued. The relics, compared with those discovered in the urns found at Walsingham, in Norfolk, the subject of the beautiful old treatise on urn-burial, by Dr. Browne, shew the identity of people, and evince the funeral customs of the Saxons, on their visiting this country, to be that of burning, as well as interring the dead." Those who have been engaged in researches of this description, will testify to the accuracy of these remarks; but some will be disposed to question the propriety of the inference which the author draws, when he states his opinion that the Saxons extirpated the Britons from the parts which they then occupied. That the Romanized Britons were entirely subdued by the Saxons is evident, but the total annihilation of the people formerly in possession of the country by their invaders, is not proved by these relics, some of which, but more particularly the urns, which are occasionally found in these graves, remind us of the pottery of the Roman British period.—*Akerman's Archæological Index.*

WATER POISONED BY COPPER IN BRASS FORCE-PUMPS: TESTS FOR COPPER AND LEAD.—Mr. Henry Osborne, of Southampton, the practical chemist who our readers may remember, corroborated our remarks on the influence of lead on water, has lately discovered copper (another poisonous metal) in the state of oxide in water, and offers the following mode of detecting its presence:—To an ale-glass of the suspected water, taken directly from the pump, add a few drops of solution of ferrocyanuret of potassium; a faint reddish-brown tint will soon be perceived if copper be present, and in the course of twenty-four to forty-eight hours, a precipitate of the same colour will deposit at the bottom of the vessel. Sulphuretted hydrogen strikes a brownish-black colour to water containing copper, but a similar colour is produced with oxide of lead, and black, with peroxide of iron. To discriminate between lead and copper, or iron, add to another portion of the suspected water a drop or two of solution of bichromate of potash; a blueish-yellow turbidity and precipitate, soluble in potash, indicates lead. In a communication to the *Hampshire Advertizer*, he says, "I found water capable of taking up copper in the short space of a quarter of an hour, or twenty minutes, but the quantity is small, and may be readily removed by filtration."

THE IRON GIRDER COMMISSION.—A correspondent states, that the commissioners appointed to inquire into the construction of iron girders, having sent to the engineers of various railways for returns of information, a counter circular has issued from the Institution of Civil Engineers, urging them to refuse.

ART MANUFACTURES.—We observe, that some articles of furniture are to be added to the series of Felix Summerly's art manufactures, such as carved wooden brackets, in the style of Gibbons; a grate, an arm-chair, and a hall-chair. It is to be hoped they will be better than some of the smaller matters already included in the series, or they will do a great deal more harm than good.

## TENDERS.

THE following is a list of the tenders for building the new Coal Market, Lower Thames-street, for the corporation of the City of London.

| | |
|---|---|
| Ward | £31,360 |
| Bennett | 30,820 |
| Nicholson | 29,700 |
| Jay | 28,587 |
| Taylor | 28,375 |
| Colebach | 28,350 |
| Harrison | 28,251 |
| Curtis | 27,344 |
| Haynes | 27,044 |
| Trego | 25,857 |

## TO CORRESPONDENTS.

"*Blind Builders Hampstead Church.*"—A correspondent denies the contractor's statement as to profit, but we have not space for further letters on this subject.

"*W. Y.'s*" inclosure was little short of an impertinence.

"*D. J. H.*" We are obliged, but have not room.

"*Allowance for Effect of Height.*"—A correspondent asks for a rule for ascertaining the size of any architectural member at a great height, which is required to appear of a given size from below, "that is to say, suppose I have to design any architectural ornament to be placed 100 feet high, and from the ground I want it to appear about 6 in. high when fixed in its place; how must the actual size of such ornament be ordered?"

"*J. S.*"—Mr. Sylvester, Great Russell-street, may be safely applied to.

"*S. J. N.*"—We think the plans of the baths and washhouses are not published.

"*M. W.*" We do not exactly understand the question.

*Received*—"H. and W.," "Lady B.," "Subscriber," "Churchwoman," "Frank Oliver" (should send his name), "G. C.," "Lover of Pure Air," "Mr. D." "Thanks!," "*L. S. N.*," "W. N. T.," "G. W.," "J. R."

*Books received*—"Sketches for History of the Decorative Painting applied to English Architecture during the Middle Ages." By G. L. Blackburne, F.S.A. Part III. (Williams and Co., Strand, 1847.) "The Electric Telegraph." By Peter Progress. (Clarke and Co., Gracechurch-street, 1847.) "Plan of the Sewers in the City." "The Tradesman's Book of Ornamental Designs." Part V. (Orr, Paternoster-row. Menzies, Edinburgh.

"*Books, Prices, and Addresses.*"—We have not time to point out books or and addresses.


## ADVERTISEMENTS.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS

Manufactory, 98, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease with at the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS. Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried in consequence of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is decidedly the most valuable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

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N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one-half, and three-fourths of an inch thick.

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SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Circy Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

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12, Rathbone-place, Oxford-street. 31st Oct. 1847.

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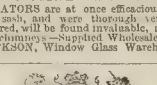
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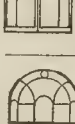
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Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exact unbroken Marble Surface to stucco, which may either be painted in imitation of stone, by the application of Portland cement, or other stucco slabs.

It is a cheap and efficient substitute in place of wood for skirting, architraving, and other mouldings, as its splendid Marble Surface is not liable to crack like wood, but can be washed with a Sponge and Water.

Sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Steel-street, Liverpool.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON** having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILE-WALL, POPLAR, enables him to execute orders on an unprecedented scale. He therefore solicits the favours of Engineers, Builders, and others, interested in works, where a ready supply and mixing of the best manufactured material of these kinds is required.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.**

RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, brickwork, railway, and other works; its adhesive qualities being equal to Roman Cement

As CONCRETE, it has more power than any other Cement or Lime, and forms a solid mass—and as firm as a rock under water—setting one-third of that to Gigot of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour similar to Portland stone, does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting

MARTIN'S FIRE PROOF and ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously called Fire-proof, which in reality are not so, and assures that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1 It is impalpable, and free from gritty matter.

2 Unlike other internal cements, its hardness is uniform throughout—cutting out clean.

3 Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and cornices of all kinds, to all of which purposes it has been extensively applied by Mr Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface (it at once resists heavier weight alone, being at the same time, non-absorbent. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 188, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

**GARRETT'S PATENT MORTISE** BRICKS, TILES, and FIRE CEMENT.—These Mortise Fire-Bricks, with the Lias Cement, will be found of the utmost importance in the erection of all kinds of Furnaces, Gas-retorts, Coke-ovens, Lime-ovens, and other similar purposes where extensive repairs and reconstructions are continually required. By the accurate adaptation of the mortise and tenon, the strength and durability approaching to indestructibility: every joint is so complete as to render the Fire Cement, that the cracks becomes a subject of measure.

Testimonials of approbation have been given by all who have used them, and the annexed is a copy just received from the Amalgamated Brick and Tile Machine Company.

111, Piccadilly, London, Sept 2nd, 1847.

Sirs,—Having erected a set of Kilns, which are patented by the Arcade Brick and Tile Machine Company, I built the Furnaces with your Patent Fire Cement, which has been submitted to the most severe test in actual use. The Brickwork is as perfect as it was the day it was built. I feel much pleasure in being able to bear testimony to its valuable properties for all furnace purposes, being far superior to any Cement brought to the notice of the public. The Kilns can be seen at Upper Head Harrow, may be seen at any time.—I am, Sir, your obedient servant,

(Signed) ROBERT SCRIVENER, Manager.

To Mr. Spencer T. Garrett, Stoke upon-Trent, Staffordshire.

**FIRE BRICKS.—WARD & HART,** Hendrefoa Wharf, Burkside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clays, &c. Builders Gas Companies, Engineers, Shippers, and all large Users, supplied from the Manufactories and at the lowest prices. A large stock of every quality always on hand at the Wharf or above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS,** Southwark-bridge-road, the Borough, Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as here introduced into this Country, with many important improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles in stock.—The Trade Supplied.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only.

70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

**THE most perfect DRY GAS METER** in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having set erected an extensive Factory, 10, Hatfield-road, in conjunction with his old established premises at Mr. Defries, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, by time, or by injurious gas. He invites attention to the fact of many of his large meters being in use at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club-houses, &c. and his powerful and flattering testimonials at other fact, which may be obtained on application.

**LESLIE'S PATENTS.** — GAS CONSUMERS guaranteed the following important sanitary and economic advantages

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2 His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight Lbs.

3 These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Batswings in the case of light required in quantity.

4 His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, MISCHIEF, and DEMANDS arising from sudden variations in supply in the gas mains, and prevents the Burners Light precipices, and not Smoke produces will warm, proceed according to the duty they have to perform, from less upwards.

PRICES: Upright Burners, with Conyngham Spring Glass Holders, with either steel glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 2d. each SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

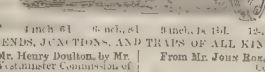
LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 20 per cent, with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full Instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present supplied coal-consumers in places

Offices and Manufactory, 59, Conduit-street, London.

**TUBULAR DRAINS** in GLAZED STONE WARE, MANUFACTURED BY HENRY DOULTON AND CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3 inch bore, 8d. PER FOOT 4 inch, 8d 6 inch, 8d 9 inch, 1s 1d. 12 inch, 1s 4d Peach, 1s 8d

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. John Roe, Surveyor to the Westminster Commission of Sewers

I would respectfully recommend the building profession generally, to adopt in preference to other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is no more reasonable ground for the high rental on land being improved that as regards strength, durability, and efficiency, there cannot be a better article.

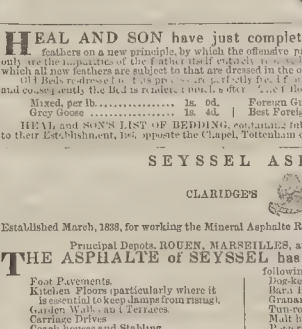
From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commissioners of Sewers

Sewers Office, Hart-street,
August 1, 1847.

DEAR SIR,—In reply to your request, I beg to say, that the Glazed Stoneware Socket Drains we have used in Holborn and Finsbury, I can recommend builders or proprietors of land to use, in preference to any other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR** WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to Iron, on account of their

CLEANLINESS AND CHEAPNESS.

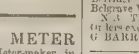
**HEAL AND SON** have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam: thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way.

Old Beds re-dressed by this process, and all the fine Dust, Impurities, and Lye expelled, the Feathers thereby greatly increased, and consequently the Bed is rendered more elastic and pleasing to the person of New Feathers.

| | | | |
|---|---|---|---|
| Mixed, per lb. | 1s. 0d. | Foreign Grey Goose | 1s. 8d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 2s. 0d. |
| Best Irish White Goose | 2s. 6d. | | |
| Best Dantzic White Goose | 3s. 0d. | | |

HEAL and SONS LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

**SEYSSEL ASPHALTE COMPANY.**

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyriment Seyssel, a Bituminous Rock, situate on the Eastern side of the Ain

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

**THE ASPHALTE of SEYSSEL** has been extensively used since March, 1838, for the following useful purposes:—

| | | |
|---|---|---|
| Foot Pavements. | Dog-kennels. | Covering of Railroad and other Arches. |
| Kitchen Floors particularly where it is essential to keep damps from rising. | Barn Floors. | The only effectual means to prevent the percolation of water, which also renders it very appropriate for the Lining of Reservoirs, Aqueducts, &c. &c. |
| Garden Walks and Terraces. | Granaries. | |
| Carriage Drives | Tan-room Floors. | |
| Coach-houses and Stabling. | Malt-house Floors. | |
| | Pigeon-cots, &c. &c. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

A PAIR of Well-built, Full-sized Third-rate VILLAS TO LET, at a Ground Rent, together or separately, situate in the healthy and favourite locality of Albion road, Queen's-road, and Hackney Downs. Apply to No. 5, Devonshire terrace, Green-lane, Stoke Newington, who is empowered to assist in the letting.

BUILDING LAND, BRICKS AND MONEY ADVANCED.

GROUND TO LET, for Third-rate Villas, in pairs and threes, at Islington, fronting the [illegible] for Ninety-nine Years, [illegible] Rent. [illegible] are very much required in this immediate neighbourhood.—Apply to TURNELL, No. 5, Devonshire cottages, Green-lane, Stoke Newington-green.

IMPORTANT TO BUILDERS.

BUILDING GROUND TO BE LET in all parts of London and suburbs, upon very moderate terms, and in most cases liberal advances. Leases can be had, and every information free of charge, or by post upon first sending a stamp. Our offices are open daily, from Ten till Four o'clock, for the purpose of Houses and Estates, which Builders generally will do well to avail themselves of, as they will thereby save much trouble and expense, whatever amount is to be effected thereby, as the fee is only the usual moderate commission.—BECKWITH and SALMON, Land and Estate Agents and Auctioneers, 25, Bucklersbury.

TO BUILDERS AND CONTRACTORS.

TO BE LET on Lease from Christmas next, the complete BUILDING PREMISES of the late Firm of GRISSELL and PETO, of Lower-road, Islington, comprising the most complete, useful, and valuable Wharf in the Kingdom, with a back entrance into New Wharf-road, Caledonian-road, and a frontage to Regent's-canal. A Premium will NOT be required; and the party taking the premises will only be called upon to pay for the Stock of Timber as may be agreed upon.—Apply, for particulars, to Messrs. WINSTANLEY and Co., Paternoster-row.

TO BUILDERS, CABINET AND COACH MAKERS, Timber Merchants and others.—Valuable Freehold Saw Mills, Timber Ware Manufactories, and Premises, with Steam Power, which valuable Machinery for Sawing, Planing, Turning, &c.

TO BE SOLD, OR LET on Lease, most ELIGIBLE PREMISES, situate No. 12, Dorset-square, in the immediate vicinity of the Regent's Park, comprising a most commodious dwelling-house replete with fixtures and fittings; at the rear of which, with a back entrance into New street-mews, are premises adapted to a large trade, and consist of a large yard, excellent workshops, counting-house, saw pits, deal and other sheds, and [illegible] steam engine and supply of spring water. There is also the advantage of the machinery, which has been very recently erected, [illegible] Immediate possession and [illegible] ing, &c be had if required. [illegible] cost price. For further particulars [illegible] premises, between the hours of 10 and 4. No written applications will be attended to.

SALES BY AUCTION.

TO ARCHITECTS, BUILDERS, NOBLEMEN, AND OTHERS.

MESSRS. EVERSFIELD and HORNE will SELL by AUCTION at Belgrave Wharf, Pimlico, on THURSDAY, the 23rd instant, and following Day, the THIRD PORTION of the STOCK IN TRADE, a pair of very Handsome Vein Marble Columns, 1 ft. 6 in. diameter, and nearly 13 ft. high, suitable for an Entrance Hall or Saloon; also several very Handsome Chimney-pieces, Gothic Tracery [illegible] Premises, and [illegible] Little Smith-street, Westminster.

TO MASONS, BUILDERS, AND OTHERS.

MESSRS. EVERSFIELD and HORNE will SELL by AUCTION on the premises, Belgrave Wharf, Grosvenor Basin, Pimlico, on TUESDAY, October 26th, and following days at Twelve for One o'clock precisely, without the least reservation, by order of the proprietor, who has entirely relinquished the business, the VALUABLE STOCK, PORTLAND, BATH, and CAEN STONE, in Block, Landing and Slab, Tooled York Paving, York and Portland Coping, Sills, Kerb, Steps, [illegible] Paris-paving Landing, [illegible] also Stanyon, Vein Blocks, and the Marble and Stone from the Show Rooms, about 12 Stone Chimney-pieces, Vein, Dove, Ravilla, Black, Cream, Green, Fleche, and other Coloured Marble, Hall Room Stone, Chimney-pieces, Enriched Porcelain mouldings, Grate Plates, Monuments, Tombs, Caen Stone, Marble Slabs for Tables, Washing Tops, Mortars, Pestle Clubs, Mallets, Rasps, Chisels, Drawing Pens, and numerous other items; also the Trade Implements, consisting of Stone Waggons, Carts, and Trucks, Hoisting Jacks, Crab Frame, Block and Falls, Stone Cutting Machine, Timber Crane, Ladders, Mortar Boxes, Saws, Screens, Wheelbarrows, and Weights, Carpenters' Benches, Tools, Saw Trestle, &c.; also a Four-wheel Chaise, Bean Mill, Chaff Machine, Brewing Utensils, Old Iron, [illegible] N.B. Approved bills at four months will be taken from buyers to the amount of £50. Marble [illegible] Catalogues may be had on the premises, and of [illegible] LEARY, Brokers, 27, Old Broad-street.

TO TIMBER MERCHANTS, CABINET MAKERS, PIANO FORTE MANUFACTURERS, [illegible]

MESSRS. SKEEN and LEARY will SELL by AUCTION, without reserve, at No. 10, Chester-terrace, Pentonville-road, on TUESDAY, [illegible] precisely, by order of the Proprietor, [illegible] the Valuable all the remaining TIMBER, consisting of MAHOGANY and TIMBER [illegible] of Spanish and Honduras Mahogany, [illegible] Veneers, Several Planks and Boards, [illegible] Veneers; principally Wainscot Planks and Boards, Deal, Ash, Oak, Staves, Deals, [illegible] Screws and Crow Bars, Trucks, and all Utensils in Trade, &c. &c. To be viewed two days prior, and Catalogues had on the premises, and of SKEEN and LEARY, Brokers, 27, Old Broad-street.

TO TIMBER MERCHANTS, BUILDERS, CABINET MAKERS, &c. &c.

FOR SALE BY AUCTION, on the Premises, New Crane Wharf, Shadwell, by order of the Executors, all the extensive and valuable Stock in TRADE of the late Mr CHRISTOPHER WILKINSON, consisting of White and Yellow Pine Deals and Battens, Yellow Pine Planks and Deals, White Spruce Deals, Flooring and Spruce Boards, [illegible] Scantlings, Quarterings, &c. &c. Also, THE LEASE of the above Premises, [illegible] Years, from the 31st of December next, at the yearly rental of £60. The whole of which will be [illegible] FIREMAN, on WEDNESDAY, the 25th instant, and following Day. Catalogues may be had at the Office, [illegible] morning of the Sale. Catalogues [illegible] and of HENRY FREEMAN, Broker, 3, Mincing-lane.

NEW OXFORD-STREET.—To Stationers, Printers, Paper-Hangings, Oilmen, and Others.—By Mr. ROBINS, at his Rooms, Premises, [illegible] Oxford-street, on Thursday next, October 26th, at 12 o'clock precisely, the STOCK-IN-TRADE of Mr. FREDERICK ALFRED KINSON.

MESSRS. ROBINS are instructed to SELL, by AUCTION, at the Factory, on MONDAY, October 23th, and Four following days, at Twelve, the extensive and tasteful STOCK of PAPER-HANGINGS of Messrs MERRICK and WILKINSON, [illegible] 10,000 pieces of satin and other fine Papers, [illegible] and beautiful Patterns, [illegible] for this unrivalled establishment for the last ten years. The whole will be [illegible] to the best bidder, will be arranged in lots to suit builders, whose attention to this sale is solicited.

Also, upwards of [illegible] Blinds, [illegible] novel description, [illegible] Fire-screens, [illegible] style for Parlour, the Property of Messrs. [illegible] Bleeding, and Printing Papers, all most valuable to Paper-stainers, [illegible] Catalogues [illegible] premises being let to Mr. ARCHER, of Old-street. Clerkenwell. The whole will be on view on the [illegible] Catalogues had on the premises, and at Messrs. ROBINS' Offices, Covent Garden.

STAIRCASING and HANDRAILING taught by a Practical Staircase Hand, at the EVENING SCHOOL OF PRACTICAL DRAWING, Academy, 28, Wellington-street, [illegible] Lecture-room, Elephant and Castle House of Attendance [illegible] Lecture-room, Tuesday, 7 to 10. Private Lessons, only a limited number of pupils taken.

ARCHITECTURE AND SURVEYING.

SUPERIOR INSTRUCTION given in [illegible] Drawing, Plans and Sections, Measuring and taking Levels, Land Surveying, Trigonometry, and Astronomical problems. Terms and Address, R. T. N., Mr. Davis, 19, Maddox-street, Regent-street.

ESTIMATING, BUILDERS WORK.

MR. REID, Professor of Architectural Mensuration, continues to give PRIVATE and COMPLETE INSTRUCTION in Measuring and Estimating every description of Carpenter's, Mason's, and Bricklayer's Quantities, with the latest and most correct Modes of Admeasurement, and to whom Gentlemen desirous of becoming Pupils are requested to make early application, as only a limited number can be received. Terms and Testimonials may be had on application at his Residence, 2, York road, Lambeth.

PERSPECTIVE.—A Professional Man is about to form EVENING CLASSES for the Tuition of Architectural students. Draughtsmen, and others, in the true principles of Perspective, [illegible] Lessons for [illegible] WEBB'S Library, [illegible]

SURVEYING, ARCHITECTURE, Engineering, Plans, Measuring, and Valuing.—Mr. HOSKING, Surveyor, Auctioneer, and Valuer, Building Consultant, &c., TAUGHT in a superior manner on the NEW SYSTEM, in a short course of PRIVATE LESSONS, by Messrs SMITH and LEWIS, Certificated Students of the Architectural Society, and Practical Architects and Surveyors, Pupils, Draughtsmen, Engineers, Architects, Builders, Draughtsmen, &c. Proficiency guaranteed, and perfect, very moderate. Pupils on completing the course [illegible] Prospectuses, &c., apply [illegible] Offices, 23, Guildford-street, Russell square.

MOSAIC PAVEMENTS.—SINGER'S PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental [illegible] has been [illegible] to provide a solution and [illegible] to which Specimens, [illegible] Architects, Builders, and others, may be referred, at the Sole Patentee, ALFRED SINGER, Vauxhall Pottery, [illegible] of Vauxhall-bridge, Surrey side.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, [illegible] Granolithic Pavement, as laid at the Offices, Whitehall-place, [illegible] At 1s. 6d. JOHN PHILLIPS'S PATENT ASPHALTIC BITUMEN PAVEMENT OFFICE, 1, Whitehall-yard, Charing-cross, [illegible] Asphalte and Bitumen [illegible] supplied with the best bitumen for covering bridges and arches.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, [illegible] to [illegible] Gentlemen, Architects, and others, that the Business hitherto carried on at these Works, is [illegible] SEPULCHRAL, SULPHURIC, GOTHIC, and other [illegible] Buildings, &c. are executed at the [illegible] S. C. respectfully solicits a continuance of the kind favours of all [illegible] [illegible] with Clean and Dustless [illegible] with Despatch and [illegible] Terms, and [illegible] advantageous.

CAEN STONE, BELGRAVE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have [illegible] from Caen, [illegible] the undermentioned Caen Stone [illegible] which have been [illegible] Stone, [illegible] Quarries, [illegible] Quarries, [illegible] Particulars may be obtained of Messrs. GEORGE GATES, 18, Southampton-buildings, Chancery-lane.

The Waterman Steamboats call at Lavender-pier, adjoining Belgrave-wharf.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and [illegible] from Anston, Engineers, Builders, [illegible] others, that they have opened [illegible] Quarries, [illegible] Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest [illegible] THE VALUABLE STONE, [illegible] Quarry, near Anston, [illegible] known, [illegible] in consequence of [illegible] Messrs. Grissell and Peto's Contract for the New Houses of Parliament, [illegible] Stone at hand for the execution of [illegible] Orders may be addressed to Messrs. WRIGHT and Co., Anston, near Worksop, Notts.

SLATE SLABS.—The Finest Slabs produced in WALES are [illegible] and [illegible] by MAGNUS and Co. the PIMLICO SLATE WORKS, [illegible] Belgrave-place, Pimlico. These reduced prices are also subject to a very large trade discount [illegible] at Buckingham Palace, [illegible] Royal Italian Opera-house, Bethnal-green, [illegible] Penitentiary, the Conservatories, Baths and Washhouses, on most of the Railways, and are specified for by the most eminent architects. Whole cargoes supplied direct from [illegible] Wales, [illegible] at very low rates. Slate Tanks, Fittings for Dairies, Larders and Wine Cellars, Landings, Cantilevers, Chimney Pieces, &c. &c.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY, 3, [illegible] South Place, Finsbury, [illegible] are [illegible] to [illegible] 13 PROVED BRICK and TILE MACHINES, [illegible] Machines, [illegible] at the Company's office, 103, Piccadilly, from 10 A.M. to 5 P.M. [illegible] Machine in [illegible] Alperton, which is within a mile of the Sudbury station of the [illegible] Public Exhibition, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, [illegible]

The following [illegible] Machines: Mr. SLIGHTS, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and RUTHERFORD, Staffordshire; and Messrs. DUNMORE and [illegible]

TILE AND TILE MAKERS, RAILWAY CONTRACTORS, &c.

THE attention of all Parties engaged in the [illegible] Trades, is respectfully [illegible] PROVED BRICK and TILE MACHINE, [illegible] Public [illegible] Machine in Operation, [illegible] Labour may be obtained, far beyond any [illegible] The Machine [illegible] Particulars of the Invention, or to treat for Licence or Purchase, [illegible] at No. 78, South Molton-street, or to Mr. CHARLES EVANS, Director, [illegible] Bank, Leeds, or to Mr. PETER PEARNHEAD, 17, Clifford's-inn, London.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be [illegible] to persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

TO BUILDERS, OWNERS OF HOUSES AND PROPERTY, AND OTHERS.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that, by an Act of Parliament made and passed in the seventh Parliament holden in the 10th and 11th years of the reign of her present Majesty, chap. 70 (local and personal), intituled, "An Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," it is enacted (sec. 4), that after the passing of that Act (2 July, 1847), it shall not be lawful to build any house unless the word "house" is thereby declared to comprise every species of building within the limits of any level division or district formed, or thereafter formed, within the limits of the said Commissioners, unless a sewer to carry off the drainage thereof be first constructed to the satisfaction of the Commissioners of Sewers, of such material, of such size, at such level, and with such fall, as they shall direct, which sewer shall lead to and communicate with such other sewer as the Commissioners shall direct, provided that, if there shall be already a sewer sufficiently near, in the judgment of the Commissioners, to any such premises, then a drain shall be made to lead from such house into such existing sewer: and it is thereby declared that the expense of building such sewer or drain shall in all cases be borne by the owner of such house, unless the Commissioners shall think that a portion of the expense of the sewer (but in no case a drain) should be borne by the level in which such sewer shall be situate: And further it is by the said Act enacted, that if any person shall proceed to build any house in contravention of the said provisions, the Commissioners are authorized to punish, [illegible] any person employed by him, by fine, imprisonment, or otherwise, as in the said Act is directed; but it is thereby provided that no person shall be required to expend a greater sum for such works than after the rate of 30s. per foot according to the external line of frontage of such building to be [illegible] connected with any public sewer, and at a distance of not less than 200 feet from any public road or other house, shall not be liable to make such sewer or drain, although such sewer or drain shall be required by the presentment of a jury: And further take notice, that the said Commissioners of Sewers hereby require all persons intending to build [illegible] of the said Act, and with this view persons interested are requested to attend at the Office of the Commissioners, No. 1, Greek-street, Soho, between the hours of nine in the morning and four in the afternoon, where a map and plan of the sewers under the jurisdiction of the Commissioners may be seen, and the form of sewers and drains required, ascertained, and a form of the written request required may be obtained, and all further information and assistance given: And further take notice, that parties are requested forty-eight hours at least before they shall so attend at the said office to call by post or otherwise, to the number of the Commissioners at the said office, a description of the house or erection intended to be built, with the mode in which it is proposed to join any sewer, or provide for the drainage of such premises.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

MORTGAGED PROPERTY.—Money to pay off existing Mortgages may be obtained on a Re-Mortgage of the Property, conditioning to repay Principal and Interest in Six Years and a Half, by Equal Monthly Instalments. For example, if £1,000 be required, the Borrower will have to pay in discharge of principal and interest, about 18s. a month until May, 1854, and in like proportion for larger or smaller amounts.—Further particulars can be learned on application to Mr. DETHRIDGE, 65, Upper Stamford-street.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procurement, personal application at the office, or, if in the country, a letter, the party bringing with them the abstract of title, plans, &c.

BRITISH MUTUAL LIFE OFFICE.—The Public are invited to examine for themselves the advantages gained for Assurers by the low rates on which policies are granted. Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

LONDON and PROVINCIAL JOINT STOCK LIFE INSURANCE COMPANY.—The Directors invite the Public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and valuable benefits offered by this office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, DIFFERENT BENEFITS of PROFITS invited. For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No. 39, Nicholas-lane, Lombard-street.

LONDON ASSURANCE CORPORATION, Established by Royal Charter in the Reign of King George the First, A.D. 1720. 7, Royal Exchange, Cornhill, and 10 Regent-street.

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| Age | Participating. | Non-participating. |
|---|---|---|
| | £. s. d. | £. s. d. |
| 30 | 2 9 3 | 1 19 1 |
| 35 | 2 10 8 | 2 5 11 |
| 40 | 3 3 1 | 3 0 0 |
| 50 | 4 10 7 | 4 15 7 |
| 60 | 6 12 5 | 6 5 11 |

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Fire Insurances on every description of Property at Moderate Rates, and Marine Assurances at Current Premiums.

JOHN LAURENCE, Secretary.

ROYAL POLYTECHNIC INSTITUTION.—The Last Week of the LECTURES on CHARACTER, with MUSICAL ILLUSTRATIONS, by Mr. J. RUSSELL, each evening, at Eight o'clock, except Monday and Saturday. A LECTURE on the PHYSICAL PROPERTIES of a JET of COAL GAS, in reference to VENTILATION, &c., with Novel and Interesting Experiments, by Dr. BACHHOFFNER, daily at half-past Three. CHEMICAL LECTURES. The ELECTRIC TELEGRAPH is worked. The WORKING MODELS explained daily. The beautiful OPTICAL EFFECTS include an entirely NEW SERIES of DISSOLVING VIEWS. DIVING BELL and DIVER, and the [illegible] NEW APPARATUS for CONVERSING with PERSONS under WATER, &c. &c.—Admission, 1s.; Schools, Half-price.

London: Printed by CHARLES WYMAN, of 16, Castle-ham Villas, Hemel Hempstead, in the County of Surrey, Printer, at the Printing Offices of all Co., Bishopsgate, 74 & 75, Great Queen-street, Lincoln's-inn-fields, and Hatton Garden, in the Parish of St. Andrew, Holborn, in the County of Middlesex, and published by the said CHARLES WYMAN, at the Office of "The Builder," 2, York street, Covent Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, October 23, 1847.

# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 247. OCTOBER 30, 1847. Price ..... 3d. Stamped ..... 4d.


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### ADVERTISEMENTS.


TO PARENTS AND GUARDIANS.

WANTED, in a Builder's Office, a RESPECTABLE WELL-EDUCATED YOUTH, quick at writing and accounts. If suitable, there would be no objection to his being articled.—Apply at 14, Osnaburg-street, New Road, between Nine and Ten o'clock.

TO BUILDERS, &c.

WANTED, by the Advertiser, a Situation as CLERK; has a thorough practical knowledge of building; is a good draughtsman, and conversant with the routine of a Builder's office.—Address, C. C., office of "The Builder," 2, York-street, Covent Garden.

TO PLUMBERS.

WANTED, in the Country, an Experienced PLUMBER and GLAZIER. One who has been accustomed to Plain Painting would be preferred. Communications, stating amount of wages required, to be addressed (pre-paid) W. H., Post Office, Nottingham. As the above will be a permanent Engagement, a reference will be required.

TO BUILDERS, &c.

WANTED by the Advertiser, aged 30, by trade a Bricklayer and Plasterer, a SITUATION to keep Accounts, Measure, Estimate, and Prepare Working Drawings; no objection to fill up time at work, if required. Unexceptionable reference can be had. Address (post-paid) A. B., care of Mr. Wadey, 93, St. George's-road, Southwark.

APPRENTICE.

WANTED, to Apprentice or Place in an Office, a Stout, Intelligent Youth, aged 14, where a knowledge of some mechanical business may be acquired, and an inclination for the arts and drawing be made available. He has been two years in an architect's office, and has seen something of general business. Address B. W., 127, Great Portland-street, Cavendish-square.

TO BUILDERS, &c.

WANTED, by a Young Man, aged 25 years, a SITUATION as FOREMAN of CARPENTERS and JOINERS. Can make fair and working drawings, understands the general routine of a Builder's office, being accustomed to the management of a business, with the payment of the men, &c., and has some knowledge of estimating and measuring up work.—Address, prepaid, to H. H., care of Mr. Shickel, 16, High-street, Islington.

WANTED, a Young Man about Nineteen or Twenty years of age, who has been accustomed to the routine of a Saw Mill, competent to take in and deliver Goods, Squaring Dimensions and Quantities of Timber, making up the accounts, &c. None need apply whose character will not bear the strictest investigation.—Address, pre-paid, stating salary expected, to W. S., at the office of "The Builder," 2, York-street, Covent-garden.

WANTED, by an Experienced and Practical Person, aged 21 years, a SITUATION in a Builder's or other Office. He is thoroughly conversant with Builders' accounts, measuring, valuing, and estimating; is a superior penman, and can prepare specifications and drawings, and would undertake superintendence of workmen. Salary, 30s. per week. Satisfactory testimonials.—Address, A. B., No. 22, Porteus-road, Paddington.

AS CLERK OF WORKS, OR GENERAL FOREMAN.

WANTED, by the Advertiser, a Practical Man, of active and persevering business habits, a SITUATION to SUPERINTEND the CONSTRUCTION OF WORKS GENERALLY; is well acquainted with measuring, estimating, and making working drawings, book-keeping, and the general routine of a builder's or engineer's office, and used to the control of workmen; acquainted with the metal trade, machinery, &c. Unexceptionable references as to character and ability. Address, E. B. B., 23, St. Alban's-street, Lambeth.

TO ARCHITECTS AND BUILDERS.

WANTED, by an Active Practical Person, a SITUATION as Clerk of Works, General Foreman to a Builder, or Superintendent of an Architect and Surveyor's Office. Has had first-rate experience in laying out and superintending works. Is an excellent Draughtsman in Office. Detail and Working Drawings. Well understands the making out of Specifications, Measuring artificers' works, and (surveying buildings, and the general routine of an architect or builder's office. Age thirty-nine years. First-rate London reference.—Address J. T. W., Port Vale, Hertford.

AS Clerk of Works, or General Superintendent of Works, by a person who can give satisfactory reference as to character and ability.—Apply, J. H. B., office of "The Builder," 2, York-street, Covent Garden.

TO ENGINEERS, ARCHITECTS, BUILDERS, &c.

A GENTLEMAN, about leaving a Line of Railway (in consequence of a suspension of the works), is desirous of meeting with a SIMILAR ENGAGEMENT in either of the above offices: is a good draughtsman, and can produce unexceptionable references as to qualifications, &c.—Address to C. E., No. 4, Graham-street, Eaton square, Pimlico.

TO ARCHITECTS AND BUILDERS.

A BUILDER'S SON, from the Country, wishes for a SITUATION in an office where he will have a chance of gaining experience. Has been in the habit of paying and superintending workmen for the last seven years, with the usual routine of a Builder's office. As experience is his object, a large salary not required. References and security (if required) given.—Address to N. R., 79, Blackman-street, Southwark.

TO ARCHITECTS AND SURVEYORS.

A STEADY and Experienced Clerk of Works, who has just completed his engagement, is desirous of meeting with ANOTHER APPOINTMENT. He is thoroughly acquainted with his business, and has been accustomed to measure, value, and estimate, and can have the highest testimonials from the architect he has just left.—Address A. A., care of Mr. Morgan, 29, Museum-street, Bloomsbury.

TO CARPENTERS AND BUILDERS.

A YOUNG MAN, twenty years of age, who has served (the former part of his time, WISHES TO ARTICLE HIMSELF for two years in a good Shop, where he will have an opportunity of improvement. Can keep accounts, and has been accustomed to the routine of the Yard, and has no objection to work in the Office after the usual working hours. Can have an excellent character from his late employers. Address to R. C., No. 16, Pitt-street, St. George's-road, Lambeth.

THE Advertiser, having a Valuable Stratum of GRAVEL running through his ground, is desirous of meeting with a person of respectability to join him in working it: the sale is extensive, and an equal division of profits proposed. For recent outlay to premises, a premium will be required. There is a convenient house, with large, well stocked garden attached. For particulars, apply by letter, post-paid, to A. B., Mr. Prior's, 51, Marchmont-street, Russell-square.


### PUBLICATIONS.


Published this Day, in 12mo price 4s. cloth.

THE PRINCIPLES AND PRACTICE OF ARITHMETIC and MENSURATION; with the use of Logarithms. Adapted for the use both of Public and Private Schools and the Universities.

By J. WHARTON, M.A. With the Sanction of the College of Preceptors.

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NEW WORK ON ORNAMENTAL DESIGN.

NOW READY, Parts I. to VI., price 2s. 6d. each, of

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This publication is intended to supply to the public in general, but especially to those trades in which a knowledge of Ornamental Design is required, a correct, simple, and copious guide in that beautiful art. Materials will be found in it suggestive of a variety of chaste and classical designs, arranged on principles as clear and comprehensive as to present examples capable of being appreciated and used by every workman.

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"It is not only characterised by cheapness, but is excellently adapted to elevate the taste of designers, by giving them admirable models for ornamental work of all kinds."—*Douglas Jerrold's Newspaper.*

London: Wm. S. ORR & Co., Paternoster-row, and JOHN MENZIES, Edinburgh.

ARCHITECTURAL ENRICHMENTS.

BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the Architect of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Design prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff price £1.—Works, 15, Wellington Street North, Strand.

PAPIER MACHE and CARTON PIERRE. Just published, a LITHOGRAPHIC VIEW of IRONMONGERS' HALL, Fenchurch-street.

The spacious Banqueting Hall of the Worshipful Company of Ironmongers having been confided to Messrs JACKSON and SONS for redecoration, they have carried out the whole of the rich dressings of Ceiling, Walls, Dado, Orchestra, and the various parts in the Elizabethan style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is richly designed with beams and minor associated panels with pendants, strap work, &c., the whole finished in colour and gold; the walls have a rich high dado with the arms, the grade, and period of office of the Masters and other eminent members of the Company, chronologically arranged from the time of Edward IV. The orchestra, principal entrance, Master's seat, are also appropriately enriched.

A large Lithographic View of this Interior is now published and ready for sale, at their Papier Mache and Carton Pierre Factory, 49 and 50, Rathbone place, price 7s. 6d.

NOTICE.—The Master Builders and the Public are respectfully informed, that a HOUSE OF CALL FOR CARPENTERS AND JOINERS is established at the WESTMORELAND ARMS, George-street, Manchester-square.


### CONTRACTS.

TO BUILDERS AND OTHERS.

THE Court of Sewers for Westminster and part of Middlesex, will be ready at the Court House, No. 1, Greek-street, Soho-square, on FRIDAY, the Fifth of November, 1847, to receive TENDERS for BUILDING about 195 feet of SEWER at South End, Kensington, in the line of the present open Sewer. A Specification and Plan of the above Works may be inspected, and Forms of Tender, and other particulars obtained at this Office, daily, between the hours of Nine and Four. Parties offering must be in attendance at One o'clock precisely, on the Fifth of November, with sealed Tenders, marked on the outside—Tender for Works. Each Tender must be strictly in the printed Form prescribed. The Court does not bind itself to accept the lowest tender. LEWIS C. HERTSLET, Clerk.

Sewers Office, No. 1, Greek-street, Soho-square, 28th October, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.

Court of Sewers, Tower Hamlets.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets', (exclusive St. Katherine's and Blackwall Marsh,) at their meeting, to be held on WEDNESDAY, the 10th day of November, at Two o'Clock in the afternoon precisely, at the office of Sewers, No. 15, Great Alie-street, Goodman's fields, will be ready to receive TENDERS (sealed up from any persons or person willing to enter into contract for the works necessary in EXTENDING THE SEWER along Pritchard's-road, being a length of 633 feet, and from thence to the Culvert, being a length of 512 feet, and in Old Gravel-lane, for a length of 340 feet, and along School-house-lane, for a length of 491 feet. Plans and Specifications of the said several works, with the Forms of Tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'Clock. Separate Contracts, and separate Tenders, to be indorsed with the nature of the work contracted for, will be required for each of the said several works respectively. The Contractors will be required to sign provisional agreements to secure the due execution of the said Contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners; no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon.—Dated this 28th day of October, 1847.

JOHN WILLIAM UNWIN, Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the lowest tender.

TO BUILDERS.

CONTRACT for BUILDING. — The Board of Guardians of Saint Olave's Union, Southwark, will receive TENDERS at the Union Workhouse, in Parish-street, Horsleydown, Southwark, on WEDNESDAY, the 10th day of November, at Three o'clock in the afternoon precisely, for BUILDING a NEW SOUTH WING to the UNION WORKHOUSE, according to Plans and a Specification, which may be seen on application to Messrs. ALLEN SNOOKE and STOCK, Surveyors for the Board, No. 69, Tooley-street. The Board do not bind themselves to accept the lowest tender, and the contractor will be required to give security for the performance of the work. Parties tendering or some person on their behalf are required to attend the Board, with their Tenders sealed up and endorsed "Tenders for Works at St. Olave's Union Workhouse" by Three o'clock on the above day, after which hour no Tender will be received.

GEO. R. CORNER, Clerk to the Guardians.

October 21st, 1847.

### COMPETITION.

TO ARCHITECTS, &c.

ERECTION of a WORKHOUSE.—AYLSHAM UNION.—The Guardians of the Aylsham Union are desirous of receiving PLANS for the Erection, in Aylsham, of a WORKHOUSE capable of containing 300 Registered Persons—Men, Women, and Children, properly classified, according to the Regulations of the Poor-Law Commissioners. The Sum of ONE HUNDRED GUINEAS will be paid to the Person whose Plan shall be approved by the Guardians and the Poor-Law Commissioners, unless he shall be afterwards employed in the Erection of such Workhouse; in which case he will be paid the usual Commission for his Services. Such Plans to be forwarded to the Clerk of the Union, addressed to the "Building Committee, Aylsham Union," on or before Tuesday, the 23rd day of November next, when the Committee will meet to inspect the same.

WILLIAM HILL, Clerk to the Union.

Marsham, Norwich, 26th October, 1847.

THEATRE ROYAL LYCEUM.—Messrs. MARKS and Co having, under the directions of Mr. Beverley, furnished a considerable part of the DECORATIONS of that Magnificent Theatre, beg to call the attention of Architects and the Trade to the same, and to the fact of their always keeping in stock ready for similar purposes—in conjunction with their large Stock of generally useful Papers, beginning from 6d. per Roll to Two Guineas—94, Princes-street, Coventry-street.

N.B. Their Splendid Collection of Patterns for the ensuing year are finished, and ready for inspection.

GREAT WESTERN RAILWAY.—OPENING TO CHELTENHAM.—On and after SATURDAY, 23rd October, 1847, the London Trains of this Company will run over the Line between Gloucester and Cheltenham. Trains will leave Cheltenham for London at 6.45 A.M., 7.50 A.M. (Express), 8.30 A.M., 10.40 A.M., 11.15 A.M. (Parliamentary), 12.45 P.M., 1.30 P.M. (Express), 3.55 P.M., 6.50 P.M., and 11.30 P.M., Night Mail. Trains from London will arrive at Cheltenham at 10 o'clock A.M., 12.5 P.M., 12.45 P.M. (Express), 2.30 P.M. (Parliamentary), 2.00 P.M., 4.24 P.M., 6.25 P.M., 8.30 P.M. (Evening Express), 8.30 P.M., and 1.30 A.M. (Night Mail).

The Express Trains arriving in Paddington at 11 o'clock A.M., and leaving Paddington at 3.30 P.M., will, on and after the 23rd instant, convey Passengers to and from Cheltenham, Gloucester, Stroud, and Cirencester. Hand-bills, giving full particulars of the above, may be obtained at the Railway Stations.—By order of the Directors, C. A. SAUNDERS, Secretary.

**W. HUGHES & CO., ORNAMENTAL** PLASTERERS, ARCHITECTURAL MODELLERS, &c., manufacture every description of Cement and Plaster Ornaments, for Internal and External Decorations; have a large variety of Gothic and other Ornamental Chimney Shafts, Vases, Flower-stands, Fountains, Animal and other Figures for Gardens and Pleasure grounds, Pediment Scroll, Bandages, Trusses, Shop-fronts, Cantilevers, Capitals for Columns and Pilasters, Ballustrading for Balconies, Terraces, &c.; Centre Flowers, Soffites, Friezes, Bed Moulds, Brackets, Paterae, &c. for inside work. Builders and the Trade may be supplied with all kinds of Cement and Plaster Castings on the shortest notice and the most liberal terms, by applying at the Workshops, No. 1, Brewer-street, North, near Sadler's Wells Theatre, John-street-road, Clerkenwell, London, where Specimens can be seen. Residence, 116, Goswell-road. Country orders punctually attended to.

**CHEAP ROMAN CEMENT** is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

**ATKINSON'S CEMENT. — WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

**PORTLAND CEMENT.—Testimonials** received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as the Building and Lining of Reservoirs, Cisterns, Baths, Fishponds, &c. For External Plastering and Ornamental Castings, it requires neither Colour nor Paint; it never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON** having completed extensive alterations and erected new and powerful machinery, at his CEMENT AND PLASTER WORKS, MILL WALL, POPLAR enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufactory of Lias and Mastic Cements, St. Andrew's Wharf, Earl street, Blackfriars.

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked, has a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S and S. plead to them selves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may be in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

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2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days without peeling when put upon dry work.

It is especially adapted for internal linings for walls, staircases, architraves, mouldings and parchments of all kinds, to all of which purposes it has been extensively applied by Mr Thomas Cubitt, on the Grosvenor estate &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone being at the same time much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 82, Canning-place, Liverpool.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, sink-traps, and various shapes always on hand.

**UNION BROWN STONE POTTERY,** CHEMICAL APPARATUS, and DRAIN PIPE MANUFACTORY, 14, Vauxhall-walk, Lambeth. Patronised by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster.

WILLIAM NORTHEN, Inventor and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN-PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to the following list of prices:—



Straight Barrel Pipes, with Socket Joints, in 2-ft. Lengths.

| 6-inch. | 9-inch. | 12-inch bore. |
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| 1s. 4d. | 2s. 3d. | 3s. 5d. each. |

Bends and Junctions equally low.

The following unsolicited Testimonial is respectfully submitted:

Sewers' Office, 1, Greek-street, Soho, July 30, 1847.

Mr. ——

DEAR SIR,—Shall you at any time be in want of Stone-ware Drain-pipes, I take the liberty of recommending you to purchase both. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them. I am, dear Sir, yours truly,

JOHN PHILLIPS, Surveyor.



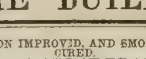
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The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.

Sold wholesale at the Manufactory, No 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

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**BAILLIE'S PATENT TRANSPARENT** VENTILATORS are at once efficacious, neat and easily adapted to any sash, and were thorough ventilation without draught is required, will be found invaluable, and effectually as a cure for smoky chimneys. Patented by Wheeler and Retail by E. and W. H. JACKSON, Widow Glass Warehouse, 315, Oxford-street.

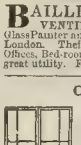
By Her Majesty's  Royal Letters Patent.

GLASS VENTILTORS FOR WINDOWS.

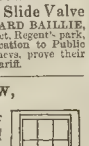
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**CHAS. WM. WATERLOW,**

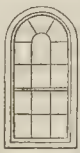
MANUFACTURER



of Sashes an Frames, and Joiner to the Trade, 191, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



**JOHNSON and PASK,**

1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



**PLATE GLASS! PLATE GLASS!!** PLATE GLASS!!! East London Plate and Sheet Glass Company, Leman-street, Goodman's-fields.—We beg to call the attention of the Trade to our Plate Glass; its Strength, Colour, and Quality of which remains unrivalled by any other company; it is admitted by the trade, that our transparent quality is superior to that used for silvering by most other houses. Rough Plate for Skylights and Flooring purposes, &c. All orders to be addressed, B MUSS, and Co. Leman-street, Goodman's-fields.

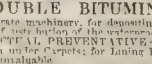
N.B. The business of this establishment can in no way connected with any other house in London of the same name.

TO THE NOBILITY, CLERGY, GENTRY, ARCHITECTS, &c

**ORNAMENTAL, STAINED, FIGURED,** and EMBLAZONED GLASS and ENCAUSTIC TILES, by new processes for Rich and Ecclesiastical and Public Edifices. G. WALKER, Paradise-street, Tunstall, Staffordshire Potteries, respectfully solicits attention to his improved method to execute orders of any extent, and every pattern in Glass, also Encaustic Tiles, unaffected by the atmosphere, at the low quotation of 1s. per square foot for Glass, and for Tiles equally low per square yard.

These Tiles are of two bar Manufacture, being of a much more intrinsic merit than by which the Manufacturer is enabled, with the greatest facility, to effect any of the newly devised combinations of Patterns Groups and Devices, in Colours of the richest Tint, and at a remarkable low Charge.

N.B. Heraldic Devices, Coats of Arms, Monograms, or any Design forwarded, executed without any extra charge, providing the order amounts to Twenty Square Yards.

By Her Majesty's  Royal Letters Patent.

**CROGGON'S PATENT DOUBLE BITUMINOUS WATERPROOF PAPER.**

The above is manufactured by the most accurate machinery, for depositing a DOUBLE COAT OF BITTUMEN BETWEEN TWO SHEETS OF PAPER, insuring an evenness of distribution of the waterproof materials the rendering every minute portion of the paper perfectly impervious to water. It is an EFFECTUAL PREVENTATIVE against the effects of DAMP FROM WALLS, if put under the usual paper and DAMP FLOORS, when under Carpets; for Lining Packages, and Wrapping all Articles of Merchandize subject to rust and injury from damp, it will be found invaluable.

SOLD IN ROLLS ONE YARD WIDE, AT SIXPENCE PER YARD.

THOS. JNO. CROGGON, 6, LAURENCE POUNTNEY HILL, CANNON-STREET, LONDON.

**TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY** HENRY DOULTON AND CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3-inch bore, 5d. PER FOOT. 4-inch, 6d. 6 inch, 8d. 9 inch, 1s 1½d. 12 inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be effecting a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

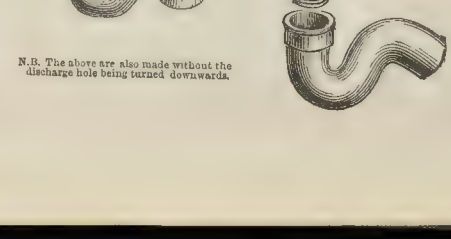
From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers Office, Hatton-garden, August 26th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR** WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

**CHEAP ORNAMENTAL GLASS.—I beg** to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

**LONDON and MANCHESTER GLASS** COMPANY.—PLATE GLASS.—Architects, Railway Contractors, Builders, and the Trade generally, are respectfully informed the London and Manchester Glass Company have now opened their London Warehouse, 19, Rathbone-place, Oxford-street, for the Sale of PLATE GLASS, suitable for Silvering, Glazing, and other purposes. The Colour and Polish are very superior, and the Substance strong. The Tariff of this Company is the same as the one at present adopted by the Trade, from which very LIBERAL DISCOUNTS will be allowed on each description of Glass.

J. L. GRUNDY, Company's Agent.

12, Rathbone-place, Oxford-street.—21st Oct. 1847.

**LONDON and MANCHESTER GLASS** COMPANY.—Manufactory, Sutton, St. Helen's, Lancashire. London Warehouse, 19, Rathbone-place, Oxford-street. ROUGH PLATE, suitable for Railway Stations, Warehouses, Skylights, and Floors, may be had of every thickness, at very MODERATE PRICES, upon application to

J. L. GRUNDY, Company's Agent.

19, Rathbone-place, October 21, 1847.

**PLATE GLASS.—Architects, Builders,** and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate Glass Company. Liberal discounts allowed on placing orders. London Warehouse, 99, Hatton-garden, Holborn. H. CHRISTIE, Agent.

N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one half, an I three fourths of an inch thick.

**SOHO PLATE GLASS WAREHOUSE,** 26 SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Circy Companies Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

**THE BIRMINGHAM PLATE GLASS** COMPANY beg to call the attention of the Trade to their manufacture of superior Polished and Rough Plate Glass. Having recently relaid their works, and erected an additional 80-horse power engine, they are enabled to produce a much larger quantity. The prices will be found to be under the market, and established in the trade. A large stock of Polished and Rough Plate always on hand. LONDON WAREHOUSE, 141, Fleet-street; WORKS, Smethwick, Birmingham.

**PHŒNIX PLATE GLASS WARE-** HOUSE, 6, St. Mary Axe, City.—E. MOSS, Proprietor. Builders, Upholsterers, and Gentlemen furnishing, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Railway Carriages, Mirrors, and other purposes. Colour, Quality, and Substance unrivalled by any other house in the Kingdom. ROUGH PLATE GLASS for Skylights supplied in lengths and inch thick. All Plate Glass for Shop Fronts delivered within five miles of London free of all charge, and estimates given, free of, expense, in town or country. No connection with any other house.

**WINDOW GLASS, LEAD, VARNISH,** COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Rochester-street, Without. Lowest prices charged. Please inquire them

Builders, Painters, Glaziers, and others supplied with every article used in the trade upon the best wholesale terms.

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Coloured and Enamelled Glass. Fluted Rolled, and Sheet Plate, for Shop fronts, Show-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

Colours and Dry Colours of the best quality; Brushes Drivers and every article used in the Trade Wholesale.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water-closets, Basins, Brass work and all materials used by Plumbers.

WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 87, Rochester-street Without, London; THOMAS MILLINGTON, Proprietor.

The Builder.
No. CCXLVII.
SATURDAY, OCTOBER 30, 1847.

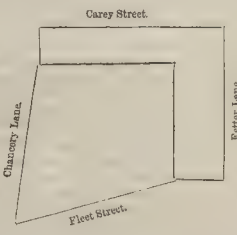
JOKING journalists, jovially jesting, with reference to the Sixth Report of the Metropolitan Improvement Commissioners, just published, which makes the erection of a suitable Record Office a *little* more probable than it was before, have pointed out that it was on the 2nd of November, 1647, that the idea of erecting a general repository for the public records was first enunciated; and that it would be a coincidence "pretty to observe" if the question were finally settled just two centuries afterwards, which, aforesaid journalists think, would be a very fair allowance of time for official deliberation.

A very fair allowance indeed, considering, too, that all that time our national archives, of which we make so much use and pretend to be so proud, have been running risks to which no ordinarily careful tradesman would think, for five minutes, of exposing his vellum'd records of Mrs. Screwemtight's consumption of his fresh butter, or Mr. Jones's order of grindstones and rolling-pins. We have, indeed, a singular way of taking care of what we prize,—"an open shed in the Essex marshes," says another diurnal writer, "the Hertford powder-mills, the magazine at the Tower, one moiety of a building the other half of which is devoted to the fabrication of fireworks or gun-cotton,—these are the chosen spots in which Englishmen deposit the printed or written wisdom of their forefathers, which in the abstract they are constantly bespattering with praise. If the records, like human beings, were open to infectious disease, they would be summarily despatched, for security's sake, to Burying-ground-passage, Johnson's-place, Gee's-court, or some of those favoured localities in which Government are determined to receive the cholera, if it shall unfortunately visit the metropolis, with suitable honours. As this cannot be, we have selected the two next most suitable agents of destruction in order to get rid of our records with as little delay as possible,—gunpowder and mildew. In the Tower, one portion of these luckless documents is submitted to the former, in the Queen's Mews to the latter, agency. We may regret that the second chemical process is slow, but it has this superiority over the means of destruction employed at the Tower,—that it is sure. On the other hand, although we may often have occasion to reflect with pain on the immunity from damp enjoyed by the Rolls in the Tower, there is the counter-balancing consideration, that at any given hour of the day or night the whole collection may be launched into eternity by an explosion of the magazine."

Alas, for the veracity of our future histories, if such were the case, the questioning of titles, and the want of materials for coming antiquaries to rummage! And yet, though a period of two hundred years is a fair allowance for deliberation (about a sixth of the whole time that has elapsed since we left our skins and took to living like Christians), the thing is not done, it is merely made possible.

The report relates to two matters,—a site for the proposed Record Office (the size and plan of it incidentally) and the formation of a new grand line of communication between the eastern and western divisions of the metropolis. Mr. Pennethorne, Mr. R. L. Jones, and Mr. Henry Cole, are the witnesses whose evidence is given, and four plans are appended, namely:—No. 1. Plan of the Rolls Estate and other properties in the neighbourhood, showing how they will be affected by the erection of the proposed Public Record Office, and by public improvements; No. 2. Plan showing a main central thoroughfare from the eastern to the western quarters of London, suggested in connection with the proposed new Record Office on the Rolls Estate; No. 3. Plan showing the proposed arrangement of the ground floor of the new Record Office; and No. 4. Plan showing the proposed arrangement of the first floor of the new Record Office.

The site pointed out for the office would be bounded on the west by Chancery-lane widened; on the north by an extension of Carey-street, 60 feet wide, made part of the new thoroughfare; on the east by Fetter-lane, moved easterly, and made 60 feet wide; and on the south by Fleet-street.




The plan of the building as proposed takes the shape of a reversed L, the horizontal arm being next Carey-street: St. Dunstan's Church, Clifford's Inn, and Sergeant's Inn, occupy the remainder of the ground circumscribed by the roads named.

The building is to be Elizabethan (we hear it with misgivings), built of brick, with a long series of bay windows, and to cost 175,000*l.*, exclusive of fixtures and fittings, which would be 31,500*l.* more. It would be two stories in height, and contain 141 rooms, besides a basement which might be afterwards appropriated. Provision would be made, too, for adding a third story when required. There would be fire-places in every room, and *no wood-work* throughout the building. The cost of properties for the site, beyond those in possession, and after taking credit for various matters, is estimated at 109,107*l.*, and the net cost to the public, of extending Carey-street across Chancery-lane and the Rolls Estate to Fetter-lane, and of diverting and widening Fetter-lane from such proposed extension of Carey-street to Fleet-street, 112,908*l.*

The new main line of communication now proposed by Mr. Pennethorne, proceeds eastward from Long-acre, at the corner of Bow-street, diverges towards the south into Carey-street, Lincoln's-inn, thus forming an ugly and awkward angle with Long-acre, traverses the north side of the Rolls Estate into Fetter-lane, and proceeds thence by a bridge over Farringdon-street; passes by the Sessions House, Old Bailey, between that and Newgate prison, takes down part of Paternoster-row, and so comes out at the west end of Cheapside.

The line suggested by Mr. Pennethorne in 1834 (no one can say this has been hurried, although denied the *mature* reflection of two centuries given to the record office), proceeding from nearly the same point in Long Acre, kept north of his present line, and would have passed along the south side of Lincoln's-Inn-fields, and through New-square, close to the end of the new hall; then crossing Chancery-lane, and the north end of Farringdon-street, would have terminated at the west end of Newgate-street. The benchers of the "Inn," however, and the trustees of the "Fields," threatened opposition, and the line has been kept to the south to avoid the forbidden ground.

By making this deviation, the office-of-works surveyor has fallen into a line proposed by the city surveyor, Mr. Bunning, who has complained in a letter to the *Times* of the treatment he has received, both from Mr. Pennethorne and the Metropolitan Improvement Commissioners themselves. In this communication he very justly objects to *crooked* lines, and points to the sinuosities of Gresham-street, in support of his protest.*

He might have mentioned Endell-street, too, at the end of Bow-street, the point of commencement for the new line, where (although the houses at the corner, which prevented the road from Bow-street continuing straight on, actually fell down), an awkward turn was positively created, and a coachmaker's manufactory, an imposing pile of the sort, by the way, is now rising to shut out all hopes of a remedy for years to come.

The line in the main, however, must be generally approved of; and the commissioners conclude their report by saying, they are of opinion, that "*if* measures be adopted by the Government for the erection of" a record office, such portion of the proposed line as is included in the estimate we have given, should at the same time be executed: and they think it their duty to add, that the general line of communication proposed "is (irrespectively of the special advantage of erecting an office for the records of the kingdom on the site suggested) the most eligible and practicable line for connecting the eastern and western portions of the metropolis, and that it would very advantageously increase the facilites of communication within the same."

We should say, that the plan shews a new street, branching from the Strand at the eastern corner of Brydges-street, in a north-easterly direction till it meets the new line, and another from the north side of St. Clement's Church. Opposite to the first there is also a proposed street subtending to Holborn, partly formed by the western roadway of Lincoln's-Inn-fields, and Gate-street, widened. At the corner of Fetter-lane, in Holborn, there is a street in a south-easterly direction, meeting the new main line near Shoe-lane, and a corresponding street from the corner of the new

* Mr Bunning had been named by the paper in question, as a concurring party; and he therefore wrote,—"I beg to state for myself, that I know nothing of the proceedings, and would be glad to learn through you why my evidence as the officer of the corporation, who is expected to carry out a considerable portion of the street, was not required before the commissioners.

The plan which I laid down westward was all but unanimously approved of by the improvement committee. It differs from that of Mr Pennethorne, in that it is comparatively a straight line, and in all except its termination, the committee I were most strongly the necessity of avoiding all crooked ways, the disadvantage of which, happily now known, manifests itself but too plainly in the 'sinuosities' of Gresham-street; and, in reference to this street, I may be allowed to state that when the improvements were talked of I long before I anticipated filling the honourable office I now hold, I waited on the architect of the Mercers' Company in connection with the master, Mr. Liddiard, on Mr. Richard Jones, and suggested improvements in connection with the haberdashers' property in that locality, which were unfortunately rejected, but the odium which you, in common with those who use the street, justly cast upon it.

To go back to the 'new line of street,' I have just reason to complain of the way in which I have been treated, and Mr. Pennethorne is not free from blame; his original plan, differed materially from mine, bearing obliquely north-eastward, and terminating at the west end of Newgate street, whilst my line passed direct from Carey-street with a viaduct over Farringdon street, through the vacant space between the Sessions House and Newgate gaol, and terminating at the west end of Cheapside.

Mr. Pennethorne, however, has adopted a portion of my line, distorted the remainder, and published the whole at the end of May last as his work, dating it back January 25, 1847, whilst I can assert that on the 24th of April, 1847, his plan took the direction above described.

† Thus it will be seen that I, in behalf of the committee, who are all but unanimous as to the advantage of a *straight line*, am not a concurring party, as has been stated, to the projected street."

Fetter-lane, in Fleet-street, joining the main line at the same point. These, however, as well as the main road, from Fetter-lane, the city boundary, will, of course, have to be decided on and carried out by the corporation.

The Appendix contains a communication from Mr. Braidwood on the means of preserving the records from fire, which will apply in other cases, and may be usefully recorded here.

"In the first place, I have assumed that a Record Office must be so built that no fire in any one compartment can by possibility affect another; also, that the safety of the building, as a whole, against fire, must not depend on the care and attention of any one, or on any outward appliances.

I am not aware of any incombustible material which can be used for the support of floors, so as to allow a tolerable size of apartment, with sufficient light, except iron.

Iron, however, must be used with the greatest caution, as, of all building materials, it is one of the most rapidly and most seriously affected by fire. Mr. Fairbairn, engineer of Manchester, in his interesting experiments on the strength of cast-iron, published in the Seventh Report of the British Association, page 409, states that, on raising the temperature of cold blast cast-iron from 26 to 190 degrees Fahrenheit, the loss of strength was 15 per cent; and, in raising the temperature of hot blast from 21 to 190, the loss of strength was 10 per cent.; taking the average of the above-mentioned examples, it gives a loss of 12 and a half per cent. of strength, on a rise of temperature of 166 degrees.

The fusing-point of cast-iron is differently stated in different works, but it may be safely taken as not less than 3000 degrees Fahrenheit: therefore, according to the above experiments, less than one-half the heat required to melt cast-iron, would completely destroy its strength. I have now by me two specimens of cast-iron, which have been melted at fires which took place this year (22nd of February and 10th of September); and some time ago I sent to the Official Referees some pieces of cast-iron, and *wrought* iron melted also at a fire (7th of September, 1844).

As iron pillars are much more exposed to the action of the draft, and, in consequence, the intensity of the heat, I did not think it advisable to recommend them. Iron ties are still more easily affected by the heat, as a comparatively slight rise of temperature will so expand them, as to prevent them acting as ties,—in fact, make them totally useless, or rather worse, as what power they might exert would, in consequence of the expansion, be the reverse of ties.

Iron girders, if of considerable length, are apt to unsettle the brick-work by their expansion, if heated to any extent.

Again, it is a very common thing to have the mortar in the first course of bricks completely pulverized by the heat; in one instance, a great part of the first or lowest layer of bricks in an arch fell down of themselves (15th of July, 1843); therefore the brick arches in the proposed building ought not to be less than nine inches thick.

It is now a generally admitted principle by all who have turned their attention to the subject, that, as the cubic contents of any building or compartment of a building (if properly divided) increase, so does the intensity of the heat increase, and, of course, the loss of strength in the iron would increase in the same proportion. It must also be considered that, although a Record Office may be constructed without any combustible materials in the building itself, still, even in the size of the apartment proposed, say 27 × 17 × 15, there would be at least twelve tons of Records in many of the rooms of the above size, disposed so as to have a thorough draft round them in every direction for the purpose of preservation; but, at the same time, this thorough draft would cause the ignition to proceed with greater rapidity, and very much increase the intensity of the heat.

For these reasons, I proposed that the bearing of the girders should not exceed seventeen feet; to this extent they might be made, I have no doubt, perfectly secure, if protected from the effects of the heat, as they may easily be to a certain extent, and also, that each compartment should not exceed 27 × 17 × 15 = 6885, the height being intended to give two sets of shelving.

This appears to me the largest size of room that could be used with perfect safety. I would even advise the room to be divided into two, with iron window shutters, for the more precious description of Records.

One very great advantage, from the small size of the rooms, would be that, should a fire take place, the loss would be in proportion to the size of the room.

I may here state, that what are commonly called fire-proof buildings (cast-iron girders and brick arches) are not so, if the compartments are large, and a sufficient quantity of combustible materials to raise the iron to a certain temperature be introduced."

"Respecting the mode of heating the building, I strongly recommend open fire-places (two in each room) for safety.

There are many objections to heating by hot air or hot water:—

1st.—A considerable number of fires have been caused by both modes.

2nd.—Either mode induces a general communication through the building, not only by means of the pipes, but it is next to impossible to pass a pipe which is alternately heated and cooled through brick or stone-work air-tight, owing to the contraction and expansion of iron, without expansion joints, which are a considerable expense, and require constant attention.

3rd.—The heat required for heating so great an extent of building must be generated in one or more furnaces, and these, with their flues, are such constant causes of risk and trouble, that no furnace or close fires should be permitted within any premises which are meant to be absolutely safe from fire.

4th.—I have been given to understand that a thorough ventilation is believed to be the most efficient means of preserving Records; and it is submitted that two open fire-places in each room, with independent flues, would better effect that end than either hot air or hot water. These fires could be lighted at pleasure in any one or more rooms that might most require drying or draft; at present, I am not aware that heating is at all necessary for the preservation of Records, except under peculiar circumstances, when the fires could be lighted."

The newspapers of Wednesday last would lead to the impression, that the feeling in favour of improvements is strong and widely spread, the "Court Circular" of that day chronicling little else than deputations with that end in view. A deputation from the city of London had yesterday an interview with the Commissioners of Woods and Forests: a deputation from St. George the Martyr, Southwark, had an interview yesterday with the Commissioners, on the necessity of taking immediate steps for the commencement of forming a new street through the unhealthy and depraved district, the Mint: the Quadrant Improvement Association came up to the Commissioners yesterday; the Metropolitan Sanatory Commission held a meeting, yesterday, &c., &c., &c.; but if we look to the miserable aspect of the intended extension of Farringdon-street to Clerkenwell, and remember that that abominable nuisance, Middle-row, is even now in course of re-construction, we must doubt the genuineness of the feeling, and look for better times.

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A Flying Bridge given way with a Crowd.—The Austrian Archduke Stephen, in journeying from Koman to Raab, had just passed a flying bridge across the Danube, followed by a crowd of people, when the bridge or a balustrade gave way, and precipitated an immense number of persons, with two carriages in the Archduke's suite, into the river, where a number of persons—accounts varying from nine to forty-six—were drowned.

## PROGRESS OF BUILDING IN PARIS.*

The effect of railways in changing the centres of activity, and creating new towns by the side of the old ones, or upon spots where populations could not possibly have been congregated before, is very remarkable. It has become so evident here, that it could not fail to draw attention; and the municipal authorities, at length awakened to the importance of the subject, and the danger menacing them, are seriously considering what remedy they can apply to the evil, how to save their revenues, or profit by the change. A railway terminus acts like a loadstone; it attracts towards itself in a moment a whole population. Streets branch out in every direction, forming so many rays, of which the station is the focus and centre of animation; extend themselves to the old quarters and districts, which far removed from the heart of towns, seemed almost deprived of life, inspiring them with renewed vigour, and at the same time giving an aspect of cleanliness and beauty for which they are alike indebted to paint and spirit.

It is not merely in increased bustle and activity that these new creations of industry are remarkable; there is a general character of improvement, both in the laying out of the streets, in the building of the houses, and in the adoption of a system of sewerage and drainage, much wanted in the older parts of the French metropolis. In these respects the improvements are decidedly great; and hence there is a double motive for the preference which the public gives to the new localities, and an encouragement to the architect and builder to erect such edifices as may be striking in point of taste and novelty of design and ornament, as also for their interior arrangements, commodiousness, and salubrity.

It cannot be said, that the modern productions in architecture and construction are not a significant evidence of increased skill in building as an art, and attention to those points so important to the comfort and health of the inhabitants; although perhaps objections may be raised as to the taste displayed in a few edifices, the capriciousness of the style, or the luxuriance of the decoration. On these matters every one will have his little saying,—may prefer plainness to richness, simplicity to profusion, whitewash to gilding or colouring. But if we are to have any general improvement, it is quite clear that the field of fancy and imagination must be free as air, for genius to have a chance with mediocrity; and that we must pardon those little extravagancies of ideality or perhaps of mere whim, which we shall find even among the most perfect works of nature itself. These have even their end and object; are not always deficient in beauty, nor ungoverned by rules. It is not then by adhering strictly and severely to the bare principles adopted in the schools, nor by copying servilely the mere masters in art, that new beauties can be created; it is, on the contrary, by the imitation of the conduct of the great masters in escaping from the drudgery of vulgar admiration and vulgar respect for their predecessors, that progress can be made, and that endless variety and newness, which are an evidence of genius, be produced.

Richness of decoration and embellishment in the houses of the middle or upper classes is rarely to be met with, except in times of peace and prosperity. The general occupation of the mind by the stirring events and anxieties of war; the absorption of its energies in the animal struggles for home and country; the calls upon the purse to meet the necessities of Government; and the paralyzing of industry and commercial enterprise, leave neither the will nor desire for embellishment, nor give the opportunity and freedom to many to cultivate the taste and talents they may naturally possess. A few only of the very rich here and there, or the favourites of fortune in the exuberance of their happiness, will surround themselves with the generally forbidden luxuries, and force into productiveness the unpropitious field of art. Splendid monuments may rise, as if by enchantment, at the conqueror's command,—massive, magnificent, complete in all their parts, perfect as to the rules of art, and yet be after all but copies of copies, imitations of former conceptions, without any thing new or striking in them. Domestic architecture will, however, lie dormant, comparatively speaking, and be of so

* See p. 431 *ante*.

plain and unideal a character, that the niggardly necessity of the times will be better demonstrated by this evidence of the want of encouragement, than by any other argument.

Within not many years, Parisian architects seem rivalling each other in the splendour of the houses and hotels they have constructed at the bidding of private enterprise. Whole quarters have arisen, not *en masse*, as with us, but house after house, — each proprietor, anxious to make the most of his bit of land, and give as much of variety, singularity, or richness of ornament as possible to his hotel. The interior corresponds with the exterior in the getting up. Painting and gilding extend from the very *porte-cochère* to the sixth story, covering, frequently, both walls and ceilings, and proving that the art of interior decoration is keeping pace with exterior ornamentation.

This luxury of modern buildings has been railed against by some as excessive, and indicative of approaching corruption and degeneracy in a people who give encouragement to it. The accusation, however, is preposterous, and as totally different from the facts, as applicable to the present time, as it can be. The luxury of the past was rather the luxury of a few, who, monopolizing the wealth and resources of the community, squandered it in excesses of every kind; and, though encouraging art and artists to a certain extent, were, by the unproductiveness of their extravagance and the wasting of the fruits of labour, bringing about that degeneracy of which their luxury was a forerunner. The luxury of the present, on the contrary, is the luxury of a greater mass, who, having a fairer share in the productions of industry, and having obtained security for the enjoyment and employment of their acquired wealth, lay it out ever productively, and give encouragement at the same time to art and artists. This luxury, then, is not an offspring of vice, but a necessary result of a more general prosperity, coupled with an increased taste for the beautiful, and an ardent desire for improvement.

While we admire many of the fine old aristocratic hotels with which this city abounds—while we admit that they have noble looking entrances, spacious courtyards, splendid and roomy apartments, we must, however, confess that few present much of architectural beauty or ornament worthy of notice. They have lofty doors and lofty windows which give a certain air of grandeur, but the plain plastered exterior of the majority, renovated occasionally with a coating of whitewash, can bear no comparison with the richly-ornamented exteriors of modern dwellings. Nor can the amount of encouragement given by their owners, lavished perhaps by almost a whole class, upon a few pet artists, be compared with the advantages to art in general and artists which arise from the prosperity of an intelligent and cultivated middle class.

These ancient mansions of the nobility of France have two things which speak in their favour, and strike the observer at first sight,—space exteriorly; and room and height interiorly. In these respects, modern hotels are at a disadvantage; the value of land has increased so immensely, that the most must be made of it, and consequently floor is reared above floor, and the courts narrowed to the smallest possible space, consistent with the wants of the "locataires." Elegance, yes, and comfort, richness and convenience, may be found united in these modern houses, as much, if not more, than in those of any other nation. The most splendid furniture, the richest carpets, hangings of silk and satin, or velvet—in short, every thing that can tend to comfort, gratify the imagination or the taste, in bronze, candelabras, clocks, &c., are to be found in the truly French apartment. But as there are perhaps six stories to the hotel, and every proprietor is desirous of having as many families as possible around his court, and these respectable and payable, modern rooms are for the most part extremely limited both as to size and height. Great fortunes having disappeared, the stately first floor of former days is nowhere to be seen in the new quarters. The smaller fortunes then were satisfied with the second or the *rez-de chaussée*—now however, the greater equality of circumstances demands a corresponding equality of habitation; and hence three, four, and even five floors in some houses have scarcely a difference of height or internal commodiousness between them.

These changes in the disposition of houses are extremely interesting, as characteristic of a corresponding change in the circumstances of a people. On this account we take note of them, and think it well worth while to draw some comparison between them, to shew the corresponding advantage to architectural development, which the improved fortunes and taste of the middle class, have called forth.

If we cannot so often look for the splendid residences of former times on which to engage the talents of a few great artists, we have, in compensation, a great many more of a different class to employ a greater number, and demanding a not inconsiderable share of talent. Take any one almost of the modern hotels, and place it side by side with one of the stately palaces of the Faubourg St. Germain: it will eclipse it altogether in splendour—the eye will wander from the dull and spacious building to fix itself in admiration on the elaborate workmanship displayed in the rich and varied ornaments of the modern building. Enter the porte-cochère, it is quite as lofty and infinitely more rich than the other; ascend the staircase, and you find marble and mahogany, and painting and gilding, in as great, if not greater profusion; the difference is, that the one is a private, the other a public staircase.

The number of ancient hotels really deserving of attention, in an architectural point of view, is really very limited; when we have named the palace of the Condés, of the Contis, the Hotel d'Osmond, that of the De la Rochefoucaults, and a few others in the Rue de Varenne, Rue de Lille, and adjacent streets, we have said enough—the majority are more curious than beautiful, more spacious than elegant. Turn from these to the splendid house built by M. Cremieux, in the avenue of the Champs Elysées, to the Maison Dorée, as it has been styled on the Boulevard, at the end of the Rue Lafitte, to the new streets in the vicinity of the Rouen railway station; to the splendid buildings along various portions of the Boulevards—the Place St. George,—the quartier Notre Dame de Lorette; and to hundreds of others equally worthy of examination—and it must be confessed that there is a beauty and variety of design, and an amount of artistic skill, bestowed on their embellishment, which can find no equal in former times.

A few hotels on a grand scale have been constructed latterly, but few they are; for there is a vast difference between building a splendid house to live in oneself, and building one which is to make an abundant return for the money laid out upon it. We might notice the hotel lately finished near the *rond-point* in the Champ-Elysées, and now inhabited by Madame Le Hon, whose husband was formerly ambassador from Belgium to the Tuileries. Nothing can exceed the magnificence of the interior, or the richness of the decoration and furnishing: we question whether its equal can be found in Paris. Higher up, on the same side, is an elegant building, recently finished, built, we think, by the Duke de Lauriston, or a member of his family. It is almost too quiet-looking, and wants something to relieve it. In the Cours la Reine are two beautiful hotels in course of termination; one has been sold, and the other is announced for sale, the proprietors not having calculated well their expenses. A gentleman named Tourette is the constructor of one of them; there is much of taste and novelty displayed in it. The house consists of a centre and two wings, each of which is ornamented with four Corinthian columns: it has a window between each pair of columns, and the entablatures are surmounted with groups representing the seasons. There are but two figures in each group, a female and child, but their positions are well varied, and there is much to praise in the distribution of the accessories: they are from the attelier of a sculptor of considerable note. Within a few steps is the well known house, called that of "François Ier.," which was brought from Moret by Colonel Brack, and reconstructed, stone by stone, on its present site, at the Restoration. This house has given the name to the quarter. A large private hotel, having much of the style and loftiness of the old mansions, is terminating in the Rue Marbœuf: it is too good for the situation. Another, the façade of which is of great simplicity and elegance, is nearly finished, in the Avenue d'Antin. From the extent of the building at the back, it is evidently intended for the habitation of several families.

We have thus far entered into a consideration of the encouragement given to architecture and exterior embellishment in the great majority of constructions rising in the best quarters of the town, because the present may be regarded as a new epoch in ornamental building, interesting to all lovers of art, as well as pleasing, and indicative of the great diffusion of wealth and the spirit and taste of the educated classes. If we look to the character of the buildings destined for the habitations of the lower classes, we find them necessarily plainer in style and cheaper in construction. For the beautiful freestone found in various parts of the neighbourhood, and which adds so much to the strength and superiority of the better class of houses, an inferior and softer stone is used in running up the walls, coated with plaster to imitate stone. It averages about 60 francs a load. The back part of these dwellings are lightly built of little more than mere lath and plaster; and but for the interference of the authorities, speculation would have prompted to the erection of houses of a very unstable description.

The greatest mass of buildings, as we have already remarked, is going on in the neighbourhood of railway stations. There seems to be a rage for that of the St. Germain and Versailles line in particular. This has been the one longest established: nearest to the fashionable part of the town, and situated on a gentle declivity, it has, therefore, very naturally attracted towards it that class of inhabitants who had most to gain or enjoy by its vicinity. The establishment of other lines is already producing its effect; time alone is wanting to turn a dreary open waste to one of animation, newness, and prosperity. This is fast accomplishing since the opening of the Northern Railroad, where almost every portion of an immense unprofitable space is now laid out in streets, or walled in.

## ARRANGEMENT OF BUILDINGS ON PRINCIPLE OF CENTRAL INSPECTION.

THE LATE SIR SAMUEL BENTHAM.

The mode of constructing buildings so as to afford a central point of observation, from which the head of the establishment may inspect, without the necessity of moving, all the essential branches of service, having been adopted by the late Penitentiary Congress, it may be of use to architects and others concerned in the erection of buildings other than, as well as, prisons, to call attention to the great variety of structures to which the same *principle* of *central inspection* is applicable.

When the late Brigadier-general Sir Samuel Bentham was, in the year 1787, with his regiment at Cricheff, in White Russia, he, as a friend of Prince Potemkin's, undertook the management of his fabrics in that neighbourhood. Struck with the drawbacks to success by the miserable arrangement of the manufacturing buildings there, he was led to consider what form would be most suitable for an edifice as an extensive manufactory, and concluded that a central point of observation, from which the director of works could with facility inspect the whole of the persons employed, and the operations going on, would materially contribute to good order, to perfection of the works, and to economy. Pursuing the idea, he contrived a structure having a central chamber for offices, with rays diverging from it for workshops. The rays were of two stories, the central observatory but of one floor, but that of such a height, that being upon it, the inspector had full view over two floors of the rays, the floor of the lower workshop being *below* that of the observatory, the floor of the upper workshop *above* it.

Sir Samuel's elder brother, the late Jeremy Bentham, about this time was on a visit to him at Cricheff, and in a series of letters to a friend in England, described his brother Samuel's invention, giving it the name of "Panopticon, or the Inspection House." These letters were published: the title-page, "Panopticon, or the Inspection House; containing the idea of a *new principle of construction*, applicable to any sort of establishment in which persons of any description are to be kept under *inspection;* and in particular to penitentiary houses, prisons, houses of industry,

workhouses, poor-houses, manufactories, mad-houses, hospitals, schools."*

In the fifth letter, Mr. Bentham desired it to be clearly understood, that "the essence of it (the invention) consists in the *centrality* of the inspector's situation, combined with the well known and most effectual contrivance for *seeing without being seen*." He mentions the collateral advantage of *frugality* consequent on this plan as to inspectors, a single person being competent to the supervision from a central point, of a greater multitude than were ever yet collected in one building. Another very important advantage of the plan, he states to be, that "the under-keepers, or inspectors, the servants and subordinates of every kind, will be under the same irresistible control with respect to the head keeper or inspector as the prisoners, or other persons to be governed. It presents an answer, and that a satisfactory one, to one of the most puzzling of political questions, *quis custodiet, ipsos custode*."

In manufactories, he speaks of the central observatory as suitable for the compting-house. His appropriate observations in regard to schools, admit not well of abridgment. One paragraph, however, it may be worth quoting, as indicating the origin of Sir Samuel's invention. Jeremy Bentham says, "In the Royal Military School at Paris, the bed-chambers (if my brother's memory does not deceive him), form two ranges on the two sides of a long room; the inhabitants being separated from one another by partitions, but exposed alike to the view of a master at his walks, by a kind of *grated window* in each door. This plan of construction struck him, he tells me, a good deal, as he walked over that establishment (about a dozen years ago was it not?) with you; and possibly in that walk the foundation was laid for his Inspection House. If he there borrowed his idea, I hope he has not repaid it without interest. You will confess some difference, in point of facility, between a state of incessant walking, and a state of rest; and in point of completeness of inspection, between visiting two or three hundred persons one after another, and seeing them at once."

In the year 1790 the amelioration of prisons and penitentiaries being a subject of public interest, Jeremy Bentham had opportunity of discussing his brother's invention with many influential persons. Sir Samuel, coming soon afterwards to England, had complete models made on his principle of a prison for a thousand persons, in which, as the rays consisted of several floors, the upper ones were appropriated to services requiring the less constant inspection, but were subject to it at all times by means of a counterpoise apparatus affixed to the platform on which was the inspector's chair, so that at pleasure he could raise himself to any required height. Members of Government were highly satisfied with the Panopticon principle itself, with the adaptation of it to the purposes of a penitentiary prison, as exhibited in the model, as well as with Jeremy Bentham's views in regard to the placing the whole, as by contract, in the hands of a private individual, subject to all the checks, and to all the publicity which he had laid down as essential security for the fulfilment of the trust reposed; they consequently authorized Mr. Bentham to make preparations for the erection of such a structure. Sir Samuel contrived the whole with its details so as to be *fireproof*, introducing iron, cast and wrought, in lieu of wood. The site fixed on by Government was Putney Heath, but the thought of having a prison in their neighbourhood was revolting to many who had villas in the vicinity, which caused that place to be given up. Millbank was offered to Mr. Bentham in lieu, but the unhealthiness of the locality rendered him averse to its acceptance; hesitation on both sides led to the abandonment of the project altogether. Great part of the castings had been provided, which, with outlay for machinery of Sir Samuel's invention, contrived for the use of prisoners, had amounted to an expenditure of upwards of 20,000*l*.

Early in 1797, the Admiralty having desired Sir Samuel's opinion (he being then Inspector General of Naval Works) whether the requisite security for 11,000 prisoners of war might not be more economically provided for than by a plan their lordships referred to him, and for which a number of wooden prison-houses were already framed in London, he devised the glazing of one end of these houses, and arranging them radially, pointing to a centre, each prison-house having its airing-ground before it towards the centre. For the guarding these prisons, he devised the construction of a central observatory, wherein the whole of the military requisite would be lodged, so that their force would be concentrated in case of any outbreak amongst the prisoners, and by placing there a small swivel-gun or two, perfect command was obtained over the prison houses. Thus whilst all the prisons were constantly under observance sufficient for security, the prisoners themselves were freed from the annoyance of guards mixing with them. By this Panopticon arrangement, out of the 1,500 officers and men that had been destined as a guard, even as many as a thousand might well have been spared for other services. It proved, however, that sufficient accommodation for prisoners was found elsewhere.

With the knowledge of the British Government, Sir Samuel, in 1804, presented to the Emperor of Russia the design of a Panopticon as a school of arts, combined with a manufactory for a great variety of articles for the naval service. Shortly afterwards, whilst he was on a mission from this Government to that of St. Petersburgh, the Emperor commanded the erection of such a Panopticon there. Its progress was already sufficiently advanced to afford proof of the perfection of the plan, when, in 1807, war having broken out between the two countries, Sir Samuel was recalled. The building was, however, completed, and brought into use. General Fanshawe, Governor-general of the Crimea, having witnessed its advantages, pointed out the superiority of a building on this principle as *barracks*.

For several years the erection of a naval arsenal in the Isle of Grain, or elsewhere to the north of the Forelands, had been in contemplation; but on the abandonment of this measure, the Admiralty signified their pleasure that Sir Samuel should devise means for the improvement of Sheerness Dockyard. After much thought, and impressed, as he had long been, with the need of suitable accommodations for affording supplies and repairs to our fleets to the eastward, particularly for ships of the line, and finding it would be less costly to form a new dockyard on waste ground and headlands than to repair and augment the old one, he, in January, 1812, presented a design for forming a complete arsenal at that port. Existing sketches shew that it was not till after designing a great variety of arrangements that he fixed on the Panopticon principle on its most extensive scale, namely, a central point of observation, where the offices of the principal officers should be placed; surrounding them immediately with the businesses requiring the most constant inspection; in the next circle placing the repairs of ships; beyond them such works as required a lesser degree of observation from the superiors, but who, by means of appropriate intervals between the rays of the central building, had means of general observation from their offices, especially of the entrance-gate, and of the general landing-place. Then again, in an exterior circle, were arranged buildings such as a naval seminary, store timber houses, made mast-house, &c., which called for but little close inspection. Again, officers' dwelling-houses were designed without the boundary of the dockyard, yet so as to have a view over it. Besides this, the central observatory was raised to such a height as to afford from a terrace on the roof an uninterrupted view over the whole dockyard. By this arrangement, the several branches of business were brought, according to the degree in which they required preference, to the source of orders and instructions, —whilst the superior officers had the least possible extent of ground to pass over, when their immediate presence was required at any particular spot,—a consideration of no small importance in all great manufacturing establishments. The Admiralty, however, determined on a *partial* repair and alteration of the existing dockyard.

* These letters are republished in the second volume of Mr. Bowring's edition of Jeremy Bentham's works.

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ROYAL INSTITUTE OF ARCHITECTS.—The first meeting of the present session will be held on Monday next, the 1st of November.

## USE OF CONCRETED MASSES.

SIR,—On perusal of THE BUILDER of the 18th ult., giving copy of evidence of engineers on materials of construction for a harbour of refuge, it appears to me to shew a great want of confidence in using artificial materials, without any other grounds being set forth than want of precedent,—a course of judging that shews we have not the same spirit of invention as the original adopters of the materials in question. An examination of materials proper and most judicious, and of their application, could be made with a greater degree of truth in result, without having any recourse to precedents, which at best only shew we want confidence in our own abilities or judgment, and wish to rely on those who, ages back, with enterprize and knowledge from nature, as it were, claim our admission of their superior skill. They, as original adopters, combiners, or manufacturers of materials, had no precedent, and I think we want none,—we have nature for our guide. We can observe that all hard non-absorbent materials, as flint, granite, metals, &c., are durable in resisting compression and fretting of water; we observe all absorbent materials will not stand the fretting of water, and much less compression; we observe, for cohesive strength, materials of the greatest density are the strongest. Thus pine, less than oak; oak less that metal. In fibre we also find a great variety of drawing tenacity, independent of density. We observe for bearing, cohesive laminated materials of the greatest density are the strongest. By comparison of weight or specific gravity, of absorption, of the action of temperature, moisture, and *local* chemicals, we can ascertain materials most suitable for purposes to which we require their application. By investigation, we discover their formation by nature, and therefrom, ordinary talent, properly directed, is able to form artificial materials: we cannot do better than follow nature as our guide. Observation will inform us that all materials not subject to corrosion are durable, according to their density and non-absorbent qualities. The great natural agents of production, formation, preservation, and the reverse, are moisture and temperature; those agents are within our grasp in formation or combination of what we term artificial materials.

The evidence referred to clearly shews that brickwork in the locality is fretted away by the action of water; that concrete, in much more placid water, is eroded or worn away, and that, in its manufacture, there are no settled quantities of its ingredients. Granite and other natural stone is too expensive.

Brickwork is absorbent, and easy of abrasion or fretting by other substances, and especially water.

Concrete, by wet and dry, for want of density and adhesiveness of its components, erodes away.

As regards quantity of lime necessary to make good concrete, that quantity that will cover every portion with the thinest lamina filling the smallest interstices, is the proper quantity; all limes in setting shrink by the expelling of moisture, and therefore the thinner the lamina the better. Now as quantity of surface differs according to the gauge or mesh of the materials to be covered, so should the quantity of lime be varied; for example, suppose we have 100 perfect cubes 4 inches square each, packed together, and it takes to cover the surfaces in connection one pint of varnish, it will take much more for the same bulk if the cubes are only 2 inches square, and much more than this again if the cubes are only 1 inch square. Now the sand and shingle, composing concrete, frequently differ as much as the 4-inch and 2-inch cubes, and sometimes as much as the 1-inch and the 4-inch, yet few observe by a comparison of difference of surface any necessity for varying the quantity of lime to the extent it is absolutely necessary; but there are proofs that better concrete is at times made of 1-12th lime than in other instances of 1-5th lime.

With respect to the evidence as to the vertical *versus* the sloping or inclined surface against the sea.

Water in motion is a power in some directions almost incalculable; a drop of rain falling, has a power few observe minutely.

The oyster is supposed or is known, to

move or swim by squeezing a wedge of water in the shutting of its shell: now at any crevice however small against which a body of water in violent motion wedges or drives into with a lifting force, the greater the vertical weight above, the better will the action be resisted; while, on a sloping surface to the action of water, there is but a small vertical weight to resist the wedging of water in displacing the stones. In a vertical surface, the retaining pressure is increased greatly from the thickness of two or three stones to the whole vertical height. Again, on a sloping surface, water in motion will cast substances that will fret the surface by rolling over it; whereas in a vertical surface substances can only be cast against it, and if that surface is hard enough to bear the concussion no damage will arise,—the substance of the wall always being equivalent in strength to resist the force of the sea. My observation on the continent, where the sea is rock-bound of granite, shewed me that the vertical rocks are scarcely worn, where sloping strands of the like rock are much fretted away; and where the rocks are of a crevice character, inroads are rapidly made by the sea on sloping shores by its wedging action.

Four years ago, I combined a substance nearly as dense as granite, as durable as flint, and in strength equalling, in some one or other resistance to strains or forces, any of the natural stones, and capable of any *form* and *size*.

I have *girders* of it 16 feet 6 inches long, supported at each end 3½ inches thick, 1 foot 11 inches deep. Paying above 7 feet bearing, from 2½ inches to 3 inches thick, supported only at each end by a bearing of 1½ inch for foot traffic.

I have a retaining wall 81 feet long, 7 feet 6 inches high, without any cross wall or buttments; it is of the thickness of nearly three inches. I have some thousand feet of sewage conduits laid, the whole without a flaw or crack. Frost and snow will not crack its surface; water coats it rather than wears it away. It can be made in blocks of from one pound to 100 tons weight, and from one foot to any dimensions of reasonable length; and further, every block can be properly bedded and cemented together water-tight under water, at any reasonable depth: its cost less than stone of the same bulk or strength, and not more than brickwork of equal strength. For expedition, in three weeks after making it is fit for removal, for use as girders and paving.

Its application for sanatory improvements in sewage, and supply of water-conduits, and in making such a perfect system of sewage that should at all times be air-tight, yet receive water, moisture, or sewage at every foot, and from every side, is easy, together with the making of inlets and outlets, into main conduits.—I am, Sir, &c., B. W.

P.S. A 4-feet length of drain, 1 foot diameter, 1½ inches thick, will weigh about 3 cwt., a good proof of its density.

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Discovery at St. Saviour's, Southwark.—A small portion of the Norman structure which formerly occupied part of the site of this ill-used church, has been brought to light within these few days past, on the north side of St. John's Chapel, now the vestry-room. It appears to be part of a semicircular apsis, probably of the original church: a string-course is visible, which is ornamented with an "indented" and "billet" moulding. Competent persons are investigating the discovery. The present state of St. Saviour's, once St. Mary Overy, full of interest and a historical landmark, is most discreditable,—to the metropolis in general and Southwark in particular. Mr. G. R. Corner, Mr. G. Gwilt, and other good antiquaries who dwell in the Borough, should look to it.

Russia and Foreign Artizans.—It is stated, that the Russian Minister of the Interior has interdicted the entry into the empire of every foreign workman, unless he can shew that he has been expressly invited by an artizan or manufacturer established in Russia, who has taken the engagement to give him work; and the police authorities have been enjoined not to deliver any permission to reside to foreign workmen, unless a domiciled Russian shall undertake to be responsible for their conduct in every respect.

## RESTORATION OF HEREFORD CATHEDRAL.

Last week we referred to a county meeting which had been held, to devise means for raising the funds required to complete the works at Hereford Cathedral.* The Dean, who has exerted himself most devotedly to this restoration, stated very fully the whole progress of the works to the meeting, and it will be useful to record some portions of his address. We should mention, that the total amount of subscriptions is 13,971*l.*, and that the expenditure exceeds this by 872*l.*, still due to the contractor. Moreover, the Dean and Chapter, anxious that the parties now employed should not be dismissed, have made themselves responsible for the continuance of the works, and have entered into a contract for the restoration of the fabric of the choir, amounting to 3,168*l.*, in addition to the 872*l.* already stated to be due to the contractor.

Referring to the dean's speech: when the tower was first discovered to be in danger, the chapter incurred a cost (including the expense of examination) of about 1,100*l.*, by relieving the tower of the weight which it sustained in the incongruous late groining, and in excavating between the piers from north to south, on either side of the tower, to the depth of 10 feet, and filling the cavities with concrete. Not only was the interior of the base of the tower so strengthened, but on the south and east sides an area of 32 feet by 28 in each was so dealt with, and a somewhat smaller area also on the north side. The next care was so to brace the upper portions of the tower as to prevent the possibility of the jarring, unavoidable in the process of under-pinning the piers (for it was requisite to begin the renovation of them from the foundations), from disturbing the shattered and disjointed portions above. To this end, in the highest chamber of the tower, in which the bells are hung, the architect introduced what he termed dragon-ties,—powerful braces of cast-iron; below these again, at the summit of the internal columns of the tower (those remarkable features of this structure which line the most spacious and magnificent lantern in the kingdom) a wooden ceiling of correspondent character, with the contiguous masonry, was introduced, and at the points of contact, and bearing on the walls so attached as again to act as an effectual brace and tie all round; and again, still lower down, just above the bases of the columns already mentioned, he placed another powerful range of wrought-iron rods, of large dimensions, having in the middle of each, over the crown of each arch, a double screw, so as to allow of the straining up of the whole square of the tower, in such a manner as to secure this portion of the fabric,—awfully cracked and riven as it was,—from further dislocation by such shocks in the progress of the works as were necessarily to be guarded against.

When, contracts being entered into, they began to restore the tower, it was found the crushing process had gone on so far, that when the front stones were drawn, the core ran out as sand would do: it was in such a state as at times to make it a matter of apprehension for the workmen. Additional shores were introduced. Although five tiers of large and powerful balks of timber, one above the other, and in four rows, on the interior side of the pier, were prepared and fixed to support its enormous weight, some of these were observed to buckle and bend in a degree requiring braces and struts to strengthen them, and others, when removed, were found to be so split and shattered, that in many places the fibres of the wood were completely dissevered, whilst at the bases of them, where they were shod with iron, and rested on iron plates in the soles or timbers placed at right angles to receive them, and these on solid masonry below—these soles were observed to have started from the masonry, being, as it were, partially raised at the ends. The date of the commencement of the contract for the tower was March 22nd, 1843, that of its completion, February 27, 1847. The first pier was commenced January 10, 1844—almost a year having been consumed in the preliminary works of the contract, as, for instance, the opening of the panels on the four sides of the tower, and the restoration of their jaumbs and features, bringing them down to the level of the adjacent panels; the reparation of the fractured masonry in the spandrels of the main arches; the securing of the different portions connected with them; the re-building of the window contiguous to this pier, in the north transept, west wall, together with the restoration of the ashlar, the parapet, and corbel table above it. You will not fail to perceive that considerable time was of necessity consumed in the fixing of the shores, especially the first. The average time, however, which each pier took in its restoration was six months.

I cannot easily describe the joy experienced by all concerned in the works, together with myself, said the Dean, when we saw that beautiful tower clear of these hideous excrescences; and found that when they and the shores were removed, and all the four legs of the tower received their destined weight, and bearing, the trifling subsidence resulting from this hazardous and courageous work was hardly perceptible, scarcely appreciable; it could hardly be regarded as the necessary sinking of such a process.

After rehearsing what had been done, a specification of the works required was read; but we have not room for more of this than what relates to *refitting the choir*.

"The ancient carved oak stalls and throne to be repaired and fixed in the choir with new oak floors, with new oak carved bench end-seats, choristers' desks, and seats, &c.

The organs to be remodelled and fitted up in the south transept against the western wall.

The entrance to the choir at the west end to be by gates of wrought metal, forming part of an open screen of metal work at back of stalls, according to design.

Metal desks with branch sconce lights to be fitted up for the choristers, in the situation shewn on the several plans.

A new communion table of suitable character, according to design, to be placed at east end of choir.

The fittings of the choir will also comprise, litany desk, eagle lettern of brass, sconces for lights, &c., &c.; also crimson velvet cushions, &c., to throne and prebendal stalls, with cut pile carpet hassocks; and brass gilt rods and standards and crimson silk curtains to throne; also a rich covering for communion-table.

The floor to be laid with a pavement of encaustic tiles. The steps to the communion-table to be of Purbeck marble polished.

The three windows at east end of choir to be glazed with painted glass, according to design.

A stone pulpit to be erected against the north-west pier of the tower, and appropriate oak seats to be *provided in the nave for the congregation*."

"This I need not say, remarked the Dean, is one of the most important features of the cathedral, and requires the most solemn attention. In reference to the open screenwork and the seats in the nave, I wish to explain that this has regard to the feeling which prevails in the present day more strongly than since the Reformation, at least than since the early traces of the Reformation, that our cathedral churches should be more capable of extended accommodation for worshippers; if not at the daily services, which may nevertheless be also at no distant period appreciated, but certainly on the Sabbath, and on special occasions. With a view to this, it has been suggested that the return stalls at the west end instead of being five in number should be three on each side; thus the space in the centre between them would be sufficient to afford that portion of the congregation beyond, the opportunity of joining in the services. And I should feel a pride and pleasure if Hereford Cathedral might set the example of so desirable an arrangement, to which no possible objection can be raised." "One word on the subject of the pulpit, placed, by the architect on the plan, and on this specification, in the nave. This under the arrangement of the stalls would hardly do, and is one of those points which must undergo consideration. It was probably in his knowledge that in the memory, I believe, of people yet living in Hereford (as at Ely now) the sermon was preached in the nave, and there are plans of the cathedral extant where its position is marked. It is also a curious fact, that till a late period there was no sermon in either of the parish churches, but after the prayers the people repaired to the minster to hear the cathedral sermon."

* See p. 503, *ante*.

To prevent the damp from striking through the walls, which it has hitherto done to the great injury of the fabric, it is proposed to cut a trench all round the cathedral, 4 feet wide, and 3 feet deep, to be filled in with concrete composed of gravel and stone lime, which should be sloped outwards and paved on the top to carry off the water.

The following is the estimate of costs:—

| | | | |
|---|---|---|---|
| The general class of fabric works amount to | | £10,184 | 0 0 |
| Comprising Lady Chapel, Ante-chapel, Ambulatory, fence-wall, steps, &c., to crypt | £950 | | |
| Five eastern windows of Ladye Chapel, painted glass | 700 | | |
| Lesser transepts | 1,336 | | |
| Large transepts and aisle | 3,438 | | |
| Restoration of nave piers and base plinths, lowering floors throughout, and sundry works to north and south aisle of choir | 1,260 | | |
| Tile pavement throughout | 712 | | |
| Plumbers' work ditto | 830 | | |
| Glaziers' ditto ditto | 393 | | |
| Various minor repairs, in different parts, not included | 565 | | |
| | | 10,184 | 0 0 |
| To this add Audley Chapel | | 750 | 0 0 |
| Three painted windows for choir | | 450 | 0 0 |
| Refitting and furnishing choir, completing organ, &c. | | 5,175 | 0 0 |
| Reparation and underpinning of base plinth round the whole fabric, concrete dwarf wall of inclosure, gates, &c., and drainage | | 1,600 | 0 0 |
| Contract for choir fabric, now in hand | | 3,168 | 0 0 |
| Balance due to late contractor | | 872 | 0 0 |
| | | 22,199 | 0 0 |
| Architect's per centage, Clerk of Works at £2. 12s. 6d. per week; Foreman of the Masons, at £1. 11s. per week; and sundry salaries which may be due; and, perhaps, some requisites not now appreciable. | | | |
| Say a total of | | £25,000 | 0 0 |

## SUSPENSION OF RAILWAY WORKS.

The spread of the certainly enormous prospective calls on projected works over a greater number of years than those heretofore limited in the general rush for railway interweavement over all the country, is not sufficient, it would appear, to satisfy the demand for suspension of railway calls, even though seconded by the proposal to arrest those on the works and contracts on the eve of commencement. Contracts and works already in hand, must also be suddenly stopped, even though probably the capital to carry them out has already, in many cases, been called for and paid up. Accordingly, we find that the directors of various railways have not only determined to suspend the progress of unfinished works for the winter at least, but have already, in some instances, issued the fiat which will extinguish many a poor man's winter fire, and deprive him of the winter's provision for his family. And these announcements have been qualified with not even a word of sympathy for the evil thus thrust off the shoulders of the abler shareholder and speculator, on to those so much less able, or liable, to sustain them. On the contrary, almost every one seems 'glad to hear,'—'happy to learn,'—that such is the case. Verily, says the *Morning Herald*, our contemporaries' enjoyments must be few indeed, when such announcements make them 'glad' to learn such facts.

All works on the London and North-Western line which could be postponed (and those lines now exceed 500 miles in extent) have been indefinitely suspended. It is also said that the works on the Birkenhead, Lancashire, and Cheshire Junction are stopped, and that Mr. Brassy, the contractor, is under heavy advances to the company. The Basingstoke and Salisbury line, says a contemporary, like many others of the same kind, has been checked in its progress, the sub-contractors being limited in the quantity of work to be done; in consequence of which they have, at considerable loss to themselves, been obliged to sell off a large portion of their horses. Part of the staff has also been reduced, and many mechanics and labourers have been thrown out of work, and those remaining are employed at reduced wages. Considerable stoppages of work too have already taken place in Scotland, and announcements of an intention to stop others very shortly have been made both there and in England. The general reason assigned is, that the shareholders are resolved not to submit to any further calls for the present. We hear, says one paper, that a suspension of the works upon the Maldon, Witham, and Braintree line of railway, now in formation, is contemplated, to continue during the winter. There is a rumour, says another, that the works on the Great Grimsby and Sheffield Railway are to be suspended during the winter months. If this should prove true, it will be much regretted, for that part of the line between this place (Brigg in Lincolnshire) and New Holland is in such a state of forwardness, that the inhabitants have hitherto expected that it would be opened either in the latter part of the present, or the beginning of the next year. Here, too, there is a great want of even other and inferior modes of conveyance, which are both expensive and tedious. 'We are glad to learn,' says a Manchester paper, 'that not only on the lines and branches generally of the Lancashire and Yorkshire Railway Company have the works been for the most part suspended, but that the usual ratio of the company's expenditure in the provision of the stock, the erection of stations, and, in fact, in every department, has been greatly reduced, probably to the extent of some two-thirds to three-fourths of the whole amount. The works on one or two of the lines which are fast advancing to completion, are urged forward; but in all other cases arrangements have been or are being made with the contractors for the extension of the contract time, and for the present suspension of works to the extent we have stated. Already the discharge of numerous workmen and labourers on some of the lines and branches has commenced; and on Friday and Saturday last, several hundreds of men, including masons, joiners, carpenters, and labourers, were discharged from the Burnley branch of the Lancashire and Yorkshire Railway. It was there reported that the whole of the works of the company are to be suspended until next spring. This is, in the main, correct; but we have already stated that there were exceptions to this rule. We believe that the Wakefield, Pontefract, and Goole line is the principal of these; the works upon this line are still to be carried on with vigour.'

Since the above account was written, *we* are 'glad to learn,'—so far, at least, as regards the progress of works already in hand,—that from the arrangement entered into between Government and the Bank of England, for the temporary extension of its circulation, by the virtual suspension of its charter, 'a continuance of railway works,' as the city article of the *Times* has it, may now be 'easily forseen.'

Mosaic Pavements at Northleigh.—Sir: Being in this part of the country, and hearing that there was a curious pavement to be seen at a village called Northleigh, about three miles from Witney, I went there, and found a beautiful mosaic pavement, about 33 feet long by 21 feet broad, composed of small pieces of white and black stone, and brick, each piece about ¾-inch square. It is tolerably perfect at present, but it is decaying in some places, owing to the admission of the rain through the thatch, which has been built over it since its discovery. I think it must have been the remains of a Roman bath, as there is a hypocaust underneath for heating, similar to the one discovered at Lincoln. The pavement is supported by square piers, about 6 inches square, composed of Roman bricks, 1¼ inch thick. There are flues ascending in different places round the edges of the pavement, about 5 inches square. There are also some broken capitals and shafts of columns lying about, and various other antiquities, which appear to have belonged to this Roman villa.—J. R. C.: Marlborough.

## PROPOSED ARMY AND NAVY CLUB-HOUSE.

After much consideration and various alterations, the elevation of the Army and Navy Club is now decided on, and we place before our readers a representation of it as it will be seen from Pall-mall.

Although the design is based on the palace built by Sansovino, for Giorgio Cornaro, on the grand canal in Venice, about 1532, it differs very materially from that structure. The Cornaro Palace has three stories above the basement, Doric, Ionic, and Corinthian, and shews the roof, terminating on the modillion cornice of the upper order, as at our Reform Club. The frieze is devoid of sculpture, and has oval openings to light an attic story.* Messrs. Parnell and Smith, it will be seen, adopting the general arrangement of the ground-floor and first-floor elevation of this palazzo, but substituting coupled Corinthian columns for the Ionic of the latter, terminate their building with the entablature of the order, highly enriched with sculpture, and a balustrading as at the "Library," (reproduced for the Carlton), and other of Sansovino's buildings.

In the first instance, the design included, in accordance with instructions given by the club, a bow-window and a projecting portico. The buildings-act, however, prevented the first, unless the line of front were set back, and for the second, there was not sufficient room to ensure a good effect. The bow was therefore abandoned, and the portico gave place, at the architects' suggestion, to a recessed porch as in its part prototype, the Cornaro palace.

The pilasters at the angles of the upper floor are shewn to be diminished towards the top, which in such a position, although not evident in our small view, could not have a good effect.

The following is a description of the principal apartments with their dimensions:—

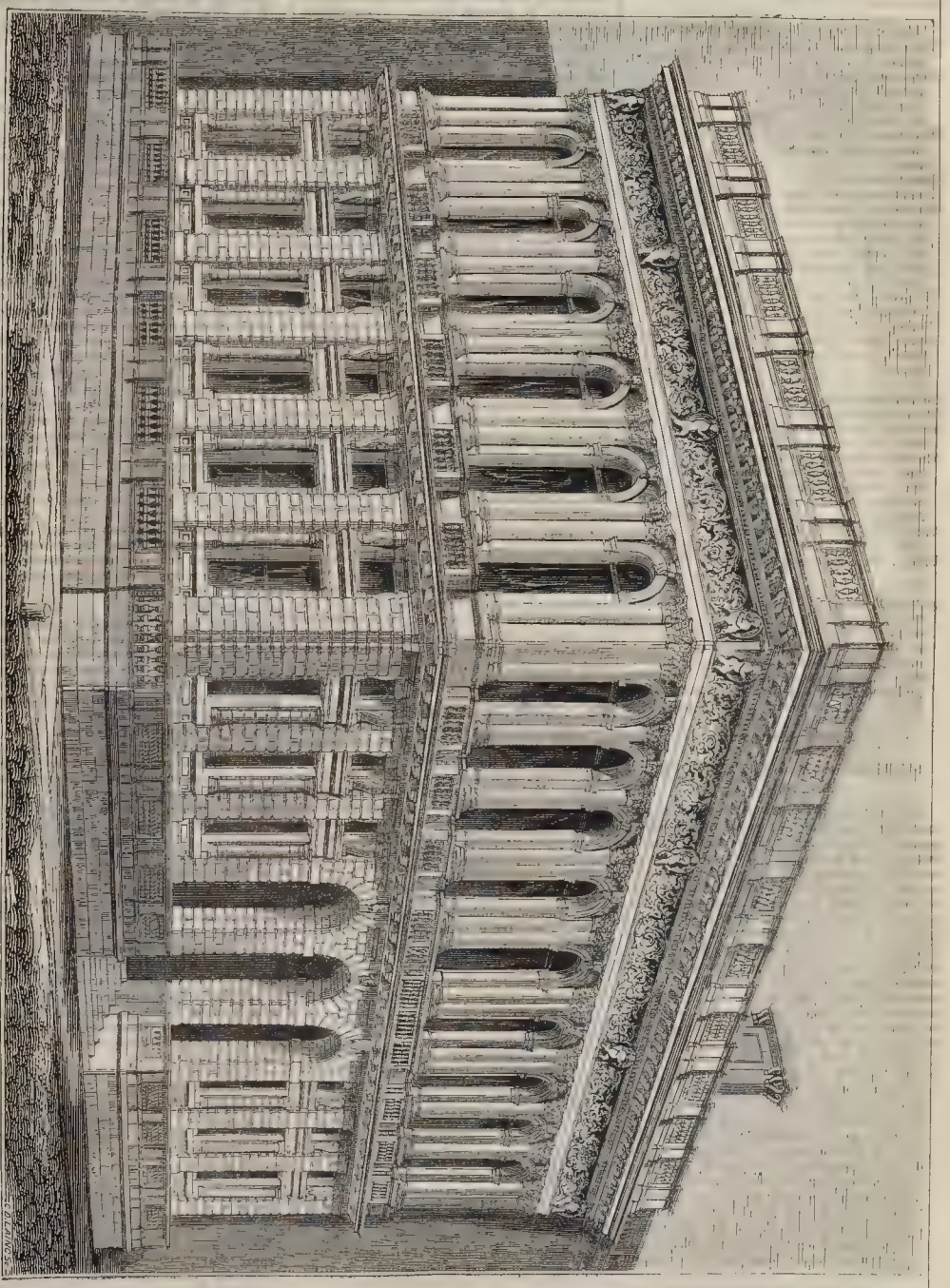
The ground floor contains a reception-room, on the left a morning-room, corresponding to which is a coffee-room lighted from each end, and an elliptical dome in the centre. The dome has an exterior covering of glass, between which it is proposed to light the room at night by a gas device encircling the whole circumference. By this arrangement, the necessity for any gas-burners with all the noxious concomitants of heat and imperfect combustion will be avoided, and a hot air-chamber provided, which, by the aid of flues, will afford a system of ventilation. *Between* this room and the visiters' coffee-room, lighted and ventilated in the same manner, and communicating with each, is placed the serving-room, connected with the kitchen by a lift, and the butler's serving-room; from this last is a direct communication to the dispensing cellars, while the room will be fitted up with ice-bins, hot and cold water, and presses for the reception of glass, none of which will be suffered to go below; there is likewise a separate entrance from the still-room. At the extremity of the building is placed the house dining-room, which has a separate communication from the kitchen, to which is attached an appropriate serving-room, and near it is a staircase leading to two bed-rooms for clerk of kitchen and second cook: the staircase on the opposite side is for female servants only. The water-closets are placed in the corridor, and have external ventilation.

*The Mezzanine floor* is devoted to the members' bath and dressing-rooms (twelve in number), and the house-keeper's department.

The first floor is approached by a branching flight of steps, one arm of which leads to the secretary's rooms, extra writing-room, and upper floor, containing the billiard, card, and smoking-room, and the other to the evening-room (the same dimensions as the morning-room), library and writing-room. The secretary's and extra writing-rooms are divided in altitude, to form an entresol for a still-room, to supply tea and coffee to the first and second floors, with sleeping-rooms for waiters, &c.

*Ground Floor.*—Loggia 35 feet by 6 feet 6 inches; vestibule, 26 feet by 18 feet; staircase, 47 feet by 26 feet; coffee-room, 82 feet by 39 feet; morning-room, 76 feet by 28 feet; strangers'-room, 46 feet by 29 feet; house dining-room, 29 feet by 20 feet.

* A representation of the Cornaro palace and the details are given in Cicognara's "Venice." Those who would seek this work through that profoundly obscure production, the British Museum Catalogue, must look under the head "Diedo."—*Le Fabbriche di Venezia.*



PROPOSED ARMY AND NAVY CLUB-HOUSE.—Messrs. Parnell and Smith, Architects.

*First Floor.*—Evening-room, 76 feet by 28 feet; library, 40 feet by 32 feet; writing-room, 33 feet by 18 feet; extra writing-room, 26 feet by 18 feet; secretary's apartments, &c.

*Second Floor.*—Smoking-room, 40 feet by 34 feet; smoking billiard-room, 33 feet by 31 feet, with card-room, 27 feet by 18 feet; billiard-room, 28 feet by 25 feet; and card-room, 25 feet by 16 feet, and servants' apartments.

## THE ARCHITECTURAL ASSOCIATION.

At a meeting on the 22nd inst., a paper was read by Mr. J. D. Wyatt, "On the leading Principles of Ancient and Mediæval Architecture, as illustrated by Sacred and Domestic Structures."

It commenced by some prefatory remarks on the importance of architecture, whether viewed simply as the sister art of painting and sculpture, and intimately connected with other branches of knowledge,—or as a practical science, directing the labours of the various artizans employed in carrying into execution a given plan. It proceeded to the subject in question by directing attention, briefly, to the elementary principles in the massive productions of India and Egypt, as exemplified more particularly in the *cave architecture* of the former and the ponderous temples of the latter, with remarks on the materials made use of, and the nature of their construction.

From Egypt the art was learnt by the Greeks, and by that enlightened people brought to a degree of refinement and perfection which, in its peculiar style, has never been surpassed.

Thence to Italy.—The Grecian style was adopted by the Romans, with variations, but these were for the most part deviations from its beauty.

An exception is *Corinthian*, in which the example of Jupiter Stator is particularly excellent. The capital and ornaments throughout the temple are marked by peculiar elegance and ingenuity of design. The writer explained the system of Roman domestic architecture, and pointed out the ordinary arrangement of their buildings, as evidenced by the remains at Pompeii and gathered from Latin authors. Passing over the degenerate productions which sprung up after the downfal of the empire, he said the *Saxon* and *Norman* works were derived from Roman principles, carried out by inferior workmen, and in an inferior manner. After the twelfth century, when the disturbances consequent on the Norman invasion had subsided, architecture became systematically studied in this country. From these efforts sprang "pointed" architecture, eminently picturesque and original, in which beauty and mathematical contrivance were exercised to the highest degree.

A comparison was instituted between the ancient temples of Greece and Rome, and the mediæval cathedrals of our own country, and each shewn to be equally well suited to its purpose. The religious rites of the former were mostly celebrated in the open air, while the building itself was devoted exclusively to the statue of the deity and its altar,—with conveniences for the preservation of sacred treasures. But in our own colder climate the ceremonies were performed under shelter, suggesting a lengthy nave (for processions), whose lofty groined roof invested the whole with sublime grandeur. Aisles were added for worshippers, and a choir (where the rites were performed) exclusively for the priests. In reviewing the main differences between classic and pointed architecture, the writer suggested that, in the former, the aim is to produce a grand and harmonious whole by the symmetrical combination of parts subservient to the general effect; while in the latter, the necessity of uniformity is almost utterly disregarded, and the proportion as well as situation of the various parts regulated by the purpose for which each is intended.

This summary was concluded by a few hints on the *principles of design*, the tenor of which was to shew, that reality and utility should be the basis in every structure, blended with a judicious proportion of enrichment.—The completeness of a building as well as its beauty mainly results from its fitness to its purpose. A good plan is essential to the formation of a good design. While the specimens of art bequeathed by our forefathers are worthy of our most attentive study, it is in the investigation of the principles on which they are founded, rather than by a servile imitation of individual portions of their works, that true excellence is to be expected.

## CONSTRUCTION AND DESIGN.

Sir,—Certain views enunciated by the chairman at the recent meeting of the Architectural Association, have, to my thinking, a mischievous tendency, notwithstanding an apparent effort to modify former definitions to something more nearly quadrating with ordinary notions. Not a great while ago there was but one thing worthy of the name of architecture,—now, it appears there are two; but one is architecture *artistical*, and the other architecture *professional!*

But in the name of common sense, I ask, to what do these violent distinctions and far-fetched abstractions tend? Verily, I trow, to no good. It is tantamount to returning to the days of disputatious schoolmen, and word-mongers. Comté hath it, that every branch of knowledge passes successively through three stages. 1st, the supernatural or fictitious; 2nd, the metaphysical or abstract; 3rd, the positive or scientific. Now, it appears that we are to turn back and lose ourselves in the labyrinthian intricacies of the second period, when, as one might hope, we are on the threshold of the third.

The chairman's assertion, that what he calls the "fine art of design" "stands essentially distinct and essentially alone," he has never taken the trouble to prove.

Call that attempted abstraction of a part of architecture which is to be exalted above the rest, what you will—call it, for instance, the designing of architectural scenery and decoration, still I cannot see that the student will be a whit better prepared to learn. In short, it appears to my simple self that the art of absolute or inventive design cannot be taught; we might as well talk of teaching the art of producing the highest species of poetry. In either case you can teach the grammar, as it were, of the art, the hitherto accepted rules, and furnish examples: what more can you do?

Depend upon it, Mr. Editor, this talk about "fine art architecture" may do considerable injury by deluding ardent, imaginative, and unreasoning youths, and leading them astray from that which would be of most use to themselves and society.

The segregation of fine-art design from architecture is talked of! Shades of the illustrious Michael Angelo and Christopher Wren, what say you to this? or turn we to some of the great ones of other fine arts. What would Leonardo da Vinci or Sir Joshua Reynolds have said of the segregation of fine-art design from painting,—throwing the science of anatomy to the dogs! or the giants Handel and Beethoven, of such a divorce of one element from another in music, throwing overboard that abstruse science, harmony? It is not difficult to conceive of the kind of response one would have met with from the two latter.

Then as to the notion that more honour belongs to the fine-art abstraction than to the realities of architecture! This is peculiarly the age of utility; and, of things nearly allied, mankind will be found to honour that most which is most useful.

Finally, I will observe, that one thing is absolutely certain,—incontrovertible, viz., that construction is the parent of whatever exists in architecture, whether it be beauty, sublimity, or what else, and it is but questionable taste methinks, to yield greater honour to the thing produced than to the producer.

*The author of the "Newleafe Discourses"* will not, I trust, take offence at the freedom of my comments, which are written solely with a desire for the ultimate establishment of the truth. I am, Sir, &c. Frank Oliver.

London, Oct. 16, 1847.

A Hint for the Royal Academy.—The council of the Royal Manchester Institution have announced their intention of opening an evening exhibition of the works of modern artists, the charge for admission to which is fixed at *twopence*.

## NOTES IN THE PROVINCES.

Emmanuel Church, Weston-super-Mare, designed by Mr. Manners, of Bath, architect, and built by Mr. Edward Gregory, of Weston-super-Mare, was consecrated on Friday last. It consists of a nave and chancel, north and south aisles, and western tower, with a porch on the north. The chancel is separated from the nave by carved stone screens. The pulpit is of stone. The pews accommodate about 700,—300 free.——The Somerset County Lunatic Asylum is still unfinished: 40,000*l.* have been expended on it, and 10,000*l.* more have been called for.——St. Sidewell's Church, Exeter, has been repaired and cleaned, and was re-opened for divine service last Sunday. The bosses of the roof have been gilt: painting and decoration by Mr. R. Pentecost, of St. Sidwell.——The new Roman Catholic Church of St. Francis Xavier, at Usk, in Monmouthshire, was opened on Friday week. The structure is in the Gothic style of the fourteenth century, from designs by Mr. Charles Hansom, of Bristol, architect. It consists of a nave and south aisle, chancel, sacristy, and porch: length internally 65 feet, width 30 feet, with accommodation for 200 in nave and aisle. ——The committee of the Gloucester and Berkeley Canal Company, on the new docks, &c., report that a further sum of 5,000*l.*, in addition to that of 16,000*l.*, already granted, would be required to complete the new docks, as it had now been ascertained that culverts and other extensive works, not included in the original estimate, would be required; they therefore asked power to raise 21,000*l.*——The contractor for the new town-hall, at Dudley, Worcester, refuses to give the magistrates possession of the building, or even the architect the key, until paid or guaranteed the sum of 500*l.* over the estimate, for certain alterations and embellishments ordered to be made in the building. The magistrates do not feel justified in incurring individual responsibility for so heavy a sum.——Christ Church, Cosley, says the *Birmingham Journal*, was re-opened on Sunday week. The east end has been entirely reconstructed, under the superintendence of Mr. G. E. Hamilton, of Wolverhampton, architect, a chancel formed internally, with screens, and an east window, with stained glass, inserted by Mr. Warrington, in foliated spandrils, with cinque-foils and figures.——A new parish church for the growing wants of Swindon, is on the tapis. A site has been offered by the lord of the manor, and 1,000*l.* towards the erection by his relative of namesake, Mr. Goddard, M.P.——It is in contemplation to erect two new district churches at Westham, one contiguous to Stratford Marsh, and the other at Forest Gate.——The subject of free access to Lincoln Cathedral is under consideration of the dean and chapter.——A Gothic stained-glass window, says a Lincolnshire paper, has been placed in the chancel at Belton parish church.——The *Albion* states, that on Friday last, no fewer than fifty persons were fined at Liverpool for refusing to quit cellars not in conformity with the provisions of the Sanatory Act.——On the 12th inst., the foundation-stone of a Wesleyan Methodist Chapel was laid at Edwinstowe, in the Worksop Circuit; Mr. Simpson, Architect. ——The erection of a covered butter market at Barnsley is at present under consideration. The expense, according to the *Doncaster Gazette*, is to be defrayed by subscription, there being no local fund for such a purpose. ——Those who knew Glossop Dale twenty years ago, says the *Derby Mercury*, would now scarcely recognize it. Factories have been erected, houses built, markets established, town-hall, police, and courts of justice appointed, and, 'to crown the whole,' a branch line of railway, from the Manchester, Sheffield, and Lincolnshire, has been in operation for more than two years.——Although upwards of 10,000*l.* have been expended on the parish church of Huddersfield, says the *Leeds Intelligencer*, it is not only still surrounded by old buildings which are a disgrace to the edifice and a discredit to the town, but these very buildings, which a recent fire had considerately endeavoured to remove, are again under process of repair.——The subscription for the rebuilding of the very inadequate infirmary at Durham, is said to be advancing very successfully; 5,000*l.*, says the *Gateshead Observer*, will provide another.

## WESTMINSTER COURT OF SEWERS.

A SPECIAL court was held on Friday last; Capt. Geo. Bague, R.N., in the chair.

A memorial was presented from the inhabitants of Grove-place, Brompton, setting forth that disease and miasma prevailed in that district, and although there were upwards of seventy houses in the place named, that no sewer existed, and that the only receptacles for the drainage of the houses consisted of cesspools, which were frequently required to be relieved. The matter was referred to the surveyor, as was also a petition from the inhabitants of Earl's-court, Brompton, complaining of the want of drainage.

A communication was received from the vestry-clerk of Hampstead, written by direction of the board of guardians of that parish, complaining of the wretched state of the drainage of West-end, Hampstead, causing the most pernicious consequences to the children in the school-room, and calling for an immediate remedy. The allegations were confirmed by Mr. Law, and other members of the Royal College of Surgeons, as to the unwholesome nature of this district. This communication led to a long discussion, and it was finally referred to the surveyor, to report immediately thereon.

*The Powers of the Commission.*—A very lengthened discussion arose on the question submitted by a Mr. Carter, of Paddington, to this court. Under the provisions of the new Act, passed for enlarging the powers of this commission, it is required, that before any new house is commenced an efficient drainage shall be constructed, if any public sewer exists within 100 feet of the projected new building; and in this case Mr. Carter wished to know, as he was required to build the sewer past several existing houses, whether he should be enabled to call upon the owners of such property to contribute towards the expenses of the same?

The solicitors to the court gave it as their opinion, that the owners of the existing houses might be called upon to contribute providing the houses had not been erected more than thirty-five years.

Some members of the court having expressed doubts as to whether the construction put by the solicitors on the powers of the Act was a correct one, it was agreed that a case should be prepared and submitted to the Attorney-general, and Mr. Bovill, to ascertain their opinions respectively thereon.

A letter was read from Mr. Farlar, in answer to an application made to him to know what sums had been paid and received by him in reference to the sewer in Alexander-place, Brompton, in which he stated that any questions of this kind were unlawful and uncalled for, and that he refused to answer them. Some discussion ensued upon the subject, and it was resolved, "That the surveyor do report on the contribution per foot to be paid by the occupiers or owners of premises to be drained in the sewer referred to in Mr. Farlar's letter."*

*Improvement of the Drainage of Westminster.*—The court then proceeded to consider the surveyor's report on the improvement of the drainage of the parishes of St. Margaret and St. John, Westminster, with the government offices, in Downing-street, &c. This document appeared in THE BUILDER, *in extenso*, some weeks since,* when the report and plans in reference thereto, were ordered to be submitted to her Majesty's Commissioners of Woods and Forests, to which the following answer has been received:—

"Office of Woods and Forests,
Oct. 20, 1847.

"With reference to my letter of the 17th inst., stating that the Commissioners of Woods and Forests had not been able to come to any decision, in regard to the sewer proposed to be built by the Court of Sewers for Westminster through Parliament-street, with an outlet to the Thames at Richmond-terrace, in consequence of Mr. Lomax, the surveyor empowered by them to report thereon, having been prevented from doing so so fully as he wished,—not having seen detailed plans and specifications for the intended sewer,—I have to report on the part of the board, that he further states, that he has inspected the plans and received such explanations as he required from you and from Mr. Phillips in regard thereto, the result of which has been, in some degree, to remove the objections, stated in his former report, to the construction of the sewer in the line and in the manner shewn by the plan and printed report, which accompanies your letter of the 8th inst.; but that he is still of opinion that the new sewer should be carried on to Whitehall, for the purpose of improving the drainage of Whitehall (which is very defective), of the government offices and houses in Whitehall and its vicinity. This opinion Mr. Lomax states that he communicated to you, but that it was proposed to remedy this defective drainage above-mentioned by the construction of such branch sewers along Whitehall as should be necessary, the expense of which would be much less than continuing the new main sewer as suggested by him, and the remedy equally efficient. Under these circumstances the board would not feel themselves justified in giving their sanction to the projected sewer until they shall have laid before them plans of the branch sewers proposed to be formed in Whitehall, and be informed when it may be expected the same will be constructed. I have also to state that, as the board have some doubt whether or not the thickness of one brick, as proposed by Mr. Phillips, is sufficient for a sewer of the size and extent of that now proposed, they have thought it right to consult Capt. Vetch upon that point, but that before giving an opinion on the subject, he has expressed a wish to see a longitudinal section of the ground, shewing the position of the drain in regard to the surface and nature of the soil as far as ascertained, and also to know if the whole of the brickwork (or what portion) is to be laid in cement; whether the bottom is intended to be laid on blocks, and the method proposed for laying bricks throughout? and, likewise, whether it is expected that the sewer will ever be subject to a pressure of water on the soffit of the arch? and I have to request that you will move the court of sewers to furnish the board with information on these points.—I am, Sir, your obedient servant,

"CHARLES GORE."

Mr. Harrison thought, that in thus applying to the Woods and Forests they had acted unwisely, and that it was not a dignified course for them to have pursued.

Mr. Willoughby said, that in consulting the Board of Woods and Forests as a public body, this court believed they had a common interest in the matter, but the drainage of Whitehall he conceived to have nothing whatever to do with the case. The communication they had thought proper to make to the Commissioners of Woods and Forests, was for the information of that board rather than an acknowledgment of any control they might have in the question.

The surveyor said he had subsequently given great attention to the subject, and had with the clerk gone over the whole of the ground again, and he had seen nothing to alter his opinion of the propriety of the course he then proposed.

After a few observations from other commissioners, it was proposed and carried unanimously, that the clerk do communicate to the Commissioners of Woods and Forests, that this court will proceed with the plans as laid down by their surveyor; and that the drainage of Whitehall will be a subject for separate consideration.

* Mr. Farlar has since forwarded to us the following copy of the communication, with a request that it should be inserted:—

"38, Brompton-square, 22nd October, 1847.

"My lords and gentlemen,—The undersigned having received from your clerk a note inclosing a document copy of which is hereunto annexed, purporting to be a copy of an order of court, said to have reference to sewer owners' claims, I beg to say I consider so much of the order referring to what sum or sums sewer owners may have expended or received, foreign to the business of the commission, and I refuse to answer the same as unlawful and uncalled for. Permit me to say, your orders of court and bye-laws must be consistent with sense, justice, and the common rights of the subject, or they are not maintainable.

"Your honourable court is sanctioned by the 10th and 11th Vic. c. 74, to arbitrate upon and assess as true an honest man, agreeable to their oath of qualification, without favour, corruption, malice, the true value for the frontages of sewers owners may have to convey, and without loss of time to put into operation the said Act, now four months old and nothing done. The said copy of order of court also sets forth, that it is required of sewer owners to present a plan of the entire length of the sewer or sewers to be built by them.

"The undersigned claims of the court an explanation of its anomalous conduct. What can claims for sewers already built have to do with those which are 'to be' built?

"That your honours be court has not powers (with narrow habitudes for retribution to the unjusted) must be admitted, and in a great measure endured.

"However absurd the recited order per copy annexed, the undersigned doth (to avoid loss of time) herewith cause to be delivered a plan of the sewer he built (not 'to be' built) in the year 1839. The undersigned also hereby gives notice to your honourable court, should it not forthwith proceed to compel parties to build covered drains, as per section 7 of the said Act, for the premises per his hat delivered to your honourable court, bearing date 15th October inst., he will on the arrival of the November term, apply, as per counsel he may be advised, to her Majesty's Court of Queen's Bench, to enforce the commission to render him that return of his property, provided for by the said Act of Parliament. The undersigned begs to remind the board of commissioners, the obtaining the said Act was craved by themselves, and granted as a reprieve, or, in other words, a protection from total annihilation of your commission, threatened by the bill designated as the Health of Towns' Bill, as introduced into Parliament by Lords Morpeth and Russell.

"Your honourable commission having thus obtained new powers, obligatory upon the commissioners as well as the public at the enormous unnecessary expense of more than 900*l.* of the ratepayers' money, have omitted every act for carrying out the same new powers, although the winter is close at hand, and fears prevalent the nation may again be visited by that scourge designated the cholera. The undersigned, by his address of the 15th inst., gives your court two drafts for the promotion of the requisite steps for carrying out the said new Act, viz., the 10th & 11th Vic., c. 70, as the only measure for promoting the public to aid in forwarding the objects of the Act, and which your court must, however reluctantly, in the end adopt.—I am, gentlemen, with all due respect for my brother commissioners, your obedient servant,

WM. FARLAR."

The following is a copy of the "order" in question:—

"Resolved, that owners of sewers built within thirty-five years, who shall make application under the new Act for parties to be compelled to lay drains into such sewers, be required to present a plan of the entire length of the sewer or sewers "*to be built*" by them, shewing the several houses and premises fronting thereon, with the sums already paid for each house from which a drain has been laid, and also shewing the length of frontage, and the amount demanded for laying a drain from each of those houses from which they desire that a drain should be now laid into the sewers so built by them."

After the above was in type, we received from Mr. Farlar, too late for insertion (even if we could afford space), other papers, and a letter, complaining of our having headed our report, "Illegal Conduct of a Commissioner." The report in question professes to be nothing more than a record of the proceedings of the court, and the court pronounced the conduct illegal.

* See p. 435, *ante*.

## New Books.

*Observations on Limes, Calcareous Cements, Mortars, &c.* By Major General Sir C. PASLEY. Second Edition: Part I. Weale; 1847.

A SECOND edition of this valuable work has been required for some years past, but the author was unable to give time to a revision of it till lately. He has now issued a first part only, but promises the completion in a few months. Since the publication of the work, artificial cements have been made and used extensively, so as to justify the opinion General Pasley had advanced in this respect.

We shall hope to find some few alterations in the appendix of the present edition. The author has experienced more ill-natured abuse himself since he wrote it than he had before, (much of it uncalled for, and not to be justified), and may feel anxious to avoid paining others.

We recommend the work to the study of all engaged in construction to whom it may still be unknown.

## Correspondence.

### ORIENTATION OF CHURCHES.

DEAR SIR,—Your correspondent of the 4th, "A Churchman," has himself *singularly overlooked* the Rubric, part of which he quotes, as it is ordered that "the table shall stand in the body of the church, or in the chancel, where morning and evening prayers are appointed to be said." I presumed every ecclesiologist was aware that this Rubric was framed to meet the want of what you term "orientation" (or what is better known in the country as "east-and-westing") in the parish churches of our happily Protestant island, as the priest can invariably comply with the whole of the Rubric, when attention to a part might seem to involve an inconvenience.

In many cases it would be much better to have disregarded this symbolism, as nothing is more painful than to enter at the chancel end of a church and to proceed down an aisle to a seat, meeting so many strangers' eyes.

Pardon the intrusion of a female upon the valuable columns of THE BUILDER, and believe that I am, Sir, your obedient servant,

A CHURCHWOMAN.

Day of the Feast of St. Luke, 1847.

### DISTRICT SURVEYORS' FEES.

SIR,—Allow me to correct what I consider to be an error in your last week's publication. It is simply as to the proper position of an apostrophe, in the following sentence:—"District surveyors' fees,—a pretty specimen." This clearly implies that the specimen is one of a class, which I deny; but place the apostrophe *before* the s, and the specimen becomes that of an individual, which I admit,—and sorry I am to do so.

Before the account in question appeared in your paper, it had been examined specially and condemned universally by the body of district surveyors; and after the expression of their decided opinion on the subject, I have reason to believe that such unfounded claims, alleged to have been made through error, will in future be relinquished.—I am, Sir, &c.

Oct. 25, 1847. AN OLD D.S.

### TREATMENT OF BUILDERS—ESTIMATES.

SIR,—Not the least among the many annoyances to which respectable tradesmen engaged in the building and repairing of houses are subject, is the one arising out of the practice of persons, requiring the smallest repair or renovation to interior or exterior of their house, calling upon them to furnish an estimate of the expense (without any intimation of a competition), with no other view but to arrive at such knowledge as may enable them to seek different tradesmen, and by tempting them with the assurance that such and such a one has offered to do it very low, induce some unfortunate to take it at a profitless price under the vain hope of future employ. I would advise every man who may discover that his judgment and time have been thus made use of, to charge for his estimate, and thus put a check upon such unprincipled conduct.—I am, Sir, &c., A SUFFERER.

## Miscellanea.

Projected Works.—Tenders have been called for by advertisement for the extension of Sewers in the Tower Hamlets; for building sewers in Kensington; for building a new south wing to the St. Olave's Union Workhouse, Southwark; for the excavation of a patent slip and a wall foundation at Hamington, with iron-work and machinery for slip, mason and wallers' work, &c.; also for the construction of three-quarters of a mile of the Birmingham, Wolverhampton, and Stour Valley Railways, amended tenders.

Example to Masters who want Healthy Active Workmen.—"There are sceptical people," says the *Gateshead Observer*, "who throw cold water on all onward movements—even on public baths and washhouses. The working classes, they say, would not go to baths, if you were to build them. But the experience of London, Liverpool, Manchester, and other towns, proves the contrary; and we are not without similar evidence in Newcastle and Gateshead. The lessee of the public baths in Northumberland-street has wisely made reductions, from time to time, in his scale of charges, and is now issuing sixty tickets for 1*l.*, each of which will secure the holder a warm bath and a towel. At the Literary and Philosophical Society lately, Mr. M'Kelvin, of Abbot and Co.'s, stated that he had purchased a pound's worth of these tickets, and on his return to the Gateshead park works, soon found customers for them all, at fourpence a ticket. We trust that in every great public establishment in Newcastle and Gateshead there will be found a Mr. M'Kelvin." If masters, in districts or towns deficient in cheap baths, or even where such baths already exist, were to create an increased demand for them by the offer to purchase and distribute tickets, at low prices, amongst their workmen, doubtless both masters and workmen, as well as bath-keepers, would derive considerable profit from the speculation. The moral influence of the masters would thus be brought to bear exactly upon those least likely, yet most requiring, to seek the aid of the flesh-brush, the soap, and the bath; and thus additional activity and spirit, as well as health and cleanliness, would be infused into the workshop.

Disregard of London Antiquities.—In the ninth part of Mr. C. Roach Smith's valuable *Collectanea Antiqua* (etchings of ancient remains illustrative of the habits and history of past ages), the author finds reason again to refer to the "perfect disregard in which our city antiquities are continued to be held by the city authorities." He says that a piece of Roman sculpture found during excavations for a sewer in Hart-street, Crutched Friars, representing the *Deæ Matres* or *Matronæ*, which "throws a light upon one of the forms of worship prevailing in Roman London, and has been made the means of instituting successful inquiry into the superstition of our ancestors, at the present moment lies neglected in an outhouse in the city stone-yard."

Statues.—A proposal from Mr. Milnes to erect a statue of Nelson, in Norwich, has been accepted. The statue is to be seven feet high, and to cost 700 guineas. The bishop is interesting himself in favour of the project: the same artist has been selected by the Board of Ordnance to execute the full length of of the Duke of Wellington, to be placed in the Tower of London.—In Edinburgh, twenty-four Waverley figures are still required to complete the Scott monument. Another Waverley ball is to be got up to raise the sum required (2,000*l.*).—Gibbon's second statue of Huskisson, recently erected in Canning-place, Liverpool, is of bronze, and stands nine feet high.

The Triforium.—Sir: Permit me, through the medium of your columns, to inquire the derivation and meaning of the word "Triforium."—*A Subscriber.*

*** The gallery (*fori*), or open space, between the vaulting and the roof of the aisles of a cathedral or church, opening into the nave, transept, or choir, by an arcade over the main arches, is called the "triforium." In modern times it has come to be applied to the range of arches or panels between the top of the pier arches and the bottom of the clerestory windows, even where there is no gallery, but merely the semblance of it.

The state of Birkenhead.—The *Liverpool Courier* gives a melancholy picture of the present appearance of Birkenhead. After detailing the number of new buildings unlet, amounting in value to 70,000*l.*, the writer says, "the above-named are only a few instances amongst the vast bulk of apparently lost and desolate property in this unfortunate place. The great extent of closed premises in the secondary descriptions of streets, it is needless to particularize—suffice it to say, that they may be seen in every direction. Splendid private houses, too, in immediate proximity to the business part of the town, and beautiful villas more remotely situated, seem also to have alike shared in the general flight which has taken place; while the dismal-looking batches of partially erected buildings, some just covered in, and others with the rough and rugged walls scarce half built up, left to fall into dilapidation and decay from the inability of their owners to complete them, give a melancholy finish to the picture which may well challenge a parallel in the annals of premature speculation, or of commercial reverses." Still as he says, "The gloom that hangs over Birkenhead is partly owing to the stagnation and want of confidence that everywhere prevail. When these pass away, her prospects will of course brighten, her buildings will again be tenanted, and her streets and public places once more resound with the hum of business. The advantages of her position, and her inherent capabilities, remain the same; and though it may be some time before her realised resources fill up the gigantic outline which the sanguine anticipations of her projectors have sketched, still while Liverpool continues prosperous, that prosperity cannot fail to be largely participated in by Birkenhead." Since the appearance of the article from which the foregoing is taken, a proposal of assistance from Government has been made and accepted. "The government is to resume possession of the piece of made land on the north side of the entrance to the great float, and, on condition of that land being reconveyed to the Commissioners of Woods and Forests, they engage to pay the expense of completing the sea wall, reserving to themselves the right of making any use they think fit of the land, and to make as many slips and sluices as they may require. It is supposed that this stipulation is made with the view of converting a portion of the land into an arsenal." The amount already expended on the sea wall is 21,000*l.*, and it is estimated that, to complete it 44,000*l.* more will be necessary. This amount government offers to give, on the conditions above named, and, in addition, to advance 150,000*l.* for the purpose of finishing the great float and embankments, so as to bring the dock into condition for business. The government are to receive, in part, as collateral security, township bonds to the amount of 35,000*l.* Birkenhead will yet realize in great part the expectations of those who created it.

Caution in Cleansing Cesspools.—The Long-acre tragedy has been recently rehearsed, if not acted over again, at Tittenhangers, an estate of the Dowager Countess Hardwicke, where, according to the *Hertford Mercury*, in order to destroy the unpleasant odour from a cesspool while cleansing it, the gardener, with that, in this instance, dangerous qualification, 'a little knowledge,' proceeded to 'disinfect' it by help of oil of vitrol; and while the diabolical fumes of sulphuretted and phosphuretted hydrogen, thus liberated of a sudden from their alkaline fixative, were still salient in the pool, his assistant descended into it and was of course immediately laid prostrate. Nevertheless, unwarned by the result, another labourer followed, in order to rescue him who had found his position too deadly for his own rescue, and *he* was as speedily reduced to insensibility. A third, nevertheless, followed his leader with the same result, and a fourth the third. At length experience taught even unthinking mortals such as these that other measures ought to be adopted; and the whole were withdrawn by aid of poles and ropes. Some hopes, strange to say, are still entertained of their recovery. How the idea of 'disinfecting' cesspools or sewers by help of oil of vitriol originated, it is hard perhaps to say, unless it might be in the expectation that a combination of sulphur and oxygen, such as it is, would neutralize one of sulphur and hydrogen, leaving nothing but sulphur and water; but it ought never to be forgotten that cesspools and sewers will always abound with soda, potash, and probably lime, which will hold these '*hydrasdire*,' if we may so call them, in a fixed state, and that sulphuric oxyacid will itself be neutralized by the alkaline bases, and will liberate in place of destroying the poisonous hydrides.

Improvements in Casting Cylindrical Pipes.—Mr. Stewart, of Montrose, has taken out a patent for a new mode of casting iron water or gas pipes, by which a superior material is produced, at a less cost than by the usual method. The mould consists of a perpendicular cylindrical iron box, of the required size, with a shaft in the centre, longer than the mould, and communicating with machinery above, by which it is kept revolving, and, as it revolves, it gradually rises. At the bottom of this shaft is an instrument, which may be termed a "presser," or "rammer," consisting of an iron block, having inclined tabular faces, of such smaller diameter than the box, as to leave the sand of the required thickness for the mould. On feeding the sand at the top of the box, it is distributed towards the sides, and the shaft and rammer, gradually revolving and rising, press it with great force against the sides of the box, leaving the mould finished and perfectly cylindrical on its arriving at the top, ready for the insertion of the core. The amount of pressure against the sand is regulated by means of a counterpoise weight. The following are the advantages claimed by the patentee:—"1. A perfectly straight cylindrical pipe, of uniform thickness. —2. No parting or joint of any kind.—3. Dressed at one-half the ordinary cost.—4. Less sand used than in any other way, and, of course, easier dried, if required.—5. The castings and sand easier removed from the boxes than in the ordinary way.—6. The flasks, or boxes, better calculated to resist the pressure of the metal than any now in use.—7. This method is the best for casting pipes perpendicularly that has hitherto been employed.—8. The greatest recommendation of all is, the simplicity of the apparatus, which requires the attendance of a boy only, who with my machine, as at present working, turns out easily six pipes, six inches bore, per hour."

Middlesex Lunatic Asylum Competition.—On Wednesday last the committee, as we are told, made their first selection of twelve from the designs submitted to them. It is said that the plans will not be exhibited, some of the competitors having expressed an unwillingness to allow their ideas to be seen by others than the magistrates. Should this really be the fact, which is scarcely credible, they will soon have reason to regret their short-sighted policy. Such a case as this would serve as a precedent to other parties for refusing to exhibit competing plans, and thus the only check on committees advertising for designs, small as it is, would be lost.

A Check-string for Engine Drivers.—Sir,—It occurred to me about two months since, that an improvement for the safety of the public might be made in the construction of the locomotive engine, by having the foot-plate on which the engine driver stands, supported by springs and attached to a lever, so connected with a valve on the top of the steam pipe in the dome of the boiler, that, should the engine driver leave the plate either by accident or design, in imminent danger, the springs under the foot-plate should cause it to rise, and by closing the valve above named, effectually to shut off the steam from the cylinders. The engine driver, when in his place on the foot-plate, would have the same control that he now has.

Brighton. Allen Anscombe.

## TENDERS.

*Tower Hamlets Sewers.*—Mile End Road; Sewer, 4 feet 6 inches by 2 feet 6 inches; length, 898 feet.

| | |
|---|---|
| Shalders | £775 |
| Stewart | 700 |
| Yeomans | 646 |
| Munday | 627 |
| Crook | 597 |
| Livermore | 576 |
| Hill | 567 |

## TO CORRESPONDENTS.

"*Burial in Churches.*"—A correspondent complains of some proceedings in Croydon Church, on the occasion of a recent interment.

"*Old Subscriber.*"—Cast-iron baths are being used extensively.

"*Constant Subscriber.*"—The committee appear to have the power to act as they propose."

"*Subscriber.*"—So far as we know, the atmospheric apparatus on the Croydon Railway must be regarded as a failure.

"*Stains to Marble.*"—A correspondent asks to be informed how he can remove mahogany and smoke-stains from statuary marble.

"*A Subscriber.*"—The January and February Parts are out of print.

"*Cockle-Market Reinventer.*"—Mr. Nicholson writes,—"I beg to inform you, that although our tender was made out and ready to be delivered with the rest, still, on account of the 'Arbitration Clause,' being inserted, our tender, with others, was not given in, the said clause not being in accordance with the rules of the builders' society."

"*Railway Breaks.*"—We are not in a position to investigate the rival claims of those gentlemen who have written to us on this subject.

"*H. C.*" (Broad-street), shall hear.

"*R. W.*"—We have not time to look for the dates required.

"*J. C. P.*" next week.

*Received.*—"A Mason," "C. G.," "A Mason" (we have not time); "W. B.," "E. H.," "A Reader," "W. C. T.," "G. H.," "J. T. W.," "A Subscriber."

*Books Received.*—"Descriptive and Historical Catalogue of the Pictures in the National Gallery." By Ralph N. Wornum: by authority: 1847.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

COMPETITION DRAWINGS,—TO ARCHITECTS, &c.

**MR. THOMAS S. BOYS**, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Antwerp, &c.," and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 81, Great Titchfield-street, Oxford street

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**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only.
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**IMPROVED TRANSPARENT TRACING PAPER**, well known for its Superior Transparency and every quality requisite for the use of Architects, Engineers, Draftsmen, and all Artists, being quite equal to the French, and much cheaper. May be had, Wholesale and Retail of T. HORNE, 2, Thanet-place, Strand, and 2, Temple-Bar, Engraver of Stone and Metal Seals.

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SMOKY CHIMNEYS NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies P. E in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

**THE most perfect DRY GAS METER** in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 19, Hampstead road, in conjunction with his old-established premises, 61, St. Martin's-lane, begs to say that he can at all times MEET the DEMAND for METERS, from 2 lights to 1,000. The sale of 10,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, leakage, or by injurious gas. He invites attention to the fact of many of his large meters being in success-full action at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club houses, &c., and has powerful and flattering testimonials as either factory, which may be obtained on application.

**LESLIE'S PATENTS.**—GAS CONSUMERS are guaranteed the following important sanatory and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in these sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Flat-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMIZER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burner self-regulating, and an Smoke-producer; these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES.—Upright Burners, with Conyngham Spring Glass Holders, with either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, 10s. 6d. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 2d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 8s. If a side burner, or 10s. If the upright be desired.

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Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.

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**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

**SAMUEL CUNDY, Mason and Builder,** PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and Others, that the Business now carried on at the above Works, is solely his.

That ARCHITECTURAL SCULPTURIC, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.

S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

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**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemanes. Orders received as usual, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-s.,ure, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected (in preference to all other in England, by the Commissioners of Woods and Forests) for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

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**ENCAUSTIC, VENETIAN, BATH,** and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY James Smith, Esq., of Deanston, chairman, invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at Work at Deanston, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr ROBERT CHARLES, Mill hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

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**JOHN GRICE** most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in. and upwards.
Bright ditto with Black and Bright Bars, 9d. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 2 ft. | 2 ft. 6 in. | 3 ft. | 4 ft. |
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| £2 5s. | £2 15s. | £3 10s. | £4 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, tuning in secret, 3s. per pull.

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**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 190, Blackfriars-road, and 127, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

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| £3 6s. | £3 13s. | £3 16s. | £4 | £4 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 2 ft. | 2 ft. 6 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
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| £3. | £3 13s. | £4 7s. | £5 10s. | £7. |

Best Improved Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do. at 3½d., and 4d. do.
Manufacturer of WOLFANSTON'S PATENT REGISTER STOVES, a perfect cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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Elliptic Stoves, 3d. per inch. Registers, 6d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
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BAKER'S OVEN WORK, Large Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

IRONFOUNDRY,
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JOSEPH GLOVER,
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**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain water Pipes, Heads, Shoes, &c.

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PATENT DOUBLE ACTION SASH FASTENINGS,
PATENT CASEMENT FASTENINGS AND SILL BARS,
Patent Copper and Iron Wire Sash Lines,
IMPROVED PATENT SASH CORDS, &c. &c.,
which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS,** Southwark-street, and the Grove, Southwark. At the above Works, the Public are secure in having the strongest make, and in the Patent Process of Galvanizing Iron, as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles as usual. The Trade Supplied.

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By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,
WITH SECRET AND STOCK LEVERS.

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Whitehall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 62, St. Martin's-le-Grand, London, opposite the new Money Order Office.

**PATENT BELLS.**—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Limpo Metal, and the bells are found to be more powerful and cheaper than those made of the ordinary bell-metal. Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

**PATENT METALS for Bearings.**—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of numerous eminent Engineers connected with public works, and for Railway and other important purposes generally, will be found superior in hardness, and cheaper, than the metals now in use. Other sorts will be found of a finer colour, a more brilliant surface, and bearing a higher polish than any ordinary brass. Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Squares, Gardens, and Roads. Garden, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

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FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE** and TUBING of every description. These Pipes are made to stand hot liquor and gas with safety; and as they do not become stiff in the coldest to the most, or require any application when out of use, are port ably well adapted for Fire Engines. Vulcanized India-Rubber Washers for steam and hot water joints, &c., of all sizes. Sole Manufacturer, JAS. LYNE HANCOCK, Gowell mews, Gowell-road, London.

# PEAKE'S TERRO-METALLIC, DRAIN, AND CONDUIT PIPES;

**ROOFING, RIDGING, PAVING, AND OTHER TILES;**

## BUILDING, PAVING, AND MANY-FORMED BRICKS, &c.

*Of at least One Hundred Sorts and Sizes.*

**THOMAS PEAKE,**

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A CENTRAL SITUATION,

AND THE TILERIES, TUNSTALL, STAFFORDSHIRE POTTERIES,

Begs to remark that his Establishment was founded upwards of a century since, and for forty years has been carried on by his late Father and Himself. That during the last thirty years he has introduced his Manufactures into the metropolis of the Cotton Department of British enterprize Manchester, and other parts of the Country, with complete success, where they continue to be duly appreciated. That the cost of transit has been of late so reduced, as to enable him to keep a respectable assortment in London, where he used to supply Messrs. Wyatt, Parker, and Co. as agents, but now superintends the depôt personally, and from what he has observed in Town as well as in other places, he cannot doubt but that his Terro-Metallic goods will be as generally adopted as they shall become known. That he is sincerely grateful to his numerous customers for their favours during so long a period, and respectfully assures them, as well as the Public generally, that they may rely upon the advantages derived from his extensive experience for a third of a century being continually exerted to merit their future confidence and support. No MATERIAL, he submits, can be more desirable than his Terro-Metallic to mould into an almost infinite variety of articles, required either at home or abroad, by Nobility, Gentry, Civil Engineers, Architects, and Practical Builders;—also by the Owners and Occupiers generally of Land, Mines, Buildings, Gardens, and other Property. The late Mr. Loudon, the late Mr. Telford, C.E., and the Incorporated Church Building Society (amongst other persons and institutions), have borne very important testimony to the excellence of this material. Its colour, cleanliness, strength, efficiency, durability, and easy adaptation, are great desiderata, and the surveyor to the honourable Court of Sewers for Westminster, in 1846, wrote,—"I consider they" (viz., the Terro-metallic Pipes) "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains." Surely STRENGTH, STRAIGHTNESS, and SMOOTHNESS, are not ordinary characteristics! The Terro-Metallic has NECESSARILY a Firm Body, intense heat being indispensable to fuse its surfaces, forming thus a natural and estimable glaze by this glaze, however, being natural, will expand or contract with the body, and consequently the articles will remain uninjured: but this is not always the case when articles are covered with artificial glazes. The variety of ordinary and unsold earths, of which bodies are formed, to receive upon their surfaces glassiness by means of foreign agents, such as salt sugar or wash, will not stand the great degree of heat needful to bring the Terro-Metallic to its admirable compactness, solidity, and strength; and many clays would be thereby reduced from a large article or vessel to a shapeless scoria. Experience has hence demonstrated this to be a fact, and they could be easily repeated. Indeed, persons in the habit of using brown glazed bottles, milk-pans, steens, pots or mugs, need not be informed of the DIFFERENCE of bodily texture presented in such articles, and inseparable from UNCERTAINTY as to their durability; an uncertainty which increases by competition, but is by no means so important in household vessels, as in articles designed for permanent work beneath our streets and buildings. It is submitted, therefore, that Terro-Metallic Pipes have, for obvious reasons, a considerating for purposes such as drains or conduits, not only on account of acids being innocuous, even to the body, or that the pipes may be laid near the surface of any street or road without risk of injury by heavily laden carriages passing over them,—but also because they may be laid in newly-formed ground without danger of fracture or breaking line by subsidence. The sockets of these pipes are roomy and deep, with well-formed shoulders, which are of a piece with them, not stuck to them after they are made. It is also further submitted that the Terro-Metallic cannot fail to take preference against every other material of inferior firmness, solidity, and strength of bodily texture, in proportion as the Public shall severally have an opportunity to judge for itself by examining and comparing it in every point of view with all competing materials, and deciding according to their intrinsic merits respectively.

The colours of the PLAIN TILES for roofs are either Blue, Brindled, or Red. They are neither nailed nor pegged, but are hung upon battens, 1 inch by 3 ths of an inch, by hooks which take firmer hold, as the wind lifts the lower end of the Tiles. Hence, and considering the fold of 7 inches, the security of such covering in exposed situations and stormy weather. RIDGES, HIPS, AND VALLIES are neatly tiled, superseding the use of Lead, which is liable to be either stolen or perforated by worms. Plain Tiles, of some antiquity and comparatively rude manufacture, in the Midland Counties, are still efficient upon roofs where they have lain undisturbed for 150 years; and a mansion called Turnhurst, the last residence of the celebrated civil engineer, Brindley, is a remarkable instance. Sanbury Hall, lately occupied by Her Majesty the Queen Dowager, the seat of the Earl Talbot and Lord Hatherton, also churches and other sizable buildings, are covered with Plain Tiles 11 inches by 7 inches by 7-16ths of an inch, of which 1,000 lay 200 square feet, at 8-inch gauge, and 1,000 lay 222 at 9-inch gauge. Blacklands and both Hand and pressed Tiles. The Incorporated Church Building Society prefer these Tiles to all other materials, excepting Lead and Copper. The Dukes of Devonshire and Sutherland are in the habit of using Terro-Metallic articles, and possess in the neighbourhood of Chatsworth and Trentham, of Mr. Peake's manufacture, probably the largest specimens in point of size of pipes in the world. Travellers, who immediately journey through many districts where Thatch and all kinds of Slates have been used, as well as these Tiles, have no doubt observed the damage sustained by roofs of other materials, whilst Terro-Metallic Tiled Roofs were uninjured. Consequently, the latter are preferred in the bleak moorlands of Staffordshire, Derbyshire, &c. In regard to the strength of timber required for Plain Tiles, it may be safely described as one of two similar roofs, which are perfectly alike, except as affected by the very different degrees of Lead and cold from the manufacturing operations carried on for them. The heaviest roof for Tiles, and is 6st wide, without partition. Next larger timber is used than red deals, as these Tiles are 10½ feet apart, and the rafters are two inches wide and three inches on each side, 5½ inches by 3 inches; the spars are 3 inches by 2½ inches, and 18 inches apart. The laths are sawn 1 in. by 3-8ths of an inch. The pitch is between a third and a square. These Tiles keep the interior of buildings comparatively cool in summer and warm in winter, and thereby preserve the timber of the roof. Their appearance in perspective upon buildings erected in the Early English style is approved; the effect is varied also by the drips, or lower ends of the tiles, being moulded to numerous devices, and the whole presenting a pleasing alternation of straight and curved lines. The PAN TILES are both of the usual form, and of a new pattern, which (at light cost) gives a marked character to the roofs of such edifices as they suit, the curves, both concave and convex, being struck from the same centre. GRECIAN AND ITALIAN TILES, both Plain and Pan Tiles, are furnished, with weather stop or rib and groove in the lap, forming a beautiful and almost everlasting covering. Of the different kinds it has been said, "In short, we consider them as the best of all covering for small cottages or large buildings." RIDGE AND HIP TILES, both Plain and Pan, are plain, capped, rolled tops, also grooved to receive various patterns of vertical ornaments; the saddles are moulded to suit the angle formed by the roof; they are made in one piece, and not fastened at the angle with bits of iron, like slate ridges, to come apart as soon as the clips shall rust away: the pitch should be stated in the order. The rolls are hollow, admitting a circular rod of any length to be passed through them. VALLEY TILES are equally efficient and more economical and durable than Lead, Zinc, &c. PAVING TILES consist of Square, Blue and Red, of several sizes, of octagon and small squares of different colours; of hexagons, of diamonds, and neatly-worked thin floor-bricks, for intersection with each other, to form a variety of pleasing pavements. To lay these Tiles, make the ground solid, and spread a little sand or fine furnace ashes over it; place the Tiles upon mortar, or other material, thinly spread, but keep the joints free, and fill them afterwards with sharp sand, which should be spread over the Tiles, and swept to and fro for a few days with a broom. Lay boards upon the Tiles to walk upon until the mortar, or other material in which they shall be laid, is set firmly. Square Tiles, 9 inches by 9 inches, and 1½ to 1¾ inches thick, are extensively used in the floors of Fireproof Warehouses at the ports of Liverpool, Hull, and Preston; also for all the floors of Fireproof Cotton Mills, and other large buildings. Comparatively speaking, these tiled floors yield neither sand nor dust; the bearings and axles of machinery, therefore, as well as the cotton, silk, woollen, or other fabric being wrought by it, suffer less injury by these floors than any other. Smaller squares, and other forms of Tiles, are used to pave Aisles in Churches, Entrance-halls, Household Rooms in Farmeries, and other respectable Dwellings, Cottages, Kitchens, Cellars, Schools, &c. They are easily cleaned, even from grease.

BRICKS, to any reasonable dimensions, are supplied; these 9¼ inch by 4¼ inch by 2 7-8ths, are in great request for Tunnels, Bridges, Canal-locks, Breast-walls, and various works upon Railways, Canals, &c. In distant localities, where the carriage is expensive, these Bricks are restricted to a facing of brick-breadth. Also, FIRE BRICKS, FRONT BRICKS, CLINKER BRICKS, WARE-HOUSE, and BARN-FLOOR BRICKS, and PAVING BRICKS for Courts, Areas, Cottages, Footpaths, and Channels; NOSED BRICKS, i. e. one corner rounded; SEMI-CIRCULAR BRICKS, to erect Columns or Cope-walls; Bricks champhered to the angle of an OCTAGON; Bricks champhered to angles of Gables, and useful to draw a covering over horizontal Flues; Bricks for PLINTHS to Patterns; KEY-STONE or WEDGE-LIKE (longitudinally or transversely) BRICKS for Arches, Culverts, or Curves; other forms would be made to Patterns or Sketches.

SOCKET PIPES for DRAINS, CONDUITS, FLUES, &c. may be had of different diameters, from 2 inches to 18 inches, increasing in thickness in proportion as the diameter is extended, and in lengths not exceeding 37 inches net; these Sockets are deep, neatly formed in the substance of the Pipe, and not stuck to it afterwards. The joints are made tight with a little Roman cement or good mortar. If desired, any form or size of Pipe would be perforated with holes, widening from the exterior to the interior surfaces. Being of true circular form and neat workmanship, smooth inside, which is well covered by a natural, efficient, and durable glaze, they resist the commonly injurious effects of atmosphere, and of mineral or other fluids or acids. These Pipes are very desirable, as they are in extensive and increasing demand, for small Sewers, Drains, Conduits, Flues, &c. instead of Brickwork, which must be erected of a bore fifty per cent. larger than the Pipes in diameter to equal them in efficiency. Also, CONICAL, REBATED, and PLAIN PIPES, of various diameters and lengths. The different forms of Pipes when divided longitudinally into halves, before they are fired, make superlative Channels, especially adapted to convey water down the slopes of railway and other works. The Pipes, Bricks, and other articles have been, and continue to be in extensive use in the construction and draining of railway and other important works, a proof of the estimation in which they are held by the Engineers.

THE SHIRTING TILES are to face the Plaster on the Walls, and make a neat and durable finish. Vermin cannot harbour about them, and Oil-paint of any colour they will take and retain for a long time. GARDEN-WALK EDGING, either with a bend along the top or an OG, has a neat appearance, and holds the soil, but does not shelter insects: it is the best and cheapest material for the purpose on account of its durability. DRAIN GRATES are intended to prevent Leaves, Straws, Sticks, and other things from choking Drains; they are suited to gravelled-walks in Parks, Pleasure-grounds, Gardens, Cemeteries, as well as in Stables, Dairies, Courts, Areas, and all other places where water enters Drains. CHANNEL BRICKS supplied of different lengths, breadths, and patterns, to lay in any place paved with flag or other material where water is to be carried off. WALLING PIPING, of several patterns and dimensions, calculated to preserve walls, and especially those built of bricks of questionable durability; one of the patterns, with Bridge Tiles over the joints, is uniform with the Grecian Tiles for Roofs. CHIMNEY-TOPS are manufactured to suit Customers, a few patterns are always on hand for sale. Many smoky chimneys, which had not been benefitted by any other means, have been cured by a roomy Pipe three feet long, pierced all over with holes, 1¼ inch diameter.

PIERCING TILES are of various patterns, to place in partitions; also, under chamber floors to prevent the noise of one room from being an annoyance in others. KILN-FLOOR TILES are of two sizes, viz., 9 inches and 12 inches square, and well pierced; they are used to pave Kilns for drying and seasoning Malt, Grain, &c., as well as Wool and other materials used by manufacturers and others. FLUE COVERS are either oblong or square, about 2 inches thick, and of different sizes; they are used to lay over horizontal Flues, extending from centre to centre of the mid-feathers or partition-walls. DRAINING SHELLS, whose form is well known to be like a horse-shoe, if one looks at the end or transverse section of the Tile, are of three sizes, viz., 3¼ inches, 3½ inches, and 4¼ inches across the feet or bottom. Of Terro-Metallic the shells are very durable, and are usually placed in the drains upon damaged Roof-tiles of the same material.

CHIMNEY LINING AND OTHER FURNACE LININGS, instead of parget, are a desideratum in consequence, 1st, of its being illegal as well as inhuman to employ climbing-boys; 2nd, of smoky chimneys and down-draughts, owing to defects in the joints of the brickwork between the flues, and the parget having perished; and, 3rd, of many other disagreeable nuisances attributable to the latter defects. These linings are made of a peculiar mixture of materials to bear heat and cold; they are of different diameters and forms of area, and are unquestionably deserving of attention from all who are erecting or altering chimneys; they have been extensively used in some parts of the kingdom for many years past, and with entire satisfaction.

HOW TO CUT OR FIT TERRO-METALLIC WARE: rule upon the edges and surfaces of the article the line of division proposed, by means of a brick-hammer, or other instrument made as sharp as possible, chip along said lines to the depth of one-sixteenth or one-eighth of an inch, without omitting any part, and always deepest at the arrises. This done, the article will divide under a few slight taps with the edge of a brick-hammer, or other similar tool in weight proportioned to the size and thickness of the article. TO PRESERVE THE COLOUR of the articles, care should be taken not to expose them to lime or other similar dust,—or to mortar, the stains from which cannot be removed. Ridging or Hip Tiles should be pointed early on a fine day, and in mortar almost black with smith's refuse or furnace ashes.

THE TILERIES ARE SITUATED near the centre of the Kingdom, about Three Furlongs from the Main Line of the North Staffordshire Railway, with which it is to become connected as soon as finished by a private branch, and along the Grand Trunk Canal from the Trent to the Mersey, rendering transit both expeditious and cheap to the port of Liverpool, and moderate to all other parts of the empire. FOR EXPORTATION TO THE BRITISH COLONIES, and Foreign Countries, merchants, shipowners, and Captains, especially, will find these goods susceptible of extended and lucrative commerce. THE MANUFACTURER IS NOT IN THE CARRYING TRADE, and therefore cannot undertake carriage of his goods, excepting to deliver them alongside of vessels, barges, boats, &c. or trucks on the railway or branch railway, at which time he expects them to be signed for "in good condition," and responsibility to end as far as he is concerned. A TRIFLE VARIATION IN SIZE OF ARTICLES PIPES, as well as other things contained in the lists, may be expected, as they are more or less dimensions and weights; they are, however, seldom, under ordinary circumstances permit, and sufficiently so, it is hoped, for general information. PURCHASERS ARE NOT TO PICK THE ARTICLES, which are sorted "ACCORDING TO THE CUSTOMS OF THE BRICK AND TILE TRADE," as soon as drawn out of the ovens, and having been placed upon the works or other premises in the usual manner, they are not to be picked, but taken all together as far as the number required: still, purchasers may select any of the lots to be supplied, as nearly as possible, to a given price or to a given number. NEWLY DESIGNED ARTICLES, AND ALTERATIONS SUBJECT TO EXTRA CHARGES for new moulds or altering others, and for extra labour in piercing, nicking, dividing, or altering any article from the established form or size. NUMBER IN COUNT is ten times ten in a hundred, ten of which make a thousand. TERMS RESPECTING CREDIT, SPECIAL CONTRACTS, AND PAYMENT, must be regulated principally by the nature of the disbursements in the trade, and partly by such special bargains as the manufacturer may enter into; Messrs. Wyatt, Parker, and Co. as agents, to whom much of the management, subsequently special bargains are to be strictly fulfilled by purchasers in all points of view, payment to be made punctually as I without abatement, according to such special agreement, and generally within 21 days of the prices as per lists respectively, as well as charges for new or altered goods, are to be paid for in or before delivery in cash, without discount, premium, or abatement, or the respective items to be subject to interest at the rate of 5£. per cent. per annum, until paid. REFERENCES INDISPENSABLE in special bargains, or any other instance where goods are to be delivered before they shall be paid for. LETTERS MAY BE ADDRESSED to either No. 4 Wharf, Macclesfield-street South, City-road Basin, London; or to The Tileries, Tunstall, Staffordshire Potteries.


## UNSOLICITED TESTIMONIALS, NOTICES, &c.

"I consider they," the Terro-Metallic Drain Pipes, "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains."—*Extract from a Report by The Right Hon. Earl Somerset, the Honourable Commissioners of Sewers for Westminster, and part of Middlesex, &c.*

"I beg to call the attention of the Court to the necessity of its taking steps to procure immediately a further supply of Straight and Curved Lengths of Terro-Metallic Drain Pipes, of 9 inches diameter, with Sockets to the same, and also of 6 inches diameter, with Sockets to the same. Also of Saddle Pipes, with two outlets, one at each side of the Sewer, and others of a funnel shape, similar to the model presented herewith, for the Gullies and Gully Drains. Fig. 3 shews the mode, by means of pipes, of connecting private drains with the sewers, and has been adopted in the case of [illegible] now constructing. I propose that a large quantity of them should also be procured. * * * I also propose that the following [illegible] at present [illegible] Terro-Metallic Pipes with the sewers already constructed [illegible] Midsummer day next, by means of Terro-Metallic [illegible]."—*Extract from a Report of the Surveyor to the Court of Sewers for Westminster, dated May 1st, 1846.*

"The Terro-Metallic Pipes [illegible] are admirably adapted for such purposes." The [illegible] Mr. Telford, C.E. [illegible] the completion [illegible] Terro-Metallic Pipes [illegible] Blacklands [illegible] are perhaps the next [illegible] Pipes [illegible] Incorporated Church Building Society [illegible]."—*Extract from a Report of the Society, dated May 1846, page 22.*

"The Terro-Metallic Pipes [illegible] which, only to the banks of the canal, are also [illegible] the extensive works called THE TILERIES. The clay on this brow has a semi-vitreous quality; it has been partially worked for a century past, but of late years its manufactured products have been [illegible] and [illegible] are forwarded to distant parts of the kingdom; consisting of Tiles, Quarries, Building and Flooring Bricks, Pipes for conveying water, and other similar articles of very superior hardness and durability. At these works steam-engines are used for crushing and preparing the clay."—*History, &c., of the Borough of Stoke-upon-Trent, by John Ward, Esq., page 100. Simpkin, Marshall, and Co.*

"A mode of Tiling adopted by the ancients, and of which there are specimens still to be found in Rome, is thus described by Borgnis 'Traité de Construction,' p. 253, a description follows, with plans and sections of the 'Italian' Tiling, see fig. 2, plate sec. 1394, "the mode of Tiling exhibited in the Temple of Diana Propylea, is given in the engravings of that Temple in the Unedited Antiquities of Attica." After describing this mode of 'Grecian Tiling, D 2 and E 2, with plans and sections, it is observed that "the effect of these Tiles is remarkably rich, and imitations of them might be introduced in Villas and cottages with excellent effect."—P. 886, and sec. 1935.

"With the Flat or Plain Roof Tiles, with lower ones ornamental would produce an agreeable shade, where the upper ones placed perpendicularly and straight and waved lines that this species of material is capable of producing."—P. 226, and sec. 459, where the Tiles are figured.

"The Tiles being formed of Terro-Metallic Earth, have somewhat of the colour of Cast-iron; they are almost equally hard, and must, from their nature, be incomparably more durable. In short, we consider them as the best of all covering for roofs, whether of small or large buildings. * * * * There are suitable Ridge Tiles, Hip-Tiles, Valley-Tiles, and many others, all manufactured by Mr. Peake, in the same superior style."—*Page 646, and sec. 1388, Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture. Longman and Co., 1833.*

"Every thing tending to facilitate the sweeping of chimneys by machinery is now peculiarly deserving of public attention. We have been much interested by the sight of a newly-introduced material for lining flues, invented and manufactured by Mr Thomas Peake, of Tunstall, Staffordshire, whose name as an important Terro-Metallic improvements are so popularly known through "Loudon's Encyclopædia." This species of piping is so exceedingly cheap that it will cause no very material additional expense in the construction of chimneys; it can sustain no injury from the action of fire, and as it presents a perfectly smooth channel for the sweeping machine, so it also requires less frequent cleansing than a common chimney, as it affords no lodgment for soot."—*Sheffield Iris, 14th Jan 1841.*

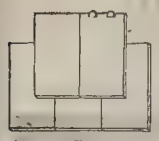
## LISTS TO CONTAIN NEARLY ALL THE ARTICLES, WITH OTHER DETAILS RESPECTING THEM, ARE TO BE READY FOR DISTRIBUTION IN A SHORT TIME.

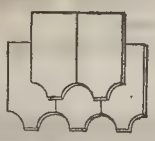
*Reference to sketches of some of the articles:—They are to a scale of 3-4ths of an inch to a foot, or thereabouts.*

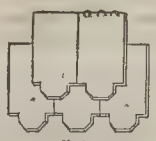


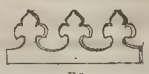

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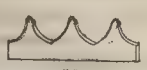
**PEAKE'S DRAIN PIPES, TILES, &c.—Continued.**

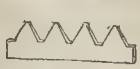

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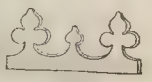

E 5.

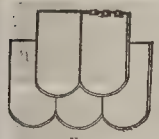

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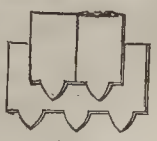

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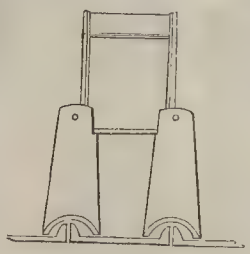

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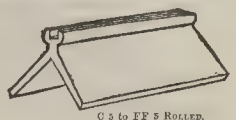

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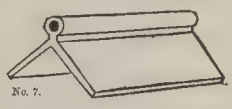

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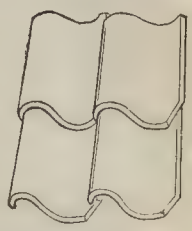

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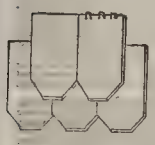

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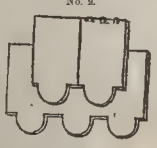

D 2 and E 2.

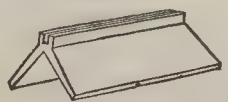

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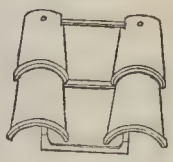

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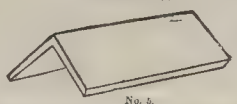

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No. 2.


No. 2.


C 5 to F F 5 Plain.


2 B and 2 C.


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No. 11.

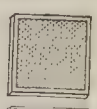

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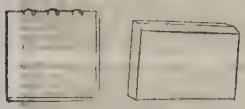

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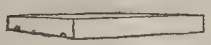

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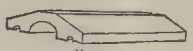

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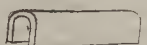

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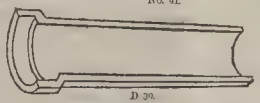

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No. 46.


No. 41.


No. 30.


No. 48.


D 30.


2 D


A 3.


C 63.


No. 57.


No 51.


No. 52.


2 E.


No. 61.


B 64.


C 64.






N 15.


A 15.


A 13 and B 13.


No. 66.


No. 67.


No. 16.


No. 21.


C 13 and D 13.

[Entered at Stationers' Hall.]

# THE BUILDER.


**FIRE BRICKS.—WARD & HART,** Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Retorts, Tiles, Clay, &c. Builders' Gas Companies, Iron-masters, Shipowners, and all large consumers, applied at their Works, Lambeth, or direct, at the lowest prices. A fresh ship from the Continent—Apply at the Wharf as above. A large stock of every quality always on hand at the Wharf as large stock of every quality always on hand at the Wharf as above. Goods made to pattern at short notice. Patent Corn Flour Mixing Tiles. Lime, Sand, Gravel, Bricks, Tiles, and Dutch Clinkers of every description.

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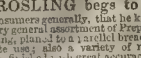
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# The Builder.

A JOURNAL FOR

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VOL. V.—No. 248. NOVEMBER 6, 1847. Price ..... 3d. Stamped ..... 4d.


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TO ARCHITECTS, SURVEYORS, AND BUILDERS.

**A PERSON** wishes for a Situation in an Architect's Office, or as Under Clerk of the Works. He has served his time to an architect, and has since been with a builder. He also understands surveying, levelling, use of the theodolite, &c. Address, W. H. 14, Michels-place, Brompton.

**A YOUNG MAN, aged 31, wishes for an** ENGAGEMENT; is capable of making out fair and working drawings; is acquainted with measuring, taking out quantities, &c., and having a thorough practical knowledge, is ready to undertake the superintendence of Works.—Address, T. K., No 2, Chard wood-street, Pimlico.

TO IRONFOUNDERS AND ENGINEERS.

**A YOUNG MAN, aged 23 years, wishes** for a SITUATION as Entering Goods, or Time and Prime-Cost Clerk, having been for the last five years engaged in the above capacities.—Address, pre-paid, to C. T., Mr. Laughan, 1, Oxford-terrace, Edgware road, London.

CITY PANIC!

**A YOUNG MAN, who has just been** disengaged from a Builder's Office, in consequence of the existing Panic, wishes for IMMEDIATE EMPLOYMENT in a similar or any other office, at a moderate salary. He writes a good hand, and is a most expeditious calculator. The most respectable references will be given.—Address to A. B., at Southam's Saw Mills, Grosvenor Basin, Pimlico.

TO ARCHITECTS

**A YOUNG MAN, who has had every ad**vantage of Architectural Education, and has also been accustomed to superintend Works on an extensive scale, is desirous of any ENGAGEMENT in an office, or as Clerk of the Works, either in town or country. A moderate salary will be expected.—Apply by letter, post paid, to A. J. B., office of "The Builder," 2, York-street, Covent Garden.

TO ARCHITECTS, SURVEYORS, AND ESTATE AGENTS.

**A GENTLEMAN** carrying on a highly respectable practice in the above profession, in an important and rapidly increasing town in the South of England, being about to retire therefrom, wishes to meet with a respectable and competent person, whom he may, for a fair consideration, introduce as his successor. This would be found a most desirable opportunity for any gentleman of ability wishing to establish himself in practice. —For further particulars apply to Mr. H. POPE, wholesale stationer, 32, Budge row, Watling street, London.

TO ARCHITECTS.

**THE Advertiser is desirous to meet with** a Gentleman who would require an Assistant for completing Architectural Designs. The advertiser undertakes Perspective Drawings in the Architect's office. For further particulars, inquire for Mr. EDWARDS, 16, Woodstock-street, Bond-street.

TO ARCHITECTS, SURVEYORS, AND BUILDERS.

**THE Advertiser, having filled the above** situations, and who is practically acquainted with the business, having finished his engagement, wishes to meet with Employment in either of the above offices. To prepare plans, measure work, make working drawings, take out quantities, write specifications, keep books, &c. &c. Any party requiring assistance will find the Advertiser thoroughly qualified in all the branches, at a moderate salary. Address to A. B., 77, Judd-street, Brunswick-square.

**ANY Person having a Pair of Cast-Iron** Hollow COLUMNS, 10 feet 6 inches high, exclusive of base, fluted, with Ionic or Fancy Caps, TO DISPOSE OF, on moderate terms, may hear of a Purchaser by applying to Edw. Homersham, Builder, Canterbury.

**PATENT COPPER WIRE CORD.**—Manufactory, Gateshead upon-Tyne.—R. S. NEWALL and Co.'s PATENT IMPROVED COPPER WIRE CORD for Window Sash Lines, Hothouses, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen ropes have hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above specimens of the Wire Cord may be seen at the office of the Patentees, No 153, Fenchurch street, London; W. T. ALLEN, Agent.

IRONFOUNDRY.

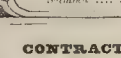
163, Drury-lane, and Charles street, London.

JOSEPH GLOVER,

Late HENDRY and GLOVER,

**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that he will be enabled to offer advantages in quality, price, and punctuality. The stock of patterns has been rearranged, to give every facility for selection. A stock of Rain-water Pipe Heads, Shoes, &c.


## CONTRACTS.



**CONTRACTS FOR SHEFFIELD NEW** BARRACKS.—NOTICE TO BUILDERS.—Royal Engineer's Office, Manchester, 20th October, 1847.—The principal Officers of her Majesty's Ordnance hereby give notice, that they will RECEIVE PROPOSALS from such persons as desire to enter into a CONTRACT for the ERECTION of OFFICERS' BARRACKS, with Mess Establishments, at Owlerton, near Sheffield, Yorkshire.—Persons desiring to tender will receive every information respecting this contract, on application at the Royal Engineer's Office, at Owlerton, near Sheffield, where they may also obtain the terms of contract, with Specifications for the several descriptions of artificers' work required, upon making a deposit of 1*l.* for the specifications, which deposit will be repaid when the specifications are returned. It is strictly enjoined that no alteration whatever shall be made in the specifications, and that no observations shall be written upon them; and notice is hereby given, that if the said specifications be in any manner defaced or soiled, the sum deposited for them will not be returned. The person whose tender shall be accepted will be required to enter into a bond, with two eligible securities, to be bound, jointly and separately, under a penalty of 3,000*l.* sterling, to the due performance of this contract. The tenders to be sealed and delivered in to form the 22nd day of November, 1847, addressed to the Secretary to the Board of Ordnance, Pall Mall, London, and endorsed "Tender for Works at the Barracks at Owlerton, near Sheffield."

N.B. The Board of Ordnance do not pledge themselves to accept the lowest tender

T. FOSTER, Major, and Commanding Royal Engineer.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS.

Court of Sewers, Tower Hamlets

**NOTICE IS HEREBY GIVEN,** that the Commissioners of Sewers for the Tower Hamlets', (excluding St. Katherine's and Blackwall Manors) at their meeting, to be held on WEDNESDAY, the 10th day of November, at Two o'Clock in the afternoon precisely, at the office of Sewers, No. 15, Great Alie-street, Goodman's Fields, will be ready to receive TENDERS sealed up from any persons or persons willing to enter into contract for the works necessary in EXTENDING THE SEWER along Pell Street, and being a length of 612 feet, and thence to the Culvert, being a length of 512 feet, and in Old Gravel-lane, for a length of 340 feet, and along School-house lane, for a length of 491 feet. Plans and Specifications of the said several works, with Forms of Tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'Clock. Separate Contracts, and separate Tenders, to be indorsed with the nature of the work contracted for, will be required for each of the said several works respectively. The Contractors will be required to enter into agreements to secure the due execution of the said Contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners: no tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon.—Dated this 26th day of October, 1847.

JOHN WILLIAM UNWIN,
Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the lowest tender.


SURVEYING AND LEVELLING.

**PROFESSOR HARMAN LEWIS, A.M.,** will COMMENCE a FOUR MONTHS' COURSE on the "Theory and Practice of Levelling and Surveying," on TUESDAY, November 9th, at a past 10 o'clock A.M., and on Mr. Further information may be obtained at the Hall of College

FRANCIS W. NEWMAN, Dean of the Faculty of Arts.
CHAS. G. ATKINSON, Secretary to the Council.
University College, London, 25th October, 1847.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

**MR. THOMAS S. BOYS,** Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Making Sketches, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to in such drawings, and devotes himself in a superior manner.—Address, Mr BOYS, 81, Great Titchfield street, Oxford-street

**BUILDERS' BENEVOLENT INSTI**TUTION, Freemasons' Tavern, Great Queen-street, Lincoln's-inn Fields, for the Benefit of Decayed Masters; and also to afford Relief in case of Accident to their Workmen.

PRESIDENT.
Hugh Biers, Esq., Carlton Villas, Edgware-road.

VICE-PRESIDENTS.
S. M. Peto, Esq., M.P., Great George-street, Westminster.
Thos. Grissell, Esq., Eq. to Lonsdale
Stephen Bird, Esq., Kensington.
William Herbert, Esq., Camplan-common.
John Vale, Esq., Devonshire-place, Edgware-road.

TRUSTEES.
William Cubitt, Esq., M.P. | Stephen Bird, Esq.
Hugh Biers, Esq. | George Spencer Smith, Esq.

TREASURER.—Mr George Bird, 43, Edgware-road.

BANKERS. Sir Samuel Scott, Bart., and Co., 1, Cavendish-square.

SECRETARY.—Mr. William Grubb.

The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations, and the public and Masons, with the liberal donations and subscriptions, appended, are highly gratifying. They beg to intimate that they have applied to Mr. Bird and Herbert, 42, Cranbourne-st. Marylebone, and Charles Jackson, 4, Pitt-place, Penn-st. Holloway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, or the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of this Institution will shortly be printed.

Chairs, Poland House Brewer-street, Golden-square, where all communications are requested to be sent.—Attendance, Mondays and Thursdays, from 10 to 4.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1¼ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton road, Pimlico (late C. Moore and Son).

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**ALFRED ROSLING begs to inform the** Trade and Consumers generally, that he keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parellel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

---

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

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MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.

N.B. Estimates given for Sawing and Planing.

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TIMBER AND DEAL SAWING AND PLANING MILLS,
Belvidere road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD-CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, despatch, and economy of material are so certainly obtained. In shooting, grooving, and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

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WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the grains, prevents further shrinkage, and, no matter how warm the temperature or hot the climate, strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

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SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the present rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

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INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with [illegible]. The worm and wheel mode for raising and lowering revolving iron shutters as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enable the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with the [illegible].

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC FOR SHOP-FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sash [illegible], Moulded, Stall-boards, Plates, and Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken to Timber [illegible].

Metal Drawing and Stamping for the Trade.

Office at [illegible], London; Works, at Deptford, Kent.

[illegible] Sawing, Planing, and Moulding, Cutting-machines [illegible] for Builders' purposes [illegible] Works.

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IRON WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or Mouth-pieces; Plates, Furnace bars, Top and Tail Pieces, Steppers, Chimney bars, Inside, Outside, and Ash-pit; Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices. CAST-IRON UPSETS.

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**HOT-WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S improved method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet street.

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**ARTESIAN WELLS, BORING TOOLS,** PUMPS, &c.—Engineers, Architects, Surveyors, Builders, or others requiring a good supply of WATER, may have any quantity procured by applying to W. SPELLER, 14, York-street, Blackfriars'-road, London; where can be had any quantity of Tools for Sinking or Boring, from 2 to 20 inches diameter, and from 100 to 2,000 feet depth; also, Men and Tools to Bore for Railroads, Minerals, &c., in any part of the world. Boring Tools and suitable Pipes for Exportation, with full instructions for their use.

Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, can be supplied with Wrought or Cast-iron Pumps, Double or Single, for Excavation or Deep Wells, from three to twelve inches in the bore, and from 6 to 130 feet in length.

HOT-WATER APPARATUS for Conservatories, &c., on the most economical and improved principle.

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OLD ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE most respectfully solicits** the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Register Stoves, from [illegible] per inch and upwards.

Bright Ditto, with black and Bright Bars, [illegible] and upwards.

Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright, -

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| [illegible] | [illegible] | 4l. 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell hanging in superior style, hung in secret, 9s. per pull.

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TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars.

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4l. [illegible] | £4. 10s. |

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5 [illegible] | [illegible] | £6 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do. at 3½d. and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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TO BUILDERS AND CARPENTERS.

**A Considerable Saving will be effected in the** purchase of IRONMONGERY, by applying at R. R. WILLIAMSON'S Wholesale Warehouse, No. [illegible], Chiswell street, Finsbury square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. | |
|---|---|---|---|---|---|---|
| [illegible] | 7d. | 8d. | [illegible] | 1s. 6d. | 2s. per 1,000. | |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d. per inch.

Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars and Bright Fittings.

3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. [illegible]

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

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**PATENT BELLS.—Messrs. MEARS** beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are very beautiful, sound and cheaper than those made of the ordinary bell metal. Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

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**PATENT METALS for Bearings.—En-**gineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort, for bearings and engineering purposes generally, will be found superior in quality and cheaper, than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface, and bearing a higher polish than any ordinary brass. Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

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**TO BE SOLD, a BARGAIN, about 1,500** Feet of PERKINS' HOT-WATER PIPE, in good condition, with Wrought [illegible] Particulars obtained by applying at No. 131, Old-street, Goswell street.

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**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles as usual. The Trade Supplied.

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**COLLINGE'S PATENT HINGES.—Sole** Manufactory, 64, Bridge-road, Lambeth, where a great variety are always on view, for church, park, railroad, coach house, and all other doors and gates, of large or small dimensions, a gate of a ton in weight moving with these engines as easily as a wicket; they are also admirably adapted for drawing rooms, being highly ornamental, and folding-doors fitted with them may be removed and replaced in an instant. Rising and spring hinges, with very superior fastenings, for external gates, at moderate prices. To be seen at CHAS. COLLINGE and Co.'s Patent Axletree, Sugar Mill, and Spherical Hinge Manufactory, 64, Bridge-road, Lambeth. A Liberal Discount to the trade.

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By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,
WITH SECRET AND SECURE FIXINGS.

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 62, St. Martin's-le-Grand, London, opposite the new Money-Order Office.

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PATENT COPPER WIRE ROPE LIGHTNING CONDUCTORS, for the Protection of Churches, Towers, Chimney-Shafts, &c.

**SMITH and ENGLISH, Princes-street,** Leicester-square, London, beg to inform Architects, Builders and others, that the above form of Lightning Conductor has been most extensively adopted, and is giving the greatest satisfaction, it proving considerably cheaper first cost, much simpler of application, with less injury to the building, than any other kind, and they can refer with great satisfaction to eminent architects and others, who have adopted it in preference;

as also their much improved Revolving and Panelled Iron Shutters,

PATENT DOUBLE-ACTION DOOR-SPRINGS,

PATENT CASEMENT FASTENINGS AND SILL BARS,

Patent Copper and Iron Wire Sash Lines,

IMPROVED FLOORING CRAMPS, &c. &c.,

which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

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PRO BONO PUBLICO.

**CAUTION.—To Purchasers of Locks, Fire-**proof Doors, Safes, &c. JOHN LEADBEATER, many years manufacturer for Chubb. LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c. that he can supply them IMPROVED DETECTOR LOCKS for universal purposes, STRONG WROUGHT-IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c. on the most improved principles of security against FIRE and THIEVES without the aid of "expensive machinery," which is employed by some inexperienced makers, but must be paid for, at prices 25 per cent. under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved Detector locks or latches. Some thousands of Leadbeater's strong room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience, during which he has adopted every possible improvement to real security, enables him to challenge competition with any other house in London. A large assortment on sale and made to order. A pair of extra strong wrought-iron fire-proof folding doors with ventilating gates, well adapted for a banker's strong room, may be viewed at his manufactory. Strong wrought-iron doors for party walls, with wrought-iron rabbeted frames, and secured by the BEST DETECTOR LOCKS IN ENGLAND, 6 feet high by 2 feet 9 inches wide and upwards, price £10 each, always on hand at LEADBEATER'S MANUFACTORY, 125, ALDERSGATE-STREET, LONDON.

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FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-**RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes. Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

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**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. George and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

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J. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

The Builder.

No. CCXLVIII.

SATURDAY, NOVEMBER 6, 1847.

HONOUR to art and artists,—the art which has Beauty for its object,—the artist whose province it is to discover and express it! "The perception of truth, and harmony, and beauty, where obscured and disguised, is one of the distinctions of genius. To make these visible to all, is one of its powers. Art should form a part of general education, and will do so, it may be hoped, before long. It may be made to assist *in* education most materially. If, as desired by the ancients, none but beautiful forms were permitted in the assemblies of the young; if noble and holy actions, gracefully set forth, everywhere met the eye; and our rooms were hung with fine thoughts instead of unmeaning patterns;—the effect on the national mind would be much greater than would be believed by those who have not fully considered the subject. Art shows us man as he can by no other means be made known. Art gives us 'nobler loves and nobler cares,'—furnishing objects by the contemplation of which we are taught and exalted,—and so are ultimately led to seek beauty in its highest form, which is GOODNESS."*

The efforts of the artist to express an idea of beauty, existing only in his mind, extend themselves imperceptibly into public benefits, and, as Reynolds expresses it, "are among the means of bestowing on whole nations refinement of taste, which, if it does not lead directly to purity of manners, obviates at least their greatest depravation, by disentangling the mind from appetite, and conducting the thoughts through successive stages of excellence, till that contemplation of universal rectitude and harmony, which began by taste, may, as it is exalted and refined, conclude in virtue." The painter (the *true* artist, he means), says a nameless writer in the "poet's corner" of a country newspaper,—

"The painter moves in a world of light
Where every vision is beaming and bright,
Beauty for ever is couch'd by his side,
His genius from morn unto eventide;
And when the fair day waxeth dim,
What is the darkness of night to him?
He plucketh a flower from every thought,
He embodies the drama of every story,
And this voiceless preacher to man hath taught
The religion of love and the hope of glory."

Looking into nature, the great artist will put aside what is special and particular, and seize that which is general and universal, —the power and beauty of MAN, not the peculiarities and littlenesses of men. Philosophers teach us that "every growth of nature has but one moment of perfect beauty:"—the business of the artist is to discover and fix this, and thus to produce that which is more elevated than the actual,—the ideal, the highest aim of art.

Let our artists read, study nature, and *think*: a picture which has no thought in it will induce no thought; "the perceptionless cannot be perceived." In other words, let them remember that "the highest excellence of every production of the hand is dependent upon the powers of the mind by which the hand is directed."

Again, honour to art and true artists!

The spread of a knowledge and love of art concerns us much. We would have it universal: and have laboured hard for years, though humbly, in many and different tracks, those who may have watched us in one, unknowing us in others. We would open to *all* the exquisite pleasure to be found in the contemplation of works of art, of

"Whate'er Lorraine light touch'd with soft'ning hue,
Or savage Rosa dash'd, or learned Poussin drew;"

and, higher still, of the marvellous productions of Raffaelle the divine, and that wonderful man, Michelangelo. We would have art enter into the life of the people, and see it, as then would necessarily be the case, adorn and elevate our manufactures.

Something has been done in England towards effecting this, and more is being done,—indeed, such agencies are now in operation as never before existed, and, if allowed fair play, will produce great results. When it is remembered, that up to 1824 we had positively no National Gallery of pictures; that before the establishment of ART-UNIONS the possession of works of fine art was wholly denied to the multitudes, (nor were there any but very confined means of leading them to an appreciation of such); further, that until quite recently Government had scarcely admitted the value of the fine arts, still less aided their progress; and, lastly, that our School of Design has not yet, even, begun to work efficiently; it will be seen that our course is but commenced, and that the prospect is satisfactory.

All these institutions, as our readers know, have had our constant attention. The state of the LONDON SCHOOL OF DESIGN for these three years past, has been clearly set forth in our pages:—so far as we know, there is not elsewhere to be found so full a record of its most disastrous proceedings,—and all that we have said respecting it from time to time has been realised. Public duty forbade equivocation; but the condemnation was pronounced in sorrow, not in anger. It has been but a drawing school, and, worse still, a *bad* drawing school. Let us hope that better things will now be done.

At all events, a change is to be made, and it cannot be for the worse, try as they may. The Board of Trade have adopted the report of the "second special committee of the Council of the Government School of Design," already mentioned,* and the director will have no further control over the masters, and indeed scarcely any thing to do with the London school: his services will probably be confined to a general supervision of certain departments of the country schools. A committee of instruction, to consist, as recommended, of five members—three, at least, of whom shall be artists by profession—has been appointed; the artists being Mr. Ambrose Poynter (who resigns his inspectorship), Mr. George Richmond, and Sir Richard Westmacott, R.A. Each class is to have a professor and masters, if we are rightly informed, responsible to the committee; lectures are to be delivered, and the establishment of elementary schools is to be immediately considered.

To produce *designers* must be the object aimed at: a knowledge of drawing and of the various styles of ornamental art which have preceded us, analyzing the principles on which these were produced, is, of course, the first step,—but only a step. We must go much further. To quote a recent writer on the subject: "It is indispensably necessary that the student should be taken to the great Normal School of Nature, and be there taught the modes and principles of natural decoration. The beauties of nature must be carefully studied and developed, and the student must be taught the general application of natural principles and forms, to the various purposes and modes of ornament and decoration. He must then be *methodically exercised* in producing new combinations of the ideas thus acquired; this being really, and in truth, what alone can be called 'teaching design,'—and, most assuredly, the only teaching which can ever result in forming original designers. It is equally indispensable, that a school of design should supply a certain amount of instruction in the condition and processes of manufactures, in order to enable the students, in the course of their school exercises, so to understand and comply with those conditions as to produce designs not only of high artistic merit, but capable of being reproduced by the manufacturer." *

Skill in drawing, as the council themselves stated four years ago, is only preliminary to the real business of the school, "which is to teach *the art of designing ornament*, both in respect to its general principles, and its specific application to manufacture."

At the present moment the school is going on as before, with an arrangement to enforce the regular attendance of the masters,—a very necessary provision, however derogatory the masters may themselves consider it;—and the male school comprises about fifty pupils in the morning classes, and one hundred in the evening.

Before quitting the subject for a time, we would aid the writer of the article before referred to, in denouncing as "erroneous and mischievous an opinion insidiously promulgated, and unfortunately not discountenanced by the corporate authorities in art, that ornamental art is in itself a study so humble as to be unworthy to engross the faculties of any above the class of 'artizan.' In opposition to this depreciating dogma, we may adduce the following assertion of Dr. Cooke Taylor, in his letter to the committee:—'A designer has to invent; and the power of inventing requires that the *mental faculties* should be developed by *general knowledge*. It needs not to dwell an instant on so palpable a truth.' The question between the fine artist and the ornamentist is far less one as to degree of intellectual power, than as to application of that power. The exercise of similar intellectual energies is demanded. Art is, in each case, the exponent of thought, and the rank assignable to the manifestation of such thought must depend upon the powers of mind with which the inventor is gifted. As in 'fine art' there is a humble and an elevated grade of production, so in 'ornamental art' there is a graduated scale, from diagrammatic design to the richest architectonic invention—from the simplest calico pattern to the epic enrichment of a golden salver." In regard to the beautiful in the works of Nature, the 'artist' and the 'ornamentist' labour on common ground; the difference consisting simply in the end to which their energies are directed. If we would estimate rightly the character and position to be assigned to ornamental art, we must look, not to what it hitherto has been, or now is, in this country; we must rather regard the distinguished rank it has held, and the wonderful results it has achieved, when fos-

* "Report of the Council of the Art-Union of London, for 1847."

* See p. 387, *ante*.

* "The Government School of Design," an able article reprinted from the *Morning Chronicle*, Oct. 1, 1847, containing a review of the reports and evidence of the council of the school, recently presented to Parliament.

tered, as of old, in Greece and throughout medieval Europe, and honoured, as in modern France and Germany.

Mr. Vernon's noble bequest, which has made the provision of another building for the national collection absolutely necessary, will change its character, and lead to other valuable additions of modern works.* A catalogue of the pictures now in the National Gallery, by Mr. Wornum, deserves great praise, and will tend to disseminate knowledge, and by assisting to form a correct judgment, will improve public taste.†

The Chantrey Bequest, when it comes into operation, will soon provide a noble collection of works of art for the people; and another valuable collection would be formed by the diploma pictures of the Royal Academicians, if there were such a place to exhibit them in as would induce the members to send a work they would not be ashamed of.

The value of such collections in an educational point of view, and the importance of leading the general public to their examination, can scarcely be overstated. Fine pictures are dumb poetry, and may be made to exert no small influence on the national mind. Moreover, if we produce an appreciating and discriminating public, we shall force our artists to advance in a corresponding degree.

## ARCHITECTURAL NOTES IN MANCHESTER.

In a former volume of THE BUILDER we recorded the impressions which a visit to Manchester, after an interval of a few years, had occasioned, and mentioned instances of good design in architecture, such as might be deemed remarkable in a town in which correct taste in art had been singularly deficient. It had been matter of wonder to many, that where beauty of form and colour in manufactured articles might appear to be most important objects of attention, the education of designers was neglected, and that thousands of pounds annually should be spent in procuring patterns from France, and yet the example of Lyons not followed.—At length the accidental visit of Haydon to Manchester, and his enthusiastic appeals, resulted in the formation of a school of design. For several years, however, the institution cannot be said to have been of much service; many manufacturers were hardly aware of its existence, and few seem to have known how much art had to do with their own occupations and the prosperity of the town.

Painting had long been the only one of the arts which can be said to have met with attention, but, even in that, there is great reason to doubt whether the true love and knowledge of art existed. It was the custom for some of those industrious dealers, who have on sale works of every artist that ever painted, to visit Manchester, amongst other places, and here many "undoubted originals" were readily disposed of. In this way "the original picture of the 'banished lord,' by Sir Joshua Reynolds," was once included amongst similar treasures, and no doubt found a purchaser, at a price which would be cheap for the picture in the National Gallery, but was dear for any copy. Exhibitions of paintings by the old masters, nevertheless, alternated with those of modern artists, and the fortunate possessors of works "by Titian" or "Correggio" had no idea that some who visited the exhibition had seen any similar paintings in the galleries of Italy. Still, Manchester has been by no means singular in this desire of accumulating every thing that bears the name of a great artist, and the mistake, whilst more excusable there than in many other quarters, has further to be set against it the fact that an exhibition of paintings by modern artists was supported for several years, under great disadvantages. But, during all this period, architecture had few opportunities of developing itself, whilst, as throughout England, the extraordinary fallacy, it now appears, was prevalent, that the art had no means of expressing itself except through the medium of the orders. The architects of this day are men of a different kind from those who immediately preceded—notwithstanding that the education of the architect still requires more carefully to be provided for: architecture is becoming a subject of popular interest, and we cannot ascribe a circumstance to any one town, which was equally observable in the metropolis. It could not be wondered at, that the popular notion of an architectural design should be always an arrangement of columns, when architects did nothing to shew the fertility of other resources.

Even in Manchester, until recently, several buildings of about a hundred years old could be met with, having the door and window-dressings of Italian architecture, and in which much might be discovered superior to the version of the Grecian style, lately and for so long in use. Now that the value of the details of the Italian school, and the true spirit of Grecian architecture, have become generally understood, we are surprised that mere holes for light, or window-dressings ill-designed, could have entered into the scheme of the same building, which displayed a portico from the temple on the Ilyssus, or a steeple crowned with the monument of Lysicrates. "Grecian purity" and "simplicity" were constantly the desired results, but their attributes not being understood, porticoes were transcribed wherever they could be put, and, for other features, *design* was feared, as it now is, in Gothic architecture, and a negation of *art* was the consequence. Of such buildings, Manchester contains many examples, without having, till later date, any important building, that might influence towards a better system, and perhaps something is due to architects from other places for having first induced the change now apparent.

For a time, indeed, architecture seemed to retrograde rather than advance. Harrison, of Chester, who designed the Exchange and the Portico News-room, had been, we believe, one of the first architects who practised extensively the Grecian style; and we are inclined to agree with the opinion held as to his ability, which later changes in taste may have altered with many. He was, perhaps, not *sufficiently* well acquainted with the Grecian style, or he would have rejected some forms, which the knowledge of those which were better would have taught him to avoid; but he was far more of an artist than some who succeeded him. It might be said of him as of many a great man, he lived a few years too soon. Goodwin, too, was an architect to whom Manchester is much indebted. In the Townhall, and in several churches, we find much that might illustrate our remarks upon the proper value of Grecian architecture, or would extort praise even from many who are not tolerant of modifications of Gothic detail. But the works of other architects, up to within a recent period, are by no means equally meritorious.

Mr. Barry's Royal Institution was at this time a building calculated to set the architects of Manchester thinking for themselves. Scarcely any of its details were to be found in 'Stuart's Athens,' and yet the building is more completely Greek than many others claiming to be so. Still matters relapsed into their old state, although the Bank in Spring Gardens was commenced from designs by T. W. Atkinson, then of London, and was the most complete change yet attempted. This architect was for some years subsequently a resident in Manchester, and erected many buildings in the neighbourhood. About ten years since, the Athenæum was in progress: it is well worthy of the architect of the Reform Club, and, though with less decoration, to our conception, in some respects surpasses that building. No doubt it did good service with those who were then learners in art, and who have since done so much to render the town what it now is.

We have before given credit to the architects of Manchester, now surprisingly augmented in number, for a complete change in the appearance of the town, and also to the inhabitants themselves, for having engaged professional assistance for a class of buildings, in which it is not always thought that art can find place. For the proof that warehouses may be designed of a character in accordance with their purpose, and yet without any absence of the graces of art, we need not now point exclusively to the commercial cities of Italy. It has been manifested in Manchester, that a town where large warehouses are constantly being commenced, is indeed in a favourable position for acquiring an appearance of elegance in its "street architecture,"—a department of the art respecting which we once intimated an opinion, that correct principles had yet to be discovered, supplementary to the merit of particular buildings. We do not mean to imply that the difficulty has been solved in Manchester any more than here, where it has been attempted. Still, in London, every attempt to regulate the heights of buildings, and the general effect in streets, has been accompanied by a strange want of skill in designing the details of elevations, and shop-fronts seem to present difficulties which are almost insurmountable.

Perhaps the best warehouse erected in Manchester since our previous visit is that belonging to Mr. Gardner, in Bond-street, by Messrs. Travis and Mangnall. Indeed, we cannot now call to mind, in any other work erected lately, an example of the combination of brick and stone, so happy as in this design. The building is of four stories, besides the basement, which is considerably elevated. Brick pilasters, occupying the height of the three upper stories, and supported by a stone basement, form the principal decoration. All the apertures are semicircular arch-headed, in two orders, so that by recessing the window aperture half a brick, a stone impost, plain console, and plinth, are inserted in the outer face. In the top story, which is much lower than the others, there are two windows in each space between the pilasters, all the other stories having one window. The cornice, which is without break, is ornamented with dentils, and is well designed, but might perhaps have been improved by greater projection. The upper stories are separated by plain string courses carried round the pilasters, and supported in the intermediate spaces by projecting bricks. The portion of the basement story above the ground line is of massive character, and the ground story forms a continuous arcade, with moulded impost capitals and bases, separated from the story above by a cornice. In the three upper stories, the cornice, the coin stones, string courses, consoles, imposts, and plinths, are of stone; the pilasters, arches, and other parts, of red brick. In the ground and basement stories nearly the whole is of stone, except the spandril spaces, and the use in these of brick, made manifest the advantage of the combination, in place of constructing the whole of stone, as usual in brick and stone buildings.——Messrs. Falkner's retail establishment in Bridge-street, is also worthy of being mentioned as a successful example of the combination of brick and stone. The front consists of three stories, surmounted by a stone cornice, under which is a range of small arched windows, grouped three and three. In the two other stories are Venetian windows with stone dressings, the centre light having a semicircular head. The doorway has a large arch springing from columns. The window lights are of disproportionate length;

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* *The Art-Union Journal* of the present month contains, with much other interesting matter, a detailed account of this fine collection of works of the British school. The editor remarks, "There can be no doubt that the public will hail with one accord the announcement of the Minister that it is his intention to meet the spirit of this great gift by asking for a grant of money for its proper reception. No matter where the site may be: either as an addition to the new palace at Westminster, in Hyde Park, or in the Green Park, somewhere a National Gallery must be erected, and England will no longer blush when reference is made to her vast wealth, and the little of it that goes to educate her people. There can be as little question that the whole of the existing structure in Trafalgar-square will be given to the Royal Academy: and that, consequently, we shall see an end to the present system of hanging at the annual exhibitions; the octagon-room will be, what it always ought to have been, a closet in which there shall be a clerk to answer questions; while the floor and the ceiling will cease to be places for the entombment. Parties, as well as for his glorious collection of pictures, we shall have to honour the name of Robert Vernon—a benefactor to ages yet unborn."

† "Descriptive and Historical Catalogue of the Pictures in the National Gallery; with Biographical Notices of the Painters." By Ralph N. Wornum; revised by C. L. Eastlake, R.A. 1847. The collection now consists of 214 pictures. "It may not be uninteresting to the reader to compare the number of pictures in the National Gallery with the number, according to the published catalogues, in the several principal national collections in Europe. In Rome, in the gallery of the Vatican, there are only 32 pictures; in that of the Capitol there are 82; at the academies of Bologna and of Venice there are in each about 280; in the Stadel Institution, at Frankfort, there are about 360; at Naples, there are 700, exclusive of the ancient paintings from Pompeii and Herculaneum; in the Berlin Gallery, recently established, there are about 1,200 pictures; in the new Pinacothek, at Munich, there are about 1,370; in the gallery of the Belvedere, at Vienna, there are upwards of 1,300; in the Imperial Gallery of Florence (Degli Uffizi), there are upwards of 1,300, and about 500 in the Pitti Palace. At Amsterdam, there are 360; at the Hague, in the Museum, there are 304, and 173 in the King's collection. The collection of Antwerp contains between 300 and 400; but they are not yet catalogued. There are 1,446 in the Louvre, exclusive of the Spanish pictures, in the Museo of the Prado, at Madrid, there are 1,853; and the celebrated gallery of Dresden contains about 1,850 pictures. At Versailles there are about 3,500 works of art, chiefly paintings, and almost exclusively illustrative of French history. The Borghese Gallery, at Rome, which is the best and largest private collection in Europe, contains, according to Melchiorri, about 1,700 pictures. In the Grosvenor Gallery there are 143; in the collection of the Duke of Sutherland, 235; in the Bridgewater Gallery, belonging to the Earl of Ellesmere, there are 48. The largest private collection in England is that of Burleigh House, Northamptonshire, belonging to the Marquis of Exeter, in which there are upwards of 600 pictures."

and the mouldings, which are rightly enough placed when serving for imposts, should hardly have been repeated where they support nothing. The windows are obviously not intended for the display of goods, being of narrow lights and far apart; but though we do not think that shop fronts, as generally contrived, are desirable additions in any work of architecture in which good effect is contemplated, a little increase of size in the windows, in a building of this nature, would be admissible. We believe a contrary opinion is not unfrequently maintained; but the use of large windows does not necessarily imply bad architecture, or there might be some reason to moderate our advocacy of the repeal of the window tax. The interior has the arrangement, which has now become common in establishments of this nature, being lighted from the top, the upper story forming a gallery round the opening. Mr. J. E. Gregan is the architect.

Messrs. Gregg's warehouse, near the back of the Branch Bank of England, is also worthy of examination, and its internal arrangements have been referred to, as presenting a model for this class of buildings. It has iron columns and girders, with brick arches; and, as a provision against fire, there is a cistern occupying the whole area at the top of the building, from which a pipe is carried down the staircase, having a canvas hose and mouth-piece at each landing. The cistern is lined with a composition of the nature of asphalte, termed "Paraqua," which, we believe, was used at the theatre in Manchester, but in the present instance has not been quite efficient. The building contains many contrivances which might be advantageously consulted in arranging similar buildings, amongst which is an ingenious apparatus for shooting the pieces of calico from top to bottom of the building, or, by an arrangement of doors, from one floor to another.——Opposite Messrs. Gregg's warehouse we noticed a building in progress in the Gothic style, and which, we were informed, was also for a warehouse.——The addition to the Exchange is progressing rapidly, though not far advanced at the time of our visit. We believe a new front is intended towards St. Anne's-square, with a portico, the order being the same as that of the old building, Grecian Doric. Mr. Alexander Mills is the architect.——Mr. Cockerell's Branch Bank of England is no doubt known to our readers from illustrations, and we merely stop to mention it as one of those buildings, of which it is very difficult to give a proper representation. Its massive effect, and the character of its windows, appeared to us particularly suitable in reference to its purpose.——The new streets lately opened, one called John Dalton-street and the other Corporation-street, are more satisfactory to us than many new streets in the metropolis. In John Dalton-street is a good building, by Messrs. Dickson and Breakspear; and Corporation-street, although with a little sameness, has some good buildings, whilst all are great advances upon what had been common previously. Red brick is the material employed, and all the windows have stone dressings.——Having heard much of a fountain that had recently been erected in Smithfield Market, we waded through mud and offal to look at it, although somewhat dubious about the result of the examination. At length we found "a fountain of living water," and "a lamp which gave light at night," but very different, we hope we may say, to what may be expected of the Caxton monument, of which so little has been heard lately. In the centre of a very dirty basin was a pedestal, ill-designed and clumsily carved, supporting a small Corinthian column, by way of post, and a large lamp. Water was projected by lions' heads, one on each side the pedestal, and—parodying the words of a poet—

* * * * * * "the sound
Amaz'd the gazing rustics rang'd around;
And still they gaz'd, and still the wonder grew,
That each small head should carry all it threw."

Altogether, the fountain is as bad as any we know of, and that, in England, is saying a great deal. The town-council should not procure a design for any work, even in this out-of-the-way part of the town, from any one but a competent architect.

At Cheetham's College, an interesting building, we hear that restorations have been going on, and also that the cathedral is being decorated. The latter building will require very careful treatment, having been restored at different times by incompetent hands. In the choir much of the old work remains, and the carving of the stalls is of great richness.

Church architecture has changed its character in Manchester as much as in most places; and for some notices of what has been done there lately, as well as for other matters, we may again draw from our notes.

## DOINGS IN BRISTOL.

A SCHEME has been submitted to and approved by the town-council, to effect the long-desired end of rendering Bristol A FREE PORT. The day which sees this accomplished should be set apart as a holyday by its denizens: it will be a fresh starting-point for this important city. A good spirit is evidently awakening here, and will produce important results. The Frome, heretofore a reservoir of putrid matter, which has annually killed at least a hundred persons, has been covered over (the measure confers honour on the present town-council) at an expense of 4,395*l.*

A new church and schoolroom are to be built on a part of the waste land on the Weir known as the Rope Walk. The town surveyor valued the land, which belongs to the corporation, at 500*l.*, but the council, with a wise liberality, agreed to take for it 150*l.*

On another part of the same land, baths and washhouses are to be erected under the direction of Mr. Baly, the engineer of those in London, at the estimated cost of 6,500*l.* By the arrangement proposed, sufficient space is to be obtained in the building for the construction of sixty bath-rooms, sixty-four washing compartments, and thirty-two ironing compartments. The bath-rooms are placed in the front of the building. The entrances to the first-class men's and women's baths are as far apart from one another as possible, at the opposite ends of the front; and those of the second-class men's and women's baths are in the centre. Each bath-room is about 6 feet square, and contains a bath 5 feet 3 inches long, of an average width of 1 foot 9 inches, and 1 foot 11 inches deep. The baths are to be made of cast-iron enamelled.

It is much to be desired that an architect were associated with the engineer in this case, so that the building might be of a less tasteless character than that in London, of which we spoke some time ago. The usefulness of the beautiful is no less certain than the beauty of usefulness.

To Mr. King, Dr. Green, Mr. Visger, and others, the city is much indebted for their efforts in respect of the important movements of which we have spoken.

The Corporation Baths and Washhouses have been very successful. During the past month 7,917 persons bathed, and 7,572 dozens of clothes were washed. On striking a balance of the accounts for the last twelve months, it was found to be considerably in favour of the institution.

## CONSTRUCTION OF THE LIGHTHOUSE AT THE PORT OF HAVANA.

IN the month of August, 1844, the foundation for a new lighthouse at the Moro Castle, to serve as a guide to vessels entering the port of Havana, was commenced by the Spanish Junta, and executed under the direction of the corps of engineers of the army. The journal of the Franklin Institute (Philadelphia), contains a translation of an account of it by a Spanish colonel of engineers, from which we condense the following particulars:—

The tower is composed of two parts; the first representing a column 79 feet high, 25 feet in diameter at the base, and 20 at the top.* The cornice of this serves as the floor of a corridor with a circular parapet, inclosed by a grated railing of copper, which surrounds the upper, or second part, upon which the lantern is supported. The first, or lower part, is constructed of hewn stone; the wall being 7 feet thick at the base; vertical in the interior, and sloping on the outside, 30 inches in the whole height. The interior space of 11 feet in diameter serves for a circular staircase, the steps of which are four feet long, 7½ inches high, 19 inches broad at the wide end, and six at the other, or immediately at the spindle, or central column of three feet in diameter, which extends up through the whole height. The stairway begins inside, at 38 inches in the clear from the door, in order to leave an open landing place; the steps being covered with slabs of marble 1½ inches in thickness, with a moulding which extends an inch beyond the step. The doorway in the lower part of the tower, which gives entrance to the stairway is four feet wide and eight feet high, with pilasters at the sides; and its cornice and frontispiece in the form of a circular arch.

The stairway is lighted and ventilated by three sets of windows, placed equi-distant from one another throughout the whole height. They are four feet high and two feet wide, and in six of them, the lower part of the niche, or recess in the wall, which forms the window, is level with the steps, and serves as a landing, or resting place. Below the stairway, and at the level of the lower floor of the tower, is a spacious room, inclosed by a wooden railing, which is used as a place of deposit for oil, and the more heavy and bulky articles used about the lighthouse.

At the height of 63 feet 9 inches, the stairway which has been described terminates in an apartment called the attendant's room, 12 feet in diameter, and 12½ inches in height, covered by an arch two feet thick in the crown. This chamber, lined with marble, is intended for the two persons who have charge of the light during the night. It is furnished with windows and the requisite conveniences for containing a supply of lamps, funnels, wicks, oil, &c. &c., having a staircase of mahogany, with a balustrade attached to the wall. The breadth of this stairway is 24 inches; the steps are a foot high and eight inches broad in the middle; it leads, through an opening left in the arch, to the platform, or upper part of the lower edifice.

Upon this platform is erected a second structure, consisting of a circular wall of hewn stone, 2½ feet thick, 8 feet high, and 11 feet 7 inches in its interior diameter. The latter dimensions are determined by the base and diameter of the lantern, which, as has been before said, rests upon it. In this second part of the tower there is a door 6 feet high by 27 inches wide, to admit of egress to the platform, or corridor, above the cornice.

The total height of the tower is, therefore, 87 feet, which, added to the elevation of its base above the level of the sea, 65½ feet, and to the height of the light within the lantern, 5½ feet, will make the total elevation of the light, 158 feet; the horizontal tangent of which is 13½ marine miles.

The glass lantern, which incloses the light, rests upon the circular wall built above the cornice of the tower, and has the figure of a prism of sixteen sides. It is covered by a cupola of copper, with a chimney in its top to carry off the gases proceeding from the combustion; the whole being surmounted by a weathercock.

*Data for determining the proper Thickness for the Wall of the Tower.*—The most interesting and nice question which first presents itself, in considering the construction of a very high tower, is to determine the thickness which its walls ought to have in order to insure the necessary stability, and to resist successfully the forces which have a tendency to destroy it. This is a general principle in all kinds of edifices; but in high towers, the base of which bears a small proportion to their height, it is necessary to consider another element of destruction, more powerful and active than the force of gravitation; namely, the violence of the wind in those great hurricanes which are so frequent on sea-coasts, and particularly among the Antilles.

In the calculation of this force, as in all physico-mathematical questions, the data are, for the most part, derived from experiments, of the accuracy of which we cannot be precisely certain; but which have been found sufficiently worthy of confidence when applied to similar structures which have, for many years, resisted every kind of force; and in this case there is nothing more logical, or natural, than to take the result of these calculations as established data of comparison with reference to our own case.

The data upon which we should reckon in calculations of this kind, founded upon numerous experiments, are as follow:—*First*,

* The Spanish *foot* here used is equal to 11·1 inches, and the *yard*, or yard, is 33·3 inches.

The pressure upon a superficial metre, when the wind has a velocity of 50 metres per second, which is that of the greatest hurricanes, is equal to the weight of 275 kilogrammes, or about 386 pounds to the square yard. *Second.* The action of the wind upon a vertical cylinder is reduced to two-thirds of the force which it exerts upon a central vertical section of the same cylinder.

To apply these rules to the stability of a tower composed of a single stone in the form of a right prism with a square base, we should multiply the superficial area of one of its sides by 386 pounds; and this product being multiplied by half the height of the prism, will give the momentum of the wind's force. In order to determine the momentum of resistance, the total weight of the tower should be multiplied by half the width of its base. Dividing this product by the first obtained momentum of the wind, we have the expression of the *absolute stability* of the edifice with regard to the action of hurricanes.

Towers are composed of numerous courses of cut stone, the adhesion of which affects the stability in proportion to the decrease in the size of the blocks of stone used. If we suppose this adhesion to be nothing in a wall composed of courses of stretchers and ties, the fracture caused by the force of the wind will not be horizontal; but (as in retaining walls) according to an oblique section, the inclination of which is determined by the maximum of relation between the force of the wind and the momentum of weight of the solid above the section. But it should be observed that in most high towers, the adhesion of the cement and the arrangement of the materials is such that the section of rupture is less inclined than in ordinary containing walls, and if, in addition to this, we also consider that the results which we seek are of comparison between our tower and those whose stability has been already tested, by having for a long time resisted, without injury, every kind of force; the supposition that the section of fracture would be horizontal should have no sensible influence.

The determination of the section of most easy fracture offers a problem of minimums, the direct solution of which, in general, requires very tedious calculations; but fortunately the position of that section is apparent, in most cases, at the first glance of the eye, or may readily be determined by a few trials.

In case the tower should have the form of a truncated cone, like that of which we are treating, if it should ever yield to the force of the wind, it would be twisted off above the offset of its base, in the direction opposite to that from which it receives the force, and its being broken above the offset would be because the arm of the lever of resistance, instead of being equal to the radius of the section of rupture, is somewhat less.

These principles being established, it is known that, in order to give great stability to a circular wall in ordinary structures, it is sufficient to make the thickness a twelfth part of the height; consequently, having to raise our tower to a height of 80 feet, a thickness of 7 feet was enough for the wall; but as the tower is not an insulated wall, but has within it a circular stairway, which binds and fastens together all its parts, and moreover, as the consideration of a convenient situation for the illuminating apparatus required that the upper part of the tower should be only 20 feet in diameter, we were able to start with 7 feet at the base, and to diminish gradually to four and a half at the top, with the advantage of an exterior slope of two and a half feet in the whole height, which also adds to its strength.

Having established these data, it now remains to examine whether, with these dimensions, the tower possesses as much, or greater, strength than others similar to it, which have been built many years, and have resisted, without the least damage, the force of the greatest storms, and I say it ought to be stronger: 1st. Because the terms of the comparison which we seek are derived from towers built in Europe, where hurricanes are neither so frequent nor of such long duration as in the Antilles; and, 2nd. Because the tower which we have constructed, from its peculiar situation, has to sustain not only the force of the wind but the shock of the waves, although this is somewhat diminished by the tower being placed twenty-two yards above the level of the sea.

For comparison, we will take the signal tower erected in 1715, at the port of L'Orient, the form of which is similar, on the whole, to that constructed at the Moro, and which has withstood, until the present time, without injury, all the force of the storms.

*Stability of the Tower at L'Orient.*—The result of a calculation with regard to this tower shews that the relation of the resistance to the pressure is 7·4; that is to say, the resistance is 7·4 times greater than the pressure. Let us now see what result will be obtained by an analogous calculation with regard to the tower at the Moro.

*Calculation of the Stability of the Tower at the Moro.*—The content of the truncated cone which constitutes the lower part, is 31,174 cubic feet. The interior cylinder, which contains the staircase, is 11 feet in diameter and 34½ in circumference; the area of its base, 95 square feet; and its content, $95 \times 78 = 7410$ cubic feet. Taking this from the total solid content, there remain 23,764 cubic feet for the solid content of the circular wall of the lower part of the tower. The cylindrical column in the centre of the circular stairway contains 450 cubic feet, and the stairway itself 306; so that the total solidity of the masonry in the lower body of the tower is 24,520 cubic feet, or 908 cubic yards. Adding to this 3 cubic yards for the projection of the cornice, and subtracting 36 yards for the apertures left for doors and windows, there remain 875 cubic yards of masonry. As the attendants' room, in the lower section of the tower, is a foot larger in diameter than the interior space occupied by the stairway, it follows that the amount of masonry, which on this account has been rather over-estimated, will be made up by the arched ceiling of this room, which has not been taken into the account.

The solid content of the circular wall which forms the upper section of the tower, upon which the lantern is placed, is 27 cubic yards, deducting the opening for the door; so that the whole amount of solid masonry is 902 cubic yards.

A cubic yard of the masonry used in this tower weighs 85 arrobas (25 pounds each), and the arm of the lever of resistance being 4 yards (a little less than the radius of the base), it follows that the power of the resistance will be $902 \times 4 \times 85 = 306{,}680$.

A central perpendicular section of the lower portion of the tower contains 195 square yards; of the upper portion, 13; and of the lantern, 26; presenting a total sectional superficies of 234 square yards. The centre of gravity of these three superficies is found at 13 yards from the base of the tower; consequently, the momentum of pressure from the wind is $\frac{2}{3} 386 \times 234 \times 13 = 31{,}504$ arrobas, and the ratio of the resistance to the pressure

$$= \frac{306{,}680}{31{,}504} = 9\,7.$$

By this result it will be seen that the tower at the Moro has a stability equal to nearly one and a half times that of the tower at L'Orient, which was taken for comparison, and consequently that its dimensions are sufficient, although indispensable for the reasons already mentioned, to warrant the undertaking of its construction with entire confidence.

*Details of the Construction.—Foundation.*—As the tower is 25 feet in diameter at its base, a circle 28½ feet in diameter was traced around the centre of the area to be occupied by it; so that the excavation for the foundation being larger than the body of the tower, a berm, or offset, of 21 inches, would be left by the extension of the foundation wall beyond that of the tower itself. The excavation was carried through the surface soil down to the rock which underlies the glacis of the Morillo, which was reached and laid bare at an average depth of 15 feet.

The rock presented an irregular surface, in consequence of which, together with its extreme hardness, the operation of cutting it down to a level would have been very expensive. It was therefore deemed preferable to construct the foundation by steps (*en escalones*), using blocks of stone of the best kind, disposed in circular horizontal layers (*formando anillos en capas horizontales*), properly placed, and the joints filled with a mixture of lime and sand; taking care, as in all masonry of hewn stone, that the joints of each layer should be covered by the course immediately above it.

The foundation is 9½ yards in diameter by 5 in depth, and consequently contains 355 cubic yards of masonry. The cost of its excavation and refilling was 1,554 dollars, being 4·375 dollars per cubic yard.

*The lower part of the Tower.*—Upon the level top of the basement, or foundation, the first layer of stone forms a solid floor over the whole, 25 feet in diameter; its outer border being vertical and forming a projection or socle of 9 inches around the tower, as well as a step of the same height, for entrance into it. The building is then continued to the requisite elevation by successive courses of 18 inches in height. In order to give an exterior slope to the wall, and consequently to diminish its thickness in due proportion, the width of the blocks in the interior courses was gradually contracted, while those on the exterior were continued of the same breadth, so that the vertical joints might recede gradually towards the interior, and the masonry be well united together; thus avoiding the defect which would result from an equal diminution in the breadth of the blocks used in both the inner and outer faces of the wall, in which case, the vertical joints of each course would continue to be one above another, thus forming two distinct walls, without further connection than that of the extending ties.

The circular stairway is composed of entire blocks of stone, which are inserted six inches into the wall, each of them forming two steps, together with the corresponding part of the central column, or nave, of the staircase. It was carried up at the same time with the wall of the tower, in order to insure the proper connection and binding together of the work, and also served for use during the construction of the building; the order of proceeding being first to set the block of stone which formed two steps, and then to lay the corresponding course on the wall, and so on successively.

In the dome which covers the attendants' room, the precaution was taken, in order to avoid the least displacement, to fasten all the arch stones of the second and third courses, together with those of the first, with iron clamps, one and a half inches thick by three inches wide, let into the arch stones and fastened to each of them by a bolt, which passes through two-thirds of their thickness, well secured with lead.

*Materials.*—The stone used in the construction of the tower was taken from the quarries known here by the name of *playa de chivos*, immediately at the point where the tower stands, and preferable to the stone found at any other place in the vicinity, because, although not of the hardest quality, they are still sufficiently so, and of a more equal and homogeneous texture than the others.

The lime and sand employed were both of excellent quality; the former made of a very hard and clean stone, and the latter containing no saline matter. The mortar was made with great care, composed of two-fifths of lime and three-fifths of sand, mixed with fresh water and well stirred, so as perfectly to incorporate the ingredients.

After the completion of the edifice, in order to preserve it from the effects of moisture and of nitrous salts, inasmuch as the stone, as already stated, is not of the hardest kind, it was covered, both on the interior and exterior surface, with a very thin and well laid coat of painted stucco.

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Masters and Servants.—In Birmingham, last week, the assistant of a photographist brought an action to recover wages due. He had agreed with defendant "to work for and serve him diligently and truly, in the photographic art, for the term of three years, from the 24th of July, 1846, at a salary of three guineas per week;" and in the agreement was also a clause, that the said plaintiff "should not work for any other person or persons during that period." It was proved that he had in his over-time taken portraits on his own account; and the judge decided that he could not recover, inasmuch as by law his master was entitled to his whole services, and he was not at liberty, during the continuance of the agreement, to take portraits for himself and receive the money for them, or for any person other than his master; and that by doing so he was in fact enticing away the customers of his employer, to his manifest injury.

## FRENCH GOODS.

Nearly all the foundations are in for the Louis-Philippe Hospital, close to the church of St. Vincent de Paul, in Paris, and 800 workmen are employed there. The inclosing walls include an area of 34,000 *mètres*.—It is proposed to erect a monument to Pius IX. in Paris, and the corporation appear favourable to the project.—A curious disagreement has arisen respecting the restorations at the Hôtel de Ville. The municipal council have refused to allow for the sum of 1,600*l*., expended in sculpture for the principal staircase, and the Minister of the Interior has confirmed their decision, leaving the amount to be defrayed either by the *préfet* or the architects. The *préfet* has stopped the payment of the money due to the architects for their services, with the view, probably, of trying the question with them. We are not aware of the circumstances under which the sculptures were ordered.—At Orleans a subscription has been commenced for the erection of an equestrian statue to Joan of Arc. And in Périgueux (Dordogne) a statue is to be raised in honour of General Daumesnil, surnamed *La Jambe de Bois*.—On the 3rd of last month the first stone was laid of a Thermal Hospital for the troops, at Amélie-les-Bains (Pyrénées-Orientales), proposed in 1835, decided on in 1841, and only now commenced: it will be finished in 1852, and will contain 500 patients. The *Moniteur des Architectes*, after stating that the plans have been arranged by M. Puiggari, engineer, remarks that it is to be regretted that the Minister of War has not thought proper to appoint a qualified *architect*, to co-operate with the engineer in the production of a building which demands architectural conditions more elevated than a barracks or a magazine. We have already expressed the same opinion so strongly in a nearly similar case, that it is unnecessary for us to say, we fully agree with our very respectable contemporary on the other side of the water. In respect of the proposed baths in Bristol, mentioned in our present number, we have thought it necessary to repeat the remark.

## CONSTRUCTION OF CHEAP SEWERS.

### CHESTER AND MANCHESTER.

Sir,—That cheap sewage is a subject of paramount importance to the public, no person for a moment will doubt; and unless science is called in to aid the efforts now being made for the sanatory improvement of towns, we shall be doomed to proceed upon the same imperfect system that has been hitherto pursued, and the public will be heavily taxed for ignorance and incompetence.

Unless a cheaper system of sewage is adopted than has hitherto prevailed, many of our towns must necessarily be prevented from having the important advantages of good drainage, on the grounds of the enormous expenditure that will be required, and the heavy burthen inhabitants of many towns are now labouring under.

It has been asserted, that cheap sewage originated in Manchester, but this I deny; and it may not be uninteresting to some of your readers to know the prices actually paid in Manchester for sewers of different capacities.

| Dimensions. | |
|---|---|
| 42 in. × 24 in., 17s. 3d. | per lineal yard. |
| 36 in. × 24 in., 15s. 4d. | ,, ,, |
| 33 in. × 22 in., 15s. | ,, ,, |
| 30 in. × 20 in., 14s. | ,, ,, |
| 24 in. × 18 in., 13s. 4d. | ,, ,, |
| 20 in. × 15 in., 12s. 6d. | ,, ,, |
| 15 in. × 12 in., 8s. 3d. | ,, ,, |

Maximum depth, 10 feet.

These sewers we are enabled to construct in Chester as follows:—

| Dimensions. | | |
|---|---|---|
| 42 in. × 32 in., 11s. | per lin. yd. | ordinary earth. |
| 42 in. × 32 in., 15s. 2d. | ,, | rock. |
| 36 in. × 28 in., 9s. 6d. | ,, | ordinary earth. |
| 33 in. × 25 in., 8s. 6d. | ,, | ,, |
| 30 in. × 22 in., 7s. 9d. | ,, | ,, |
| 24 in. × 18 in., 6s. 6d. | ,, | ,, |
| 20 in. × 15 in., 5s. 6d. | ,, | ,, |
| 15 in. × 12 in., 4s. 9d. | ,, | ,, |

Maximum depth, 12 feet.

This difference arises chiefly from the exercise of economy in the use of material and labour, as the prices of these in the respective towns do not vary 15 per cent. In my former communication, I stated the cost price of the tubular sewer, 20 inches by 15, to be 6s. per lineal yard, *exclusive* of excavation, but I find we can execute it in 4½-inch brickwork much cheaper, our sewers, as you will perceive, costing us only 5s. 6d., including excavation to the average depth of eight feet. The general shape of the sewers in Manchester is either a semi-circular or egg-shaped invert, covered with flags, as if the properties of the arch were not well understood, or could be rendered available. In Liverpool, prices are still higher, and modern Birkenhead partakes a *little* of their extravagance. A system of flushing is also to be economically applied to the sewage of Chester.

It has been broadly stated that sewers composed of 4½-inch brickwork are inadequate for the purpose intended, but when we calculate upon the strength of brick as applied in sewers, more particularly if radiated, the objection is utterly worthless, and arises from a want of knowledge of the properties of materials, and the power they possess to resist compression.

We have a sewer in this city 3 feet 6 inches by 3 feet, of 4½-inch brickwork, that has been built fifteen years, and I had it opened the other day, and found it in as perfect a state as when first constructed, although composed of bricks of the ordinary shape, viz., rectangular, and I have not the slightest hesitation in saying that sewers may be constructed with the greatest safety, of this capacity and strength of material.

As to the durability of bricks or tiles for the purposes of drainage, we have the strongest proof, Roman Tiles having repeatedly been dug up, which must have been buried in the bowels of the earth upwards of 1800 years, and in a perfect state of preservation, with the stamp of the LEG. XX. VV. clearly impressed upon them, the thickness of the material being only one inch. The Romans in the midst of their conquests seem to have had time and inclination to study the subject of drainage, and other sanatory regulations, proofs of which they have left at all their principal stations. Britons, with all their boasted intelligence and civilization, lack those qualities so eminently displayed by those enterprizing people, or our towns would not exhibit, as they now do, an almost total disregard of drainage and cleanliness.

B. B.

Chester.

## MEETING OF MECHANICAL ENGINEERS AT BIRMINGHAM.

A quarterly meeting was held on 22nd ultimo at the Institution-rooms, Temple-buildings, Mr. G. Stephenson, president, in the chair, when a discussion took place on the merits of various mechanical and engineering inventions for the safety of railway trains, described or presented to the meeting. Mr. Stephenson introduced the subject of his proposed safety-break, with plan and description. He alluded to the models or plans of other proposed breaks which he had examined, but did not think any of them would work well. He was obliged to admit, however, that the invention of Mr. Alfred Knight, of Birmingham, son of the borough treasurer, [the ingenuity of the *idea* of which, apart from its mere mechanical adaptation, we have already noted in a recent impression of The Builder] 'was certainly a very ingenious contrivance. But he thought it also was too complicated, as there were, no doubt, too many wheels. The inventor had got a very ingenious mind. But he would observe that an ingenious mind was very dangerous to a mechanic. When they wanted a really useful invention, simplicity was everything.' [No doubt some one may now readily take the hint from the suggestive idea of compelling the very evils to be counteracted—namely, the rotation and progressive motion of the wheels of a train of carriages—to minister to their own counteraction, and arrest *themselves* at any moment midway in their own career; and such a one, so taking the hint, may even endeavour to appropriate *the idea* as his own, by merely realizing it in other or simpler mechanism; but that is probably the only *danger* to be dreaded from the highest and freest exercise of an inventive genius which ought rather to be encouraged than thus repressed; inasmuch as its real value and merit ought not to be confounded with any mere supposed or actual demerit or defect in the mechanical application of its own invaluable and suggestive *idea*,—an application which it really requires but a second-rate and comparatively ordinary mind to improve upon or simplify,—although, as we have said, there certainly is a risk of such an inferior mind ultimately claiming to itself the whole merit, both of idea and of mechanism, by sagaciously confounding the one with the other, while merely suggesting improvement or simplification of the mechanism.]

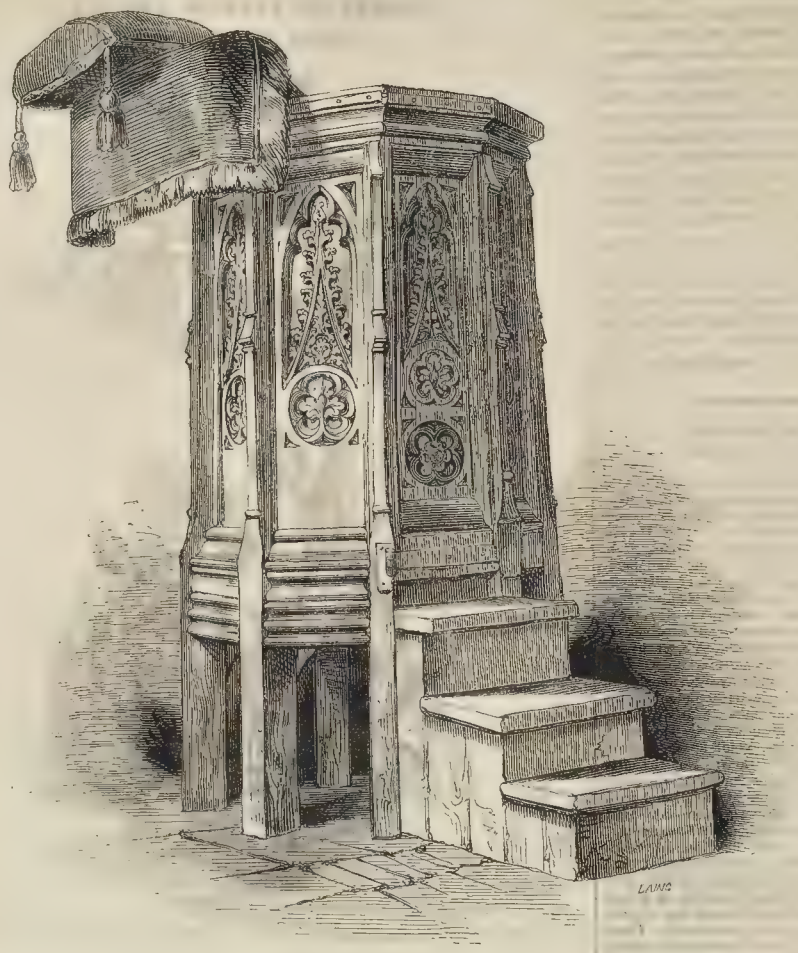
The discussion on the subject of breaks was ultimately adjourned till next meeting; and a paper, by the president, on the communication between guard and engine-driver, was then read, and various plans (most of them already noticed in The Builder) were discussed, including the speaking-tube for communication between passengers and guards, but which the president considered to be 'almost too absurd to comment upon,' as, even though practicable, 'there would always be some timid persons alarmed at mere trifles, and would be causing stoppages and delays innumerable.' [How could that be? Strange to say, that is an objection which applies to almost any scheme but this one, whatever may be its demerits otherwise, the very design of it being to enable passengers to communicate with guards, *and guards with passengers, without stopping the train at all, unless the guard* should be himself convinced there was sufficient reason.] The president's own recommendation was a modification of the plan already in practice on the Austrian lines, and repeatedly suggested, namely, guards facing the train in both directions, and communicating signals, such as a red flag by day and a red lamp by night, without any provision for oral or other communication with passengers in cases of fire, such as nearly deprived us lately of a bishop, or of sudden illness, death, insanity, or any thing else. The superiority of a powerful whistle over a bell, in the event of either being adopted, was suggested by the president, and the electro-magnetic circuit, in connection with it, was proposed by Mr. Crampton.

A long and elaborate communication was afterwards read by Mr. A. E. Cowper, on an improved suspension-bridge, of a peculiar form, for carrying railways, and which he characterised as 'a piece of boiler-maker's work,' rather than of civil engineering. The object of the paper was to call attention to a mode of preventing such bridges from being 'thrown out of shape, or in any way distorted by the weight of a passing load;' and this he proposed to do chiefly by 'the plan of making a chain of such depth as to include any alteration in the curve of the strain that might take place.' But the limits of the present article prevent us from here doing anything like justice either to the idea or its development. The president and others, in discussing the subject, remarked, that if the invention could practically carry out the intentions of Mr. Cowper, it effected a most important desideratum in railway engineering.

The good to railways from such discussions was then adverted to, and a notice of motion made for eight meetings a year instead of four, when the meeting adjourned till 24th current.

Surrey and Kent Commission of Sewers.—A court was held last week, when the chairman of the Committee of Accounts brought up the statement of the receipts and expenditure for the last half year. The income amounted to 28,666*l*. 16s. 11d., which included balance in hand last April, 5,630*l*. 0s. 3d; loan, 8,500*l*.; rates, 11,354*l*. 15s. 2d.; contributions from those requiring drains, &c., 2,231*l*. 19s. After paying all expenses, there was a balance in hand of 9,054*l*. 17s. 10d., exclusive of 8,000*l*., put out to interest. Mr. Drew, solicitor to the court, stated that he had received instructions from the Sanatory Commission to send to the commissioners an account of the number of attendances of each commissioner, from the year 1841 to the year 1846. It was stated that some of the commissioners had attended only twice in the course of the year.

Timber under Hearthstones. — The recent fire in Drummond-street, Euston-square, when a poor lady was miserably burnt to death, has been ascribed to ignited cinders falling through a crack in the hearthstone. We have, ourselves, known of more than one fire caused in this way.



WOODEN PULPIT—WENDEN CHURCH, ESSEX.

## WOODEN PULPIT.—WENDEN CHURCH, ESSEX.

A FINE example of the wood carving of the fifteenth century, and an interesting specimen of an early pulpit, is afforded by an engraving of that in Wenden Church, Essex, a primitive structure, which exhibits traces of an early Norman foundation. The pulpit has nine sides, seven of which are carved alike in each panel. The door occupies two sides, and has an extra quatrefoil inserted in the carved panels. The pulpit is in fine preservation, and the carving singularly perfect, and sharp in its outline. It stands 5 feet 7½ inches in height, and measures one foot across the top of each panel, which, following the outline of the pulpit, decreases upwards.

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LONDON IMPROVEMENTS.—A bill was brought into the Common Council on Friday in last week, under the powers of the City Improvement Act of 1847. It proposes to raise 300,000*l.* for improvements from Cannon-street to St. Paul's; and 200,000*l.* for other improvements not yet determined on.

BUILDING SOCIETIES.—It is said that the number of building societies in England and Wales now amounts to 1,200.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE opening meeting of the present session was held on Monday evening last; Mr. S. Angell, vice-president, in the chair. A long list of donations having been announced, Mr. W. P. Griffith was admitted a fellow, and the certificates of various candidates were read.

The Chairman said, that as that was the first meeting for the session, he would intrude on their attention for a few minutes. He much regretted that the president, Earl de Grey, was unable to attend; his lordship's communications, however, shewed that he still felt the same interest in the prosperity of the Institute as he had ever exhibited. The chairman had to allude with regret to the loss of a colleague, Mr. Allen, who, although a junior member, had made considerable advance in his profession. He felt bound also to allude to the death of Mr. Cottingham, although he was not a member of the Institute: it was the desire of the Institute to pay tribute to ability, whether in their own ranks or out of them. Notwithstanding the financial difficulties, there were many new buildings rising in the metropolis, and although they were not all original, he thought it satisfactory that such good models were taken as those by Sansovino. The new churches rising were mostly satisfactory, as well in the material used, Kentish rag and Caen stone, as in the design. The sanatory question was also forcing itself on architects: ventilation and drainage called for their careful consideration. In conclusion, he would remind all the members of the necessity of contributing to the general information; many had been travelling during the recess, and he hoped that their sketches and note-books would furnish instruction at some of the meetings. The students, he remarked, would find every facility provided for them, and he hoped they would largely avail themselves of the advantages offered.

Mr. M. D. Wyatt then read a paper on "Mosaics, as applied to Architectural Decoration," which we shall give *in extenso* next week.

Mr. Donaldson, in remarking on the durability of decorations in mosaics, said there were some fine specimens in our country—one he particularly remembered in Leicester; and he thought it was very desirable that we should have a catalogue of all existing specimens in England. It was much to be regretted, he thought, that our royal family regarded with such little interest the tombs of their ancestors in Westminster Abbey, some of which display fine mosaic decorations, and, if properly restored, would serve as a school for us, without going to Greece and Italy. He was compelled to say that a better feeling was evinced in France.

## GROUPS IN CARTON PIERRE, IN LYCEUM THEATRE.

From the scale of the view we gave of the Lyceum Theatre in the Strand, the groups of boys and foliage, bearing the lights, were scarcely represented so clearly as they deserve. In our present number, therefore, we add drawings of them on a larger scale. The upper engraving shows the figures which are seated on the entablature; and the lower represents one of the groups encrusting the main columns, on a level with the front of the first tier of boxes above the dress circle. As previously stated, these are formed of *carton piérre*, and painted and varnished to appear like china, etch gilt.

We have already spoken of the artistical skill displayed by Messrs. Jackson in the whole of the applied ornaments, modelled and put up here; an after-examination of other works executed by them, has strengthened our good opinion.

## GROUPS IN LYCEUM THEATRE,

MODELLED BY MR. W. JACKSON.





## WHAT IS HIGH ART?

DECORATIVE-ART SOCIETY.

At a meeting held on the 13th ult. (the opening of the present session), the first portion of a paper "On Art; its distinctions and purposes relatively considered," by Mr. Dwyer, was read. The leading questions arising from the subject, as set forth in the members' circular, were, What is high art? historical art? fine art? &c. Under what conditions do these become identical? and what is the relative value of each for the purposes of decorative art?

Mr. Dwyer introduced the subject by remarking, that amidst the multifarious writings extant upon art, the ambitious tendencies of this or that author in jealously upholding the dignity of a particular class of artists, or in vaunting forth the advantages arising from a given system of practice, would appear to have been the main considerations. For the most part, however, we should find that the study of nature is held to be the starting-point from which we are to be led away into a complexity of technicalities and metaphysical reasonings. As in writings, so it would be found in works. The architect, sculptor, painter, and poet, each attempts a mysterious grappling of mind with matter of fact, occasionally developing a high degree of intellectuality with much that is either unmeaning or not easily understood. Then, he observed, there is the continually varying misapplication of technical terms in art, arising from an absence of principle in giving fixed names to definite things, which renders it a matter of difficulty to understand the proper limits and distinctions which exist between even such terms as high art, historical art, fine art, &c. He had sought for precise definitions from living artists of good repute and long standing, but obtained none; he had heard much of reasoning, in small circles as it were, which convinced him that a more general and comprehensive knowledge of art in its various phases would be useful, indeed, among its professors. The ordinary criticisms of the day upon art were to him vague and meaningless, and would generally, if divested of doubtful technicalities and expressed in plain English words, expose their flimsy construction. In tracing the progress of art, the reader felt that it had been strangely handled, not alone from the restless ambition of some of its votaries and professors, but still more so by the wanderings of others after the indefinite. Princes and popes have at certain periods entertained a deference for its works, which at other times is wholly lost to observation; but he considered that the attention at present directed towards art, throughout Europe, would probably promote an unprecedented Progress. The spirit of popular agitation, which the Corn Laws now no longer engross, might attach its epidemic influence and searching powers to the arts in our country, with advantage to all. Nevertheless, he held art in itself to be capable only of slow progress, simply because that must arise solely from a succession of improvements in imitative skill. A parallel to the present demand for variety of style and character had not, he said, existed in any previous period. In painting, sculpture, and architecture, we may learn to discover distinctive features marking a period, and most clearly shewing the development of progression. Mr. Dwyer sustained this argument, by contending that the sameness of treatment in the works of most artists testifies to the tenacity with which copying or imitation clings to all, and that therefore it is essential to reflect and know, how far the different schools of art have relation to each other in respect of imitation,—how much an artist has been indebted to previous examples,—before we can adjudge to him a qualitative rank. The reader then enumerated celebrated works by Greeks, Romans, Italians, Venetians, French, Flemish, and Dutch, which, he maintained, were in harmony with the tastes and moral dispositions of the respective nations at the time they were produced, and also that art is in a great measure localized—dependent on certain rules, as developed by existing specimens, and by the position these held in the public estimation,—that it is essentially a thing of time, place, and circumstance. By judging of works of art upon a particular consideration of beauty, and by admitting one *class* of production as superior in rank to another, without reference to a comprehensive view of art generally, a great injustice had, he maintained, been engrafted on our received opinions upon art. There was, it was said, a strong resemblance in the results, to the choice of an inexperienced person, between one watch, having inferior mechanism in a gold case, and another containing good works, in a silver one—when the gold case was selected. It was unfortunate for art that its votaries had been too frequently influenced by a gold case. Distinctive ranks in the departments of art, the reader contended, were a great evil, and to equalize them would be a great good achieved. Until the difficulties attendant upon the operations of art are understood, and unjust prejudices removed—until painters in oil, water, encaustic, and fresco, cease to disparage each other's work, and to exaggerate the importance of their own, until all aristocracy in practice of art shall be dissipated, and art, in humble garb of plaster and clay, be looked upon as kindlily as if in marble, until some new energy shall have swept away these prejudices, as unreasonable as unjust, and a combination of artists in one emulative course of comprehensive inquiry and dispassionate reasoning, shall contribute to that one great purpose called art—we must not, it was contended, look for a positive and marked progressive feature to be developed in our times. It was then explained, that art being essentially based upon ideality, with an accurate presentment of effects in form and colour, after nature, is constituted and regulated by certain principles in harmony with the prevailing taste, education, or fashion, so as to excite pleasing emotions; and that it is therefore necessary to specially advance education and train the mind, before the really beautiful in art can be properly appreciated, or the genius evinced receive a just and fair criticism. Several instances were referred to, shewing the power of art in expressing clearly and intelligibly to all whatever sentiment it is intended to impart,—as the "Laughing Faun" and the "Dying Gladiator," in sculpture; or the "Creation of Adam," by Michelangelo; the

"Transfiguration," by Raffaelle; and the "Last Supper," by Leonarda da Vinci, in pictures. These examples, it was said, testify to a mental or reasoning ideality, combined with a skill in depicting the essence of things material, and should therefore rank far above imitative skill in the abstract. Ideality is yet more severely tasked in connecting the several ideal embodiments into a grand whole, or complete picture, as in the "Last Judgment," by Michelangelo. Art such as this, he said, might be called *high art;* but the qualification ought not to be attached to the works of an ordinary artist, whose vanity leads him to lay a surreptitious claim to take rank under such a banner.

The characteristics of Greek art, it was stated, are quite distinct from the examples last mentioned, although both have received great and well-deserved admiration. The Greeks, however, approached only to a perfect embodiment of physical beauty, without evolving the attributes of the higher powers of mental reasoning: this would arise simply from their progressive refinements being based chiefly on skilful imitation. Art had undoubtedly been extensively encouraged by the Greeks, from the great number of their works; and if, instead of pursuing the *heroic vein*, they had sought to impart a *moral purpose* (expressions to be taken in their broadest sense), then, indeed, would their productions have attained to a truly glorious eminence. It was the reader's opinion that their wonderful skill, when receiving additional purpose and meaning, would have created much nobler works through their embodiment of mental attributes. The frieze of the Parthenon, he contended, while he had the fullest appreciation of its beauties, ought not to be viewed in any other light than as a production in *imitative art*. Nature, he said, had been so faithfully studied and delineated, that very few inaccuracies could be discovered; but he deduced from this and the pervading similarity of features and vacant expression, not only that the *models* must have been of a superior class, but also that the Greek artists had relied upon their powers of imitating objects as they were seen by them.

The reader remarked that there are two distinct kinds of ideality in art,—one addresses the imagination only, and the other goes further, by appealing to the reflective and reasoning faculties. Several examples were then described to shew that *embellishment* had formed the noblest intent and purpose of art in its best periods, and that, while the first artists of the middle ages painted to embellish, we paint to produce pictures.

After some remarks upon Haydon's writings, he submitted the inquiry: What is *high* art? Is it a term to signify something superior in merit? Is it a matter of theory or practice? Can it teach morality or put down vice? Had it a correlative in the sciences, such as high chemistry or high astronomy? He would be glad to learn the proprieties of art from its phraseology, and would continue his attempt in disentangling the subject at the next meeting.

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## MOVEMENTS OF POPULATIONS IN TOWNS.

It is not uninteresting to speculate on the tendency of towns to extend themselves in certain directions, a tendency resulting either from the favourable character of the position under increase of population, improved modes of commercial intercourse, or the spirit of landed proprietors and builders. As we have already remarked, nothing has had so great an influence over the movement and settlement of populations as that greatest and most remarkable of modern inventions, the railroad. Not only in the immediate vicinity of large towns are these changes strikingly evident, but in the remotest corners a new existence seems to be created, a new impetus to industry and speculation to be given; and men hitherto lulled to sleep and indifference by the dreamy monotony of country life, wake up as it were to new ideas. The gay villa makes its appearance in the distant village, neat, well-garnished shops attract the eyes, the ivy-mantelled tower fast crumbling to ruin is repaired, and even the hut of the cottager, as if ashamed of its ancient hues, smiles under a coating of whitewash.

There can be little doubt that if, on the establishment of a line of railroad, a position remote from the centre of activity be chosen for its terminus, a risk is run of setting up a rival point of activity at a distance from the old, which by its new advantages may be injurious eventually to the others prosperity, and the value of its property generally. The populations will of necessity group themselves around these new centres, and will benefit by the change, not only because they will have at hand such ready means of transit for goods to the most distant parts, but because they will get land at a cheaper rate, houses at lower rent, with the advantages of air and space denied to the mass, who in ancient towns are forced to inhabit dark, unwholesome, crazy buildings, many of which were once tenanted by our better classes.

Nature seems to have pointed out certain situations as better suited for the residence of large multitudes than others. History, again, points out to us in what respect centres of activity have been changed, rendered variable, or been altogether destroyed by the short-sighted regulations of authority, the influence of tyranny, or the avarice of speculators. It does not matter much where great towns ought to have been and might have been; although leaving men free to choose by their own natural instinct, the positions most favourable for the development of their industry would, without doubt, have changed the whole political face of society, and benefited it morally and materially; for every atom of liberty gained through tolerance, however indirect, is a victory to the people in genuine prosperity. It does matter, nevertheless, when great centres of activity have been created or do naturally exist, that they should not be suddenly deranged by new interests or impolitic opposition to progress of any kind, but be allowed to take their fair and legitimate share of the advantages. The introduction, therefore, of improved methods of locomotion, not immediately within their reach, could not fail to be injurious to them, and the application of a remedy to evils once created, is at no time very easy.

On the first attempt to establish a railroad near Paris, considerable opposition was raised to bringing the terminus into the town. The St. Germain Company, impelled by its own interest, naturally sought to obtain a position as central as possible; it was, however, compelled to content itself with its present station in the Rue St. Lazare, instead of being close to the Madelaine. Here it could scarcely be said to be in Paris, inasmuch as, although at some distance within the walls, there was hardly a house to be seen in the vast open plain through which the line now passes. To the south of the town arrives one of the two railroads to Versailles. Instead of being permitted to enter, like its rival, within the walls, so strenuous an opposition was made, that it only approaches them at a very respectful, but most inconvenient distance; and the result has been what might have been anticipated, that the company has failed, and sold its road to its happier competitor. Had the terminus been carried, as was proposed, up to the Pont Neuf, little doubt can be entertained that the utmost degree of prosperity would have followed. Now, however, but not until it had been ruined by its rival, its long-expected continuation to the west of France will be carried out, and then the immense activity that will of necessity be given to it, must necessitate the proposition, and assure the consent of the town authorities in their own interest, to the extension of the line into the interior of the metropolis. In fact, it is clearly evident, that this line must become eventually the principal communication with the west of France, and that when the lines to Lyons and Bordeaux shall have been opened, a junction at Paris will become necessary, and thus the Ocean and the Mediterranean be brought into rapid communication with each other.

The St. Germain Company has foreseen all the immense advantages which its rival to Versailles might have derived, had the line been extended, as it is about to be, to the west. It has become the purchaser of it, and uniting the two under one management, is preparing a junction for them at a place called Viroflay, some six or eight miles from Paris.

The activity with which this company has acquired to itself so many advantages, has excited no little attention; and some have even carried their provisions so far, as to assert that a great movement is beginning, on the part of the population, towards the part of the town touching upon their lines; and that in contemplation of such a move, of necessity, on the part of the inhabitants, the lands in that direction have been bought up as fast as possible by the interested parties. These apprehensions, of the rising of a new Paris by the side of the old one, are much exaggerated. Great as is the movement in the direction alluded to for the moment, it is not greater than might be expected from the increase of population, and from the natural effect of the earlier termination of the lines of the St. Germain Company. When we shall have other lines opened from the east, and the south, and west, we may expect that the vicinity of those lines will display as great activity of change as the first has given proof of.

We have, however, here some half dozen lines united in one; and a junction further proposed of the lines with the great western road; and an attempt made, moreover, to approach and run a cross line into the northern. It results then, that, by reason of the increased facilities accorded by this network of iron, intersecting the west of Paris, having a communication with the sea by Rouen and Havre, on the point of having one with the west of France by the junction at Viroflay, with the prospect of an union with the northern, which is separated from one of its branches by a merely trifling distance, the lands lying within the influence of this network have acquired a value greater generally than those of any other part, and new streets and roads are forming, and buildings rising, with a rapidity almost unequalled.

When, with the advantages of railway communication, with the facility of transporting its productions to various parts of a country, you offer to an industrious population land and houses at a cheap rate, can one be surprised that the offer should be accepted? Paris is becoming every day more and more a manufacturing town; and, as such, will accept with avidity all the facilities which can be presented to it for the transport of its productions. The progress made within comparatively few years is absolutely astonishing, and is not confined to any particular quarter. The fashionable as well as the unfashionable neighbourhoods are invaded by the ateliers of industry, and tall chimneys, vieing with each other in elegance and height, rise up beside them, filling the atmosphere with smoke, and rapidly changing the clear skies of Paris to the melancholy hues of our manufacturing towns.

The manufacturer will look only to the facilities for the transport of his fabrics. He will not hesitate, when offered land at one or two francs a square mètre on which to build his ateliers, to prefer it to paying such immense prices as it costs in the town, where it rises to even 300, 500, and sometimes 1,000 francs the mètre. The buildings, of whatever kind, will be infinitely cheaper of construction, as the materials can be brought immediately by the railroads from the quarries which produce them. From Montoorye, freestone of the finest kind; from Nanterre, rough stones of an excellent quality for ordinary constructions; from Argenteuil, the best plaster; and from the north, coals may be transported to their doors, without entering Paris at all. Thus, the heavy impositions exacted at the barriers will be avoided; and, above all, that most excessive annoyance of the barbarous *octroi*—the inspections which every thing must undergo before being allowed to enter, causing delay to business, trouble, vexation, and expense, as well as injury to goods and property exposed to be hauled over by the agents of authority. These are important considerations for the manufacturer, and he will not fail to profit by any change for the better.

Paris is situated within a natural basin, which presents many advantages, and seems to have pointed it out as the site of a great capital. From the island on which its first inhabitants had congregated, it extended itself to the south bank, on which we find the curious remains of Julian's palace and baths, and then to the north bank, where the noblesse of the middle ages erected some of their fine old hotels. Fashion then led the way westerly, and the Faubourg St. Germain rose. Its glories are now fast passing away; and a new world,—a

world of wealth as well as title, a world of money as well as fashion, a world of greater industry, intelligence, activity, equality, despising the idle dreamings of mere vanity and insane pride, seeking for the truth and reality of things, and not the fictions of life,—is spreading itself over the west and north-west quarters of the town.

This is the direction of the movement, which appears to be embarrassing the contemplations of the authorities. If the movement continues, if those who have had the skill to speculate and profit by it, tempt it with still further advantages, and if the town authorities do not remove some of the unreasonable restrictions which weigh upon commercial industry, will not the result be somewhat injurious to its interests and revenues, and will not the increasing population be disposed to spread itself in the direction most favourable to its interests, its profits, and its health?

If these speculations have some truth in them,—and they are not without a certain gravity,—the stupid old system of the octroi, which the great Revolution destroyed, and Napoleon re-established with all its annoyances and embarrassments to business, will run the risk of being overthrown, not by arguments and theories, but by a material agent, which science and industry have created. The authorities, anxious to preserve their revenues, may extend their barriers to the line of the fortifications, but in doing so they will more than double their expenses, while the manufacturing population may be still free to transport itself beyond that circle.

There is, in short, on the part of the good people of Paris, a disposition to move beyond the barriers, to place itself in a cheaper locality, and out of the reach of the municipal impositions. With the facilities offered for transporting their persons into the centre of the town, by omnibus and railway, they are as quickly at their *bureaux* and counting-houses as if they resided within the *faubourgs*. Why, then, should they not profit by the cheapness of living and lodging, the blessing of purer air and the luxury of a garden; or, have two establishments out of town, as well as in the town? Hence, all round the capital, but particularly in those directions most favoured by rapid means of conveyance, buildings are rising by thousands; and yet within the old walls, in excellent situations, exist immense vacant spaces without a house upon them, sufficiently extensive to contain a population as great as that which already peoples the gay and charming city.

## PUBLIC PARKS—COPENHAGEN FIELDS.

Sir,—Some years since an inquiry was instituted in the House of Commons, as to the expediency of providing additional parks and places of exercise for the public in the vicinity of the metropolis. The committee to whom the matter was referred stated, in their report, that the then present public places for exercise and recreation were insufficient, and recommended that additional places should be established, indicating, among other places, Copenhagen-fields (for sale at the time) as the most eligible spot for a public park that could be selected. Why this recommendation was not carried into effect I cannot say; but I think that every well-wisher to public health will agree with me, it is a great pity that it was not, and that too little regard has been shewn to the welfare of the inhabitants of this quarter of the metropolis, and to the community at large. Recently walking in the neighbourhood of Copenhagen-fields, I was much grieved to see the alteration in appearance of this once delightful spot. Verdure is now almost destroyed, and clamps of burning bricks occupy the spot where the weary citizen, after the toils of the day in the close counting-house, used to refresh himself with a mouthful of fresh air. In a few months hence it will probably be covered with a parcel of flimsy houses, run up with rubbishing materials; and the poor worn-out clerk and artizan will have to walk an additional mile or two to get a sight of a green field.

For some years past a gradual and systematic plan of encroachment has been carried on against the public enjoyments and convenience. Old footpaths and walks, which have existed from time immemorial, have been shut up. Many of your readers may remember the footpaths across the fields to Hampstead, Kentish-town, and Highgate, which were nearer, and more pleasant in the summer time than by the dusty roads. Perhaps some may recollect that most delightfully rural lane, called Hagbush-lane, which used to run in a northern direction from near Copenhagen House towards Highgate. This lane was an *ancient pack-horse road*, and before the use of vehicles, was the great northern road. This thoroughfare was closed some few years since by a system of gradual encroachment, in the most unjustifiable manner, and all signs of its former existence destroyed.

I do not mean to say that it is possible to undo all the mischief that has been done, or to restore the place to any thing like its former beauty; but a great deal may be accomplished if immediate and energetic measures are taken to secure this spot for the use of the public. If not done *immediately*, it will be too late, and the opportunity thus presented of giving additional beauty and health to the great metropolis *will be for ever lost*. J. C. P.

Clerkenwell, Oct. 25th, 1847.

## NOTES IN THE PROVINCES.

The dilapidated old Church of Ewell, Surrey, is being rapidly replaced by the more spacious edifice erected chiefly at the expense of Sir G. L. Glynn, the rector, and at the cost of 6,000*l.*; from the design of Mr. Henry Clutton, architect. Contractors: Mr. Myers, and Mr. W. Killick of Ewell.——The Wesleyan College at Taunton, built from designs by Mr. James Wilson, of Bath, was opened on Tuesday week before last. It is in the Tudor style. The centre is marked by a tower, rising between two gabled compartments. Above the entrance there is an oriel window. On each side of the general centre are three divisions, separated by buttresses, each filled in with a window. The building is capable of accommodating 175 students. ——The Yeovil market and town-hall tenders having been lodged and opened, that of Mr. James Davis, of Frome, was accepted, being the lowest, and accompanied with 'testimonials of his ability as a builder.' The cost of the building (exclusive of the site) will be about 3,500*l.*——Steps have been taken for enlarging and improving the assize-hall at Wells, and for building a large consulting-room for solicitors and clients, enlarging the gaol, and building a kitchen and other necessary offices. It is also intended to improve, embellish, and refurnish the residence of the judges. Mr. R. Blakemore, M.P., has contributed very liberally towards the latter object.——The spire of Lydney Church, which is said to be 'one of the finest and nicest proportioned in the kingdom,' and about 220 feet high, is undergoing very considerable repairs, by Mr. Chas. Walker, steeple-builder, Lydney, at a cost of upwards of 180*l.*, borne by Mr. Charles Bathurst, Lydney Park. The spire, says the *Gloucester Journal*, is ornamented with a scroll, forming a cross, and worked from a stone weighing upwards of 12 cwt.——Fretherne Church was consecrated on Thursday week. The cost of the rebuilding, on the old site, has been about 3,000*l.* The edifice, which is in the late decorated style, consists of a nave (40 feet by 18 feet), a chancel (20 feet by 14 feet), with a vestry in the south side (8 feet by 9 feet); a north aisle adjoining the nave (23 feet by 9 feet 6 inches), and a western tower and broach spire. The principal entrance is through the tower on the north. The walls are 2 feet 6 inches thick, lined internally with white freestone ashlar, no plaster being anywhere used in the church. They are faced externally with a brown sandstone. The external dressing and moulded work, as well as the spire, bell turret, and crosses, being all of Bath stone, the contrast of colour between the Bath and brown sandstone is said to have a good effect. The floors are laid with encaustic tiles in pattern. The font is of white freestone, from Painswick, carved and moulded, and raised upon a grey forest-stone step. The roofs are of Memel timber, stained with asphalte. The sittings (which are open) and the pulpit, &c., are of Riga carved oak, dark-stained. The chancel windows, as well as those of the nave and aisle, are all filled with stained-glass, executed by Mr. Rogers, of Worcester. The organ is placed on the floor, under the west window, in the nave. The interior fittings have been executed by Messrs. Potter, Terry, and others, the Patent Carving Company, and Messrs. Minton and Co. The contractors were, Messrs. Ashbee of Kingscote, and Cholerton of Quedgley; and the architect, Mr. Francis Niblett of Gloucester.——The Birmingham Corn Exchange, opened on Thursday week, is 172 feet long, and from 37 to 40 feet wide, including the vestibules. It is of the Doric order of architecture, and is divided into three compartments by ranges of pillars on each side, between which are placed the dealers' stands, which are convertible into tables. The room is lighted by a semicircular glass roof running the whole length of the building, and not liable to be darkened by snow. There are 5,000 feet of glass in it. The room is decorated with statues and fitted up with gas-lights springing from cornucopias. Committee-rooms and other conveniences are also provided. The building was erected by Mr. S. Briggs, under the superintendence of Mr. Heming, the architect.——Mr. W. W. Weston, the munificent improver of the church of Stratford-on-Avon, has ordered the restoration of the chancel of Haselor church, of which he is the impropriator. The works will be superintended by Mr. Henry Saunders, of Stratford, architect. The old and curiously interlaced oak timbers of the roof, says the *Worcester Journal*, have already been laid open, and the east window restored in stained glass. Two arches, curiously painted, have been exposed, and other improvements effected.——The dilapidated old church of Brockworth, a few miles from the city of Gloucester, has been in course of restoration within the last two years. Much it is said has been done, and 186 sittings made free. The chancel, by the liberality of Sir John W. Guise (the lay rector), has undergone a thorough and perfect repair. Stained glass, by Wailes, for the east window, has been presented by Mr. William Davies, of Wellclose. There is a deficiency of 26*8l.* 10*s.* however in the ways and means of completing the repairs. Reopening fixed for 2nd inst. Mr. Jacques, of Gloucester, is the architect.——Three years since a few students of Queen's College, Cambridge, requested permission of the authorities to contribute towards the restoration or rather re-exposure of the roof of the chapel. The restoration has been effected, and the roof now appears panelled in oak, and richly decorated with painting and gilding. At the same time Mr. R. Moon, M.A., restored the pitched timber roof of the hall, and added a louvre and bell turret. A new east window of Caen stone has also been added to the chapel, the stained glass by Mr. Barnett, of York. Much, however, remains to be done both to the chapel and hall. A tasteful restoration of the windows and wainscoting, it is thought, would render the hall the most architecturally correct in the university; and we trust, says the *Cambridge Chronicle*, that all the members of the college will unite their efforts to restore these edifices. ——The church of Brothertoft, near Boston, has been restored and beautified in the Gothic style at the expense of Mr. Thomas Gee. The reconstruction has been effected by Mr. Booth, of Boston, under the supervision of Mr. S. Lewin, at an expense of upwards of 900*l.* The most effective ornaments of the building, says the *Lincolnshire Times*, are the carved pulpit and altar-screen by Mr. J. W. Carter, of Boston, lately foreman to Mr. Booth.——St. Paul's Church, Hull, was consecrated on Wednesday week. The plan of this church, says the *Hull Packet*, consists of chancel, nave with aisles, vestry, and tower to be crowned with a lofty spire. The style is early English, with lancet windows. The west end has an arcade of five arches, two pierced. The roofs are of lofty pitch, covered with Dampier's patent dark-gray tiles, which have a pleasing appearance. The walls are of rough stone, from Brough; with quoins, &c., of Caen stone. In the interior the nave is divided from its aisles by an arcade of six arches on either side, and mainly depends for effect on its roof, which is open to the rafters, and supported by arched braces on stone corbels. The seats are all alike, low and open. The chancel (40 feet long) is separated from the nave by a moulded arch, and rises by steps eastward to the altar. The

eastern triplet is filled with stained glass, by Mr. Wailes. The internal length of the church is 123 feet; and the internal height to the ridge of the nave roof is 47 feet. The contemplated height of the spire is 160 feet. The architect is Mr. W. R. Dykes, of York, and the contractors are Messrs. Simpson and Malone, of Hull.——A Health of Towns' Association is about to be established at Doncaster, in connection with the metropolitan one, and for the prompt adoption of practical improvements in the drainage, water, ventilation, &c. of the town.——The Newcastle and Gateshead Whittle Dean Water-works have made great progress towards completion. The earthwork of the reservoirs at Welton has been executed. The store of water which they will contain will be about 250,000,000 of gallons,—the present consumption of Newcastle and Gateshead being rather less than 1,000,000 gallons per day. Of the twelve miles of iron aqueduct pipe, upwards of eight miles are laid. ——The alterations and repairs of Glasgow Cathedral are progressing slowly towards completion. The clock-tower at the west end has been reduced in its proportions to a level with the body of the cathedral. It is thought to be an addition never contemplated by the architect. The external repairs on the south side are completed, and the removal of the north transept is in progress. The churchyard has been lowered about 4 feet at the east end, in order to uncover the lower part of the building.

## RAILWAY JOTTINGS.

Iron-girder bridges, formerly believed to have been made on a principle which insured their safety, having being found to be really not so, says a Manchester paper, it is important to know that further attempts are being made to construct bridges which shall, to a much greater extent, combine safety with economy and simplicity. Lately, says our authority, we saw a model of one which is said to combine these important properties, and is now exhibiting at the Town-hall warehouse, Cross-street. It is a perfect arch, composed wholly of iron; is 22½ feet long, 8 inches deep, 20 broad, and weighs about 6½ cwts. It combines the arch with the abutment bridge, and they can be used separately or together. All the tension parts are made of wrought-iron, and the compression parts of cast-iron. It is so constructed that the rafter and ring-post principle intersect throughout the whole of the structure; and there are chains at the bottom and centre for keeping the whole in a perfect state of tension, thus equally distributing the weight or pressure. The model now supports a weight of 50½ cwts., without having the abutments up; it, consequently, depends upon the chains entirely. We were told that, if the weight be taken off the centre of the arch, its curve would still be maintained without the slightest deviation: it possesses another important property, that of compensating itself against heat and cold.——By the suspension of railway works, it is believed that between 200,000 and 300,000 persons, in all, will be thrown destitute; and that nearly 10,000 railway navigators would be put out of employment within a distance of ten miles round Manchester alone, during the ten days just past. 'With so large a portion of their own working population suffering from the want of employment,' observes a contemporary, 'this large amount of unemployed labour thrown upon the manufacturing towns cannot fail to seriously aggravate the state of things during the coming winter.' But it probably matters little to the Stock Exchangers on whose shoulders the liability of sustaining them now falls.——The Railway Commissioners have just called for a return from all the railway companies, with the view of ascertaining the estimated amount remaining to be paid by each of them, and the probable expenditure, during each half year, to 31st December, 1851. The return is to specify the various termini, lines partially or entirely contracted for, and amounts to be expended. Under head of 'Contracts entered into,' date of expiration of contract is to be given, and amount remaining to be expended under it; estimated amount to be expended under each contract to 30th June, 1848; amount in addition to such contracts; amount required to complete works, and up to 30th June next. The return is also to give a list of lines for which no contracts have been made; of works commenced, and amount required to complete them to 30th June; of those not commenced, and amount authorised to be raised and expended, with probable expenditure during half-year ending 31st December, 1847, 30th June, 1848, and 31st December, 1848. It is understood to be quite optional with the companies whether to comply with these requirements of the return or not, as the commissioners have no power to compel them; but it is thought, says the *Times*, that, as the information sought for is not inquisitorial in its character, the return will be generally acquiesced in.——The site for the terminus of the South-Western in York-road, Lambeth, has been cleared by Messrs. Lee, the contractors for the works of the extension from Nine Elms, and they are making active progress towards the completion of the line by next spring. The viaduct is nearly completed to Westminster-road. The whole length of this viaduct, nearly two miles, passes through a densely-populated neighbourhood. The arches are to be let for shops, workshops, and dwellings, and are to be covered the entire length of the viaduct with 'Seyssel Asphalte,' prepared by help of a sort of portable steam-engine of all-work, made by Messrs. Eastern and Amos. The entire surface to be thus covered is estimated to contain about 450,000 feet.——The Lynn and Ely line was opened throughout on Monday week: from Lynn to Downham Market had been opened for some time. The bridge over the Ouse is considered a work of art, and a good specimen of carpentry. The Government inspector, Capt. Wynne, R.E., has reviewed the works. His examination is stated to have been very close and severe, his attention being most particularly directed to the bridges over the Ouse and Wissey. The engineer by whom they were constructed is Mr. J. S. Valentine, and the resident engineer Mr. Houselander. The bridge and viaduct over the Wissey is 103 yards in length, and consists of one opening of 70 feet span over the waterway, similar in construction to the bridge over the Ouse, and seven side openings of 30 feet span each, with a single span over the waterway of 121 feet 6 inches. The method adopted to support the railway over this space is by suspending the platform from three timber bows, each formed of 3-inch deals, firmly united together by oak trenails. The suspension rods are of wrought-iron, of the best material and workmanship, it is said; each rod having been proved equal to a strain of 20 tons; and as there are 72 of these rods, the weight they are capable of supporting is 1,440 tons; but the greatest weight they will be required to carry will not exceed 310 tons, the platform itself being 150 tons, a weight never likely to come upon the bridge except for the sake of experiment. The piers are of Yorkshire stone, the foundations being sunk to a depth of 30 feet. Four engines and tenders, and five waggons laden with iron, were placed upon this viaduct at the same time but the deflection, according to the *Morning Advertiser*, was scarcely perceptible. The *Morning Herald* states that the proprietor of two windmills, 150 yards from the Ouse embankment, has got 1,000*l.* compensation for 'loss of wind!'——The timbers supporting one of the arches (the seventh) of a viaduct of twenty-one arches crossing Wharf Dale and the River Wharfe, on the Leeds and Thirsk line, gave way on Tuesday week before last, while the workmen were quoining the arch, and the quoined portion fell and killed two of the workmen. This viaduct carries the railway across the river at a height of 70 feet above the surface of the water. The arch which fell was 30 feet in width. The stones had been applied to about 20 feet of the arch, and the mortar spread for the remaining ten feet of stone, when the timbers gave way. Serious apprehensions were for some time entertained as to the stability of the other six arches.——On Friday week the centre work for one of the arches of the Caldervale viaduct was blown down by the wind, and a damage of 200*l.* sustained. ——The laborious work of arousing railway directors to a sense of their duty, their interest, and their safety, as well as the safety of the public, seems now about to be rewarded with something like success in the manifestation, at length, of a reluctant endeavour to provide the simple means of securing both. The South-Western Company have recently affixed to the guards' carriages a very loud sounding bell, to be rung by the guard while the red or danger flag flies up, as a signal to the engine-driver to stop the train. Various simple, but it is said effectual, contrivances are also being instituted on some Scottish lines, including what a clergyman in the *Times* also recommends, namely, a suggestion lately made by ourselves, that the side footboards of carriages be converted into a secure passage for the guards, at least on one side, by means of a rail, with space within for the movement of one person along the train, from carriage to carriage. The guards would thus be able to see or hear, and judge for themselves as to any necessity suggested by passengers for stopping the train, &c.; and might be called on for the purpose by some simple but efficient communication between the carriages and their seats, but they should be also appointed to make the circuit at short intervals. The tickets, too, might thus be again, as once, but thus with perfect safety, collected by the guards. To prevent passengers from having exit along the guards' beat, the doors on that side might be locked by the guards.——The atmospheric trains on the South-Devon line are said, by the *Western Times*, to be running with success. We should like to see how they get through the winter campaign, however, before being again obliged, as we have been, to fluctuate perpetually, between good reports and evil, as to the doings of the atmospheric lines.——It is said that the whole of the traffic between Malton and Driffield had been conveyed on the back of a donkey previous to the formation of the Malton and Driffield Junction Railway, and that before the construction of the Newcastle and Carlisle Railway the whole of the passenger traffic on that road was done by one coach.——The contractors for the completion of the branch from the Furness line to Broughton-in-Furness, have pushed forward their undertaking, so that it will be finished in about six weeks. The station at Broughton is in the course of erection.——We learn, says the *Carlisle Journal*, that the works on the Carlisle and Glasgow line, near Dumfries, are daily increasing in interest, particularly at Nunholm, where the bridge is in course of erection. The scaffolding on which the crane travels has been carried across the river, and the wondrous machine is fairly set to work. Seizing three or four gigantic stones in its forceps, it deposits them in the foundation-bed, returns to the bank asking for more, and by its aid the operatives will soon be able to raise a rampart of mason-work above the water.——Compensation for detainment half an hour at the head station of the Edinburgh and Granton line was recently obtained at law by a passenger who held a ticket for a train in which there was not room enough for him.——The engineers of the Perth and Dundee Company, since witnessing the late inundation in the river and its effects, are doubtful of the propriety of following out the plans lodged for the Perth bridge, which was intended to be of wood. The navigation commissioners have also, we hear, complained to the Treasury of certain proceedings on the part of the Lords of the Admiralty, the sanction of both being required to any plan for crossing the river.——The greatest engineering difficulty presented in the construction of the Ulster Railway, says the *Northern Whig*, was the formation of a bridge over the Bann, on the Ulster Railway, without the expenditure of an excessive sum of money. The river is of considerable breadth, and its bottom at the point of passage is composed of soft mud and bog. The difficulty, however, has been overcome, a substantial bridge having been constructed at a moderate expense from a plan by Mr. Godwin, the company's engineer. The bridge is 200 feet in length, divided into five compartments of 40 feet each. It is constructed entirely of timber, with the exception of malleable iron tension-rods attached to the girders, technically termed 'trusses.' The height of the bridge, from the summer level of the river to the rails, is 22 feet, the depth of the water about 20 feet, and the bottom consists of mud and bog, as already stated, to a depth of above 16 feet. The bridge is therefore supported on piles and framing nearly 60 feet high.——The bridge at Etaples, constructed for the passage of the railroad from Abbeville to Boulogne, fell last week. The expense of repairing

it will be 30,000 francs.——The railway from Cracow to the Prussian frontier was opened to the public on the 14th ult. This line joins that of Upper-Silesia, and thus completes the communication with Vienna and Berlin. The whole journey from Paris to Cracow, says *Galignani*, may now be done by railway in three days and a half.

## Correspondence.

WESTMINSTER COURT OF SEWERS.

MR. EDITOR,—Your report of the 30th October expresses that your statement on the alleged illegal conduct of a commissioner was a record only of the proceedings of that court, whose misdoings are no protection to others. I do not desire to trespass more than possible on your pages, yet I cannot but remark on your last week's report, where you say the solicitors give it as their opinion,—"That the owners of existing houses might be called upon to contribute, providing the houses had not been erected more than thirty-five years."

Is it possible that professional men who have received upwards of 900*l.* for their new Act, which you report they are called upon to explain, can be thus ignorant that the Act compels every person to drain into every sewer if within 100 feet of a dwelling, be the sewer or house as old as the said solicitors (if they made such a statement) are young, or green, if you please? Well might some of the members of the court repudiate such doctrine; the result of which is, the solicitors obtain a further job to draw up a case, obtain counsel's opinion, and report a copy to a future court. Not only doth the court (which, unfortunately, abounds with lawyers) thus waste the ratepayers' monies, but delay for months their proceedings, and Mr. Carter's buildings stop, in the month of November, over a question capable of being solved by any boy of common understanding. The court being attended by a solicitor (who, of course, works gratis) at each of its meetings, is new? I can only reflect and feel ashamed of the commission. What right have men to accept appointments if they are incompetent to decide so simple a question? Mr. Carter may safely proceed with his sewer: he must and will be paid for it,—the price may be ascertained some twelve months hence by that splendid body whose duty it was in July last to have prepared a tariff of prices for sewers, as a fixed rule, thereby informing sewer-builders what they had to expect. This should have been done by the special court (which, for the future, I shall designate the insane court) summoned for the 27th of July last, expressly to make rules for the carrying out of the new Act, whose energies produced two resolutions, one of which survived one month, when it was repealed, and the other is waiting the same result, both being equally absurd.—I am, Sir, &c.,

WM. FARLAR.

Brompton-square, Nov. 3, 1847.

THE IRON TRADE.—It is not true, as some accounts would assert, says the *Birmingham Gazette*,—a stout upholder of the prospects of the iron trade,—that prices have been fully sustained in all branches of the trade, and that it has been 'unaffected by the difficulties consequent upon the very serious monetary panic.' Contracts for rails have been taken at lower rates, and the bonus of cash payments would have been eagerly secured at a considerable sacrifice upon any description of iron. In the pig trade there has been a giving way—to a slight amount, it is true. On all hands a diminution of confidence has been felt, and an evident desire shewn to contract business to the lowest consistent amount. We were sorry to observe, in an article that has appeared in a leading metropolitan journal, already severely commented upon, an assertion, based upon a hurried, half-informed report of the proceedings at our last quarterly meeting, that the interests of this trade are adverse to those of every other, and that its prosperity inflicts poverty and hardships upon the masses of the people. This we feel called upon flatly to contradict. There is not, that we are aware of, any trade in existence which so continually and immediately circulates an equal amount of its returns among the working classes of our country—surely not any of those where the raw material is of foreign production.

## Miscellanea.

VENTILATION OF CHURCHES: ST. JOHN'S, LIVERPOOL.—Bad ventilation being greatly complained of here, a plan was proposed, which, although only partly carried out, has been successful, according to the *Liverpool Standard*, in a great degree. It was proposed to cut apertures in the ceiling, and in the apertures, flush with the ceiling, to place circular gratings, and from the apertures run shafts, having flanges or bonnets at the bottom of each shaft to cover the aperture, so as to create a draft, and prevent the impure air diffusing itself through the interior of the roof, thereby causing pressure, and preventing a quick draft through the orifices in the gratings. More openings and pagodas were proposed to be placed in the roof, the then existing ones not being sufficient to carry away the impure air from the interior of the roof. With the extra openings abovementioned, the shafts, it was suggested, might be dispensed with; but the ventilation would not be so complete and effectual without the shafts as with them. A horizontal shaft was proposed to be placed upon the joists over the ceiling of the church, one end running into the tower, and from the other end of the horizontal shaft to run a shaft perpendicular into a louvre in the roof. It was proposed that the clock in the interior of the church should be taken down from its present situation, so that the orifice through the wall, which is nearly 4 feet in thickness, and is bored through to the interior of the tower, might be made use of for the purpose of ventilation, by placing a grating over the aperture which the clock now covers, and having a shaft from the other end to one of the windows in the tower. If the shaft was not approved of, it was suggested that the three windows in the tower should be made so as to create a draft to carry the impure air through the Venetian windows in the belfry, false floors being objected to as over-expensive. Shafts were proposed to be run under each side of the pews in the body of the church, to reservoirs sunk in the centre aisle to receive the pure air, with gratings over them. The above plan, if acted on, would, in the opinion of the architect, in which the authorities connected with the church coincided, have removed the inconvenience complained of, arising from the impure air collected when the church is crowded in service hours. From financial considerations, however, only a portion of it has been acted upon. The shafts which were to be run along each side of the body of the church, in connection with air-reservoirs under the centre aisle, have been dispensed with; and the opportunity has for the present been lost of using the orifice in the wall, in which the clock is fixed, for ventilating purposes. The windows in the tower, which, in case a shaft was not run through, might be made of great service by being opened, and perforations made in the ceiling, remain as they were, closed.

A NEW TREDDLE-WHEEL CARRIAGE, expected to travel on common roads at the rate of ten miles an hour, by the light, simple, and pleasant labour of a tread-wheel attached to machinery in the interior, and capable of carrying twelve persons at this rate, for thirty to forty miles, by one driver, without fatigue, is at present exhibited in model at Liverpool. If the power requisite as a prime mover be so light and easily applied, why not replace the driver's by a powerful spring, to be wound up like that of a watch, at convenient stations, or by the driver himself at once, with the help of a passenger or two, instead of having him on the tread-mill continually, like some incorrigible criminal?

ELECTRO-TELEGRAPHIC PROGRESS.—Along the North-Western line the electric telegraph is rapidly approaching completion. Workmen have been employed in laying it down at Euston-square, whence it is to run along the New-road, King's-cross, Pentonville, City-road, &c., to the central station in Lothbury. Below Wolverton, the line of telegraph is already finished and in working order, and it is expected that before the close of the year the communication between Liverpool and London will be fully established.

IMPROVEMENT OF PULLEYS.—A patent has been taken out in America for increasing the adhesiveness of the surface of pulleys, drums, &c., by a coating of India-rubber, or some other gum of similar nature.

IS BAD WORK TO BE PAID FOR?—This is a question, says the *Iris*, which frequently arises in Sheffield, and one which it is often exceedingly difficult to decide, especially as to work sent out to be done. In a recent instance, a quantity of stuff for files was given to a workman to cut, and instead of doing them properly himself, he employed a boy to cut the round part and a man to cut the flat, and the work was badly done. The wages were therefore refused, and a proposal was made that the workman should pay the worth of the iron and take the files for his wages. This he refused to do, and summoned his employer for 25*s.*, which the mayor restricted to 20*s.*, dismissing the summons, but ordering that sum to be paid, as he conceived that, though badly cut, the employer 'might manage to get rid of them in some manner:' rather an equivocal recommendation, surely, from a magistrate. The defendant was by no means satisfied with the decision, especially as this was but one out of many instances in which he would be obliged to 'get rid' of bad files 'in some manner.'

NORFOLK AND NORWICH ARCHÆOLOGICAL SOCIETY.—At a meeting held the week before last, the Rev. R. Hart read a paper on the "Pilgrimage to Walsingham," chiefly founded on Erasmus's account of his visit to that celebrated shrine.—The Rev. John Gunn, who had intended to have read a paper on Herbert de Lozinga's Norman tower, but had not been enabled to prepare it in time, made some remarks on Yarmouth church, particularly describing the recent discovery of Lozinga's tower, and explaining, by reference to plans and drawings, the manner in which the desire to preserve it had affected the subsequent enlargement of the church.—Mr. Harrod, the secretary, read a paper on, and a translation of, a document, found amongst the corporation records, relating to the broils which were prevalent in the reign of Henry VII., between the prior and monks of Norwich and the authorities of the city.—Mr. Francis Worship read a letter, addressed by himself to Mr. Dawson Turner, in reference to the Cromer monument, lately discovered in Yarmouth church; and an engraving of the monument, which had been executed at the expense of Mr. C. Palmer, was presented by that gentleman to the society.—The Rev. James Bulwer gave some particulars respecting some very beautiful rood-screens, in Gately, Caston, and other churches, and exhibited drawings of each.—The Rev. C. Thomas took the opportunity of remarking, with respect to the subject of screens bearing emblematical designs, that there were four, he was informed, that were at present blocked up by pews, or covered with plaster; so that the emblems on them were hid. These four were at Gooderstone, Rainham St. Martin, Suffield, and Foulden, near Oxbourne; and he had no doubt that, were attention directed to the subject, many others would be discovered.—Mr. Britton, who was present, made some observations on the peculiarities of Yarmouth church. The Bishop of Norwich was in the chair, and Sir John Boileau took an active part in the proceedings.

LITHOGRAPHY FOR ARCHITECTURAL SUBJECTS.—We have recently seen some specimens of a new process of *stumping* in lithography, by Hullmandel, which may be advantageously used for architectural subjects, as it supersedes the necessity of a tint-stone, and so enables a good effect to be obtained with economy.

BRUGES CATHEDRAL TO BE COMPLETED BY AN ENGLISHMAN.—A termination has been given to the tower of the cathedral of Bruges, from the design of Mr. Chantrell, under the superintendence of M. Buyck, towns' architect of Bruges. It is of very massive proportions and 250 feet high, with the detailed decorations resembling the towers of Ely, Norwich, Rochester, and Durham. The former wooden termination was burnt some years since. The west end of the cathedral, long unfinished, is about being completed also.

DESTROYERS OF BRITISH SHIPS.—A friend writes us from India, that in the dockyard of Bombay is to be seen a new ship of the line, entirely destroyed by an invisible army of white ants, who have riddled every timber to such an extent that they will scarcely hold together. What will not united and repeated efforts effect?

COMPENSATION FOR GOODWILL, &c.—In a case of compensation sought by Mr. Hallett, for loss of trade, &c., in premises situate in Dorset-street, Blackfriars, required for the purpose of city improvements, the claimant had taken the lease and goodwill under covenant to grant an annuity of 30*l.* per annum to a Mrs. Snoxall, whose husband had carried on business as a blind-manufacturer in Dorset-street and Crown-court; and not only to allow Mrs. Snoxall to reside in one of the houses, but not to carry on the same business (which had been established upwards of sixty years, under the name of Snoxall and Hallett) at any other place. The lease was granted in 1839, for twenty-one years, by the Earl of Delawarr, at a rental of 90*l.* per annum, which was less than its real value, and as much as 100*l.* improved rent had been offered for a portion of the premises. The claim, therefore, was for 825*l.*, seven years and a half improved rent, and 1,836*l.*, three years' loss of profits. The matter was tried at the court of compensation, and evidence was adduced at great length on the part of the claimant. The Recorder held that no claim could be made for what might have been an improved rent for another business, unless the claim for the one now carried on was abandoned. The jury, however, would estimate the improved value of the property as at present used and enjoyed, and a reasonable compensation for loss of profits. The jury gave a verdict for 385*l.* improved value of the lease, and 645*l.* 3s., one year's loss of profit, fixtures, and loss by removal; the whole amounting to 1,030*l.* 3s.

GOODWIN SANDS: ANOTHER BEACON SWEPT AWAY.—The iron tubes of Dr. Potts may still remain, but the beacon erected on them has shared the fate of all its predecessors. It was washed away by the violence of the storm of the 23rd ult.; but it can scarcely be possible that the tubes or piles themselves were reached, as they were sunk to a depth of more than 31 feet below the surface. Dr. Potts still maintains that they 'will be found efficient for bearing any proper superstructure,' but that 'the variety of erections engineers may be pleased to place on them, is a matter not under his control.' In our next number we hope to afford some clue to the cause of this unfortunate event, which may lead to the establishment of a structure less likely to be broken off by the violence of storms or the collision of vessels in distress.

DESIGN FOR LABOURER'S COTTAGE.—The Society of Arts have repeated the offer of their large gold metal, or thirty guineas, for the best design for a labourer's cottage in the country. "The drawings are to comprise a general plan, elevation, and section, drawn to a scale of three-eighths of an inch to the foot, together with the requisite working drawings to a large scale, and a general specification of the internal finishing and fittings proposed. The design must provide a living-room, a scullery, and three bedrooms. Presuming, in structures of this description, where the outlay must necessarily be very limited, that both with a view to economy of material and likewise to external effect, it will be considered desirable that the cottages should be erected in pairs, the wall between them containing the flues, in such cases the details of one only will be required. It is necessary that consideration should be given, firstly, to the most convenient arrangement of the parts; secondly, to the best means of ventilation, drainage, supply of water, cleanliness, and economical heating; and lastly, to combine therewith the most pleasing and picturesque effect attainable with reference to the limited outlay. The cost of a double cottage erected in Middlesex, when completed, with the requisite landlord's fixtures must not exceed 300*l.*"

WORKS IN HAND.—Mr. Richardson has nearly completed a work on ornamental design, which promises well. Mr. Henry Kendall, junior, has a collection of designs for schools and school-houses in hand: and Mr. F. T. Dollman is about "Examples of Antient Pulpits, from drawings and measurements taken on the spot."

WARMING RAILWAY CARRIAGES. — In America a patent has been taken out for an improved mode of warming railway passenger trains by a combination of flues, connected, by elastic and flexible hose, with openings and registers in the bottom of the carriages.

YORKSHIRE ARCHITECTURAL SOCIETY.—At a meeting of this society, in the week before last, it was stated that it was intended to destroy two interesting ancient chapels at Bolton and Redmire, Wensleydale, and to substitute one modern erection in their stead. It was accordingly resolved that the secretaries be directed to communicate with the ecclesiastical authorities of the place, deprecating the proposed demolition of the ancient chapels, and expressing the willingness of the society to contribute for the purpose of their restoration. It was also resolved that a grant be made for the purpose of obtaining an accurate survey of the churches in the deanery of Pontefract; and Mr. J. W. Hugall and Mr. C. Vickers expressed their willingness to co-operate in the undertaking.

TWO HOUSES FALLEN IN.—An accident, demanding the most serious attention, occurred on Sunday night week, about eleven o'clock. Two houses at the top of Chapel-street, Devonport, upon the building of which Mr. Weary, builder, and Mr. Grant, builder, have been engaged about eight months, fell in with great noise: the beams and joists were fixed, and both houses just ready for roofing. What could have been the cause of the disastrous accident it is difficult to say, or whether blame attaches to the builders, but the middle wall between the two houses appears to have been the part that first gave way, and the stones used in the building were taken from those of the old houses that occupied the site. Happily no individual was injured by the fall.—*West Briton.*

SAWING IRON.—It is often forgotten by smiths that iron, when heated, may be put into a vice, and the ends may be readily split by a suitable saw. A saw fit for this purpose should be thicker at the edge than at the back, and with uniform teeth, one-twelfth of an inch apart. The saw when used must be often dipped in water, to prevent its becoming too much heated. It may be mentioned that a bar of iron of almost any size may be sundered, while hot, by the simple application of common roll brimstone.

## TENDERS.

For alterations in the School of the London Domestic Mission Society, in Half Moon-alley, Whitecross-street, Mr. Edward Hall, F.S.A., Architect. Opened in the presence of the parties.

| | |
|---|---|
| Lawrence and Son ..... | £1,274 |
| Winsland and Holland .... | 1,048 |
| H. Burton (accepted) .... | 1,024 |

## TO CORRESPONDENTS.

"*Surveying.*"—A correspondent wishes to know "the method adopted by those engaged in the contouring of Ireland in obtaining the necessary data for laying down the contour line, or any other method for the same purpose which may be considered useful."

"*H. W. G.*"—will find some information in a little pamphlet "On the Cottages of Agricultural Labourers, with Economical Working Plans," by Mr. Edward Cresy, published by Kidgway. We cannot at this moment treat the subject of labourers' cottages ourselves:—some of our correspondents may perhaps be able to do so.

"*Friends in Lille.*"—Thanks for paper.

"*L. H. I.*"—Write to the secretary of the association, Lyon's Inn Hall, Strand.

"*A Frequent Reader.*"—If our correspondent will write to Mr. Fowler, Dorset-street, Fleet-street, or Messrs. Burridge and Healy, 130, Fleet-street, he will obtain information from which he may judge. Bernan's work on Heating (published by Bell) would be found very useful.

"*Y. Z.*"—Write to Mr. J. P. Knight, at the Academy.

"*Messrs. B.*"—Thanks. Too late for present week.

"*Orientation of Churches.*"—We are unable to find space for half a dozen further communications on this subject, including that of our old correspondent, "J. K."

"*A Good Stem for New Oak*" is often asked for: those who know it do not seem willing to communicate.

*Received.*—"Improver," "J. G.," "A Reader," "F. L." (Waverton), "D. W.," "W. B." (Southwark), "J. J. S.," "A Londoner," "Celda," "P. S.," "J. J.," "Constant Reader," "Regular Subscriber 1841," "X. Y. Z.," "J. S."

*Books Received.*—"The Practical Furnishing, Decorating and Embellishing Assistant." By Henry Whitaker (Fisher, London). Parts I to XI. "The Practical Cabinet Makers' and Upholsterers' Treasury of Designs." By H. Whitaker (Fisher). "The Tradesman's Book of Ornamental Designs." Part VI. (Orr and Co.) "The People's Journal." Parts X. and XI. (Bennet, 69, Fleet-street.) "Tait's Magazine" for November (an interesting number). "Caldwell's Musical Journal." Part V. (Orr and Co., London.) "Laws of the Freemasons of the Church." "Journal of Public Health." No. I. (Renshaw, Strand.)

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only.

70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Warfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

PLATE GLASS.—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate Glass Company. Liberal discounts allowed on glazing qualities, London Warehouse, 59, Hatton-garden, Holborn. H. CHRISTIE, Agent.

N.B. ROUGH PLATE GLASS supplied one-fourth, three-eighths, one-half, and three-fourths of an inch thick.

SOHO PLATE-GLASS WAREHOUSE, 26, SOHO-SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

THE BIRMINGHAM PLATE-GLASS COMPANY beg to call the attention of the Trade to their manufacture of Superior Polished and Rough Plate Glass. Having recently enlarged their works, and erected an additional 30-horse power engine, they are enabled to produce a much larger quantity. The prices will be found to compete with any establishment in the trade. A large stock of Polished and Rough Plate always on hand. LONDON WAREHOUSE, 141, Fleet-street; WORKS, Smethwick, Birmingham.

PHŒNIX PLATE GLASS WAREHOUSE, 24, St. Mary Axe, City.—E. MOSS, Proprietor. Builders, Upholsterers, and Consumers of Plate Glass, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Railway Carriages, Mirrors, and other purposes. Colour, Quality, and Substance unrivalled by any other house in the Kingdom. ROUGH PLATE GLASS for Skylights supplied 3, 3-8ths, ½, ⅝, and inch thick. All Plate Glass for Shop Fronts delivered within five miles of London free of all charge, and estimates given, free of expense, in town or country.—No connection with any other house.

LONDON and MANCHESTER GLASS COMPANY.—PLATE GLASS.—Architects, Railway Contractors, Builders, and the Trade generally, are respectfully informed the "London and Manchester Glass Company" have now opened their London Warehouse, 12, Rathbone-place, Oxford-street, for the Sale of PLATE GLASS, suitable for Silvering, Glazing, and other purposes. The Colour and Polish are very superior, and the substance strong. The Tariff of this Company is the same as the one at present adopted by the Trade, from which very LIBERAL DISCOUNTS will be allowed on each description of Glass.

ROUGH PLATE, suitable for Railway Stations, Warehouses, Skylights, and Floors, may be had of every thickness, at very MODERATE PRICES, upon application to

J. L. GRUNDY, Company's Agent.

12, Rathbone-place, October 21, 1847.

PLATE GLASS! PLATE GLASS!! PLATE GLASS!!! East London Plate and Sheet Glass Company, Leman-street, Goodman's-fields.—We beg to call the attention of the Trade to our Plate Glass; the Strength, Colour, and Quality of which remains unrivalled by any other company. It is a fact well known to the trade, that our glazing quality is superior to that used for silvering by most other houses. Rough Plate for Skylights and Flooring purposes, &c. All orders to be addressed, B. MOSS and Co., Leman-street, Goodman's-fields.

N.B. The business of this establishment is in no way connected with any other house in London of the same *name*.

WINDOW-GLASS, LEAD, VARNISH, COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopsgate-street Without. Lowest prices charged. Please inquire them.

Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop-fronts, Show-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

Ground and Dry Colours of the best quality; Brushes, Dryers, and every article used in the Trade Warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

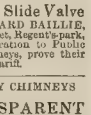
WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 87, Bishopsgate-street Without, London; THOMAS MILLINGTON, Proprietor.

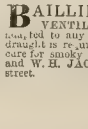
HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sun-blind; all simple, cheap, and effective.—Apply for licenses, and to inspect its real merits, at HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

CHAS. WM. WATERLOW,



MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



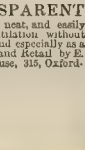


TO THE BUILDING WORLD.

H. BANKS,

Manufacturer of Shop-Fronts, Sashes, and Frames, and Joiner to the Trade, 78, Bethnal-Green Road, London. Parties engaged in building, will find the charges at this establishment cheaper than in any other house in London. A full list of prices forwarded by return of post to any part of the country.

N.B. Glazed Goods securely packed for the Country.



By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

BAILLIE'S Patent Transparent Slide Valve VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12 a, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

VENTILATION IMPROVED, AND SMOKY CHIMNEYS CURED.

BAILLIE'S PATENT TRANSPARENT VENTILATORS are at once efficacious, neat, and easily applied to any sash, and where thorough ventilation without draught is required, will be found invaluable, and especially as a cure for smoky chimneys.—Supplied Wholesale and Retail by E. and W. H. JACKSON, Window Glass Warehouse, 315, Oxford-street.

WOOD and STONE CARVINGS.—
Manufactory, 6, Regent-terrace, Cambridge —Wood or Stone Carving and Furniture in all their branches, in Gothic or other styles, such as Screens, Lectern and Font Covers, Reading Desks, Library Desks, Communion Tables and Rails, Stalls, Arm Chairs, Standards, Pipe Heads, Chairs, Stone Crosses, Bosses, and all kinds of figure work in Wood and Stone, at every description of work required in ecclesiastical edifices, executed by S. RATTEE, whose chief study is to execute all orders intrusted to him in a superior manner, with strict attention to economy. He is also now working with considerable success machinery by which he executes all kinds of Antique and Spiral Twisting, at prices hitherto unparalleled.

THE most perfect DRY GAS METER in the World is DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory at Hampstead Road, being on the whole of the premises, 95, St Martin's-lane, Size to suit that to regain to MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has enabled him to produce. Travellers, at this time, only employed. The invited attend to the fact of many of his first meters having run as accurate as on the first day of Parliament Street and Bedford-street, Strand, Theatres, Churches, Club-houses, &c., and has powerful and flattering testimonials as either factory, which may be obtained on application.

LESLIE'S PATENTS.— GAS CONSUMERS guaranteed the following important sanitary and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are packed in cases for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are remarkable for one and the same burner of twenty-eight inches.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT from any given quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATIC GAS REGULATOR effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from variable, variations in supply from the gas-mains, and renders the Burners Light-proof against the Gas Consumers; these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES: Upright Burners, with Conyngham Spring Glass Holders, with either sized glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 1s. each. SAMPLE PACKAGES, with one burner and a set of glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. If a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, upon certain conditions, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unpaid sophist chimney-and-fire place.

Offices and Manufactory, 89, Conduit-street, London.

ARCHITECTURAL ENRICHMENTS.

BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronized by His Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Alnwick Castle, at Drayton Manor, at the new Conservative Club House, Grocers' Hall, &c., also at the British Museum and Pantheon in Regent-street, where it has been extensively used for some years, and has proved and established its superiority over every other kind of composition, both in beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier maché ornaments, with a tariff price £1.—Works, 15, Wellington Street North, Strand.

PAPIER MACHE and CARTON PIERRE.

Just published, a LITHOGRAPHIC VIEW of IRONMONGERS' HALL, Fenchurch-street.

The spacious Banqueting Hall of the Worshipful Company of Ironmongers having been confided to Messrs. JACKSON and SONS for redecoration, they have carried out the whole of the rich dressings of Ceiling, Walls, Dado, Orchestra, and the various parts in the Elizabethan style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is richly designed with the arms, and other associated panels with pendants, strap work, &c., the whole finished in colour and gold; the walls have a rich high dado with the arms, the grade, and period of office of the Masters and other eminent members of the Company, chronologically arranged from the time of Edward IV. The orchestra, principal entrance, Master's end, are also appropriately enriched.

A large Lithographic View of this Interior is now published and ready for sale, at their Papier Maché and Carton Pierre Factory, 49 and 50, Rathbone-place, price 7s. 6d.

WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more neat and durable than lead, and 50 per cent. cheaper. Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvedere-road, Lambeth, London.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN & BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS

THE AINSLIE BRICK AND TILE MACHINE COMPANY James Smith, Esq., of Dean-ston, Chairman, beg to call attention to their IMPROVED BRICK and TILE MACHINES which may be seen in full work, and at the Company's office, 1, Pall Mall, Piccadilly, from 11 A.M. to 5 P.M. Mr Robert Stevenson, who has been appointed manager to the Company, will show the Machines at the Company's works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 a, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr SLIGHT'S, Leith-walk, Edinburgh; Mr LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and PINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

ANSTON QUARRIES.— Messrs. Wm. WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining those of Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others in England, by the Commissioners of Woods and Forests for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

Application to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and others, that the Business now carried on at the above Works is solely his:—

That ARCHITECTURAL, SCULPTURE, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.

S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

PAVING, 2s. 9d. PER SQUARE YARD.

Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PIC KINGTON, PORTONCEAUS BITUMEN PAVEMENT OFFICE, 15, WHARF ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

MOSAIC PAVEMENTS.—SINGER'S PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental Pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall-bridge, Surrey side.

MAGNUS'S ENAMELLED SLATE.—Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has been introduced into Buckingham Palace, the drawing-room at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-hand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate-work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices. N.B. The trade supplied with whole cargoes, self faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

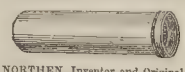
LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GAZES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

UNION BROWN STONE POTTERY, CHEMICAL APPARATUS, and DRAIN-PIPE MANUFACTORY, 14, Vauxhall-walk, Lambeth; at Albion Wharf, Holland-street, Blackfriars'; Kingsland Basin, Kingsland-road; and Lime Kilns, Limehouse. Patronized by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster.



WILLIAM NORTHEN, Inventor and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and others to the following list of prices:—

Straight Barrel Pipes, with Socket Joints, in 2-ft. Lengths.

| 6-inch. | 9-inch. | 12-inch bore. |
|---|---|---|
| 1s. 4d. | 2s. 3d. | 3s. 8d each. |

Bends and Junctions equally low.

The following unsolicited Testimonial is respectfully submitted:

Sewers' Office, 1, Greek-street, Soho, July 30, 1847.

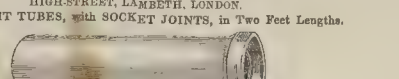
Mr ——

Dear Sir,—Should you at any time be in want of Stone-ware Drain pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them. I am, dear Sir, yours truly,

JOHN PHILLIPS, Surveyor.

TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY HENRY DOULTON and CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3-inch bore, 5d. PER FOOT. 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 1½d. 12-inch, 1s. 5d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. John Phillips, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, as not only to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

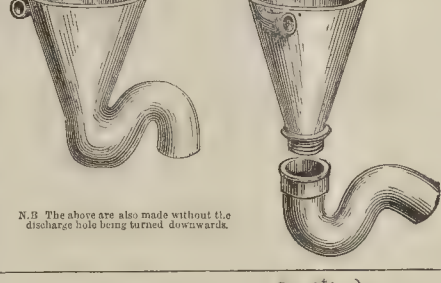
From Mr. John Roe, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers' Office, Hatton-garden, August 24th, 1847.

Dear Sir, In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.



N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

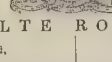
Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

Delivered in London or its vicinity free of charge

By Her Majesty's  Royal Letters Patent.

PATENT ASPHALTE ROOFING FELT, as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinbro'.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.

THOS. JNO. CROGGON, 8, Laurence Pountney Hill, Cannon-street, London

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of

THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

Patronized by

Her Majesty's Woods and Forests,
Her Majesty's Commissioners of Customs,
Honourable East-India Company,
Honourable Board of Ordnance,
Her Majesty's Estate, Isle of Wight,
Royal Botanical Gardens, Regent's Park.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its use and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the only works in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

# THE BUILDER.


**DR. ARNOTT'S CHIMNEY VENTILATOR.**—F. EDWARDS, Stove Maker to her Majesty, 20, Piland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve Ventilation of rooms of every description. Prices from 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove, grate, and fire business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can in fact take the cure of smoky chimneys on the most reasonable terms of no cure no pay.

TO BUILDERS AND OTHERS.

**WANTED TO PURCHASE** Freehold or Leasehold GROUND RENTS to the amount of £500 or £1000. Address by letter only, stating full particulars, to H. BROADBRIDGE, Architect, 75, Lincoln's-inn-fields.

TO BUILDERS.

**A LIST of BUILDING GROUND** to be Let, in or on favourable terms, in various parts of London and the suburbs, can be had free upon application, or by post, upon inclosing the stamps for it. It is important to Builders and others also to know that our offices afford peculiar facilities for the speedy Sale by Private Contract of Houses and Estates, and also for the Letting of Houses. No charge whatever unless business is done. BECKWITH and SALMON, Estate and Land Agents and Auctioneers, 53, Bucklersbury.

**CANADIAN SLEEPERS.**—For SALE, well-manufactured SLEEPERS, of Cedar, Hemlock, and Pine: a few thousands left on hand.—For particulars, apply to HANS MARCHER and Co., 11, Parliament-street, Hull.

TO PLASTERERS AND BUILDERS.

**SUPERIOR SINGLE LATHS £2** per Load, with the following lengths, and the number of Laths each bundle contains:—

| | | |
|---|---|---|
| 10 Bundles, 4 ft., | 120 Laths. | |
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Thomas B. Simpson, Esq.
Edward Smith, Esq.
Hon. C. P. Villiers, M.P.
John Wilks, Esq.
Edward Wilson, Esq.

SECRETARY.—Dr. Thomas Price.

1. Assurances are granted on Houses, Buildings, and Goods, Ships in Dock, Farming Stock, and all other kinds of property, at the lowest rate consistent with security.

2. Losses paid immediately on proof, without deduction of discount.

3. Real security!

4. No expense attendant on Transfers from other Offices.

5. A Small Yearly Policy issued, on payment of the premium and duty, for Six Years only.

The usual Commission allowed to Surveyors, Auctioneers, Solicitors, and Agents.


### CONTRACTS.

TO BUILDERS AND OTHERS.

THE Court of Sewers for Westminster and part of Middlesex will be ready at the Court House, No. 7, Greek-street, Soho-square, on FRIDAY, the 19th of November, 1847, to receive TENDERS for the following Works, viz.:—1,635 feet of Sewer (including junctions) in Long Acre, St. Martin's; 1,130 feet of Sewer (including junctions) in Newman-street, St. Marylebone.—Specifications and Plans of the above Works may be inspected, and Forms of Tender and other particulars obtained at the Office daily, between the hours of Nine and Four. Parties desiring must be in attendance at Half past One o'Clock, precisely, on the 19th of November, with separate sealed Tenders, specifying on the outside for which of the above Works their Tenders are made. Each Tender must be strictly in the printed Form prescribed. The Court does not bind itself to accept the lowest Tender.

LEWIS C. HERTSLET, Clerk.

Sewers Office, No. 1, Greek-street, Soho-square, 12th Nov. 1847.

GAS TAR.—The Directors of the Commercial Gas Company are prepared to receive TENDERS for GAS TAR during the next Twelve Months, commencing from the 24th of November, 1847.—Particulars and Conditions will be given upon application at the Company's Office, Stepney. Tenders to be sealed and endorsed "Tender for Gas Tar," to be forwarded to the Secretary by Twelve o'Clock on Wednesday, the 17th day of November, 1847.—By order of the Board,

Stepney, Nov. 5, 1847. G. JAQUES, Secretary.

TO BUILDERS.

TO BE LET, by Tender, on a Long Lease, SEVERAL HOUSES, in a crowded, well-letting neighbourhood, in the east of London, at a good rent. They are in a dilapidated state and require considerable outlay. A Specification of Repairs &c. and particulars of the property, may be obtained on application to Messrs. BECKWITH and SALMON, Estate Agents, 2, Bucklersbury.

ORPHAN WORKING SCHOOL.

TO BE LET, a Valuable Plot of Ground, known as the School Premises in the City-road, belonging to the above Charity. The land-tax is redeemed. Particulars may be obtained of JOSEPH JENNINGS, Esq., Surveyor, 14, King-street, Bartlemy square, or of the Secretary, at the office of the Charity, 19, Gresham-street. Sealed TENDERS must be forwarded to the office not later than the 25th instant.

November 6th, 1847. JOSEPH SOUL.

NOTICE IS HEREBY GIVEN, that the INSTITUTION of BUILDERS' FOREMEN have removed their place of meeting from the Salisbury Arms Tavern to the Bay Tree Tavern, St. Swithin's-lane, in the City of London, where it is requested all communications will be addressed.

W. ALLARD, Secretary.

BUILDERS' BENEVOLENT INSTITUTION, Freemasons' Tavern, Great Queen-street, Lincoln's-inn Fields, for the Benefit of Decayed Masters; and also to afford Relief in case of Accident to their Workmen.

PRESIDENT.

Hugh Biers, Esq., Carlton Villas, Edgware-road.

VICE-PRESIDENTS.

S. M. Peto, Esq., M.P., Great George-street, Westminster.
Thos. Grissell, Esq., F.S.A., Lambeth.
Stephen Bird, Esq., Kensington.
William Herbert, Esq., Clapham-common.
John Vale, Esq., Devonshire-place, Edgware-road.

TRUSTEES.

William Cubitt, Esq., M.P. | Stephen Bird, Esq.,
Hugh Biers, Esq. | George Spencer Smith, Esq

TREASURER.—Mr. George Bird, 83, Edgware-road.

BANKERS.—Sir Samuel Scott, Bart., and Co., 1, Cavendish-square.

SECRETARY.—Mr. William Grubb.

HON. SOLICITORS.—Jaques, Edwards, Jaques, and Layton, 8, Ely-place, Holborn.

The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations; and the additional Names, with the liberal Donations and Subscriptions appended, are highly gratifying. They beg to intimate they have appointed Mr. Edward Herbert, 22, Crawford-street, Marylebone, and Charles Jackson, 1, Paradise-street, Hollaway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, and the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of the Institution will shortly be printed.

Offices, Poland House, Broad-street, Golden-square, where all communications are requested to be sent.—Attendance, Mondays and Thursdays, from 10 to 1.

SOCIETY for the ENCOURAGEMENT of ARTS and MANUFACTURES, &c.

H. R. H. PRINCE ALBERT, F.R.S., D.C.L., President.

The Ninety-Fourth Session will commence on WEDNESDAY EVENING, the 10th instant, when the Royal Charter will be laid on the table, the Address of the Council will be presented, and communications relating to Arts and Manufactures will be read.

The Meetings will be conducted for this Session, for subjects in FINE ARTS, MANUFACTURES, MECHANICS, CHEMISTRY, and AGRICULTURE, best seen and read, and may be had at the Society House (if by post, inclosing a stamp).

The ANNUAL EXHIBITION of Fabrics and Specimens in the Decorative Arts and Manufactures, including Works in Glass, China, Earthenware, Metals, Leather, Carved Work, Papier Maché, Japanned and Brass Work, &c. &c., will be open during the Months of March and April.

MANUFACTURERS, ARTISTS, and DESIGNERS, are requested to send in their Works on the 26th of February.

The FIRST VOLUME of a New Series of TRANSACTIONS of the SOCIETY, with numerous Engravings and Coloured Plates, is in the Press for delivery to Members.

The EXHIBITION of the WORKS of WM. MULREADY, Esq., R.A., for the Promotion of a NATIONAL GALLERY of BRITISH ART, will take place in June.

All Letters and Communications to be addressed prepaid to the Secretary of the Society of Arts, at the Society's House, John-street, Adelphi.

# THE BUILDER.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

**LONDON and MANCHESTER GLASS** COMPANY.—PLATE GLASS.—Architects, Railway Contractors, Builders, and the Trade generally, are respectfully informed the "London and Manchester Glass Company" have now opened their London Warehouse, 12, Bathbone place, Oxford street, for the Sale of PLATE GLASS, suitable for Silvering, Glazing, and other purposes. The Colour and Polish are very superior, and the substance strong. The Tariff of this Company is the same as the one at present adopted by the Trade, from which the following DISCOUNTS will be allowed on each description of Glass.

ROUGH PLATE, suitable for Railway Stations, Warehouses, Skylights, and Floors, may be had of every thickness, at very MODERATE PRICES, upon application.

E. GRUNDY, Company's Agent

12, Rathbone-place, October 21, 1847

**PLATE GLASS.—Architects, Builders,** and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate Glass Company. Liberal discounts allowed on glazing. Sample at the London Warehouse, 59, Hatton-garden, Holborn. H. CHRISTIE, Agent.

N.B. ROUGH PLATE-GLASS supplied one-fourth, three-eighths, one-half, and three-fourths of an inch thick.

**SOHO PLATE-GLASS WAREHOUSE,** 26, SOHO-SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and it possesses almost faultless quality This Plate is to be had of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

**THE BIRMINGHAM PLATE-GLASS** COMPANY beg to call the attention of the Trade to their manufacture of superior Polished and Rough Plate Glass. Having recently enlarged their works, and erected an additional 80-horse power engine, they are enabled to produce a much larger quantity. The prices will be found to compare with any other establishment in the trade. A large stock of Polished and Rough Plate always on hand. LONDON WAREHOUSE, 310, Fleet street: WORKS Smethwick, Birmingham.

**PHŒNIX PLATE-GLASS WARE-**HOUSE, 24, St. Mary Axe, City.—E. MOSS, Proprietor. Builders, Upholsterers, and Consumers of Plate Glass, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Hackney Carriages, Mirrors, and other purposes. Colour, Quality, and Substance unrivalled by any other house in the Kingdom ROUGH PLATE GLASS for Skylights supplied 1, 3-8ths, 1-2, and 3-4ths thick. All Plate Glass "Shop Fronts" cut and fixed in five miles of London free of all charge, and estimates given, free of expense, in town or country.—No connection with any other house.

**PLATE GLASS! PLATE GLASS!!** PLATE GLASS!!! East London Plate and Sheet Glass Company, Leman-street, Goodman's-fields.—We beg to call the attention of the Trade to our Plate Glass; the Strength, Colour, and Quality of which remains unrivalled by any other company. It is admitted by the trade that our glazing quality is superior to that used for silvering by most other houses. Rough Plate for Skylights and Flooring purposes, &c. All orders to be addressed, B. MOSS and Co., Leman-street, Goodman's-fields.

N.B. The business of this establishment is in no way connected with any other house in London of the same name.

**WINDOW-GLASS, LEAD, VARNISH,** COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopsgate-street Without. Lowest prices charged. Please enquire there.

Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET BRITISH SHEET.
BRITISH CROWN PROPAGATING GLASSES
Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop-fronts, Show-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES

Ground and Dry Colours of the best quality; Brushes, Drivers, and every article used in the Trade Warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water closets, Basins, Brass-work, and all materials used by Plumbers

WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 87, Bishopsgate-street Without, London; THOMAS MILLINGTON, Proprietor.

**CHAS. WM. WATERLOW,**

MANUFACTURER



of Sashes and Frames, and Joiner to the Trade, 125, Bunhill-row, Finsbury square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 200 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is with the notice of all engaged in building.



**SHOP FRONTS, SASHES AND FRAMES, DOORS, &c.** MADE FOR THE TRADE.

**JOHNSON and PASK,**



1, Arnold-street, Chelsea-hill, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work on the lowest possible scale of prices. All kinds of Wainscoting and Mahogany work done in the very best manner. Every description and carefully packed for the country. A full list of prices



forwarded by return of post, to any part of the country.

**TO BUILDERS, PAINTERS, AND OTHERS.**

**MESSRS. WOOD and CO., GRAINERS** and WRITERS to the Trade only.

70, York Road, Lambeth; and at 28, Cross Street, Blackfriars Road.



**H. MORRELL'S FINE PREPARED** DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared putting a leaf on each varnished side, and possess all the requisites for the most highly finished drawings.

Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and also on the 1st of all the principal Booksellers and Stationers in Town and Country.

By Her Majesty's  Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS. To be had of EDWARD BAILLIE, Glass Painter and Stainer, 120, Cumberland Market, Regent's park, London. Their extensive and general application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

VENTILATION IMPROVED, AND SMOKY CHIMNEYS CURED.

**BAILLIE'S PATENT TRANSPARENT** VENTILATORS are at once efficacious, neat, and easily applied to any sash-rail, where through ventilation without draught is required, with a handsome appearance. Prices from 2s. 6d. each for smoky chimneys. Supplied Wholesale and Retail by E. and W. H. JACKSON, Window-Glass Warehouse, 49, Oxford-street.

**DR. ARNOTT'S CHIMNEY VENTI-**LATOR.—F. EDWARDS, Stove Maker to her Majesty, 30, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gasfitters and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of Rooms of every description.—Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating the hair-side, disfiguring the paint above

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, in the most beautiful imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain is the object of this process, which surpasses paint in appearance, while at the same time, it is economical, for the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process I have named, and be more durable when finished. The Dyes or Stains are prepared and sold by HENRY STEPHENS, 54, Stamford street, Blackfriars-road, London, in bottles of 8d. and 1s. each, and at 5s. per gallon. The stain may be obtained to any required depth of colour, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

N.B. Hints for the choice of "THE BUILDER," 2, York-street, Covent Garden, London.

**FIRE BRICKS.—WARD and HART,** Hoxdurus Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories, Bricks at the lowest prices. A large stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying, Malting Tiles, Lime, Sand, Gravel, Bricks, Tiles, and Dutch Clinkers of every description.

**DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.**

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock. N.B. Depôt for Glass Pantiles.

HEALTH OF TOWNS.

**KIRRAGE'S PATENT SEWER-**DRAIN AND BUILDING BLOCK.—The Patentee, observing the evils which arise from the perishable nature of the materials in general use for building Sewers, Foundations and other Works, much exposed to the action of water, was induced to attempt the production of a material which should at the same time be impervious to and indestructible by damp, and unaffected by atmospheric influences, and combine great strength and durability with facility of moulding into any required shape. In this he has been successful; and he is now enabled to offer to the Public his Patent Blocks, which will be found to possess all the qualities of great strength, indestructibility by water, facility of working, and are at the same time available for all such purposes and sanitary measures as have more especially for forming the bottom of Sewers, as in at present, from the nature of the materials used in building them, not only permit very considerable leakage, but constantly require repair. The use of the Patentee's material is not confined to the purposes above-mentioned, but may be applied for all building purposes, especially Floorings of Iron Granaries, Malthouses, and other places where there is a tendency to damp and dryness is essential, as also for the formation of Baths, Cisterns, and Reservoirs.

For common Building purposes, the material of which the Patent Blocks are composed may be used as a coating for Concrete Blocks, formed of a cheaper substance

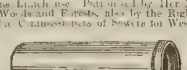
The price at which the material can be supplied is 7l. 10s. per ton.

The material for the sewer of the shape used for the Holborn and Finsbury districts, size, 3 feet 6 inches by 2 feet 6 inches, cost 1s. per foot run; 4 in. 6d. per foot for the Barrel, or small drain of 9 inches in diameter.

Corporations, Engineers, Surveyors, Builders and Public Companies engaging in Public Works, are invited to inspect the Patent Sewer and Drainage Blocks; Drawings and Specimens of which can be seen at the offices of Messrs. DREW and SHAPWELL, 22, Abingdon-street, Westminster, where also all applications for licenses are required to be made.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN-PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronised by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, sink traps, and various shapes always on hand.

**UNION BROWN STONE POTTERY,** CHEMICAL APPARATUS, and DRAIN-PIPE MANUFACTORY, 14, Vauxhall-walk, Lambeth; 48, Albion Wharf, Holland street, Blackfriars; Kingsland Basin, Kingsland road; and Lime Kilns, Leigh, Kent. Patronised by Her Majesty's Commissioners of Woods and Forests, also by the Right Hon. and Hon. the Commissioners of Sewers for the city of Westminster.



WILLIAM NORMAN, Patentee and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and Others to the following list of prices:—

Straight Barrel Pipes, with Socket Joints, in 2-ft. Lengths.

| | | |
|---|---|---|
| 6-inch. | 9-inch. | 12-inch bore |
| 1s. 4d. | 2s. 3d. | 3s. 4d. each. |

Bends and Junctions equally low.

The following unsolicited Testimonial is respectfully submitted

Sewers' Office, 1, Greek-street, Soho, July 30, 1847.

Mr. ——

DEAR SIR,—Should you at any time be in want of Stone-ware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Norman, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly,

JOHN PHILLIPS, Surveyor.

**TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY**

HENRY DOULTON AND CO., POTTERS,

HIGH-STREET, LAMBETH, LONDON,

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3-inch bore, 5d. PER FOOT, 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 1½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS AND TRAPS OF ALL KINDS

Extract from a Letter addressed by Mr. Henry Doulton, to Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by thus doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and economy, there cannot be a better article.

From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

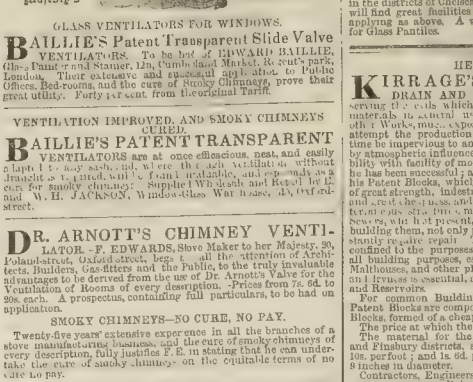
Sewers Office, Hatton-garden, August 26th, 1847.

DEAR SIR, In reply to your request, I beg to state that glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

JOHN ROE

Mr. H. Doulton.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR**

WATER-CLOSETS,

With Trap in One or Two Pieces.

DOULTON AND WATTS,

LAMBETH POTTERY,

HIGH-STREET, LAMBETH,

LONDON,

Manufacturers of the annexed in superior

GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

Delivered, in London or its vicinity free of charge.

By Her Majesty's  Royal Letters Patent.

**CROGGON'S PATENT DOUBLE BITUMINOUS WATERPROOF PAPER.**

The above is manufactured by the most approved machinery, for the sole purpose of DOUBLE COAT OF BITUMEN BETWEEN TWO SHEETS OF PAPER, insuring an evenness of distribution of the waterproof materials, thus rendering every square inch of it perfectly waterproof. Its use will PREVENT ALL DRIPPING from the roofs of Warehouses, &c., under the usual paper, and DAMP FLOORS, when laid down; for Lining Packages, and Wrapping all Articles of Merchandize subject to injury from damp, it will be found invaluable.

SOLD IN ROLLS, ONE YARD WIDE, AT SIX-PENCE PER YARD.

THOS. JNO. CROGGON, 5, LAURENCE POUNTNEY HILL, CANNON-STREET, LONDON.

The Builder.

No. CCXLIX.

SATURDAY, NOVEMBER 13, 1847.

VARIOUS matters constructional have fallen under our notice during the week, and may be usefully placed before our readers. On Monday, for example, we assisted in a series of experiments at Mr. Cubitt's establishment, Thames Bank, on the strength of bricks (conducted by Mr. Dines, an able assistant of Mr. Cubitt), the results of which were exceedingly striking. The difference of strength in bricks, as our readers will perceive when we put before them the details of the experiments, is extraordinary, and the necessity of attending to certain circumstances in their formation and use, is very apparent. The power was applied by means of the hydraulic press, and the metal surfaces, between which the bricks were crushed, were filed smooth and made perfectly parallel,—an important point.

A good place brick (if we may use such a contradictory expression,—a *place* brick always meaning a *bad* brick), faced with plaster to make an even bed, yielded to 11 tons, and was crushed by 16¼ tons. In other words, (as we shall use the same terms in recording all the experiments,) a disruption of the brick was observable when 11 tons' weight was on it; and after 16¼ tons it offered no further resistance, but fell to pieces, and the index of the ram receded.

A similar brick to the last, also faced with plaster, yielded to 16 tons, and was crushed by 22½ tons.

Two common stock(?) bricks, differing from the latter merely in colour, yielded to 10 tons, and were crushed, one by 16 tons and the other by 16½ tons.

A good stock yielded to 30, and fell to pieces under 34 tons.

A superior washed stock yielded to 36 tons, and was crushed by 44½ tons.

A pressed and kiln-burnt stock, made for superior purposes, ground on both faces to get a true bed, *bore a pressure of* SIXTY TONS (the limit of the power of the ram used), and was taken out sound and uninjured!! A similar brick not ground, but faced with plaster, resisted the same pressure without crushing, but was slightly broken round the edges.

A bat of the same description, with a somewhat uneven bed, not faced, was crushed by 27 tons.

It is unnecessary to say how much depends on the evenness of the bed: when this is not the case, the brick is broken up in detail. The hollow formed in the underside of bricks, for the reception of mortar, necessarily lessens their resisting power. All the bricks of which we have spoken were of Mr. Cubitt's own make. An ordinary place brick from another field yielded to 3 tons, and was crushed by 9 tons; and a second of the same description yielded like the first to 3 tons, and was crushed by 6 tons.

Such experiments as these open the eyes most usefully, and lead always to advantage. A brick is a brick to some persons,—that is, it always means the same thing: yet here we see it in one case untouched by *sixty* tons' weight, and in another falling to powder under the pressure of *six*.

We may have the opportunity of recording, on a future occasion, the resisting power of other materials: in the meantime we may give the result of similar experiments with this end in view, on three pieces of Caen stone the size of a brick, 9×4½×3. The first, which had the bed parallel with the end and at right angles with the pressing surfaces, was cracked by thirty tons (not in the line of bed), and crushed by thirty-nine tons. The second block, with the bed parallel with the vertical face, and at right angles to the pressing surfaces, stood forty-two tons before it crushed; and the third, with the bed parallel with the pressing surfaces, was slightly cracked by forty tons, but stood fifty tons and a half before it crushed!

Mr. Cubitt has recently instituted a series of experiments on the usefulness, or otherwise, of wrought-iron tension bars, employed in the manner in which they frequently are, to assist wood and cast-iron beams. The result shews their worthlessness, as our readers shall have the opportunity of seeing shortly.

Great want of thought, if not ignorance, appears to us to have been shewn in the selection of *cast-iron* as the material for the *beacon on the Goodwin Sands*, recently destroyed, and in the mode of construction. The beacon consisted of a central cast-iron tube 2 feet 6 in. in diameter, put together in 10 and 20 feet lengths, sunk 33 feet into the sand, by means of Dr. Potts's very ingenious and important application of atmospheric pressure, and surmounted by a cage or ball, at a height of about 50 feet from the sand level. Around the central column were four other cast-iron tubes 15 inches in diameter, slightly tied together and braced to the main tube. It was unwisely placed on the most exposed part of this fatal shoal, and so badly constructed that its fate might have been predicted.

To use so brittle a material as cast-iron for any part of the beacon above the sand, was most unwise; and then, to make the chance of failure greater, the joints were of very indifferent character, the end of one tube being merely let into the other, and secured, if we are rightly informed, by six three-quarter pins.

By implication, the failure of this substructure may prove injurious to the patentee of the process by means of which the tubes were driven, in an incredibly short space of time, through the sand, into which, to drive a pointed rod of 3 inches' diameter one inch, when it was 13 feet in the sand, forty-six blows of a monkey, weighing 1 cwt., were required. Such an impression as this we should much regret, as the invention is an important one, and is in no way touched by the destruction of the beacon. A small spar breakwater, properly constructed on a foundation of tubes so driven into the sand, would long brave the wind and waves, and might be kept in repair with facility.

Dr. Potts's process, as most of our readers probably know, is very simple: the lower extremity of the hollow tube or pile, which may be of any shape, is open; the upper end is fitted with a cover; the air is extracted from the tube by pumps, or a partial vacuum is otherwise formed by the condensation of steam, &c., when the sand or shingle flows into it; and the tube, by its own gravity and the pressure of the atmosphere upon its upper surface, descends. The force with which it is driven down is not to be calculated by the area of its upper end alone, on which the atmosphere acts: the removal of all obstacles below, driven into the tube by the atmosphere to fill the vacuum ("Nature's abhorrence," as the old philosophers called it), must also be taken into account. The effect with even a small pump is quite extraordinary. For the foundations of a bridge for the Chester and Holyhead Railway, over a branch of the sea, nineteen piles which were required for the central pier defied the efforts of the ordinary drivers. By means of the process in question, however, they were all easily forced in at the rate of 6 feet in two minutes and a half;—the pile-drivers shaking their heads during the operation, and saying it was time they gave over business!

## REVISION OF THE METROPOLITAN BUILDINGS ACT.

A COMMITTEE, privately nominated by Lord Morpeth, to consider the more glaring evils of the Buildings Act, has had several meetings. It consists of Mr. Hosking, Mr. Poynter, and Mr. Shaw, the official referees; Mr. Pownall and Mr. Aitchison, on the part of the district surveyors; and Mr. Biers and Mr. Piper, on the part of the builders.

It is to be regretted that the public are not represented,—owners of property, and the profession generally, should have had a voice in the recommendations which will go to his lordship and be made the basis, probably, of a legislative measure. We have all confidence in the gentlemen composing the committee, but each of them, it must be apparent, has an interest to serve apart from that of the public.

Those who have suggestions to offer may, with propriety, address the committee through any member of it.

## ON MOSAICS, AS APPLIED TO ARCHITECTURAL DECORATION.*

SHOULD the memorable sentiment originated (I believe) by Victor Hugo, be but true, "que l'histoire de chaque grand pays est inscrite sur ses monuments," it then surely behoves us, if we would read the history of our own and other countries aright, to draw deeply from those inexhaustible fountains of information, and to recollect, that while the purpose and general nature of a nation's monuments best indicate the leading qualities and relative importance of the kingdom, the relics of its minor arts and embellishments define most clearly the peculiar social position and condition of its people.

If we enter at all generally on this examination, we shall find, that each successive phase of civilization has possessed an accompanying cycle of arts, varying in artificial character with the conventionalities incident to a state of elaborate development; and we may thus learn, in some degree, to classify the arts of embellishment, and appropriate each properly to that state of human culture with which it may seem most in harmony.

The history of the art on which it is our pleasing task to enter, briefly, this evening, affords a striking illustration of the truth of this proposition. We trace mosaic, as an eminently luxurious and elaborate embellishment, from its apparent origin in the hotbed of Persian effeminacy, through its comparatively developed state among the Greeks, to its fructification and universal dissemination through the courtly elegance and abandoned luxury of imperial Rome; and recognise the fact, that it was only in connection with this most artificial condition of being that it ever assumed the varied character and universality of employment it then and there obtained.

Introduced in the days of Scylla, about 85 years before Christ, the first purpose to which it was applied was the decoration of the Temple of Fortune at Prænestè, the present Palestrina; we there find, to this very day (corroborating the account Pliny has given to us), that most interesting pavement generally known as the "Palestrina mosaic," in which a curious peculiarity is noticeable clearly indicative of the Grecian origin of the art, namely, that the inscriptions, illustrating the

* Read at the Institute of Architects, by Mr. Matthew Digby Wyatt, on the 1st inst., as mentioned last week.

subject (an inundation of the Nile), are written entirely in Greek characters.

As to trace the changes and alternate progression and declination of mosaic, in anything like historic order, would not only be a more fitting occupation for the archæologist than the architect, but would moreover occupy a far greater amount of time than it will be possible to devote to its illustration to-night, I shall, in preference, proceed to offer to your notice, in the *first* place, a slight analysis of its conditions and capabilities; and, *secondly*, the advantages of so studying its peculiarities, as to enable us most successfully to take advantage of all those salient points which most properly fit it for modern introduction.

The term *mosaic*, in its most extended sense, includes such a union of small portions of the same, or any different materials, as shall, by combination, produce an effect attainable by no other means. As applied to the fine arts, or considered as a minor department of them, it must assume two leading and distinctive forms—the *pictorial*, or that in which the imitation of a picture or other existing object is aimed at; and the *conventional*, or that in which architectural and geometrical forms only are portrayed.

Let us first then briefly examine the nature of *pictorial mosaic*. Among the Romans it soon rose to an unexampled state of popularity: it was adopted as a leading element in all their monumental and domestic decoration, and lined with its polished incrustation alike the walls, the pavements, and the vaults of their temples, baths, and dwellings; in the museums of the Vatican and the Capitol, and in the ruins of temples and baths, at Rome, at Pompeii, Pozzuoli, Baia, and in the gallery of the Studii at Naples, ample evidence still exists of the universality of its employment, of the nature, and varied processes of its production, and of the extensive range of subjects selected for representation. Gods, centaurs, men, animals, landscapes, flowers, ornaments, and foliage, are depicted with equal ability; and we are probably indebted to these almost imperishable relics for the preservation of some of the lovely fancies of the great artists of antiquity, whose creations might have altogether passed away, had they not been recorded through this most durable of all materials; for we must not forget the constant habit of reproduction, among the artists and artizans of antiquity, and refuse to ascribe the invention of the artistic treatment of a legend to a master mind, because we may meet with its representation only in fragments of coarse and perhaps ill-drawn mosaic, or wall-painting.

In examining the nature of these subjects with relation to the positions for which they may have been designed, we cannot fail to be struck with the general congruity existing between the nature of the idea depicted, and the character of the apartment for the adornment of which it may have been destined. Thus, in the houses of Pompeii, we find portrayed in mosaic the faithful dog guarding the threshold, or the hospitable inscription hailing the visitor even in the doorway; in the atrium, or hall, a rich though simple pattern is elaborated; in the triclinium, or dining-room, we meet with the "opus asaroton," or representations of fragments of food, &c., dispersed upon the ground; in the gynæceum, or female apartments, subjects of ornament, foliage, animals, &c., of the greatest delicacy; and in the grottoes for the preservation of the Lares, or household gods, and in the pavements near them, are to be found the noblest subjects and the most admirable works of art. This happy unity of idea is of course enhanced by a similar taste presiding over the distribution of the other pictorial embellishments. What a lesson should not this afford to people who are in the daily habit of decorating their dining-rooms with such prints as Mr. Eastlake's "Christ Mourning over Jerusalem," divided only from its pendant Mr. Landseer's "Laying down the Law," by a highly-coloured portrait of the proprietor's favourite child!

At first, only small cubes of stone and marble were employed, but very soon a want of greater brilliancy of colour than they could afford was felt, and oriental marbles of all kinds, porcelain, and glass, were pressed into the service, and laid upon a plaster backing with a strong lime cement. Many of the specimens yet remaining display an extraordinary delicacy of execution; the mosaic generally known as Pliny's doves, from the subjects consisting of some doves sitting, dressing their feathers, and sipping water from the edge of a metal basin, is probably the most brilliant example. It is right, perhaps, to remark, that the practice of the Romans in employing representations of figures, &c., for pavements, although almost universal among them, and sanctioned, as in the extraordinary pavement, by Beccafumi, in the Cathedral at Sienna, by some of the best masters of the revival of art in Italy, is still a reprehensible one, as it is contrary to all natural feeling to set one's heel upon an irregular surface, still less upon the face of a hero. Mr. Pugin makes, in his 'True Principles,' some admirable remarks on the proper design and peculiarities of pavements, both encaustic and properly mosaic. A right feeling should, I think, confine the employment of pictorial representations in mosaic to walls, and coverings or "revêtements" for vaults and cupolas.

It would occupy us too long to enter into the question of the subdivisions and nomenclature of all the Roman varieties of mosaic, but it is sufficient for us now to remark that they were numerous and various, and obtained in full perfection until about 200 years after Christ, when the art began to decline in both taste and execution, although not probably in popular estimation. When in the year 329 Constantine removed the seat of empire to Constantinople, he probably took many Roman mosaic workers with him, and, through their labours, the first churches erected by him were decorated. From them the art was doubtless handed down traditionally, and in transmission changed its character. The more oriental taste for gold and splendour soon superseded the purer practice of the Romans, and Byzantine glass mosaic started into life.

There seems every reason to believe that for many centuries the Greeks remained the almost exclusive workmen and designers in mosaic, and through their labours Italy and Sicily stand pre-eminent in the possession of churches and baptisteries, whose walls are adorned with the gilded ground, and the gorgeously-draped and swarthy-visaged saints, so peculiarly Byzantine in character.

Byzantium, Asia Minor, and the Holy Land, once doubtless possessed many noble specimens of their Christian art, but the elements, wars, fires, and Mahometan whitewash, have deprived us of almost all those sources from whence modern oriental art probably derived much of its inspiration and peculiar character; and it is in connection with this subject that the interesting question arises as to the influence that the early decorative processes may have had in determining the subsequent character of conventional ornament in all styles: thus—the Arabs having at first adopted the general scheme of Byzantine architecture, and among its processes that of mosaic, and from want of drawings of Byzantine details, and of Greek architects, the style having naturally declined in integrity of character, while the mechanical processes would be retained traditionally among the workmen, this very mosaic work, which was at first only a subordinate means of decoration, would become a leading element in the minds of the Mahommetan designers, and, from experiments and combinations made with small geometrical cubes of glass mosaic, they would be led naturally to that elaborately intricate style of pattern, which, when they emerged at length from the influence of Byzantine tradition, became so essential a character of all their compositions. Thus also no doubt did the traditional predilection for mosaic modify most materially, not only the plan and whole structure of the churches erected up to the year 1200 in Italy, but even the minuter details that characterise those monuments, and constitute their style.

Of the principal of these churches which yet retain their ancient mosaics, we extract from Lord Lindsay's most valuable history of Christian art, a chronological list, which appears fully supported by the Chevalier Bünsen, Mr. Gally Knight, and Ciampini. He enumerates those of Santa Sabina, Rome, 425; of Santa Maria Maggiore, 432; Santi Giovanni and Apollinare, at Ravenna, 440; San Lorenzo fuori le Mura, Rome, 578; of Sant' Agnese, Rome, 642; Santi Nereo ed Achille, Rome, 800; Santa Cecilia, Rome, 820; of Sant' Ambrogio, Milan, 836, and of Santa Maria Nuova, Rome, 848.

Lord Lindsay remarks, that from the period of this last date (848), for more than two centuries, scarcely any mosaic work was done in Italy by Greek artists, as it was a season of war, misery, and barbarism, and we accordingly have to look in the commencement of the twelfth century for a revival of the art. We find it in the remarkable example executed in the church of San Clemente at Rome, 1112, and in it a new spirit, thus ably indicated by his lordship:—

"This mosaic is a most elaborate and beautiful performance, yielding to none in minuteness of detail and delicacy of sentiment. It is characterized, moreover, by a resuscitation of the symbolism of early Christianity, so long neglected, although in subordination to one of the traditional dramatic compositions—the crucifixion. On every account, therefore, it merits the most attentive consideration."

From this period, through the gorgeous decorations of St. Mark's, at Venice, of the churches of Monreale, and the Capella Palatina at Palermo, the cathedrals of Cefalu in Sicily, San Giovanni Batista at Florence, those of San Paolo fuori le mura, Santa Maria in Trastevère, San Giovanni Laterano at Rome, and many others, we trace pictorial mosaic of the Byzantine character down to as late, perhaps, as the year 1506.

In all those churches in which full latitude has been given to the employment of this kind of mosaic, such as that of St. Mark's at Venice, or Monreale in Sicily, we find the entire surface of the walls covered with these representations, all executed upon a gold ground, the subjects arranged in a perfect cycle of symbolism, and the conception, treatment, expression, and execution, in some cases of a very noble, in all of a very interesting character. It would be waste of time to expatiate on the effects produced by the system of decoration employed in these two last-mentioned buildings, but I may perhaps be justified in asking, what their appearance would have been now, had they been executed in such a material as fresco; and whether they would still appear as they do now, endowed with the godlike qualities of perpetual youth and beauty?

Nearly coeval with the gradual decline of pictorial mosaic work on the Greek system, started into life two new varieties, the Roman and the Florentine; the former a revival of the ancient Roman "opus vermiculatum," or minutely delicate picture produced by the insertion of the smallest pieces of coloured glass in very close proximity, and by matching their colours perfectly with those of the painting to be copied, reproducing a perfect imitation of it—the latter an attempt on the part of the Florentines to imitate the *modus operandi* of the ancient Roman "opus sectile," or mosaic composed of flat pieces or veneers of variously-coloured marbles, and to execute with such materials only imitations of all sorts of objects. The noblest example now existing of the application of this branch of the art of mosaic to architectural decoration, is probably that of the chapel of the Medici in the church of San Lorenzo at Florence. The most glorious specimen of Roman mosaic similarly applied is to be found in the beautiful decorations of that most magnificent cathedral, St. Peter's. It is this, or a similar mode of fabrication, that Mr. Barry will probably employ in the projected mosaic work in the new Houses of Parliament.

Even to this day both these branches of manufacture continue under royal patronage, and are preserved in their highest perfection in national manufactories both at Rome and Florence.

Turning now from our examination of the general nature of pictorial, to a brief consideration of conventional, or more strictly, architectural mosaic, we shall find, that in pavements, and occasionally on walls, it obtained universally under the Roman empire, principally in the forms of "opus tesselatum" and "opus sectile." The general character of the latter has been already indicated in its mention in connection with the modern Florentine mosaic. The former was composed generally of small cubes of marble, called *tesseræ*, with which all the largest and most important mosaic pavements of a geometric character, at Rome, were constructed; the contrast of colour being usually confined to that produced by black and white marble. Numerous specimens of this

and of some of the other varieties of Roman mosaic have been found in this kingdom, as well as in France, Spain, and other countries of Europe, and the British Museum contains several fragments, which, if not exhibiting a refined delicacy of workmanship or design, convey at least a very tolerable idea of the nature of its ruder work, and of its general appearance.

The geometrical construction of most of the Roman tesselated patterns was based usually on the square and circle, up to the time of Alexander Severus, A.D. 220, who, according to Lampridius, introduced a new variety of mosaic into Italy, the materials of which consisted of porphyry and serpentine, and the base of the design of which was ordinarily that of the hexagon and equilateral triangle. As the other, this was of course chiefly used for pavements, and gradually superseded all other varieties of the art; from the time of Constantine down to the fifteenth century, under the name of *opus Alexandrinum*, it was constantly employed as the almost universal ornamental paving of the Italian churches; and, like the cotemporary glass mosaic, its manufacture remained principally in the hands of the Greeks. Two very beautiful examples of *opus Alexandrinum* yet exist in this country, in both cases doubtless the work of Byzantine or Italian artists,—the one in Westminster Abbey, the other in Canterbury Cathedral. We have thus seen that the Italian architects of the middle ages were in the habit frequently of lining the walls and vaults of their churches with pictorial glass mosaic, and the pavements with this precious tesselation; these several adornments serve to complete the decoration of the *fabric* of their buildings, and it remains, therefore, for us only to notice that elaboration of the mosaic art which was devoted, from the fourth century to the fourteenth, to the embellishment of the subsidiary portions of the architecture and church furniture. This consisted of what was called *opus Græcanicum*, that is, a glass mosaic composed of tesseræ or cubes cut to a regular form, and arranged in such geometric combination as to produce, by the contrast of gold and brilliant colours, the most exquisite and complicated patterns in borders, strings, &c.; and these, when inserted in the marble grooves formed in the pulpits, episcopal and regal thrones, twisted columns, ciboria, tombs, and other articles of church furniture, produced the most gorgeous effect, and, through this process of inlaying, the Greek and Italian artists were enabled to carry out, even to the minutest detail, the general character and spirit of that element (mosaic), which formed the basis of their most extended architectural decoration: thus preserving aunity of style, little regarded in the present day, but most fully worthy of imitation.

We have thus briefly endeavoured to run through the leading elements of the art of mosaic considered as a branch of the fine arts, and we shall proceed to offer a few remarks on its value in connection with æsthetic study. To the student in the art of painting its importance is extreme, as it contains almost the only record of his art from the fourth to the thirteenth century. To those engaged in the study of ancient manuscripts it is of value, as it enables them to approximate to dates, and to test styles at which they could scarcely arrive without its aid. To all interested in the history of ancient stained glass its study is important, as, in the earliest examples of mosaic windows, we find exactly the same principle followed out that we trace in the mosaic wall picture; to the enameller its variations are peculiarly interesting, as for centuries the Greeks were almost the only European artists in that branch of the arts, and in their mosaic enamels they only reproduced in a minute form, those works, which on a large scale decorated the walls of their noblest buildings; and last not least, to the architect, it affords the most durable, and probably the most beautiful means of adding to the charms of well-studied and varied form, the graces of colour; it enables him to study the science of polychromy on the largest scale, and through a series of the most fully-developed experiments, and offers to him, in its geometrical character, a form of design almost unparalleled in decorative resources, that harmonizes alike with the severer forms of monumental style, and the more free and graceful peculiarities of domestic and social requirement.

Whether forming an almost imperishable lining to one of the principal vaults in the British senate-house, or inserted in a marble chimney-piece in a drawing-room of even humble pretensions, the writer of this paper ventures to assert, that if its history, peculiarities, and processes be but rightly studied by the designer, it will be found to constitute a graceful embellishment and harmonious addendum.

But the practical architect may naturally inquire where can the "material," the "tesseræ," the "smalto," the bedding, the proper cements, &c., be found; and are our workmen sufficiently instructed to produce such works? To the first question, it can only be replied, that almost every advantage afforded to the ancient mosaic workers in choice of material, &c., is far exceeded by those of the present day. Through the unremitting attention of Messrs. Pether, Prosser, and Blashfield, as designers and inventors, and that of Messrs. Singer, of Vauxhall Bridge-road, and Minton, of Stoke-upon-Trent, as manufacturers, every article necessary for the execution of the most elaborate mosaic work can be provided; and through the admirable mechanical improvements introduced into the manufacture, such means of ease and regularity have been brought to bear upon the powers of production, as to facilitate in no ordinary degree the elaboration of the most extensive works of this nature. I have every reason to believe that Mr. Minton or Mr. Singer have it in their power to produce, at this present time, could patronage be obtained for their execution, as extensive, and probably as beautiful works, as have ever graced the palmiest days of the art; and I am sure, from the interesting specimens exhibited to-night through the kindness of these gentlemen, that the members of this Institute must perceive the capabilities of this too much neglected branch of architectural study.

M. D. Wyatt.

## ART: ITS DISTINCTIONS AND PURPOSES RELATIVELY CONSIDERED.

DECORATIVE-ART SOCIETY.

At a meeting on October 27, the second part of a paper on the above subject was read by Mr. Dwyer. In resuming, he wished it to be understood that his plan of treatment sought rather to embody and classify on broad considerations, than to judge of art in its details. Doubtless many differed from his opinions, and he had found prejudice to be the greatest difficulty to overcome in attaining to a proper estimation of art. We ought not, he said, to rely on a floating opinion, that this work is beautiful, or that commonplace,—this high art, or that low and vulgar: we should not be contented to receive all such dogmas as truth, without attempting to understand why or how far the intentions of art are evident to ourselves. Simplicity with purpose, he said, constitutes perfection in art; and although they are the most rarely developed, they are most readily recognized by a spectator. He then inquired, what constitutes historical art? Is it represented by battle scenes, massacres, processions, or reviews? He was of opinion that, in its true and nobler sense, we ought to find a combination of characteristics in persons, time, and place, harmonizing with the event represented, and associated with mental attributes commanding reverential attention, and exciting an appropriate feeling of emulation in the beholder. It is rarely, he observed, that such *desiderata* are supplied in painting, and the accredited substitutes are too generally mere portraits and gatherings from old prints. The recent exhibition at Westminster Hall, professedly of historical art, would, he said, afford examples to convince us how far these principles have been understood and how applied. The picture of "Alfred inciting the Saxons to prevent the Landing of the Danes," displayed a high purpose,—an attempt to shew in a simple fact what our navy once was, and lead us to respect the man who by his genius improved the defences of our country and laid the foundation for our present commercial greatness. Thus, there appeared much food for a reflective mind. On the other hand, "The Battle of Meeanee" could only excite a feeling of horror, and would, in his opinion, be more fitted for the Horse-guards than a decoration in the new palace at Westminster. In "Richard Cœur de Lion forgiving Bertrand de Gourdon," a moral lesson might be discovered —an embodiment of a noble principle in Christianity; while, on the other hand, "Edward's *generosity* to the People of Calais during the Siege of 1346," was too problematical in such respect. Attention was directed to a scriptural picture relating to the "Seven Acts of Mercy," in which the conditions of sickness, hunger, and the houseless, were expressed through the medium of English associations. This the reader considered praiseworthy, as appealing in English garb to English understandings, and thus rendering art more sympathetically urgent to good moral actions. It would be instructive, he said, for all to examine how much of high art, or rather *high purpose*, has emanated through the royal commission. He inferred, that out of much pretension there may be found a very few good works tending to promote the advancement of art. A more extensive acquaintance with the nature of mental emotions, and a greater variety in mental expressions, were mentioned, as being essentials for progress, and that to portray mental capacity in accordance with the *character* depicted, is the essence, or *high* art, as being beyond the capacity of imitative skill. An example such as "The Last Supper," by Leonardo da Vinci, would, it was said, impress an ordinary spectator, at the first glance, with the natural variety shewn in the whole scene; yet the distinctive expressions of each personification are rendered in consonance with the event depicted.

The *decorations* for the new palace at Westminster, according to the comprehensive system laid down by the Fine-Arts Commission, it was observed, afford an unexampled opportunity to artists for gratifying the desires of all who venerate painting only in its noblest workings. He hoped that the term *decorations* would not continue to be misunderstood, misinterpreted, and restricted in its meaning, as hitherto, by artists in general;—that the time had returned when all branches of the arts would be thought honoured in their application as decorations. He would ask, what had lately been the general estimation of a painting on a wall? why, mere ornamentation. Whereas, if stripped from such a position and framed as a picture, it would have been recognised as of fine art, or high art. Again, he remarked, artistic workings in metal, such as jewellery, would, if in marble, take rank as fine art. These false distinctions, the reader contended, had led to an overflow of followers in certain divisions of art called professional, whilst in others, deemed industrial, an equally evident scarcity prevails. A skilful designer for manufactures, he argued, is as much an artist as the painter of landscapes or portraits, and, in his opinion, the designer required for his purposes abilities both mentally and manipulatively superior to the other. He instanced Holbein, who, as a painter of portraits, imitated admirably, but as a designer, he invented nobly;—Quentin Matsys, who, being recognized by artists, owing to his great abilities as a painter, displayed yet greater genius in his ironwork as a blacksmith; but, had he not painted, his name would not have been remembered by artists. Is it just, it was asked, to estimate art thus by clean hands, as it were? or, is it right to place imitative skill above ideal and constructive genius? It was remarked, that the public requires instruction before sound inferences, upon what constitutes great excellence in the arts, can be popular, or an understanding of the parallels in artistic achievements can be fairly sustained. Successful works in art emanate only from a congenial source, and the taste of a nation must always influence their production. He had been much impressed by the opinion, that whatever is truly great or practically useful is always based upon simplicity, while that which is imperfectly understood is usually overloaded with technicalities. The simple outlines of Greek and Etruscan vases, he observed, have caused, perhaps, more abstruse geometrical investigations into conic sections than even the planetary systems; yet, in his opinion, geometry had not been brought to assist art in their formation. He had prepared a few drawings, which were exhibited, to shew how simply the most refined forms are obtainable. From the beautifully curved outlines of leaves generally, he had been induced to make a few tracings, and he had been greatly sur-

prised by the slight modifications necessary to impart that practical result—fine-art design.*

He next spoke of ornamental art, which class, he said, includes works by Raffaelle, P. Veronése, Tintoret, Rubens, Le Brun, Verrio, and other eminent painters. Sculpture he considered to be the ornamenting accessory to architecture. The ornamental designer has no status with the general public. The application of embellishment is almost unlimited, and nothing which consists of a combination of forms should be deemed beneath the range of art. Art, it was said, has but one general purpose and effect alike intelligible under every aspect; nevertheless, the broad distinctions in its practice, originating in human pride, have sapped its energies, and dissevered its entire frame into fragments, each of which is striving to maintain a separate existence and identity. Mr. Dwyer contended, that as all divisions or kinds of art are for the most part decorative, so then a combination uniting one branch with another, and strengthening all, would be most valuable.

It was then remarked, that it is among the applications of art which have been most perverted and misinterpreted, that remedies are necessary; that the fine arts, as we have been instructed to name them,—architecture, sculpture, and painting,—are each imperfect and incomplete one without the other, and that, nevertheless, their association requires to be presided over and directed by the comprehensive purpose in the result or effect, which is decorative art. As an instance of what he intended to imply, he referred to the new British Museum as a fine specimen of architecture, but quite out of place, and having no harmonious association with anything surrounding it. This had not been the case with the style of building it was displacing, nor is the same deficiency evident in the new palace at Westminster. Indeed, the suggestions which have been entertained with reference to the bridge, are proofs of a far better taste in that quarter. These examples, he said, also show that art is inevitably influenced by contingencies.

The reader remarked that there remained the great distinction between art and its application to arrange. In the one is the object, in the other the means. He had now approached the main difficulty in his subject: how to hold the balance with justice to all interested in the progressive development of the arts. With the Royal Academy of Arts and its accessories on the one hand, and the industrial arts with their commercial importance on the other, where could all meet on neutral ground to discuss and diffuse mutually a more correct appreciation of the beautiful? It would be remembered that each class has its own means and processes to attend to, but even where so many classes have one and a similar purpose, a mutual concentration and co-operation must be conducive to a general success. In conclusion, he hoped the term "decorative art" would soon be better understood as a combination of all pertaining to high art, fine art, and industrial art, in their general purpose of the embodiment of beauty and perfection with all things material.

* We shall engrave a few of these for an early number.

## ARTISTICAL.

Mr. Eastlake, R.A., has resigned the office of keeper of the National Gallery, and Mr. Uwins, R.A., is appointed in his stead. ——It is stated that the sculpture for the pediment of the British Museum has been entrusted to Sir Richard Westmacott, who was supposed to have retired.——The election of Mr. Sydney Smirke, as an associate of the Royal Academy, last week, is a second acknowledgment that the academy have virtually rescinded the narrow rule which required the candidates for its honours to be members of no other society of the kind, Mr. Smirke being a fellow of the Institute of Architects. Mr. F. R. Pickersgill, whose first notoriety was given him by the Art-Union of London, was the successful candidate for the other vacant associateship. The election of a secretary and a professor of painting will take place at the end of the month.——We find the following, evidently correct, biographical sketch of Mr. Gibson, R.A., in a country paper:—"Gibson, the sculptor, was born in 1790, at Gyffyn, near Conway, in North Wales, and was the son of a gardener. At an early period he was sent to Liverpool, and apprenticed to a cabinet-maker and carver in wood. He shewed a decided turn for the sculptor's art, and excelled in carving and modelling small wooden figures. A small model in wax of 'Time,' which he executed in his eighteenth year, attracted the notice of Messrs. Franceys, sculptors, of Brownlow-hill, Liverpool. The Messrs. Franceys purchased his indentures, and employed him in the higher branches of their business. Whilst with them, young Gibson executed for Mr. J. Gladstone a bas-relief representing the Seasons, and a Cupid, which is said to be equal to any work of his maturer age. He was noticed by the late W. Roscoe, who procured for him the patronage of Michael Angelo Taylor, then M.P. for Durham. Gibson went to London in 1818, under the auspices of Mr. Taylor, and found immediate employment. He became known to Lord Castlereagh, from whom he received letters of introduction to Canova, and in 1820 he went to Rome for the purpose of study. At Rome he met the Duke of Devonshire, for whom he executed the celebrated Mars and Venus. This work attracted the notice of the King of Bavaria, who gave him general commissions, and since then he has rapidly advanced to a first place amongst British sculptors. His last work is the statue of Huskisson, recently erected at Liverpool."——Gibson's original statue of Huskisson will be placed in the London Exchange.——The late Mr. Henry Howard had been a full member of the Royal Academy nearly forty years, having been elected in 1808. He was made an associate in 1801. He was the oldest member, with the exception of the president, Sir Martin Shee, who was elected in 1800, and Mr. Turner, who dates from 1802. Sir Robert Smirke, Mr. Ward, and Sir R. Westmacott, who were all elected in 1812, stand next in seniority.——Mr. M. L. Watson, the sculptor, who died on the 28th ult., aged forty-three, was articled to a solicitor, but found art a more engrossing pursuit, and thought he might effect greater deeds out of the office than in it. Flaxman helped him: he went to Italy, stayed three years, returned, spent his last shilling, and was then engaged by Chantrey as a modeller. Not obtaining an advance of wages when he sought it, he left Chantrey, and was first engaged by Mr. Baily, afterwards by Mr. Behnes,—and then tried once more on his own account. "At this time," says the *Athenæum* of the 6th inst., which contains an interesting notice of the sculptor's progress, "Chantrey died; and on Allan Cunningham's recommendation, Lord Eldon was pleased to entrust the two colossal statues of the late Lords Eldon and Stowell—one of Chantrey's last and largest commissions—to Mr. Watson for completion. Chantrey had done nothing to the work beyond a few indications on paper; and the two statues—which are now, we are told, fast rising from the marble—were designed under the superintendence of Allan Cunningham, modelled, and since completed in plaster and part in marble by Mr. Watson. Another of his better works (for he was only rising into reputation at his death), is a full-sized portrait statue of Flaxman, modelled in 1843, and transferred to marble at the request of a committee, consisting of the Marquis of Lansdowne, Mr. Rogers, Mr. Hallam, Mr. Eastlake, Mr. Barry, and other well-known connoisseurs and artists." He is perhaps best known by the clever bas-relief on the Hall of Commerce, in Threadneedle-street: he was employed at the time of his death on a bas-relief for the unlucky Nelson monument.——The death of the Perthshire sculptor, Anderson, whose Tam O'Shanter is well known, was caused, in Liverpool, by typhus fever.——Sir Robert Kane recently made the curious statement to Lord Clarendon, in Dublin, that the present Act of Parliament for the protection of the copyright of designs was first set on foot, and obtained, through the instrumentality of Sir Emerson Tennent, by an Irish house, Messrs. Henry, of Islandbridge, to protect Irish designs from being pirated and adopted as French by the Manchester houses! The act was made, of course, imperial, but its original object was, as stated, to protect the designs produced in Ireland.

Stain for New Oak.—Fresh lime-water is said to be a good stain for new oak.

## RAILWAY JOTTINGS.

Improvements in 'the break' are still in course of constant and repeated suggestion; 'yet even of these,' says a contemporary, 'but few have come into use,—the greater part of the railways still employing the old form through the influence of their *eminent engineers*, who cannot bear the introduction of any inventions but their own, however superior they may be. We have this week inspected a new kind of break, patented by a Mr. Lee, and now being taken up by a company, with offices, in Moorgate-street. It consists of a break-block beneath each wheel, or one pair of wheels, of a certain number of carriages in a train, as may be required. This block is attached by connecting rods to a lever, working an the axle as a fulcrum. From the top of this lever a connecting rod leads to a bent lever, on the extreme end of which is another connection rod, with a screw-box on the end, which is raised or lowered by the guard on the top of the carriage, turning a winch handle, by which the break is either pressed with great force on the rail under the wheel, or put out of gear. The plan was in operation on the Croydon line for twenty weeks, when, we are assured, it was found to have eleven times greater breakage-power than the old break; and a train, going at the rate of from thirty to forty miles an hour, could be stopped in less than 100 yards, without the passengers being aware that the breaks had been applied. This break can also be put into action, in right of the same patent, by a buffer acting upon a rod and spring, whereby the train stops itself; it can also be applied by the engine-driver, in cases of extreme danger, by a steam-pipe from the boiler, *stopping the last carriage first,—thus preventing the slightest collision.* We understand a testimonial, expressive of its merits, was signed by nine guards who had used it. When we consider that it was sworn in evidence, on the inquest on the bodies of the sufferers at the Wolverton accident, that a train could not at that velocity be stopped under 500 yards, it is clear that, if directors will not adopt proper safety principles, when offered to them, it becomes a duty devolving on the public to compel their adoption.'——The *New York Sun* describes a 'railroad sprinkler' in use on the Stonington Railway for "watering the track and road bed, thereby diminishing the friction of the cars upon the track, preventing the boxes and journals from being heated, by keeping away the dust, preserving the paint and varnish by not having to clean the cars so often, relieving the passengers from great annoyance, and taking from the breakmen a large share of their labour at the through stations. This improvement has been very popular with travellers. It requires about 2,000 gallons for the Stonington Railroad (forty-seven and a half miles). The machine is attached to the train behind the usual water-tank, and is under the control of the engine-man by a rope attached to a valve, which he shuts and opens at pleasure."——The suspension of works in various quarters is still in progress. Besides the notice which one contractor on the Great Western lately gave to 1,400 men, the company are about to discharge 350 more at New Swindon.——The works of the South Wales line have been suspended in Pembrokeshire, from uncertainty of the precise direction in which to proceed with the line, it is said. At Newport, however, the works on this line have been suspended in consequence of the pressure, and about 400 men, it is said, discharged, although the contractors have sent a number of their 'navvies' to push on the contract at Bridgend. The force at Stow Hill Tunnel, too, is to be reduced.——A partial suspension of the works on the East Lancashire, at Burnley, took place on Monday week. It is said that Messrs Hattersley intend to employ none but their best and steadiest workmen during the winter.——Orders have been issued, it is said, to suspend for a time the prosecution of the works on the Blackburn, Clitheroe, and North-Western Extension Branch of the Bolton, Blackburn, Clitheroe, and West Yorkshire Railway Company.——It is said that one great railway contractor has more than 7,000,000*l.* of contracts incomplete at this moment; and, although 2,000 workmen have recently been discharged from his employ, he yet pays 50,000*l.* a week in wages alone.

## NOTES IN THE PROVINCES.

The Windsor improvements are to be delayed, it is rumoured, till the Government can conveniently provide the 200,000*l.* necessary for their accomplishment.——The second graving dock at Southampton is almost completed. This piece of brickwork must have required some little skill in 'naval architecture,' for it is 'turned to the shape of a ship's hull.' It is relieved with masonry, and the cost is not more than a third of what it would have been if built of stone.——The Portland Harbour of Refuge is going on swimmingly. An addition of 100 men has just been made to the working corps of 200, previously engaged, and from time to time it will be further greatly augmented.——The Newport waterworks are in rapid progress, and the force of the water has been proved sufficient to supply the chamber story of every building in the upper part of the town.——The alterations and improvements of St. Julian's Church, Shrewsbury, are now nearly completed. A tablet has been erected in commemoration of the Rev. R. Scott's 'generous spirit and noble liberality,' detailing that he had caused an effective architectural character to be given to the exterior of the south side of this sacred edifice, and had added stone piers, pilasters, portals, &c., erected an ornamental stone wall and parapet round the churchyard, flagged and paved areas and footways, renewed steps, roofed the chancel, painted, cleansed, &c. The architectural improvements were designed and executed by Mr. Dodson, of Shrewsbury. The work has latterly been completed by the removal of the lobby roof, and the isolation of the old tower from the body of the building thus effected.——In complaining of the burial of the proposed cemetery, at Cambridge, in apparent oblivion, a correspondent of the *Cambridge Chronicle* remarks, that "it is rather remarkable, and not very consolatory to remark, that in this renowned place building projects are not only expensive, as compared with the like in other places, but also very slow of execution."——The Roman Catholic chapel in Willow-lane, Norwich, has been renovated and embellished. The interior, says the *Norwich Chronicle*, has been gorgeously decorated in the Byzantine style, under the superintendence of Mr. Bulmer. In the windows, ten in number, stained glass has been placed, throwing a sombre and subdued light into the chapel. The entire ceiling and the walls of the edifice, the pilasters, the window splays and organ pipes, have been decorated, and all the furniture of the chapel is of corresponding description. In regard to decorations and embellishments, they say, no church or chapel in this eastern district can be at all compared with this building.——Besides the recasing and restoring of St. Luke's Chapel, at the Norwich Cathedral, by Messrs. Brown and Kerr, the cathedral architects, three Norman windows have been substituted for the mullioned nondescripts formerly introduced, and the whole crowned with the Norman coping, of the pattern recovered by Professor Willis, in Ely Cathedral. Into the east, north, and west upper windows of the great lantern tower, eight canopied figures in painted glass, by the late Mr. Yarington, have been introduced. The painted window at the eastern end of the triforium has been recently removed to the south transept, and replaced by a Norman arch, executed by Mr. James Watson, under the direction of Mr. Brown. In this arch Mr. Warrington has placed a memorial window of a Norman character, from the original example in the north window of Brayborne Church, in Kent.—— The corporation, it seems, says the *Lincolnshire Times*, have found it impossible to carry out their design of providing a public cemetery, as not only the consent of bishop and clergy, but of residents in the vicinity, as well as the owners of the property pitched upon, might prevent the obtaining of the Act.

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Surrey and East Kent Sewers.—A correspondent calls our attention to an extensive work now being performed under the Commissioners of Sewers for Surrey and Kent, in arching over the river Effra, or, as it is called, Brixton Washway; on which 200 men are daily employed. Mr. Joseph Gwilt is the surveyor, and Mr. Munday the contractor.

## WESTMINSTER COURT OF SEWERS.

A general court was held on Friday, Nov. 5; Capt. Geo. Bague, R.N., in the chair.

*The Sanatory Commission at Gwydyr House.*—The clerk read a letter from Mr. Austin, the secretary to the Metropolitan Sanatory Commission, now sitting at Gwydyr House, asking the permission of this court that Colonel Hall, clerk of the Ordnance, may be at liberty to inspect the plans, sections, &c., of the Westminster Commission of Sewers. A further request was made for a list of the commissioners, with the professions and qualifications of those who had transacted the business of the court for the last seven years.

The chairman said he was given to understand that this was the body which was to seal the doom of the present commissioners.

Mr. Branscombe thought that whatever arrangement was made, the business of the court would not be performed so economically. He had, however, been told that they would not last till Christmas, and that one of their present commissioners was to be appointed as the head of the new body, at a fixed salary.

*Rating the Great-Western Railway.* — Mr. Justins, clerk to Messrs. Mapleson and Co., solicitors to the Great-Western Railway Company, presented himself to appeal against the sewer-rate charged upon that company, amounting to 96*l.* In support of this appeal Mr. Justins stated, that no poor-rate exists for the premises of the company at Paddington. An action had been entered by the parochial authorities for the recovery of the rate, but shortly before the time of trial the record had been withdrawn, and the question had been agreed to be referred to arbitration. Therefore, he contended, that as no poor-rate had been made, no sewer-rates could be founded on a rate that had no legal existence. The ground of resistance of the Great-Western Railway Company was, that in the early part of the year 1844 they were rated to the poor-rates for 3,000*l.*, but in the latter part of the same year a second rate was made, taking the extraordinary leap from 3,000*l.* to 7,650*l.*, which the company refused to pay, and the parish officers seized one of the railway engines. The company replevied, and the question was carried to one of the superior courts, when the record was withdrawn, and an application made that the proceedings be stayed; at the same time agreeing to submit the matter to the arbitration of Mr. G. F. Pollock, whose award would bind all parties. Under these circumstances, he was of opinion that no sewer-rate could be claimed based upon this disputed calculation.

Mr. Harrison said the court was not bound by this hypothesis, and had nothing to do with the dispute between the parish and the company. A request might be made, that the collection of the sewer-rate be postponed, but a protest against it could not be received.

Mr. Justins acceded to the suggestion of the hon. commissioner, and prayed that the collection of the sewer-rate might be suspended until the award of Mr. Pollock was made. The company had been for nearly twelve months producing evidence before the arbitrator, and, *pendente lite*, no rates had been paid. The last rate was paid in 1844, but he thought the whole question would be brought to a close in the present term.

The suggestion of Mr. Harrison was then embodied in a motion, and carried unanimously.

The court then proceeded to open tenders for 194 feet of sewer at South End, Kensington, which were as follow:—

| | |
|---|---|
| Norton and Son | £144 |
| R. Robinson | 109 |
| J. and S. Williams | 108 |
| Yeoman | 108 |
| Perkins | 98 |
| Hutton (accepted) | 95 |

A letter was received from a Mrs. Webb, occupying premises opposite St. Luke's Church, Chelsea, setting forth that, wishing to drain her house into the sewer, she applied to this court to know to whom it belonged, when she was informed that it was the property of the Chelsea Church commissioners, to whom she paid about 10*l.* for the required accommodation. Since then she had been waited upon by Mr. Farlar's agent, making a demand of upwards of 19*l.* for this privilege on behalf of a Mr. Gigner, stating that the sewer really belonged to him, and not to the church commissioners. She had subsequently been served with a writ of trial in the Marshalsea Court for the amount, and now sought the advice of this court under the circumstances, as she had acted on the information received from their officers.

This subject led to a long discussion, and it was finally resolved, on the motion of Mr. Le Breton, by a majority of 16 to 8, that as Mrs. Webb had acted on the advice received from the officers of this court, that their solicitor do defend the action of Mr. Gigner against Mrs. Webb, and take such steps as he may deem expedient.

*The Drainage of Long Acre.*—Mr. Le Breton said he had great pleasure in moving that the order of court for building 1,825 feet of sewer in Long Acre, be sanctioned and confirmed.

Mr. Hawkes did not approve of the plan, but believed the work so desirable that he should not oppose it.

The clerk wished to know whether the owners of the property were to be charged as the work went on, or that they should wait till it was completed.

It appeared to be the general opinion that, before any contribution was required, the work should be finished.—The order was then sanctioned unanimously.

*The Powers of the Commission.*—The solicitor of the court produced the opinion of the Attorney-general and Mr. Bovill on a case ordered to be submitted to them by the last court, in reference to a question put by Mr. Carter, a notice of which appeared in The Builder of the 30th ult. The opinion was as follows:—

"We are of opinion, that under the Act of the 10 & 11 Vict., contributions can be obtained from persons who may hereafter avail themselves of sewers then existing, only where such sewers have been constructed within thirty-five years *before* the passing of the Act; and that in those cases the remedy for enforcing contributions will be by an order of the commissioners so provided under the seventh section of the recited statute; but we think the commissioners ought not to direct the payment of such contribution by instalments.

"With respect to sewers constructed *after* the passing of the Act, we think the commissioners can enforce contribution under that statute only where they have themselves constructed the sewer, and by charging the owners of the frontage under the provisions of the ninth section; but there may also be cases in which the commissioners might be able to effect some beneficial arrangements under the former statutes and bye-laws.

"We are also of opinion that, under the late Act, the commissioners may take upon themselves the formation of the drains for private houses to the sewer, but that in such cases they would not be entitled to charge the expense upon the owners or occupiers of the property so drained, or to include in it the frontage proportion payable in respect of the sewer. "John Jervis,

"Temple, Nov. 3, 1847. William Bovill."

The case and opinion were ordered to be printed and laid before the court.

The court sanctioned an order for 1,130 feet of sewer in Newman-street, Marylebone.

Several letters were received from Mr. Farlar, calling upon the court to put in force the powers of the Act, by compelling parties resident in Robert's-place to drain their houses into the sewer, so that he might obtain a return of the money advanced by him in its formation.

Mr. Hawkes said it was the bounden duty of those who obtained the Act to carry it out for the public benefit.

Mr. Willoughby deprecated any commissioner calling upon this court to put in operation the powers of the Act for any particular place, as, whenever they were required, it might be deemed necessary to include a whole district. He should therefore move that the report be laid on the table.

The chairman was of opinion that a day weekly should be set apart for the consideration of any letters that might be received, which, as he some time ago anticipated, now accumulated to a great degree. As he was upon his legs he wished to advert to the expiration of the commission, and, unless it were renewed, it would merge into the hands of the county magistrates, any six of whom might attend to do the business of the commission.

Mr. T. L. Donaldson said it was highly necessary to secure parties a return of their money laid out for the public good, and he thought the clerk or the solicitor should lay down some plan for the consideration of these cases, or that they should appoint a special day to consider the whole question.

The matter then dropped.

In reference to the termination of the commission alluded to by the chairman, the clerk was ordered to communicate with the secretary to the Lord Chancellor upon the subject.

The clerk brought under the notice of the court the application of the Sewage Manure Company, as to a proposed conduit from the Ranelagh sewer by Sloane-square to the Counter's-creek sewer by Stanley-bridge, and, after some discussion, he was ordered to communicate to the Sewage Manure Company that the notices were irregular and not in conformity with the Act of Parliament.

A rate of 3d. in the pound was ordered on the eastern division of Westminster sewers.

The surveyor presented a report on the drainage of Cumberland-street, Grey's-place, Bull's-garden, &c., Chelsea, which represented the existing state as of a most pestilential character, and proposed to remedy the same by building two new sewers, and arching over or entirely filling in an old one; the whole of which improvement he estimated at 590*l.*—The report was adopted.



CARVED FONT CASE, IN NEWINGTON CHURCH, KENT.

## CARVED FONT CASE, NEWINGTON KENT.

SIR,—Few persons will be inclined to dispute the soundness of the advice often given in your pages, as to the benefit to be derived from seeing the interior of every church which you may be near. Business frequently taking me to different parts of the country, I seldom omit examining the interior of every church near the place in which I may be staying for the time, and it is really surprising how great a mass of information may be thus obtained: however unpromising the outward appearance may be, it is rare but something valuable may be found in the interior, sometimes merely a moulding, or the capital and base of a pier, at others a good piscina or sedilia, in many churches a handsome font, and occasionally a font-case, such as that forming the accompanying illustration. This very curious article of church furniture (if I may so call it) is in the church at Newington, in Kent, a small village about three miles from Hythe (which latter place, by the way, has a church well worth a special visit, the chancel being a beautiful specimen of early English, with a good undercroft in the same style). Newington Church is in a miserable state, encumbered with unsightly pews and huge galleries, green with damp at the lower part of the walls, and covered with whitewash on the other parts—in fact, with nothing worthy of notice, except the font-case, which is a very curious and fine specimen of late wood carving. At first sight it has every appearance of a pulpit, being about the same height, and placed against one of the piers of the nave. It is of oak, hexagonal in plan, and I am sorry to add, painted and varnished. Two of the sides form the door, which opening much after the fashion of a corner cupboard, discloses the font, a perfectly plain piece of masonry, reaching about half the height of the case. The top moulding of the case is evidently of a more recent date than the rest of the work, and I am inclined to think that there has been some more important termination which has been destroyed. Another of these cases, very similar to that at Newington, may be found in the adjoining parish church of Cheriton, and a third at Ticehurst, in Sussex, where the case is panelled on both sides, and of which you gave an engraving of one of the interior panels lately. Here the oak is left in its natural state, without any embellishment from paint. It may be as well to add that Ticehurst Church has a good tower and north porch, some tolerable windows, and very good piers and arches in the nave, but the whole building is much in want of repair.

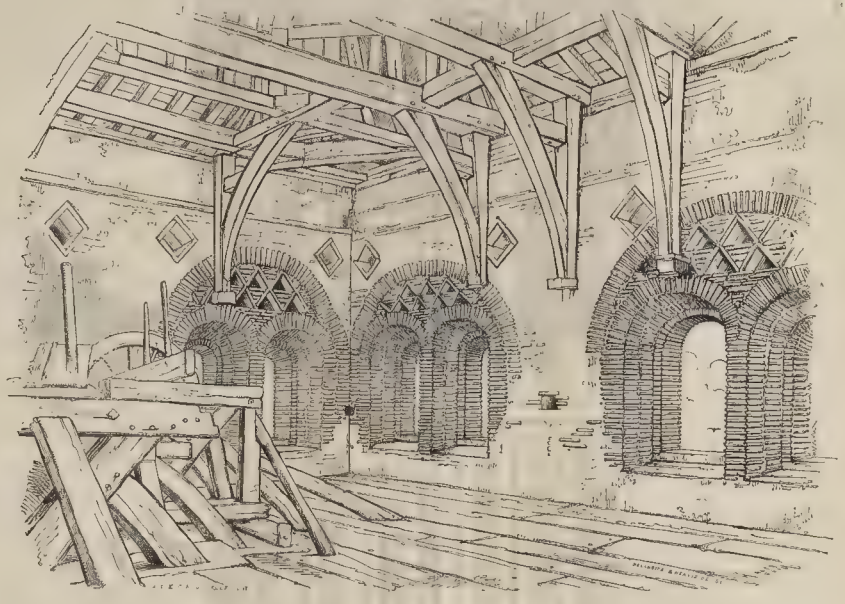
WM. CAVELER.

## THE EARLY ARCHITECTURE OF ST. ALBAN'S ABBEY CHURCH.

So long ago as 1833 the Messrs. Buckler, well known as zealous antiquaries, intimated, in the *Gentleman's Magazine*, their intention of publishing an inquiry into the history of the Norman architecture of St. Alban's Abbey Church. This intention they have now realized; and in doing so, they have produced a very important volume, and made clear several interesting points, especially this, that there were two towers at the west end.* "No conjecture," say our authors, "as to the former existence of towers in union with the west front was ever promulgated,—a fact which would not be deemed remarkable if it were not for the elaborate and valuable engravings of this church published in the year 1810 by the Society of Antiquaries, in which the fragments of the one towards the south are accurately delineated, but evidently without having been understood. That the same relics should up to this time have escaped recognition as having belonged to a tower is perhaps not wonderful, on account of their partial concealment by the walls of a dwelling-house, which has been at-

* "A History of the Architecture of the Abbey Church of St. Alban, with especial reference to the Norman Structure." By J. C. Buckler and C. A. Buckler. Longman and Co., Paternoster-row, 1847.

## THE EARLY ARCHITECTURE OF ST. ALBAN'S ABBEY CHURCH.



INTERIOR VIEW OF THE BELFRY.



ELEVATION OF NORTH TRANSEPT.

tached to the church in the particular situation referred to."

The Norman portion of the existing edifice was commenced about 1077, on the site of a previous church built in the eighth century, and was dedicated in 1115. When seen in its full proportions, "with its three towers, the central one augmented in height and beauty of appearance by its lofty octagonal lantern and tapering pinnacles," it must have been an imposing edifice, and a striking feature in the landscape. The length in the clear from west to east was 440 feet, terminating in an apse, and the transept from north to south was 176 feet, and had apsidal chapels on the east side.

"The visible remains of the church whose general figure we have just described, are portions of the aisles and side walls of the sanctuary, the transept and lantern tower, three entire bays on each side of the choir, and six on the north side of the nave.

Particular regard seems to have been paid to laying out the plan of the church, and fixing the subdivisions for the positions of the piers; and measurement proves that this part of the work was performed with such ability, that only slight deviations from accuracy and uniformity occur—points which were not to be so easily maintained in carrying up the work. An exception to the former remark must not be overlooked, a regularly increased width having been given to the north transept from its junction with the tower to the opposite extremity; but with respect to the superficies of the walls and pilasters, and their retreating members, obedience to the line and rule was by no means strict; and as the discrepancies in the structure were not concealed by the application of the cement, considerable irregularity is found to prevail upon a near examination of the interior."

Messrs. Buckler remark, "that the subdivision of the width between the walls into nave and aisles was made with considerable attention to exactness, and the result is a handsome proportion in the spaces formed by the piers of the arcades; a line passing through the centre of these in a longitudinal direction, gives to the nave one-half of the entire breadth, the symmetry of the avenues being preserved by the equal division of the piers upon the imaginary limit; but this

scale, which may also be discovered in the plans of other Norman churches, does not, in the present instance, apply with any precision to the rest of the design."

It was not thus, however, that this church was proportioned by its original builders. The equilateral triangle appears to have been the figure that regulated its plan, and, when tested by this, some remarkable agreements become apparent.

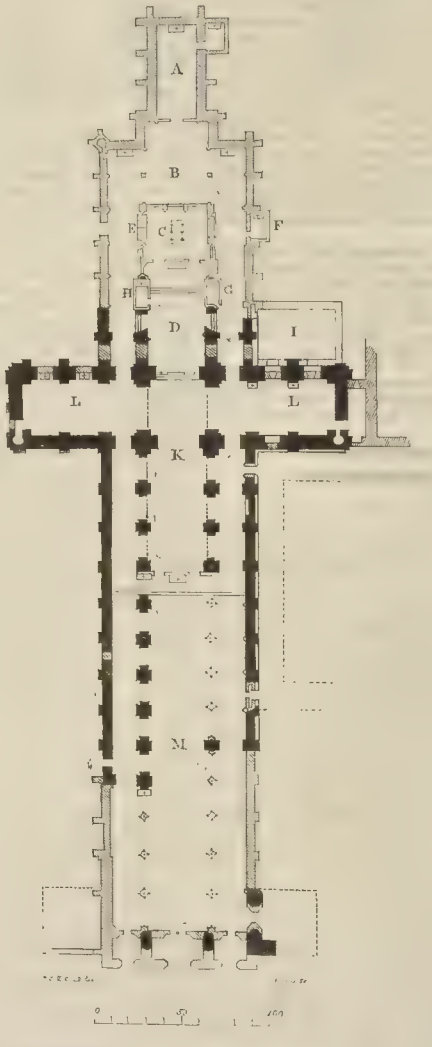
Matthew Paris says, that previous to the rebuilding of the church at the time we have mentioned, the walls and vaults of Verulam were carefully sorted, and all the whole tiles and stones, columns and tablets, which could be found, were put aside for the proposed structure. The building as now seen, agrees with this statement in a very interesting manner. Some of the walls are of flint, with layers of Roman brick, at unequal distances, and others present irregular masses of stone and bricks, and cement. The Roman mode of construction, as exemplified in the walls of Verulam, was adopted in a degree as well as the materials.

Brick and stone are curiously intermixed, the former being covered with cement to obtain the required profile and appearance.

"A rare example of the union of stone and brick, in the cornice of the parapet of the clerestory on the south side, must be named, it having been added to the Norman wall, at the time of the extensive alteration of the nave, in the thirteenth century, for the purpose of completing the elevation thus far uniformly. The ancient material was at no period rejected, however abundant the supply of stone; and this cornice, when first completed, and for a long time afterwards, appeared to be wholly of masonry, but the mouldings and corbels only are of stone, all the other members being of brick, cased and perfectly formed with cement."

"The brick is mostly of one size, namely, $16 \times 12 \times 1\frac{1}{2}$ inches;* and no less regard was paid to lapping the courses, or preserving the bond, than could have been in the construction of masonry. Hence we observe the influence that the material exercised over the design: the retreating members on the angles of the piers and arches, and on the pilasters standing in advance of the walls, are in proportion to the measure of the slabs. Brick of a still larger superficial dimension than that just named appears occasionally, particularly in the staircases, but in point of substance it generally varies. This inequality, however, was unimportant; the concrete mortar was used with an unsparing hand, and with a confidence which shewed perfect reliance upon its temper for duration; and in cases of disparity, an approach to a level line in laying the courses was obtained by giving more or less substance to the joints.

* A brick of these dimensions, extricated from a bank by the road passing over the site of Verulam, is preserved at Oatlands; its weight is 21 lbs.




REFERENCES TO PLAN OF THE CHURCH.

A Lady Chapel.
B Eastern Aisle.
C Presbytery.
D Sanctuary.
E Watching Loft.
F Duke of Gloucester's Chantry
G Abbot Wheathamstead's Chantry.
H Abbot Ramryge's Chantry.
I Sacristry.
K Choir.
L L Transept.
M Nave.

The bricks vary in shape and durability in proportion to their exposure to the fire in the process of burning. Many are vitrified and warped by excessive heat, and but few are observed to have yielded to the action of the weather upon the exterior of the building. The earth of which they were made was evidently prepared with great care: their texture is close and fine, and the hardness such that they seem as durable as the flint with which they have been so admirably combined in the walls. They are mostly of a deep red colour, but many in the interior of the belfry are of white earth.

The supply lasted at least as long as it was required for the building, every part of which, in all its essential features, from the foundation to the uppermost finishings of the walls, even to the parapet of the tower, is of tile-brick, so that the original intention in this respect was fully accomplished; and it was not until a later period, and under the influence of another style of architecture, that we observe the introduction of solid masonry without any admixture of brick, except as forming one of the ingredients of the rubble-work of which the core of the walls consists."

Several *flue bricks*, built up among the courses, have been accidentally disclosed, also others of peculiar shapes: some have had bosses, or handles, in the centre, as if intended to be used as covers for apertures.

"The staircases and galleries, or passages, formed in the thickness of the walls, exhibit ingenious and very interesting specimens of construction in perfect preservation.

The circular shafts in the extreme western angles of the transepts, terminating with turrets above the parapet, are nearly 7 feet in diameter, with newels of the same figure, but of different sizes, the larger towards the north being 7 feet in circumference.

The spiral form of the under side of the steps, springing from the newel by a most clever application of the material, cannot fail to attract attention; the process by which this portion of the construction was advanced may be distinctly traced. The staircase was built to a certain height, upon a cradle or frame of wood, which was moved, or, as it may properly be described, screwed upwards, and as the work proceeded so the centre was raised. The boards fixed upon this spirally-formed frame in order to complete its figure, and immediately upon which the brickwork rested, were three and four inches wide, lapped and wedge-shapen, in lengths of 14 and 18 inches, alternately arranged. The mortar with which the new work was overspread, retains the impression of the boards, and perfect freshness of appearance."

Messrs. Buckler dwell at some length on the employment of a cement as a facing both inside and out. They consider that "the employment of composition or cement for the purpose of defining ornaments and mouldings, if not coeval with ecclesiastical architecture, was at least applied with this important object in some of our most ancient churches; and though, perhaps, in no other instance to the extent in which we view it in that of St. Alban's Abbey, yet many interesting examples might be referred to as illustrative either of the remoteness of its antiquity, or the value that was attached to it, and also as exhibiting the naked forms upon which the ornamental features were produced."

Of the painting with which the interior was adorned, the rich shrines, as described by Matthew Paris, and other details, our authors give a full account, and illustrate the appearance of the Norman church by a ground plan and various diagrams.

"It has been discovered that the floor of the church was originally paved with tiles made

for the purpose on the spot, and consisting of gravel, broken brick, and lime,—a most durable composition, and a very serviceable appropriation of the refuse materials produced by the excavations, as well as by the operations of the workmen during the progress of the building. Many fragments have been found under the present floor in every part of the interior, shewing that the tiles were six inches square, and one in thickness, with no other polish than that conferred upon them by use. Next to these in point of date, and brought to view at the same time, are tiles 3¼ inches square, with a plain jet black surface, similar to those still remaining on the high altar-piece in the choir of Fountains Abbey."

Our authors then proceed to describe the various alterations and the additions that were made in succeeding times: these were begun as early as the reign of King John, when the west front was taken down for the purpose of being rebuilt, and remained long in ruins. William de Trumpington, who died in 1235, did much towards the completion of the church, including, as the chronicler writes, —"a certain covering (which is commonly called labreschura, or ceiling), with which he concealed the row of timbers above the famous image of the Blessed Virgin, lest the antiquity of the rafters or beams should offend the eyes of beholders; for a similar reason he also whitened the walls of a great part of the church, which the long-continued filth of dust had disfigured; so that if he had completed what he began, by a pleasing change he would have renewed the time-worn church."

The annexed plan (Fig. 1), taken from Messrs. Buckler's work, shews the church as it now is, the darkened portions indicating the early parts of the building which remain. The whole length from east to west, according to the account published by the Society of Antiquaries, with John Carter's drawings, is 600 feet.

Fig. 2 is an elevation of the north transept, shewing the *cone* which terminated the staircase turret, and the tier of blank arches which ornamented the lower part of the gable.

Fig. 3 represents the interior of the belfry: "never having been covered with cement, this chamber exhibits most fully the construction of its walls; the brickwork of which they consist is carried, in regular courses, through the deep reveals of all the openings to the exterior. The peculiar formation of the interior arches of the windows, and the various ornamental piercings on the sides, are not so easily described as represented with the pencil, and the view in the interior, shewing these curious particulars of the Norman brickwork, and at the same time the ancient timber framing by which the spire was supported, may be deemed useful and interesting."

The church under consideration has so many singularities and beauties, that all students and lovers of our ancient architecture should visit and examine it for themselves, taking with them Messrs. Buckler's volume as a suggestive and valuable guide.

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CHANGES IN LINCOLN.—In almost every quarter of the city houses are being erected, says the *Cambridge Chronicle*. The county prison is in the course of rebuilding, for the purpose of carrying out the separate system. A new deanery is commenced. The old houses which hemmed in the county hospital are being pulled down. The London and York Company are completing the exterior of a large hotel. The London and York and Great Grimsby and Sheffield lines, with the various subsidiary works (such as bridges), are being constructed. A new covered market is in the course of formation. Small streets have been formed, and others are forming. The water company are proceeding rapidly with their works for supplying the city with water. A proprietary mill has been commenced. The new cattle markets, with an adjacent inn, have just been completed. The committee appointed to select a site for the public cemetery, have, it is stated, fixed upon three fields opposite the ruins of the Monks' Abbey. The old abbey and grounds ought to be included, and, at no very large cost, the eastern end of the ruin might be fitted up for a chapel. It is stated that bricks are scarcely procurable in Lincoln, the great demand of late having cleared out all the brickyards. In consequence, parties are compelled to import bricks from a distance.

## New Books.

*An Introduction to the present Practice of Surveying and Levelling.* By A CIVIL ENGINEER. Williams and Co., Strand.

THE subject is here treated in a plain, intelligible manner, and many useful practical hints and directions are included. The work supplies no actual want, being, in fact, one of the many books of the same sort which the railways called into being; but it is adapted to meaner comprehensions than some of them, and will be found useful.

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*The Electric Telegraph.* By PETER PROGRESS. Clarke and Co., Gracechurch-street. 1847.

THIS is an interesting sketch of the progress of telegraphic communication, and a very lucid explanation of the means at present used, evidently foreseen by Shakspeare when he made Robin Goodfellow say,—

> "I'll put a girdle round about the earth
> In forty minutes."

The electric telegraph affords one more proof of the fact, that those who *invent* are seldom so well rewarded (if at all) as those who *apply* the invention. A Mr. Rowland constructed an electric telegraph in 1816, and in pointing out what electricity might be made to do, gave a perfect description of the present electric telegraph. He clearly established the fact, that an electric current might be made to pass through a continuous wire of great length. In combating the objection that the subterranean part of the apparatus might be injured by mischievously-disposed persons, he jokingly remarks,—"If you cannot prevent this, hang the rogues if you catch them, curse them if you cannot, and mend it immediately in both cases."

Government discouraged the inventor; he had not quite hit upon the right means either, and was told from the Admiralty, that "telegraphs of any kind were wholly unnecessary, and that no other than the one then in use would be adopted." With more equanimity than is usually displayed in such cases, our author observes,—"I felt very little disappointment, and not a shadow of resentment on the occasion, because every one knows that telegraphs have long been great bores at the Admiralty!"

## Correspondence.

PUBLIC PARKS—COPENHAGEN FIELDS.

SIR,—The remarks of your correspondent respecting the erection of a parcel of slight-built houses over the once-famed Copenhagen Fields coincide so exactly with my feelings on the subject, that it gives me great pleasure to find I am not singular in my regret to see the play-ground of the northern part of the metropolis thus covered. I will not, therefore, trouble you with many remarks upon the subject, but trust you will give the full force of your ably-written periodical towards the redemption of this once delightful spot. No place can be better adapted by nature for a park than this. The varied surface of the ground, and the fine old trees that have still survived this *brick and mortar improvement*, will render it a comparatively easy task to render it so.

The increasing population of this vast metropolis renders it a matter of necessity that we should have some places of healthful resort, where we can obtain a little fresh air after the toil of the day in the smoky city. If this be not taken in hand soon, where are we to go?

I certainly cannot understand why the recommendation of the committee to which your correspondent alludes did not receive the attention it deserved, and can only suppose that the owners of the lands consulted their own interests only. Now, I hope, that it has been again mooted, some enterprizing individuals will take up the subject and convene public meetings to petition Parliament, and that, too, without loss of time.

I, for my own part, will give all the aid in my power, and will thank you for any hints that can facilitate this desirable object.

Your insertion of this, perhaps, will call forth the remarks of some whose abilities will enable them to do greater justice to the subject.

Clapton, Nov. 8, 1847. J. H. L.

## Miscellanea.

PREMIUMS FOR ARCHITECTURAL DESIGNS AND DECORATIVE ARTS.—The Society of Arts has offered a variety of premiums to promote original designs for decoration. "By first eliciting the design from the artist, and then honouring the manufacturer for realizing the design, the society hopes to extend practically the sphere of its utility, and especially to make the institution the means of easy communication between the artist, manufacturer, and merchant. For this purpose it is intended to register the address and change of address of each meritorious competitor, so that, on applying at the society's house, any manufacturer may have the means of communicating with such artist, and may be enabled to obtain the best information respecting all objects of ornamental design." The following are amongst the subjects:—1. For the best chalk or monochrome drawing, being an original composition, of children, half life-size, for a circular compartment, the silver medal and five pounds. 2. For the best chalk or monochrome drawing, being an original composition, of figures half-life size, to fill a spandrel of an equilateral arch of two centres, the silver medal and five pounds. 3. For the best cartoon, being an original composition, of a group of the rose, shamrock, and thistle, arranged ornamentally, a silver medal and three pounds. 4. For the best cartoon of an arrangement of the white lily, for a decorative purpose, the silver medal and two pounds. 5. For the best design for a chimney-piece, with bas-reliefs, scale, three inches to the foot, with working drawings, full size, the silver medal and ten pounds. For a model of a chimney-piece, with bas-reliefs, scale, three inches to the foot, and details full size, the silver medal and twenty pounds. 6. For the best original design for a stained-glass window, to suit a room or passage, in the Italian style of architecture, the silver medal and ten pounds. 7. For the best original design and working drawings for a pair of carriage gates, in iron, scale, two inches to the foot, and details full size, the silver medal and ten pounds. 8. For the best design and working drawings for a pair of folding-doors, with bas-reliefs on the panels, the silver medal and ten pounds. 9. Models of a door-knocker and scraper, the silver medal and five pounds. 10. For a design for an ornamental cast-iron pillar to support the roof of a railway platform, scale, three inches to the foot, the details full size, the silver medal and five pounds. 11. For a combined design for a finger-plate and lock furniture to match, the silver medal and five pounds. In the class of *architecture*, besides the premium for the best design for a labourer's cottage, already mentioned, the society offers for the best original design for an intermediate railway station, the gold medallion. "There must be a campanile, or clock-tower, and a platform, 300 feet long, roofed over; also a porch, a booking-office, two waiting-rooms, a watercloset inside, and another outside: a kitchen, cellar, and three rooms for the station clerk. Scale, one-eighth of an inch to the foot, with such details to a larger scale as the author may consider necessary for the full development of his design."

NEW ROMAN CATHOLIC CHURCH, CHELMSFORD.—A new Roman Catholic Church at Chelmsford, Essex, was opened on the 21st ult. The style is early English of late character, or rather transition from the early English to the decorated, and the church consists of nave, two aisles, chancel, and two chapels, one at each end of the aisles. The nave is 57 feet long, 22 feet wide; aisles, 58 feet long, 11 feet wide; total width 44 feet inside; chancel, 22 feet long inside; height of nave, 38 feet inside; total length inside, 80 feet; and the cost about 2,500*l*. The windows are filled with stained glass, by Wailes, of Newcastle. The timbers of the roof of the nave and aisles are seen, the nave having what is called a "cradle roof." The exterior is faced with chalk flints, with dressings of stone from Box Hill, near Bath. A belfry for a sanctus and another bell, surmounts the gable over the chancel arch. A porch on the south side forms a prominent feature of the edifice. The architect is Mr. J. J. Scoles, one of the honorary secretaries of the Institute of Architects; and Messrs. Curtis, of Stratford, are the contractors.

THE TUBULAR BRIDGE FOR THE MENAI STRAITS.—The progress of the Britannia-bridge necessarily excites much attention. A correspondent of the *Leeds Intelligencer*, anticipating time, has given a notice of the bridge as if it were finished. Speaking of the iron tubes, he says:—"They are made of plates of iron, of various thicknesses, riveted together: the iron increases in thickness as we proceed towards the centre. The roofs of the tubes are formed of cells, and also the floors. Those cells are formed of iron plates set on edge, the cells of the roof being within a fraction of 1 foot 9 inches square; and those of the floor being 1 foot 9 inches wide, and 2 feet 3 inches deep. The rails on which the trains run are laid on these cells of the floor. The flat bottom, the two upright sides, and the flat roof of each tube are formed of plates, the thinnest of which is a quarter of an inch, and the thickest twelve-sixteenths of an inch; but the number of them laid together, and the internal joinings, cannot be yet explained. The weight of each of the long tubes will be about 1,300 tons; the weight of the four short ones about 600 tons. In the whole there will be at least 7,600 tons of iron used. No contracting estimate of the expense of the ironwork has been made, as the work may cost more or less, according to circumstances. The masonry was contracted for by B. J. Nowell and Co., at 130,000*l.*, but, from alterations in the plans, it will cost (supposing no further alterations be made) 200,000*l.* They expect to finish the masonry in August, 1848. It will contain one million and a half of cubic feet of stone. In May last, fifty vessels of sixty or seventy tons each were employed in conveying the stones to the works; the red sandstone, of which the inside courses are built, from Runcorn; the blue limestone, of which the outside courses are built, from the sea-shores of Anglesey. The quarries on the Anglesey shores opened for this work extended over twenty miles. In the whole there were 1,300 men employed, 600 of them at the bridge; the fortnightly wages of the latter amounted to 1,500*l.* Upwards of 200,000 cubic feet of timber has been used for stages and scaffolding. A steam-engine was at work on each shore; and a third was being erected on the Britannia rock, in the centre of the strait, to hoist the stones, grind mortar, saw timber, and perform other heavy work. On each shore there was a limekiln,—the chips of the limestone falling from the irons of the hewers being burned into lime, and the chips of the red sandstone being ground to powder to make mortar with the lime."

A NEW ROTARY FOUR-HORSE POWER ENGINE IN A HAT-BOX!—Mr. Elijah Galloway has patented what has hitherto been esteemed much more as the philosopher's stone of steam-power than a practicable invention, and is accordingly supposed to have solved the knotty problem of the greatest possible economy of fuel, weight, and friction of which steam power is susceptible. A four-horse rotary engine under this patent is now at work at the factory of Mr. Tyrrell, engineer, at Deptford, in driving a furnace-blower, and it is said to be so wondrously portable as not to weigh more than two or three cwt., and not to occupy more than half the space of an ordinary hat-box! A steam pipe from the boiler brings the steam into this little receptacle; an eccentric crank is turned by the rotary motion within it; and here is all the machinery said to be necessary to propel the largest engines, whether mining, marine, or locomotive! The Admiralty are said to have ordered an estimate for supplying the *Minx* with a fifty-horse power one. They could not do better, we think, than name such a little whirling machine the *Minx* itself, and keep it in a band-box.

TRIBUTE TO BRITISH SCIENCE FROM THE SULTAN MAHMOUD.—We understand that our countryman, Mr. Fairbairn, of Manchester, has been presented with a decoration of one of the Turkish orders, in consideration of the valuable services performed by that gentleman in his capacity as engineer to several extensive works, undertaken at the desire of the sultan.

WIRE ROPE AND CORD.—Messrs. Newall's patent wire rope and cord, specimens of which we have lately examined, seems well adapted for hanging sashes or pictures, and for other purposes where hemp cord has hitherto been used, and greater durability is desirable.

ELECTRO-TELEGRAPHIC PROGRESS.—The telegraph on the Baden Railway was opened on 15th ult. The Government had appointed a commission to examine all the different telegraphs in use, and adopted Highton's Patent Gold-Leaf Telegraph. Professor Eisenlohr, of Carlsruhe, who superintends it, reports that the plan is so perfect that it must come into general use throughout the world. He states that *with one wire only* information has been transmitted at the rate of thirty letters a minute [nothing peculiarly new in that, we should think], whilst the most complicated apparatus, and one that costs ten times as much, and requires a much more powerful current of electricity, gives not more than sixty or seventy letters a minute, and is not certain in its action. The words in the report of the learned professor are, that "it excites the admiration of the world."

SANATORY MATTERS IN CHELSEA.—A correspondent writes:—"As the scourge of man, the cholera, is (they say) coming, it should not only be met as if we feared 'God and not the cholera,' but should be the means of inducing all parties to 'clean out' during the approaching cold season. Thinking possibly you might deem it a portion of your beneficial duty to urge this good work, I send you information as to what the authorities of 'old Chelsea' are doing, and, if you approve the same, it may be made a stimulus for the exertions of others. The Sanatory Commission have sent to the Board of Guardians a request for a report of the 'courts and alleys,' &c. The Board of Guardians have handed such request to the Chelsea Improvement Commissioners, seeking their co-operation. The latter body are, through their surveyor, visiting, and inspecting, and reporting on all cases of an unwholesome nature; such report is then to be submitted through the Board of Guardians for the report of their medical officers, and in all instances where the medical gentlemen report unfavourably, the Chelsea commissioners will take each individual case into their consideration, acting as the necessity of the matter may require, reporting from time to time to the Sanatory Commission; and as it is well known that in a multitude of cases persuasion is better than compulsion, wherever the same can be done, an intimation of the state of the property will be sent to the owners of it."

CAMBRIDGE ANTIQUARIAN SOCIETY.—From the report of the council we learn, that a second volume of the society's publications has been commenced by the recent issue to the members of No. XIII., being the Rev. J. Goodwin's *Evangelia Augustini Gregoriani*, which will soon be followed by No. XIV., containing three papers, viz., Mr. Franks on "Palimpsest Sepulchral Brasses;" Mr. C. W. Goodwin on "Two British Shields;" and Mr. J. O. Halliwell's catalogue of books, bequeathed by T. Markaunt to Corpus Christi College, Cambridge in the year 1439, with a list of their prices. The council, in concluding their report, express thanks to the Cambridge Philosophical Society for having granted the gratuitous use of its rooms for the meetings of this society. Such liberality, relieving the Antiquarian Society from the necessity of hiring a room in which to hold its meetings, has enabled the officers to reduce the expenses attendant upon conducting the society during the past year to the very small sum of 6*l.* 5s., and placed it in the power of the council to expend about 180*l.* upon the museum and publications.

CLAY FOR ARCHITECTURAL PURPOSES.—Sir: I herewith forward you a small portion of newly-discovered clay, as taken from the strata in Leicestershire, which, beyond doubt, may be brought into many useful purposes,—either for all kinds of architectural ornaments, or the most minute castings. When dry it becomes *much harder* and more durable than any cement we have now in use. The following is its analysis:—

| | | |
|---|---|---|
| Silica, or sand | 46 | 0 |
| Alumina, or clay | 24 | 4 |
| Carbonate of lime | 12 | 0 |
| " " magnesia | 4 | 0 |
| Oxide, or rust of iron | 7 | 0 |
| Traces of common salt, gypsum, and little vegetable matter and moisture | 6 | 8 |
| | 100 | 0 |

CHARLES HANBURY, C.E.
77, Connaught-terrace, Hyde Park.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for Sewers in Long Acre and St. Marylebone; for sundry Government works at Holyhead, comprising the formation of railways and the erection of sea walls; and for the erection of a lock-up house at Coleshill.

CONTEMPLATED REMOVAL OF THE QUADRANT COLONNADE.—The Commissioners of Woods have given notice of an application to Parliament for power to remove the colonnade of the Regent-street Quadrant, and to sell the materials to defray the expense of new fronting the houses; and, should that prove insufficient, to make a rate on the inhabitants, who have for some time past complained of this colonnade as a hindrance to their business.

NEW STREET AND RECORD OFFICE.—The Commissioners have also given notice of application to Parliament for powers to make so much of the proposed new street of which we lately spoke, and to take such property as would be required for the site of the intended Record Office.

THE CORNARO PALACE AND ARMY AND NAVY CLUB-HOUSE.—In a notice of the proposed new building for the Army and Navy Club last week, the *Athenæum* remarks, that "a contemporary (meaning THE BUILDER) is mistaken when he describes the Palazzo Cornaro as exhibiting three *orders*. It has only two,—an Ionic and a Corinthian upon a rusticated substructure, breaking into piers beneath each pair of columns." In truth, however, we have not the expression which is pointed out as a mistake. Our words are: "the Cornaro Palace has three *stories* above the basement, Doric, Ionic, and Corinthian" (we were pointing out the differences from that structure in Messrs. Parnell and Smith's design, which has but two stories above the basement), and this our usually correct contemporary will find to be the case.

FILE-CUTTING MACHINE.—A patent has at length been taken out by a Mr. E. Vickers, of Sheffield, for cutting files by machinery. By this invention, it is said, the difficulties are avoided by the machine being so arranged as to imitate the manual process now in use.

SOCIETY FOR THE IMPROVEMENT OF MEN EMPLOYED IN MANUFACTORIES.—This society, intended to advance the general improvement of working men; to purify and increase their sources of enjoyment; and to encourage and induce them to engage in the delightful work of self-improvement, as recently noticed by us, is making satisfactory progress. There are now seven auxiliaries, namely, in Lambeth, Vauxhall, Westminster, Southwark, Bermondsey, Shadwell, and Milwall; and lectures are being delivered *gratuitously* to the working men of London, and will continue to be so during the next winter months. At some of the lectures 1,000 operatives have been present. Mr. A. Austen, 34, Walnuttree-walk, Lambeth, is the secretary, and would give any required information. The cause is a noble one.

TIDAL HARBOUR BOARD.—The Tidal Harbour Commission having been abolished, Capt. Bethune, R.N., Capt. Washington, R.N., and Capt. Vetch, R.E., have been formed into a "Tidal Harbour and Conservancy Board," under the jurisdiction of the Admiralty, with a salary of 800*l.* per annum each.

THE USEFUL WITH THE ORNAMENTAL.—When Sir John Carr was in Glasgow, about the year 1807, he was asked by the magistrates to give his advice concerning the inscription to be placed on the Nelson monument, then just completed. The travelling knight recommended this brief record—'Glasgow to Nelson.' 'Juist so,' said one of the bailies; 'and as the toun o' Nelson 's close at haund, might we no juist kill twa dougs wi ae stane, an' juist say,—"Glasgow to Nelson—sax mile;" an' so it might serve for a moniment an' a milestane too?'

THE SANATORY MOVEMENT.—The object of the sanatory movement may be summed up in a few words—a sewer in every street of every town and village; a drain for every house; a constant and unlimited supply of good water to every family; pure air at any cost; the application of the refuse of towns to the purposes of agriculture; and, lastly, to secure these blessings, the removal of every impediment, physical and moral, and the destruction or reconstruction of every form of local administration which does not work well towards these righteous ends.—*Fraser's Magazine for November.*

## TO CORRESPONDENTS.

"*J. R.*" The height of buildings for the purpose of the Buildings Act is measured from the surface of lowest floor up to underside of the ceiling of topmost story, as the highest part. If no ceiling, to underside of tie-beam or collar-beam.

"*A Builder*."—A stain for darkening wood to imitate oak may be purchased at the office of "The Builder." Or the varnish may be stained with asphalte.

"*A. M.*"—We know of no "committee of gentlemen before whom a person can pass an examination and thereby be qualified as a civil engineer, without having served his time with one of the profession."

Received:—"M. Saul," "W. N.," "C. G." (next week), "An Honest Englishman," "C. G.," "V. V." (Shrewsbury), "W. R.," "J. W."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size casks are 24 inches long by 12 across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes—such as the Building and Lining of Reservoirs, Cisterns, Baths, Fishponds, &c. For External Plastering and Ornamental Castings, it requires neither Colour nor Paint, is never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purpose it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Steel-street, Liverpool.

GREAVES'S LIAS LIME and CEMENT.

RUPPY and VERY, 3, South Wharf, Paddington.

LIAS LIME, or Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a soil mass—acts as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or smack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against using compounds that resemble Cement with others, erroneously and to be of the same description. Sand & public themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from any Cement, and being a neutral compound, is not only free from chemical mercy upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to offer the solution to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without being put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 18a, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Cunningham, Liverpool.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 95, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease with but the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being with but metal pins, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the fastening of those now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The neat and wheel motion for drawing and lowering revolving iron shutters as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and nine years' practical experience (during which they have adopted every real improvement) enable the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has recently expired), at the lowest prices of makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR IRON, FOR SHOP-FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental; handsomely Engraved, Moulded, Stall-board Plates, best Plate glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 23, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

TO THE IRON TRADE, &c.

MR. WILLIAM HENDRY, late of the Firm of HENDRY and GLOVER, Iron Founders, Drury-lane, begs to inform the Trade that he has CEASED to have any CONNEXION with GLOVER since the 9th day of January last, and that he will not be responsible for any debts that may be contracted since that date.

WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more clean and durable than lead, and 50 per cent. cheaper.—Sold by Messrs. J and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvidere-road, Lambeth, London.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. HIRST and FIDDLER, Maple Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN and BARR and Co., Palace row, Worcester.

TO ARCHITECTS, BUILDERS, AND OTHERS.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouses, 9, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES which are to be seen at work at Alperton, and at the Company's office, 123 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London. All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 123 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 125, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Pendeford, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

PAVING, 2s. 9d. PER SQUARE YARD, Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work warranted.—Apply to JOHN PITKINGTON, DODGEBUS ROTUNDA CEMENT OFFICE, 15, WHARF ROAD, CITY ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and others, that the Business now carried on at the above Works is solely his,—

That ARCHITECTURAL, SCULPTURIC, GOTHIC, and MASONIC WORK in all its Branches, &c., are executed at the cheapest possible charges.

S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others to favour him and Order, to which early and prompt attention, as his system of doing business would be found highly advantageous.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone, business, to the above extensive premises, where a large stock will be kept up by a constant fresh supply from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE OATES, 18, Southwark-street, Borough, London.

Orders stopped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and Others, that they have opened QUARRIES in the land adjoining those of Messrs. Gresell and Peto, and are ready to supply any quantity of stone on the shortest notice.

The VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all other in England, by the Commissioners of Woods and Forests for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

Application to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

SLATE SLABS.—The Finest Slabs produced in WALES, of amazing strength, pure in texture, and free from spots, may be had of Mr. MAGNUS, at the PIMLICO SLATE WORKS, Upper Belgrave place, planed both faces at the price that inferior Slabs in the neighbourhood are currently selling. These reduced prices are also subject to a very large trade discount. These Slabs have been extensively used at Buckingham Palace, Strathfieldsaye, the Regent, Naval and Military Schools, Dartford, the Model Prison, Pentonville, the Gaol-stone square, Baths and Washhouses, on most of the Railways, and are specified for by the most eminent architects. Whole cargoes supplied direct from Mr. Magnus's Works in Wales, planed both faces at very low rates. Slate Tanks, Fittings for Dairies, Larders and Wine Cellars, Landings, Cantilevers, Chimney Pieces, &c. &c.

ARCHITECTURAL ENRICHMENTS.

BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and cheap bills. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mâché ornaments, with a tariff, price £1.—Works, 15, Wellington Street North, Strand.

PAPIER MACHE and CARTON PIERRE. Just published, a LITHOGRAPHIC VIEW of IRONMONGERS' HALL, Fenchurch street.

The spacious Banqueting Hall of the Worshipful Company of Ironmongers has been enriched to Messrs. JACKSON and SONS, for redecoration, they have carried out the whole of the enrichments of Ceiling, Walls, Dado, Orchestra, and the various parts in the Elizabethan style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is richly designed with beams and panels, associated panels with pendants, strap work, &c., the whole finished in colour and gold; the walls have a rich high dado with the arms, the grade, and patron of office of the Masters and other eminent members of the Company, chronologically arranged from the time of Edward IV. The orchestra, principal entrance, Master's end, are also appropriately enriched.

A large Lithographic View of this Interior is now published and ready for sale, at their Papier Mâché and Carton Pierre Factory, 40 and 50, Rathbone-place, price 7s. 6d.

PREPARED FLOORING BOARDS.

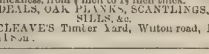
ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from 1 inch to 4 inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton road, Pimlico (late C. Moore and Son).

ALFRED ROSLING begs to inform the Trade and Consumers generally, that he keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of wood.—Bishop's Wharf, Barnsbury Wharf, Barnsbury, and old Barge Wharf, Upper Ground street, Blackfriars.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Brick-layers Arms, SEASONED FLOORING, MATCH BOARDING PUT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Panelled, Oak, and Fir Laths; Wheelwrights' Stocks. All sawn and jaquared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

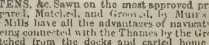



SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for steaming, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the most speedy manner. The new process of steaming ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how quickly dried afterwards), and by the great attraction the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for Boards, Rails, Stairs, Shutters, and similar purposes. For Reasons to prove the great value of this or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 29, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years' seasoned flooring boards, contain from 8 to 10 per cent. of moisture, exclusive a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

LADDERS, BARROWS, &c.

G. ELL respectfully invites the attention of Builders, Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Trussels, Steps, &c., he has constantly on hand, at a very low scale of Prices; and is now selling Excavators' Barrows of ash frames and elm tops at 8s. 6d. by a quantity being taken; and the best make of stout ash frames, stays to legs, inch elm top, largest size, at 10s. or 10s. for cash; Ladders commencing at 4d. per rung. Every other description of Barrow and Ladder equally low.

G. ELL'S MANUFACTORIES, 3 and 6, Tottenham-court, New road, St. Pancras, opposite Hampstead-road.

THE most perfect DRY GAS METER in the World.—W. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 19, Hampstead road, in conjunction with his old-established premises, 67, St. Martin's-lane, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the high character being the successful action at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club houses, &c., and has a careful and lasting testimonials at either factory, which may be obtained on application.

LESLIE'S PATENTS.—GAS CONSUMERS guaranteed the following important sanitary and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, as injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in size, for the MORE PERFECT PRODUCTION OF LIGHT, from either Cannel, Coal, or Oil, per foot of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

4 These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 50 per cent.

4. His new Patent AUTOMATON GAS REGULATOR effectually PREVENTS the WASTE, DISAGREEABLE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light producers, and not Smoke-producers: these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES:—Upright Burners, with Convulsion Chamber included, 7s.; Side Burners, ditto, 6s. each; extra Glass Combustion Chamber, 9d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each State, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and hobs places.

Offices and Manufactory, 23, Conduit-street, London.

WOOD and STONE CARVINGS.—Manufactory, 6, Regent-terrace, Cambridge Wood or Stone Carvings, and Church Furniture in all their branches, including Pulpits, Screens, Lecterns, Fonts and Font Covers, Reading and Litany Desks, Communion Tables and Railings, Stalls, Altar Chests, Stan lards, Pulpit Heads, Chairs, Stringe Courses, Bosses, and all kinds of figures in Wood and Stone, and every description of wood work required in ecclesiastical edifices, executed by J. RATTEE, whose chief study is to execute all orders intrusted to him in a superior manner, with great attention to economy. He is also now working with considerable success machinery, by which he executes all kinds of Antique and Spiral Twisting, at prices hitherto unparalleled.

# PEAKE'S TERRO-METALLIC, DRAIN, AND CONDUIT PIPES;

## ROOFING, RIDGING, PAVING, AND OTHER TILES;

## BUILDING, PAVING, AND MANY-FORMED BRICKS, &c.

*Of at least One Hundred Sorts and Sizes.*

## THOMAS PEAKE,

**4 WHARF, MACCLESFIELD-STREET SOUTH, CITY-ROAD BASIN, LONDON,**

A CENTRAL SITUATION,

**AND THE TILERIES, TUNSTALL, STAFFORDSHIRE POTTERIES,**

Begs to remark that his Establishment was founded upwards of a century since, and for forty years has been carried on by his late Father and Himself. That during the last thirty years he has introduced his Manufactures into the metropolis of the Cotton Department of British enterprize Manchester, and other parts of the Country, with complete success, where they continue to be duly appreciated. That the cost of transit has been of late so reduced, as to enable him to keep a respectable assortment in London, where he used to supply Messrs. Wyatt, Parker, and Co., as agents, but [illegible] the [illegible], and from what he has observed in Town as well as in other places, he cannot doubt but that his Terro-Metallic goods will be as generally adopted as they shall become known. That he is sincerely grateful to his numerous customers for their favours during so long a period, and respectfully assures them, as well as the Public generally, that they may rely upon the advantages derived from his extensive experience for a third of a century being continually exerted to merit their future confidence and support. No MATERIAL, he submits, can be more desirable than his Terro-Metallic to mould into an almost infinite variety of articles, [illegible] by the Nobility, Clergy, Gentry, Civil Engineers, Architects, and Builders, [illegible] the Owners and Occupiers generally of Land, Mines, Buildings, Gardens, and other Property. The late Mr. Loudon, the late Mr. Telford, C.E., and the Incorporated Church Building Society (amongst other persons and institutions), have borne very important testimony to the excellence of this material. Its [illegible], strength, efficiency, durability, and easy adaptation, are great desiderata, and the surveyor to the honourable Court of Sewers for Westminster, in 1846, wrote,—"I consider they" (viz., the Terro-metallic Pipes) "are admirably adapted, from their [illegible] Strength, [illegible] Straightness and Smoothness, for house and other drains." Surely STRENGTH, STRAIGHTNESS, and SMOOTHNESS, are not ordinary characteristics! The Terro-Metallic has NECESSARILY a Firm Body, intense heat being indispensable to fuse its surfaces, forming thereby a natural and estimable glaze; this glaze, however, being natural, will expand or contract with the body, and consequently the articles will remain uninjured; but this is not always the case when bodies are covered with artificial glazes. The variety of ordinary and unsolid earths, of which bodies are formed, to receive upon their surfaces glassiness by means of [illegible] salt [illegible] wash, will not stand the great degree of heat needful to bring the Terro-Metallic to its admirable compactness, solidity, and strength; and many clays would be thereby reduced from a large article or vessel into a bit of shapeless scoria. Experiments have demonstrated this to be a fact, and they could be easily repeated. Indeed, persons in the habit of using brown glazed bottles, milk-pans, steens, pots or mugs, need not be informed of the DIFFERENCE of bodily texture prevalent in such articles, and inseparable from UNCERTAINTY as to their durability; an uncertainty which increases by competition, but is by no means so important in [illegible] designed for permanent work beneath our streets and buildings. It is submitted, therefore, that Terro-Metallic Pipes are, for obvious reasons, a desideratum for purposes such as drains or conduits, not only on account of acids being innocuous, even to the body, or that the pipes may be laid near the surface of any street or road-without risk of injury by heavily [illegible] but also because they may be laid in newly formed ground without [illegible]. The sockets of these pipes are roomy and deep, with well formed shoulders, which are of a piece with them, not stuck to them after they are made. It is also further submitted that the Terro-Metallic cannot fail to take preference against every other material of inferior firmness, solidity, and strength of bodily texture, in proportion as the Public shall [illegible] opportunity to judge for itself by examining and comparing it in every point of view with all competing materials, and deciding according to their intrinsic merits respectively.

The colours of the PLAIN TILES for roofs are either Blue, Brindled, or Red. They are neither nailed nor pegged, but are hung upon sawn laths, 1 inch by 3-8ths of an inch, by knobs, which take firmer hold, as the wind lifts the lower end of the Tiles. Hence, and considering the fold of 7 inches, [illegible] situation and stormy weather. RIDGES, HIPS, AND VALLIES are neatly tiled, superseding the use of Lead, which is liable to be either stolen or perforated by worms. Plain Tiles, of some antiquity and comparatively rude manufacture, in the Midland Counties, are still efficient upon roofs where they have lain undisturbed for 150 years; and a mansion called Turnhurst, the last residence of the celebrated civil engineer, Brindley, is a remarkable instance. [illegible] lately occupied by her Majesty the Queen Dowager, the seats of Earl Talbot and Lord Hatherton, also churches and other valuable buildings, are covered with Plain Tiles 11 inches by 7 inches by 7-16ths of an inch, of which 1,000 lay 200 square feet, at 8-inch gauge, and weigh from 20 to 25 cwt. Bricklayers usually do both tiling and pointing. The Incorporated Church Building Society prefer these Tiles to all other materials, excepting Lead and [illegible]. The Duke of Devonshire and Sutherland are in the habit of using Terro-Metallic articles, and possess in the neighbourhoods of Chatsworth and Trentham, of Mr Peake's manufacture, [illegible] specimens of the roofs in the world. Travellers, who immediately after hurricanes have traversed districts where Thatch and all kinds of Slates have been used, [illegible] sustained by roofs of other materials, whilst Terro-Metallic Tiled Roofs were uninjured. Consequently, the latter are preferred in the bleak moorlands of Staffordshire, Derbyshire, &c. In regard to the strength of timber required for Plain Tiles, it may be acceptable to describe one of two similar roofs, which stand perfectly, although affected by very different degrees of heat and cold from the manufacturing operations carrying on under them. The building is 210 feet long and 18 feet wide, without partition. No stronger timber is used than red deals, 11 inches by 3 inches. The principals are 10½ feet apart; there are two side trees on each side, 5½ inches by 3 inches; the spars are 3 inches by 2½ inches, and 18 inches apart. The laths are sawn 1 in. by 3-8ths of an inch. The pitch is between a third and a square. These Tiles keep the interior of buildings comparatively warm in winter and cool in summer, and thereby preserve the timber of the roof. Their appearance in perspective upon buildings erected in the Early English style is approved; the effect is varied also by the drips, or lower ends of the tiles, being moulded to numerous devices, "shewing off some of the most pleasing alternations of straight and waved lines." The PAN TILES are both of the usual form, and of a new pattern, which (at light cost) give a [illegible] suit, the curves both concave and convex, [illegible] GRECIAN AND ITALIAN TILES are furnished, with weather stop or rib and groove in the lap, forming a beautiful and almost [illegible] "In short, we consider them as the best of all coverings for roofs, whether of small or large buildings." RIDGE AND HIP TILES are plain, capped, rolled tops, also grooved to receive various patterns of vertical ornaments; the saddles are moulded to suit the angle formed by the roof; they are made in one piece, and not fastened at the [illegible] apart as soon as the clips shall rust away; the pitch should be stated in the order. The rolls are hollow, admitting a circular rod of any length [illegible]. VALLEY TILES [illegible] economical and durable than Lead, Zinc, &c. PAVING TILES consist of Squares, Blue and Red, of several sizes, of octagon and small squares of different colours; of hexagons, of diamonds, and neatly-worked thin floor-bricks, for intersertion with each other, to form a variety of pleasing pavements. To lay these Tiles, make the ground solid, and spread a little sand or fine furnace ashes over it; place the Tiles upon mortar, or other material, thinly spread, but keep the joints free, and fill them afterwards with sharp sand, which should be spread over the Tiles, and swept to and fro for a few days with a besom. Lay boards upon the Tiles to walk upon until the mortar, or other material in which they shall be laid, is set firmly. Square Tiles, 9 inches by 9 inches, and 1¼ to 1½ inches thick, are extensively used in the floors of Fireproof Warehouses at the ports of Liverpool, Hull, and Preston; also for all the floors of Fireproof Cotton Mills and other large buildings. Comparatively speaking, these tiled floors yield neither sand nor dust; the bearings and axles of machinery, therefore, as well as the cotton, silk, woollen, or other fabric being wrought by it, suffer less injury by these floors than any other. Smaller squares, and other forms of Tiles, are used to pave Aisles in Churches, Entrance-halls, Household Rooms in Farmeries, and other respectable Dwellings, Cottages, Kitchens, Cellars, Schools, &c. They are easily cleaned, even from grease.

BRICKS, to any reasonable dimensions, are supplied; those 9¼ inch by 4½ inch by 2 7-8ths, are in great request for Tunnels, Bridges, Canal-locks, Breast-walls, and various works upon Railways, Canals, &c. In distant localities, where the carriage is expensive, these Bricks are restricted to a facing of brick breadth. Also, FIRE BRICKS, FRONT BRICKS, CLINKER BRICKS, WAREHOUSE, and BARN-FLOOR BRICKS, and PAVING BRICKS for Courts, Areas, Cottages, Footpaths, and Channels; NOSED BRICKS, i.e. one corner rounded; SEMI-CIRCULAR BRICKS, to erect Columns or Cope-walls; Bricks champhered to the angle of an OCTAGON; Bricks champhered to angles of Gables, and useful to draw a covering over horizontal Flues; Bricks for PLINTHS to Patterns; KEY-STONE or WEDGE-LIKE (longitudinally or transversely) BRICKS for Arches, Culverts, or Curves; other forms would be made to Patterns or Sketches.

SOCKET PIPES for DRAINS, CONDUITS, FLUES, &c. may be had of different diameters, from 2 inches to 18 inches, increasing in thickness in proportion as the diameter is extended, and in lengths not exceeding 27 inches net; these Sockets are deep, neatly formed in the substance of the Pipe, and not stuck to it afterwards. The joints are made tight with a little Roman cement or good mortar. If desired, any form or size of Pipe would be perforated with holes, widening from the exterior to the interior surfaces. Being of true circular form and neat workmanship, smooth inside, which is well covered by a natural, efficient, and durable glaze, they resist the commonly injurious effects of atmosphere, and of mineral or other fluids or acids. These Pipes are very desirable, as they are in extensive and increasing demand, for small Sewers, Drains, Conduits, Flues, &c., instead of Brickwork, which must be erected of a bore fifty per cent. larger than the Pipes in diameter to equal them in efficiency. Also, CONICAL, REBATED, and PLAIN PIPES, of various diameters and lengths. The different forms of Pipes when divided longitudinally into halves, before they are fired, make superior surface Channels, especially adapted to convey water down the slopes of railway and other works. The Pipes, Bricks, and other articles have been, and continue to be in extensive use in the construction and draining of railway and other important works, a proof of the estimation in which they are held by the Engineers.

THE SKIRTING TILES protect the Plaster on the Walls, and make a neat and durable finish. Vermin cannot harbour about them, and Oil-paint of any colour they will take and retain for a long time. GARDEN-WALK EDGING, either with a bead along the top or an OG, has a neat appearance, and holds up the soil, but does not shelter insects; it is the best and cheapest material for the purpose on account of its durability. DRAIN GRATES are intended to prevent Leaves, Straws, Sticks, and other things from choking Drains; they are suited to gravelled-walks in Parks, Pleasure-grounds, Gardens, Cemeteries, as well as Streets, Sculleries, Courts, Areas, and all other places where water enters Drains. CHANNEL BRICKS supplied of different lengths, breadths, and patterns, to lay in any place paved with flag or other material where water is to be carried off. WALL-COPING, of several patterns and dimensions, calculated to preserve walls, and especially those built of bricks of questionable durability; one of the patterns, with Bridge Tiles over the joints, is uniform with the Grecian Tiles for Roofs. CHIMNEY-TOPS are manufactured to suit Customers, a few patterns are always ready for sale. Many smoky chimneys, which had not been benefitted by any other means, have been cured by a roomy Pipe three feet long, pierced all over with holes, 1½ inch diameter.

PUGGING TILES are of various patterns, to place in partitions; also, under chamber floors to prevent the noise of one room from being an annoyance in others. KILN-FLOOR TILES are of two sizes, viz., 9 inches and 12 inches square, and well pierced; they are used to pave Kilns for drying and seasoning, Malt, Grain, &c., as well as Wool and other materials used by manufacturers and others. FLUE COVERS are either oblong or square, about 2 inches thick, and of different sizes; they are used to lay over horizontal Flues, extending from centre to centre of the mid-feathers or partition-walls. DRAINING SHELLS, whose form is well known to be like a horse-shoe, if one looks at the end or transverse section of the Tile, are of three sizes, viz., 2½ inches, 3½ inches, and 4½ inches across the feet or bottom. Of Terro-Metallic the shells are very durable, and are usually placed in the drains upon damaged Roof-tiles of the same material.

CHIMNEY AND OTHER FUNNEL LININGS, instead of parget, are a desideratum in consequence, 1st, of its being illegal as well as inhuman to employ climbing boys; 2nd, of smoky chimneys and down-draughts, owing to defects in the joints of the brickwork between the flues, and the parget having perished; and, 3rd, of many and disastrous fires attributable to the latter defects. These linings are made of a peculiar mixture of materials to bear heat and cold; they are of different dimensions and forms of area, and are unquestionably deserving of attention from all who are erecting or altering chimneys; they have been extensively used in some parts of the kingdom for many years past, and with entire satisfaction.

HOW TO CUT OR FIT TERRO-METALLIC WARE: rule upon the edges and surfaces of the article the line of division proposed, then with the cutting-end of a brick-hammer, or other instrument made as sharp as possible, chip along said lines to the depth of one-sixteenth or one-eighth of an inch, without omitting any part, and always deepest at the arrises. This done the article will divide under a few slight taps with the edge of a trowel, or other similar tool in weight proportioned to the size and thickness of the article. TO PRESERVE THE COLOUR of the articles, care should be taken not to expose them to lime or other similar dust, or to mortar, the stains from which cannot be removed. Ridging or Hip Tiles should be pointed early on a fine day, and in mortar almost black with smith's refuse or furnace sand.

THE TILERIES ARE SITUATED near the centre of the Kingdom, about Three Furlongs from the Main Line of the North Staffordshire Railway, with which it is to be connected as soon as finished by a private branch, and along the margin of the Grand Trunk Canal from the Trent to the Mersey, rendering transit both expeditious and cheap to the port of Liverpool, and moderate to all other parts of the empire. FOR EXPORTATION TO THE BRITISH COLONIES, and Foreign Countries generally, MERCHANTS in Liverpool and Glasgow especially, will find these goods susceptible of extended and lucrative commerce. THE MANUFACTURER IS NOT IN THE CARRYING TRADE, and therefore cannot undertake carriage of his goods, excepting to deliver them alongside of carriages, boats, or railway trucks at his own wharfs or branch railway, at which time he expects them to be signed for "in good condition," and responsibility to end as far as he is concerned. POSSIBLE VARIATION IN SIZE OF ARTICLES.—PIPES, as well as other things contained in the lists, may vary more or less from the stated dimensions and weights; they are, however, as accurate as circumstances permit, and sufficiently so, it is hoped, for general information. PURCHASERS NOT TO PICK THE ARTICLES, which are sorted "ACCORDING TO THE CUSTOMS OF THE BRICK AND TILE TRADE," as soon as drawn out of the [illegible] and having been placed upon the works or other premises in the said manner, they are not to be picked, but taken all together as far as the number required; still, purchasers may select any of the lots to be supplied from, provided they do not reject any of the articles. NEWLY-DESIGNED ARTICLES, AND ALTERATIONS SUBJECT TO EXTRA CHARGES for new moulds or alterations [illegible], and for extra labour in piercing, nicking, dividing, or altering any article from the established form or size. NUMBER IN COUNT is ten times ten in a hundred, ten of which make a thousand. TERMS RESPECTING CREDIT, SPECIAL CONTRACTS, AND PAYMENT, must be regulated principally by the nature of the disbursements in the trade, and partly by such special bargains as the manufacturer may enter into; Excise, Wages, and other out-goings, are prompt and without abatement, consequently special bargains are to be strictly fulfilled by purchasers in all points of view, payment to be made punctually and without abatement, according to such special agreement, and generally in all other cases the prices as per lists respectively, as well as charges for new or altered goods, are to be paid for on or before delivery in cash, without discount, premium, or abatement, or the respective items to be subject to interest at the rate of 5l. per cent. per annum, until paid. REFERENCE INDISPENSABLE in special bargains, or any other instance where goods are to be delivered before they shall be paid for. LETTERS MAY BE ADDRESSED to either No. 4 Wharf, Macclesfield-street South, City-road Basin, London: or to The Tileries, Tunstall, Staffordshire Potteries.

## UNSOLICITED TESTIMONIALS, NOTICES, &c.

"I consider they," the Terro-Metallic Drain Pipes, "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains."—*Extract from a letter by John Phillips, Esq., Surveyor to the Honourable Commissioners of Sewers for Westminster and part of Middlesex*, 1846.

"I beg to call the attention of the Court to the necessity of its taking steps to procure immediately a further supply [illegible] lengths of Terro-Metallic Drain Pipes, [illegible] inches diameter, with Socket Joints, as those now in store will soon be worked up. It is also desirable to procure some with Bevelled Ends to suit the sides of the Sewers * * * and others of a funnel shape, similar to the model presented herewith, for the Gullies and Gully Drains. Fig. 2 shews the mode, by means of pipes of [illegible], and as it is essential, both as regards economy and sound construction, that they should be worked in the side walls whilst sewers are being constructed, I propose that a large quantity of them should also be procured. * * * I also [illegible] with the sewers [illegible] by means of Terro-Metallic Pipes."—*Extract from a Report by the above-named Gentleman, dated 1st May*, 1846.

"The Bricks, being made of clay peculiarly good in quality and triturated by machinery." (The [illegible] Mr. Telford, [illegible] before or since, "and [illegible] Newcastle fire brick, the hardest [illegible]

[illegible] than seven pounds to the foot; [illegible] twenty two ounces to the foot. Blue Tiles * * * are perhaps the next [illegible] Incorporated Church Building [illegible] *The Builder" of the 16th of May*, 1846, *page* [illegible]

[illegible] to the banks of the canal, are the extensive works called THE TILERIES. The clay on this brow has a semi-vitreous quality; it has been partially worked for a century past, but of late years its manufactured products have been [illegible] to distant parts of the kingdom, consisting of Tiles, Quarries, Building and Flooring Bricks, Pipes for conveying water, and other similar articles of very superior hardness and durability. At these works steam-engines are used for crushing and preparing the clay."—*History, etc., of the Borough of Stoke-upon-Trent, by John Ward, Esq., page* 100. *Simpkin, Marshall, and Co.*, 1843.

"A mode of Tiling adopted by the ancients, and of which there are specimens still to be found in Rome, is thus described by Borgnis ('Traite de Construction,' p. 25[illegible]), a description follows with plans and sections of the 'Italian' Tiles, 2 B and 2 C, p. 956, and sec. 1924:—'the mode of Tiling exhibited in the Temple of Diana Propylea, is given in the engravings of that Temple in the Unedited Antiquities of Attica.' After describing this mode of 'Grecian Tiling, D 2 and E 2, with plans and sections, it is stated that "the effect of these Tiles is remarkably good, and imitations of them might be introduced in Villas and cottages with excellent effect." P. [illegible], and sec. [illegible]

"Which (viz., Flat or Plain Roof Tiles, with lower ends ornamental) would produce an agreeable shade, shewing off some of the most pleasing alternations of straight and waved lines that this species of material is capable of producing." P. 229, and sec. 459, where the Tiles are figured.

"The Tiles being formed of Terro-Metallic Earth, have somewhat of the colour of Cast-iron; they are almost equally hard, and must, from their nature, be incomparably more durable. In short, we consider them as the best of all coverings for roofs, whether of small or large buildings. * * * * There are suitable Ridge-Tiles, Hip-Tiles, Valley-Tiles, and many others, all manufactured by Mr. Peake, in the same superior style." *Page* 648, *and sec.* 1368, *Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture. Longman and Co.*, 1833.

"Every thing tending to facilitate the sweeping of chimneys by machinery is now peculiarly deserving of public attention. We have been much interested by the sight of a newly-introduced material for lining flues, invented and manufactured by Mr. Thomas Peake, of Tunstall, Staffordshire, whose various important Terro-Metallic improvements are so popularly known through 'London's Encyclopædia.' This species of piping is so exceedingly cheap that it will cause no very material additional expense in the construction of chimneys; it can sustain no injury from the action of fire, and as it presents a perfectly smooth channel for the sweeping machine, so it also requires less frequent cleansing than a common chimney, as it affords no lodgment for soot."—*Sheffield Iris*, 1[illegible]th *Dec.* 1841.

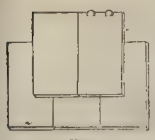
### LISTS TO CONTAIN NEARLY ALL THE ARTICLES, WITH OTHER DETAILS RESPECTING THEM, ARE TO BE READY FOR DISTRIBUTION IN A SHORT TIME.

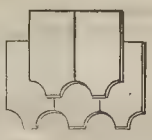
*Reference to sketches of some of the articles:—They are to a scale of 3-4ths of an inch to a foot, or thereabouts.*

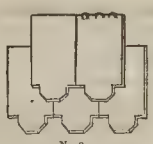
- [illegible] Tiles.
- [illegible] Tiles.
- [illegible]
- [illegible]
- [illegible]
- [illegible] Tiles.
- [illegible]
- 2 D Grecian Ridge.
- [illegible] E Grecian Eaves Tile.
- [illegible] Plain Gable Tile.
- [illegible]
- [illegible] Ridge Tile.
- 5. Plain Ridge.
- C 5 to F F 5. Plain Saddle, grooved for ornaments.
- C 5 to F F 5. Rolled Saddle, grooved for ornaments.
- B 5. Pyramid Ridge.
- C 5. Vandyke Ridge.
- D 5. Trefoil Ridge.
- E 5. Fleur de lis Ridge.
- F 5. Fleur-de-lis Ridge.
- F F 5. Fleur-de-lis Ridge.
- G 5. Inverted Arch Ridge.
- [illegible] Capped Roll.
- A 6. Gothic Cap Ridge.
- 7. Rolled Top Ridge.
- 10. Quoined Hips.
- 11. Quoined Vallies.
- A 13. } B 13. } Paving Tiles.
- C 13. } D 13. } Paving Tiles.
- 15. Paving Tiles.
- A 15. Paving Tiles.
- No. 15. Paving Tiles.
- 17. Skirting Tile.
- 18. Skirting Tile.
- 19. Skirting Tile.
- 21. Paving Bricks.
- 30. Channel Brick.
- D 30. Channel Tile.
- 33. Kiln-floor Tile.
- 40. Wall Coping.
- 41. Wall Coping.
- No. 44 Drain Guard.
- 46. Garden Edging.
- A 46. Garden Edging.
- 48. Drain Shell.
- 51. Plain Pipe.
- 52. Rebated Pipe.
- 57. Socket Pipe.
- 61. Conical Pipe.
- B 64. Flue Lining.
- C 64. Flue Lining.
- C 65. Chimney Top.
- 66. Chimney Top.
- 67. Chimney Top.

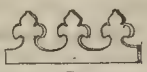
[Entered at Stationers' Hall.

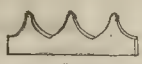
**PEAKE'S DRAIN PIPES, TILES, &c.—Continued.**

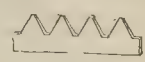

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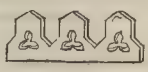

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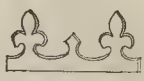

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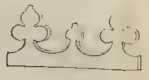

E 5.


G 5.

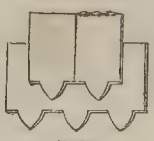

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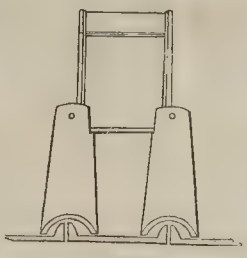

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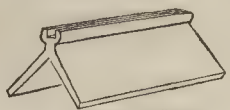

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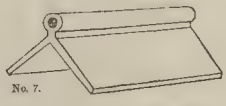

F F 5.

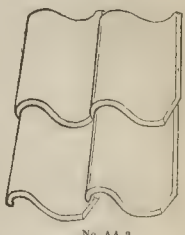

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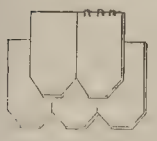

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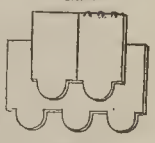

D 2 and E 2.

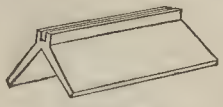

C 5 to FF 5 Rolled

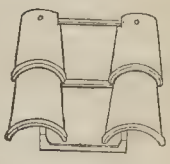

No. 7.


No. AA 2.


No. 2


No. 2.


C 5 to FF 5 Plain.


2 B and 2 C.

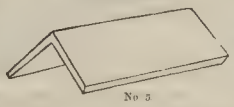

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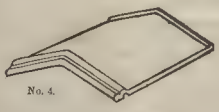

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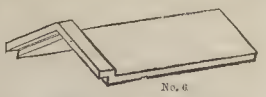

A 46.


B 5.


No. 19.


No. 3

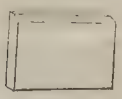

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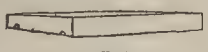

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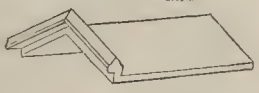



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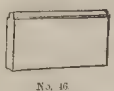

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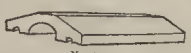

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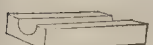

No. A 6.


No. 33.

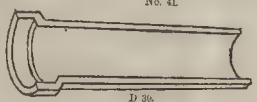

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No. 57.


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November 3rd, 1847. (Witness) WM. HEARN.

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70, York Road, Lambeth; and at 23, Cross Street, Blackfriars Road.

VENTILATION IMPROVED, AND SMOKY CHIMNEYS CURED.

BAILLIE'S PATENT TRANSPARENT VENTILATORS are at once efficacious, neat, and easily adapted to any sash, and, where thorough ventilation without draught is required, will be found invaluable, and especially as a cure for smoky chimneys.—Supplied Wholesale and Retail by E. and W. H. JACKSON, Window-Glass Warehouse, 315, Oxford-street.

DR. ARNOTT'S CHIMNEY VENTILATOR.—P. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of Rooms of every description.—Price from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies P. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

TO DECORATORS, PAPERHANGERS, AND THE TRADE.

E. T. ARCHER, of the late Firm of ARCHER and TAVERNER, of No. 140 and 141, Old-street, begs leave to state to the Trade that, in consequence of the increasing demand for his DECORATIVE PAPERS, he has taken the opportunity to embrace the advantage of the above premises, lately occupied by Messrs. MERRICK, WILKINSON and Co., upon which establishment E. T. ARCHER will be happy to submit to the Trade in general all his various styles of Decorations, to which will be added all the large collection of Decorations, Pictures, French Chintzes, and Decorative Borders and Papers of Messrs. Merrick, Wilkinson and Co., which E. T. A. has been successful in purchasing at the late sales of Messrs. M., W. and Co. E. T. Archer, at the same time, returns his thanks for the liberal support he has for the last eighteen years received at the hands of the Trade, and trusts that he shall continue to receive their confidence and support at the Manufactory and Show-rooms, No. 451, OXFORD-STREET, and Nos. 140 and 141, Old-street, where all orders will meet with promptitude and attention.

GARRETT'S PATENT MORTISE BRICKS, TILES, and FIRE CEMENT. These Mortise Fire Bricks, with the Fire Cement, will be found of the utmost importance in the erection of all kinds of Furnaces, Gas-retorts, Cokeing-ovens, Engine-boilers, and other similar purposes where expensive repairs and reconstructions are now continually required. By the increased surface of joint obtained, they afford strength and durability approaching to indestructibility; every joint is so completely sealed with the Fire Cement, that the erection becomes a solid piece of masonry.

Testimonials of approbation have been given by all who have used them. The annexed is the copy just received from the Ainslie Brick and Tile Machine Company:—

203, Piccadilly, London, Sept. 20th, 1847.

SIR,—Having erected a set of Kilns, which are patented by the Ainslie Brick and Tile Machine Company, I built the Furnaces with your Patent Fire Cement, which has been submitted to the most intense heat for several months. The Brickwork is as perfect as it was the day it was built. I feel much pleasure in being able to bear testimony to its valuable properties for all furnace purposes, being far superior to any Cement brought to the notice of the public. The Kilns erected at Alperton, near Harrow, may be seen at any time.—I am, Sir, your obedient servant,

(Signed) ROBERT SCRIVENER, Manager.

To Mr. Spencer T. Garrett, Stoke-upon-Trent, Staffordshire.


### CONTRACTS.

Guildhall, November 15th, 1847.

THE Committee for Letting the City Lands will meet at GUILDHALL, on WEDNESDAY, the 24th day of November instant, at One o'clock precisely, to receive TENDERS for LETTING, on Building Leases, for Sixty-one years, from Christmas next, a PIECE of GROUND, on the north side of Narrow street, at the corner of Cross-street, at Ratcliffe; and a large PLOT of GROUND on the east side of Paddle Dock, on the south side of Upper Thames-street, and on the north side of the river Thames. Also to receive TENDERS for LETTING on Leases, for Twenty-one years, from Christmas next, a HOUSE, No. 19, on the north side of Broad-street-buildings; Nos. 30, 29, 28, 27, 26, and 25, on the north side of Revis-marks, St. Mary-axe; Nos. 7 and 6, on the west side of Castle-street, Houndsditch; and Nos. 7, 6, 5, and 4, on the north side of Crescent-place, Blackfriars.—Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall.

THOS. SAUNDERS, Comptroller.


CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes—such as the Building and Lining of Reservoirs, Cisterns, Baths, Fishponds, &c. For External Plastering and Ornamental Castings, it requires neither Colour nor Paint; it never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

GREAVES'S LIAS LIME and CEMENT. RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dockwalls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—acts as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and cu-tuc.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

JAMES WESTON having completed extensive alterations and erected new and powerful machinery, at his CEMENT and PLASTER WORKS, MILL WALL, POPLAR, enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl street, Blackfriars.

ARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 136, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 38, Canning-place, Liverpool.

CANADIAN SLEEPERS.—For SALE, well-manufactured SLEEPERS, of Cedar, Hemlock, and Pine: a few thousands left on hand.—For particulars, apply to HANS MARCHER and Co., 11, Parliament-street, Hull.

PREPARED FLOORING BOARDS.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

ALFRED ROSLING begs to inform the Trade and Consumers generally, that he keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepare by machinery, of Deals and Battens of every description, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

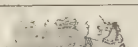
MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS, Belvidere-road, Lambeth, near Waterloo Bridge.

THE GENERAL WOOD-CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that these new methods of preparing floor boards, match linings, skirtings, &c., by which accurate, despatch and economy of material are certainly obtained. In addition to grooving and tonguing a board although curved, the machine follows the edge, retaining a moderate thickness of the skin throughout, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being in their built lers not trade, tenants, are not connected with any trade but that of sawing and planing, and depend solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.



WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED SHUTTERS.

THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, by which the Patent Saw Mills, immediately adjoining the Commercial and East London Docks, Rotherhithe, are commenced working, the sawing and planing will be done at the usual charge, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage, and no matter how warm the temperature or hot the climate, strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licenses to work the patent, scale of prices, or any further information, address, post paid, or apply to W. H. TAYLER (Resident), at the temporary offices of the Company, 28, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years' seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

TO AGRICULTURISTS AND BUILDERS.

A LARGE SUPPLY of BRICKS, DRAINING PIPES, and TILES, of every description, is now ready FOR SALE. Architectural Tiles and Pottery made to order at the shortest notice.—Mr. COOPER, Longlands Lodge Brick Tile and Pottery Works, near Epping, Essex. Specimens of the above may be seen at the office of "The Builder," 2, York street, Covent Garden.

WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 30 per cent. cheaper.—Sold by Messrs. Lynd and SHARP, Slate Merchants, Pooley street, and Mr. RICHARD COOPER, Slate Merchant, Belvidere-road, Lambeth, London.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRILLION, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES which are now at work at Alperton, and at the Company's office, 183A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM G. TUNNY, secretary at the office of the Company, London, 183A, Piccadilly.

These Machines may be seen at Mr. SUTCLIFF'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Pendridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

PAVING, 2s. 9d. PER SQUARE YARD.—Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 1, WHARF ROAD, CITY ROAD. N.B. County Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

MOSAIC PAVEMENTS.—SINGER'S PATENT, for Churches, Halls, Conservatories, Verandahs, Baths, &c. The most beautiful and durable of all ornamental Pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall-bridge, Surrey side.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and others, that the Business now carried on at the above Works is solely his;—

That ARCHITECTURAL, SCULPTURIC, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.

S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto honoured his business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land fronting those of Messrs Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.

This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all other in England, by the Commissioners of Woods and Forests for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

Application to be made to Messrs. Wm. WRIGHT and Co., Anston, near Sheffield, Nottinghamshire.

WELSH SLATE SLABS of the Finest Description, and planed both faces, supplied to the Trade at the same prices that rough (self-faced) Slabs are being sold at for the principal Slate Wharfs in town. A large discount is also allowed, or, in lieu of discount, parties ordering 150 feet and upwards may, if they prefer it, have the Slabs delivered, carriage free, to any canal or railway point within fifty miles of London.

N.B. Whole cargoes direct from the Quarries. Enamelled Slate Chimney-pieces, Slabs, Mural Tablets, Baths, Fonts, &c. &c.

Address, Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place.

ARCHITECTURAL ENRICHMENTS.

BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decoration, has been patronised by Her Majesty, by the Hon. Board of Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. Durable enough for the royal palaces at the present House of Lords at Dulwich Castle at Brandon Manor, the new Conservatories for Horse Guards' Hall Arcades at the British Museum and Pentonville Prison, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability, being prepared for the execution of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mâché ornaments, with a tariff, price £1.—Works, 15, Wellington Street North, Strand.

PAPIER MACHE and CARTON PIERRE. Just published, a LITHOGRAPHIC VIEW of IRONMONGERS' HALL, Fenchurch-street.

The spacious Banqueting Hall of the Worshipful Company of Ironmongers having been remodelled by Messrs JACKSON and SONS for redecoration they have carried out the whole of the rich dressings of Ceiling, Walls, Dado, Orchestra, and the various parts in the Elizabethan style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is richly decorated with panels and mouldings and the walls with panels, strapwork, &c. the whole is handsomely executed in colour and gold; the walls have a rich high dado with the arms, the grade, and figures of Peace on the Masters and other eminent members of the Company, chronologically arranged from the time of Edward IV. The orchestra, principal entrance, Master's end, are also appropriately enriched.

A large Lithographic View of this Interior is now published and ready for sale, at their Papier Mâché and Carton Pierre Factory, 49 and 50, Rathbone Place, price 7s. 6d.

THE most perfect DRY GAS-METER in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to GAS, as injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light-producers, and not Smoke-producers: these will vary in price according to the duty they have to perform, from 18s. upwards.

PRICES:—Upright Burners, with Corrugham Spring Glass Holders, with either sized glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 9d. each. SAMPLE PACKAGES, with one burner and a set of glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimney-piece and grate.

Offices and Manufactory, 59, Conduit-street, London.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can send for the Patentee, who will cause the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only one that can be made effective for the purpose. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up without a single complaint of their want of strength or security; and nine years' practical experience during which they have adopted every real improvement enable the Patentees to challenge competition with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with flat convex laths.

BUNNETT also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be free from rumble.

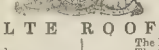
BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC CASHBARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop Fronts fitted with Iron Shutters, Patent Brass or Zinc Sash Bars or Ornamental; handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house in the trade, taken in Town or County.

Metal Drawing and Stamping for the Trade.

Office at No. 28, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

By Her Majesty's  Royal Letters Patent.

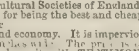
PATENT ASPHALTE ROOFING FELT, as used by

Her Majesty's Woods and Forests,
The Royal Agricultural Society of England,
The Leeds and Manchester,
The London and North Western,
The Liverpool and Manchester,
The Chester and Holyhead,
The Norfolk and other Railways,
And the Corporation of the City of Edinbro'.

PRICE ONE PENNY PER SQUARE FOOT.

Also "DRY HAIR FELT" of superior make, at very reduced prices, for preventing the Radiation of Heat, and deadening sound.
THOS JNO CROGGON, 3, Laurence Pountney Hill, Cannon-street, London

CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of

THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
THE BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Arsenal and Messrs's Horse, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, in rolls of 25 yards each. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions for laying it, will be forwarded on application, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, and to one part of the town or country. A Dry Hair Felt, for covering Boilers, &c. is also manufactured, by which a saving of about 25 per cent. is effected. The TRADE are respectfully cautioned to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and is the only Felt that has been used in the Royal Dockyards, where the above roofing is made at F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

The Builder.

No. CCL.

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THE snow-ball gathers as it rolls. The echoes of the cry for sanatory reform are heard from many places. Those who do not feel the necessity for it, because of want of knowledge, are beginning to join in the agitation, impelled by those who do; and before long, the demand being universal will be irresistible, and men will no longer be permitted to die by thousands before their time, or suffer the wholesale waste of happiness and wealth which has so long gone on. The cry is becoming fashionable,—it is to be hoped there will not be with the much cry, "little wool,"—and the newspapers record in every column lectures on health of towns, deaths from impure air, improvements in sewerage, reports of parishes on their own abominable condition, and "grand demonstrations in favour of a sound and comprehensive sanatory bill."

Go into the provincial mechanics' institutions, and you will hear one lecturer say,—"Whilst men are interested in putting up half-a-dozen tenements where there is only space for two—whilst the population are crowded together in alleys, and lanes, and yards, without light, or air, or room, or water, or drains—whilst every sanatory law is neglected—every precaution set at nought, and all the ordinary injunctions of Providence disregarded—so long will there be high mortality, high poor-rates, and great suffering; and, unless the Government interfere, no effort of philanthropy, or exertions of individuals, can prevent, or even mitigate, the evils complained of. The dwellings of the poor, in addition to being surrounded by adverse circumstances, are often structurally bad—the walls are of insufficient thickness—the basement insufficiently elevated, and unprovided with the appliances which comfort and health require. The sites on which they are placed are frequently damp, low, marshy, and undrained; and so frail in their construction, that, were they to stand alone instead of being built in a line, they would almost certainly give way. It is not to be wondered at, therefore, that disease prevails as it does amongst them—and that fever, rheumatism, ague, and debility, thin their ranks, and convert a hale and robust population into a pale, sickly, and diseased one. The State—whose pillars and support are the labouring classes—becomes enfeebled by a physically deteriorated people; and health, the greatest blessing and bulwark of nations as of individuals, can only be preserved by attention to those external circumstances on which the physical condition of man is dependent."

And while this is being said in Southampton, another in London is shewing, that the waste of money caused by defective structural arrangements in the United Kingdom cannot be less than twenty millions sterling, the result of 20,000 deaths and 200,000 cases of unnecessary sickness,—and winding up a forcible address with such cheering anticipations as these:—"The measure announced in three successive speeches from the Throne, and brought forward in two successive Parliaments, will soon be again offered to your acceptance. How are you prepared to receive it? Happily, whatever the fate of the measure, the sanatory cause is safe: it rests upon a foundation not to be shaken; it is firmly built upon Truth, Mercy and Justice. It may be resisted for a time; but it will assuredly triumph. Justice shall take the place of the spurious charity which now wears the garb of mercy; prevention shall be substituted for publication, and economy for waste; and the hideous form of vulgar and ignorant selfishness, red with all the blood shed from the foundation of the world, and dark with the accumulated miseries of mankind, shall be trodden under foot, while the radiant form of enlightened self-interest, upheld by law and liberty, prompted by charity, and guided by justice, will reascend her recovered throne, and rule over a world, the smiling abode of health, peace, and plenty."

This delightful result, however, is still a long way off: its achievement will need many and continuous efforts,—efforts which for their own sake all are bound to assist in making. Again and again we must repeat that every person, whatever may be his station, is personally and *selfishly* interested in preserving the health not merely of his neighbours, but of all the world! If any doubt this, let them recall this one fact, that the cholera which reached England in 1831 broke out at Jessore, near Calcutta, in 1817, and destroyed 10,000 persons of all grades, through inattention to the miserable circumstances under which the *pariahs* of that province lived! Those who throw obstacles in the way of measures to give good supplies of light, pure air, and good water, to all classes, may themselves fall beneath a fever, generated by the want of these requisites in an obscure court far away from their immediate neighbourhood.

Much, as we said, has to be done: look at the recent reports from Hackney, where two children were killed by the noxious vapours from an uncovered drain or accumulation of filth; from St. Andrew's, Holborn, and George-the-Martyr, where the health of the inhabitants is seriously threatened by the state of the cesspools; from Pimlico, close to the Palace, even worse; from the wealthy parish of Marylebone, and numerous other places.

The report from the last-named parish, Marylebone, takes a very formal shape, and is an important document, shewing the industry and acumen of the committee by whom it was drawn up. It points out that no fewer than 280 streets and ways are wholly without sewers, and remonstrates in strong terms against the constitution and management of the Sewers' Commission.

As to the abominable window-tax (the tax on light, health, and morality), the report says:—"Under the head of lighting, and in connection with the extreme importance of the subject, as regards all attempts at sanatory improvement, your committee cannot but call on the vestry most strenuously to urge once more upon the consideration of the Government and the Legislature the absolute necessity, if there be any thing like sincerity on the part of the proposers of sanatory measures, of repealing that most unjust and unequal and obnoxious tax, which places a heavy penalty on the formation of all openings for the admission of light and air, the free admission of which is indispensable to the maintenance of health. So long as the window-tax continues to render the habitation of all classes, and of the poor especially, gloomy, stagnant, and impure, no attempts at a partial remedy of minor evils can be attended with success. The remedy of this crying grievance is so simple, and so completely within the power of the Legislature, that its continuance can only be regarded as a convincing proof of indifference to the most obvious and practical means of carrying out real measures of sanatory reform." In respect of intramural burial, the committee come to the self-evident conclusion that the practice is too highly detrimental to the health of the surrounding neighbourhood, to be permitted to continue under a prudent system of sanatory regulations, and they show very good reasons why, with respect to St. John's ground, in this parish, "the subject of further interment there will shortly require the most serious consideration of the vestry." In the upper portion of this ground, containing about three acres, 42,542 bodies have been placed within the last twenty-four years!

Leaving this report for a while,—the question of burial in towns daily acquires additional importance in the eyes of all unprejudiced persons,—the necessity of its prevention more evident. The recent exposures relative to Enon Chapel, and other receptacles of the sort, have opened the eyes of the public to the enormity of the abuse, and have roused the indignation of the metropolitan and provincial press. A writer in the *Bridgewater Times*, who had specially visited the place, says forcibly:—

"Since the death of the proprietor, in 1839, no fresh burial has taken place; the property has passed into other hands, and the chapel, which was once used as a place of worship, is now turned into a dancing-hall, for the delight of those who can pay sixpence for a ticket. Over this charnel-house of corruption are these revelries held; and the malignant gases which permeate through every fissure, are inspired by the crowds who have nightly visited this nest-egg of corruption. In its neighbourhood fever is always in possession, and the mortality is fearful; but who has cared, or who cares for this? The poor wretches whose poverty compels them to locate there, are far too anxious to gain a livelihood to count the cost of health at which they obtain it. Death overtakes them—they perish, and in some neighbouring burial place they balance accounts with their survivors, by rotting, and disseminating amongst them the same dangerous elements which cut *them off* before their time. And thus the game goes on: the living tread upon the dead, fill up their vacant places, and leave no blank; and, in their turn, the dead cut down the living. And who, we ask again, cares for these things? Were we to draw our conclusions from any appearance of actual reform in the system, we should answer, 'No one.' There is little evidence of a care for these things by any amendment for the better in the metropolis and the provinces. But yet, if we watch the growing movement, it evidences that there are some who care, who work and strive with perseverance and with energy to effect a reform in this particular. Sanatory reform is a popular subject. Improved sewerage, better ventilation, and facilities for bathing and washing, are the topics of the day; and valuable agents they each and all are in the great work of improvement. But what avails a better drainage, when the sewers only form a quicker vehicle for the transit of impure gases, which percolate through them from surrounding burial grounds? And what avails ventilation, when the air we breathe passes over, and is impregnated with the deadly vapours from a churchyard? What is the use, in fact, of attempting to purify the air, when the nuisance which poisons it remains, and increases daily and hourly?"

Mr. Savage Landor, in his "Pericles and Aspasia," makes satirical reference to this abuse in a passage which, although it only refers to a part of the subject, and includes an abomination of another sort, we are led to quote. One of his characters is rehearsing the tales of a travelled friend, and says,—

"But Lysicles will appear to you to have assumed a little more than the fair privileges of a traveller in relating, that the people have

so imperfect a sense of religion as to bury the dead in the temples of the gods, and the priests so avaricious as to claim money for the permission of this impiety. He told us furthermore, that he had seen a magnificent temple, built on somewhat of a Grecian model, in the interior of which there are many flat marbles, fastened with iron cramps against the walls, and serving for monuments. Continuing his discourse, he assured us that these monuments, although none are ancient, are of all forms and dimensions, as if the Thracians were resolved to waste and abolish the symmetry they had adopted; that they are inscribed in an obsolete language, so that the people whom they might animate and instruct, by recording brave and virtuous actions, pass them carelessly by, breaking off now and then a nose from a conqueror, and a wing from an agathodemon."

Our present business, however, is with health not beauty, and we leave the quaint writings of Landor for a letter by an Inspector of the City Police, setting forth an amount of illness and death in the neighbourhood of Barbican, in the city, supposed to be caused by exhalations from a burial-ground in Golden-lane, frightful to contemplate if correct. The truth of the communication has since been denied by the Guildhall Court of Sewers, the noxious gases spoken of being ascribed to the gully-hole of the sewer and the water from a steam-engine. The contradiction, however, is not by any means conclusive, and it is to be hoped that the matter will be further investigated.

This statement was forcibly dwelt on by Mr. Bond Cabbell on Monday evening last, when he took the chair at a public meeting at the Crown and Anchor Tavern, Strand, called expressly to pass resolutions in favour of a sound and comprehensive Sanatory Bill, and so to strengthen the hands of the ministers.

At this meeting, on the motion of Mr. Mackinnon, M.P., it was resolved,—"That the drainage and sewage of the metropolis are very insufficient; the cleansing of the streets exceedingly imperfect; the supply of water lamentably deficient in quantity and bad in quality; that the practice of burying the dead in the midst of the living produces great demoralization, and grossly violates the sanctity of the grave; that these, among other evils, entail enormous and unnecessary expenses upon the people, and lead to a great deterioration of health and fearful destruction of life."

And further, on the motion of Mr. Lushington, M.P., "that this meeting deplores the apathy generally evinced by the public relative to the evils referred to in the preceding resolution, as well as the absence of an uniform law which would enable the Government to exercise an efficient control over local administrative bodies; and that this meeting pledges itself to support the Government, in any efforts made by it to pass a sound and comprehensive sanatory measure."

The Sanatory Commissioners are pursuing their examinations, and, if we understand rightly, have lately received some important evidence touching the size, form, and construction of sewers,—of this, however, all in good time.

In aid of the movement, happily commenced, the "Metropolitan Health of Towns' Association" have issued the first number of a monthly "Journal of Public Health." The idea is a good one, but it will need to be carried out more efficiently than the first number promises, if it is to have much effect. Moreover, the price charged for it is too great. Under the head of "Correspondence" in this journal there is a slashing exposure of the Tower Hamlets' Commission of Sewers, which would doubtless attract attention if the Commission were not now virtually defunct. *De mortuis nil nisi bonum!*

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a meeting of the Institute, held on Monday, the 15th, Mr. C. Fowler, vice-president, in the chair, Mons. Firmin Epellet, and Major-General Howard Vyse, M.P., were elected honorary and corresponding members. Mons. Epellet, who is the architect of the department of the Pas de Calais, has recently completed the town-hall of St. Omer, which has the peculiarity of including a theatre within its walls.

In connection with Mr. Knowles' plan of the Parthenon, presented amongst other donations, Mr. Donaldson remarked, that it shewed that a joint in the pavement came under the centre of each column in the *naos*, quite contrary to modern practice. The speaker had always thought there must have been some communication between the *naos* and the *opisthodomus*, to enable the priests to get at the treasures kept there without going outside the building.

Mr. Penrose said appearances were not in favour of such a belief: there were no indications of a doorway.

Mr. C. H. Smith then gave some account of a species of trappean or porphyritic stone used in Devonshire for building purposes, and presented specimens to be added to the collection. Crediton Church, and other structures in that neighbourhood are built of it. It is of igneous formation (ranking with lava, clinkers, &c.), full of bubbles, afterwards filled with carbonate of lime: melted felspar formed the main part of the stone. Mr. Smith said it differed much in durability, and was found to be less depended on as it approached a grey colour.

Being asked whether setting it in the line of its *bed* made any difference in its durability, the reader said the line of bed could not be detected. Further, he thought in respect of lime stones, such as the oolites, Bath stone, Caen stone, &c., nothing was gained by setting them in the way of their beds: the sandstones were different. In Caen stone it was impossible for any person to say positively, merely from examination of a block, which was the direction of its bed. As to the value of this stone, the best of it was very durable, but a great difference was to be found in different specimens of it. As a general rule, the finer the grain of the oolites the more likely they were to decay: the coarse lasts longer. The best-looking work was the least likely to endure. The darker coloured Caen stone was the best.

Mr. Godwin said, the question was one of so much importance, that he would venture to refer the meeting to some experiments on Caen stone, made recently at Mr. Cubitt's, which shewed, without reference to the action of the weather in either case, that of two pieces of Caen stone the size of a brick, one, whereof the bed was parallel with the pressing surfaces, required fifty tons to crush it; while the other, wherein the bed was at right angles with the pressing surfaces, was crushed by thirty tons.*

Mr. Poynter said it was worth notice, that the mullions of the windows in Henry Seventh's chapel at Westminster, which throughout were placed contrary to the line of the bed, were in the best state of preservation.

The chairman said, this was quite compatible with Mr. Godwin's statement. The mullions of windows had little or no weight to carry,—to ensure their preservation, the main consideration was to prevent their absorbing moisture, and this was better effected by placing the bed-line of the stone vertically rather than horizontally.

It was remarked that Caen stone contains nodules of clay, and is very deceptive,—the saw often discovering vents and faults in the soundest-looking blocks. The nodules in question, even though apparently sound, are soon affected by the frost, and the block spalters.

Mr. Donaldson gave a full account of the church of S. Maria del Fiore at Florence, and a description of the design for completing the façade, submitted to the Institute by the Cavaliere Niccolo Matas. To this paper we shall probably refer again. It included an account of the wonderful dome, second in size only to that of St. Peter's, which it long preceded, erected by the scientific Brunelléschi.

In the course of the conversation which ensued, Mr. I'Anson remarked on the great interest of this building, as standing between the mediæval and revived classic buildings. In point of construction it was more perfect than St. Peter's, and a noble testimony to the skill of Brunelleschi. As regarded Cav. Matas's design, so far as he could judge, it seemed a happy adaptation.

The chairman said the design appeared creditable to the architect, and as Cav. Matas sought the opinion of the Institute, the meeting would probaby record it by a vote, which might have reference only to its general effect.

Several members objected to commit the Institute to an opinion without due consideration, and, indeed, to the expediency of giving such opinions on proposed works, even with all materials for judging before them: ultimately, however, a committee was appointed to examine the design, and report upon it to the members.

We fully agree with those who objected to this course, and hope that the committee will report that they do not consider it desirable to express any opinion upon the design. A contrary course will lead to much inconvenience, and may be productive of harm. Once establish a precedent, and a refusal to give an opinion will amount to a condemnation, while an assent in all cases will involve a great deal of useless trouble and responsibility. Moreover, it may happen that several architects have submitted designs for an intended work,—the present may be a case in point, for aught we know,—and one who should forward his *projet* to the Institute and obtain their approval, might be inferior to another, though the author of a good design, yet armed with the Bull from Grosvenor-street, be enabled to carry off the prize, and so injustice would be done. The committee, appointed to consider what opinion, if any, shall be forwarded to Florence in support of this design, cannot do better than adopt the words of a phrenological friend of ours, who, when asked by young ladies in dainty drawing-rooms to "feel their heads," and report their characters, usually replies,—"As I must either flatter your vanity or wound your feelings, without any probability of doing good in either case, and may, moreover, commit myself, young women's heads being very deceptive, I do not think it desirable to accede to your request."

* See p. 337, *ante*.

## THE GAS MOVEMENT.

MONOPOLY PLEADS ITS OWN CAUSE QUIETLY BEFORE THE COMMONS.

A special pleading, without much more scruple, yet without much less ingenuity, than that so often and so brilliantly displayed by the trimming barrister in defending the cause of his all-but-doomed and more than 'uneasy feeling' client at the bar of Justice, *might* have been shrewdly anticipated from the effective and convenient permission granted to gas companies by the Parliamentary 'order,' to 'tell their own story,' in the form of statements of profit and loss, and other detail, which parties asked 'what they have to say in their own defence,' are well assured 'may be used against them' on their trial,—even at the Bar of the 'Commons' both in Parliament and out of Parliament assembled. But if the immense array of figures constituting the 'abstract of returns' called for by that terror of evil-doers, Mr. Hume, was really meant by the gas-house authorities as a special pleading in their own behalf,—instead of throwing dust into the eyes of the public, far less of Mr. Hume, it runs an imminent risk of being used much more against than in favour of their own past and present course of management,—or rather of mismanagement, both of their own best interests and the interests of that public for whose behoof they act, or ought to act, as faithful trustees of certain legacies, gifts, or bounties of nature and of science long since bequeathed to them for the common good. For a more unequivocal condemnation of that course than their own returns present, no twelve honest men in a jury-box could have the heart to pronounce without that sop to a sensitive mind, even imaginary 'mitigating circumstances.' From beginning to

end, in short, these instructive returns constitute one continuous 'running commentary' on, and corroboration of, what we have so oft reiterated, both in the letter and in the spirit, namely, that, would companies only consider the history of "their own experience as a class—experience thrust on them per force indeed, but not the less instructive,"—they could scarcely fail to "be assured of the fact, that they themselves, no less than the public, would be equally and much more satisfactorily benefited by the substitution of smaller profits on lower prices, indefinitely multiplied by the endless demand to which an immense reduction in the charges yet insisted on would inevitably lead,—a demand which can only arise out of such a previous reduction of price, whether voluntary or by compulsion;" an assurance, moreover, in support of which we also appealed to "the frequent experience of Government in effecting great and wide-spread benefits to the public,—without the slightest disadvantage, nay, with positive advantage to the revenue,—by immense reductions of taxation upon articles in general use,"—or that might, could, should, or would be thus extended into *truly general* use.

But with the mere enunciation of the *general rule*,—that as surely as the price is grumblingly and reluctantly reduced, so surely are the diffusion and the 'dividends' at once and proportionately increased,—as indeed in circumstances such as these they scarcely deserve to be,—and, on the contrary, that as surely as the reduction of price is resisted, so surely are the diffusion and the dividends nipt in the bud,—we do not mean forthwith to quit this instructive phase of the present interesting and important subject: rather ought we to dwell on the details, and thus to impress the rule, if possible, on the hitherto impenetrable, and self-sacrificing even while self-seeking, dispensers, or withholders rather, of the light. For the sake of those of our readers, however, who require no such hammering of facts into the region of ideas, we shall inflict as little of the tedium of this process as we possibly can, consistently with justice to our own anticipations and to what we have just declared of the facts themselves. And the more especially so, since we do believe, after all, that now, the less hopeless or more enlightened and enterprizing of the gas directors themselves, alive to their own self-preservation and self-interest, will be at length triumphantly convinced, by their own returns, that we were right in so long insisting on a steady and rapid and immense reduction of prices below the present average: so much so, indeed, that now, at length, they will clearly see that the sooner they come down to the level of the public expectation the better for themselves, no less than for the public.

But though freely admitting the *relative* merits of this very instructive return, we cannot proceed to our task without, in the first place, formally entering our protest against one defect, and a vital one it is, in its *absolute* merits, as a fair and candid response to the public demand of a clear accounting of stewardship. With the exception of the significant glimpse afforded by a single admission of the administration of a *bonus along with the dividends* in the case of the Exeter company, and of another equally *singular* recognition of the existence of such an invention at all, along with a disclaimer of the fact, doubtless felt to be urgently advisable, that any *bonus* has ever *there* been given, namely at Halifax,—as profound a silence reigns throughout the whole of the remaining portion of the returns upon the important item of *bonuses*, as if no such convenient cloak had ever been conceived by *any* of their expert manufacturers, for covering too large profits, and for trimming and clipping the current 'dividends' of the gaseous realm into more or less unobtrusive dimensions, not so very likely to attract the admiring gaze of would-be competitors, in this golden age, when the chief good of man is a sterling "*bonus* varying from 35 to 85 per cent.," as one current advertisement incidentally has it—not a gas company's, to be sure: indeed, we will venture to say that they are not in the habit of 'revealing too much' by advertising *bonuses*. But can it indeed be possible that none have been returned simply because none have ever been given? Or, do not the one or two solitary and inadvertent exceptions prove the rule? Yet, if the rule, how can the discrepancy be at all feasibly explained? why, simply thus: The Commons called for "the rate per cent. of *dividend* to the shareholders or proprietors on their shares in each year;" but they did not call for an account of bonuses at all, and, consequently, the gas companies under parliamentary law were only acting up to their instructions, and nothing more, in volunteering nothing more than they were called upon to give. So thus it happens that full many a *bonus*, doubtless,—nay, full many an *optimus*—has been quietly left in the shadowy and obscure perspective, where it, no doubt, loves to vegetate, and fructify, and blush unseen,—too diffident, 'too truthful,' to 'reveal' itself 'too much' to any but to those happy shareholders on whom it is destined to waste its sweets.

And that we have here placed this interesting subject in its proper point of view, is sufficiently and significantly attested by one rather *striking* peculiarity in the curious correlations and contrasts displayed in these much more ostensible than real revelations of the secrets of the gas-house, namely, by the fact that in those few instances where no *bonuses can* or *will* be really called for or abstracted on any pretence from the 'dividends' of which they ought to constitute an integral or at the least a fractional portion,—instances such as those of Manchester and Salford, where the manufacture of gas is in the hands of the municipal or other public authorities, and where the profits are expended on public improvements or other public purposes,—there is a steady, strong, and honest-looking phalanx of dividends or nett profits, uniformly exhibited, which, *indeed* contrasts, in a *singular* manner, with the returns from some of the more self seeking establishments, such as those of the metropolis.

Now, will any one believe that this is really so as it is made to appear: that by some unaccountable, nay, inconceivable, reversal of the laws of corporate or municipal, and heretofore, but too often, loose-fisted and extravagant nature on the one hand, and of private or monopolist and close-fisted self-seeking grasping on the other, those who are merely looking to the common good or the public profit, really turn out to be, par excellence, *the* grand example set before all others, not only in economical and profitable management, but in the substantial boon of a comparatively cheap article dispensed to the public whence they reap their splendid profits, also only for that public's own substantial 'bonus?' If this indeed be so, then even for this reason alone, as well as for others, the sooner our metropolitan and provincial gas manufactories pass into the hands of managers so vastly superior to those entrusted hitherto by Parliament with so public and important a charge, the better for the extensive gas consuming and the still more extensive gas-desiring portion of the community at large. But few, indeed, will yet believe that appearances are any thing but deceitful in this respect at least; and the strange anomaly thus apparent only militates the more in favour of the conclusion, that those profits, *at the least*, which appear in the municipal accounts ought also to appear in others, and would have so appeared, as we have hinted, had they not been deemed to be, like *their own idea* of the advocacy of their own editorial supporter, far 'too truthful' to be 'revealed too much.'

Yet it must not be concluded that those dividends even ostensibly reaped are in general any thing but splendid profits on the capital called up, as profits ranging upwards, from 5 per cent., through 10, to 15, 25, and even 35 per cent., cannot but be, and that too over and above the equally splendid profits expended on office-holders no less than on shareholders,—the former, proposed even by the advocates of monopoly themselves, to be most unmercifully cut down by amalgamation and concentration, or in fact, and in plain terms, by ultra-monopolization, *for the mere sake of reducing the price of gas to the public!* The alleged amount or limit of these profits, however, will appear in course of the analysis and detail on which we proposed in the outset to enter; but, in order to do justice to our subject, we find we must make room for it, and other matters of more or less moment, in another article.

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Glass Trade.—The glass trade, which forms an important branch in the manufactures of the Tyne, is at present very dull. The large house of Swinburne and Co., at South Shields, have reduced their men to short time, and have discharged nearly all their labourers.

## TRURO NEW HALLS AND MARKET.

On Friday in the week before last the new halls and market, erected from the designs of Mr. Christopher Eales, of London, were opened. The ground occupied is an irregular parallelogram, on the south side of Boscawen-street, containing an area of about 3,000 square yards, the whole of which has been embraced in the plan, which is arranged in three divisions.

The *northern building*, the principal construction, has a frontage towards Boscawen-street of about 90 feet in width and about 50 feet in height. The façade is in the modern Italian style, and partakes of the *palazzo* character. It is executed in granite, from the Carn Brea quarries, and has a rusticated basement with five openings in it, the quoins and arches being vermiculated. The basement is surmounted by a continued cornice of the Doric order, the frieze and soffit being charged with triglyphs and modillions. From this cornice the principal story rises, having five windows therein, with suitable dressings, surmounted by tympana, three of them being angular, and the two intermediate circular. Beneath the windows panels are formed between consoles under the sills. The rusticated quoins of the building are continued up to a *cornicione* surmounting the whole frontage, 4 feet in depth, and having a projection of 3 feet 6 inches, supported by deeply-moulded consoles, with panelled frieze and sunk soffit between. Above the central window rises a small ornamental dial-turret, to be terminated with a finial and vane.

The three central openings in the basement lead to a vestibule, 90 feet by 40 feet, which is divided into compartments by granite *antæ*.

In the centre, on each side of this vestibule, is a staircase of dressed granite, leading to a spacious corridor of communication on the principal story, in the front of which is the council-hall, 40 feet long by 30 feet in width, and 22 feet in height. Adjoining are a committee-room, town-clerk's office, &c.

Opposite to the council-hall is the great court, 50 feet long by 36 feet wide, and 25 feet in height. It is lighted by six windows, and fitted up as a judicial court. It is wainscotted round to the height of the windows; the walls above are divided by pilasters into compartments, and there is a cornice with enriched trusses beneath the coffered ceiling. At the east end of the façade is the police station.

The façade of the *south building*, which is towards the quay, is about 105 feet in length, and executed in dressed granite, with a centre and two wings, the former 40 feet in height. The principal story is of good dimensions; the centre has five circular-headed windows, the centre being a triplet, and the whole surrounded by a cavetto, with sunk angular rustic jambs and arches. This building comprises, on the ground story, a fish-market, 60 feet by 30.

In the *central area*, between the north and south buildings, is placed the market. It is divided in width into three spaces, by iron columns supporting the roofs, the centre roof being 25 feet in height, and lighted by a range of glazed sashes on each side. The side roofs also have lights, and additional light is obtained from windows in the east and west walls. The area is arranged with four double rows of stalls, affording accommodation for eighty-six butchers; with others at the sides for poultry, &c. There is also a corn exchange, together with weigh-house, furnace-room, and other conveniences for the use of those attending the markets. The whole, with the exception of the fish and pig markets, is paved throughout with slabs of Delabole slate. According to the *Cornwall Royal Gazette*, the whole building is substantially erected, and well adapted to the site. The first stone was laid on the 20th of January, 1846. The contractor was Mr. Joseph Pryor, of Helston.

Mr. Eales was the architect of the townhall and markets in the neighbouring town of St. Anstell, as well as of several residences in the neighbourhood.

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Lubricating Machinery.—Mr. Carter, of Oldham, has secured a patent for a new system of lubrication, by which a certain portion of oil, or other fluid, is supplied from a revolving flask to the axles or shafts in machinery, between any certain number of revolutions—such as one in 5,000.

## OF A NEW STYLE IN ARCHITECTURE.

THE ARCHITECTURAL ASSOCIATION.

At a meeting of the association on Friday, the 5th instant, a paper "On a new Style in Architecture" was read, of which we give the following portion:*—The ancient style of Roman architecture was revived with the arts of painting and of sculpture, receiving such additions as were demanded by a state of increased luxury. There is no doubt that for its ascendancy the classic style was greatly indebted to its sculpture, from which the great artists of the sixteenth century learnt the elements of their arts, and naturally extended their admiration and study to the relics of coeval architecture. The influence of such examples soon became felt throughout Europe. In Britain, which seems always to have signalised itself by economy in matters of art, brick supplied the place of stone, oftentimes in edifices of much importance. It must be confessed that the mixture of the two materials was not altogether unfavourable to the results. The Palladian school adorned this country with many admirable buildings, but gave place to the school which formed the most vapid productions ever dignified by the name of architecture. A rage arose for what was called pure Greek art, by men who merely copied the dimensions of ruined temples, and were utterly ignorant of the spirit of artists. If the common sense of mankind had allowed it, they would have covered the land with hypœthral dwellings, for windows were not so much in the style. To be in style they abandoned their material of brick as a surface; they stuccoed and painted their abortions to imitate blocks of stone, because Greek temples were marble. Though they used paint on their elevations, they never thence attempted to make a beauty: it had not been proved to their satisfaction the Greeks had a gift for polychromic decoration. The Greeks, in their opinion, were too pure for colour. If it had been practicable, they would have had their works black-lined drawings in the air, so droll an opinion had they of Greek refinement. This race of blockheads is not extinct; the surveyors of this day have the same itch for copying, in spite of the introduction of cast iron. They copy interminably, and scarcely one attempt has been made to strike out any beauty of which the material may be susceptible. Some copy classic, and others gothic; they deride the abuses of each other's styles, and are equally ignorant.

"So one fool lolls his tongue out at another,
And shakes his empty noddle at his brother."

They are equally ignorant of the very rudiments of composition,—that art by which masses are balanced without uniformity,—and they are justly the targets for the ridicule of painters and sculptors. A column, ready made, is built as a monument, because composition requires ability; the column is surmounted by the abacus, even a Corinthian, though there be no architrave for it to sustain, or with which it is to harmonise; thus the abacus becomes useless, and, seen diagonally, top-heavy and unmeaning. The ancient cornices, which are always placed on modern dwellings, are so unsuited to the dimensions of our brick walls, that, to prevent them from falling off, we must balance their weight by building an attic or a balustrade upon them, or we must resort to clumsy expedients of construction to tie them down with iron rods. Thus reviewing some of the absurdities committed in the name of style, considering the requirements of our materials, brick and iron,—considering that the architect is degraded by the importance of style, that he sees no beauty in any thing not according to precedent,—I cannot but wish that some man of genius should arise and produce a system less conventional, and more adapted to our wants. If this could be obtained, we should not find men tolerated in calling themselves architects whose pretensions to the title consist in the possession of certain books. We should more frequently find men who, when they have acquired the knowledge of styles, consider that they are but scholars who have just mastered the grammar of their art, and then we should also find that men of general talent and education could appreciate architectural beauty, when their opinion of architectural ugliness could not be swamped by the assertion, that the ugliness is in style. How absurd is the whim of one man for making the two sides of his design uniform to the minutest particle; when convenience requires a modification, how ludicrous his struggles for monotony! Yet let us not laugh at him sooner than his rival, who declares that his style admits of any thing, and does his best in his works to illustrate the meaning of "higgledy-piggledy." The strongest argument to be urged against the neglect of style is that founded on the association of ideas; but this is an argument of more force in imagination than in reality. It is true that, contemplating the architectural glories of ancient Athens or Rome, the poetic mind may feel that Socrates has hallowed the one place or Cicero the other, and be in enchantment at the remembrance of departed genius. Let us now suppose a case in which this argument will receive its most favourable illustration;—suppose a man in solitude, among the ruins of Athens, to be one who from learning and natural sensibility is capable of thought suited to such a place,—to be at the time even under the influence of those glorious ideas that make the poetry of Byron immortal: such a man might fold his arms and say within himself, "These are the ruins of that city whose people murdered Socrates,—here looking at that glorious sun which now I see, of wicked men he took the poisoned bowl." Here he might sigh; but if that sigh were answered from behind some broken columns, no doubt his emotion would then depend upon the voice; it might be that it would not be such as to dispel the sadness that does not offend. But if the voice, instead of harmonizing with the melancholy of the scene, were clamorous for beef-steaks, the veriest clown must know the poet's dream is gone, and his mind occupied by indignation, or, perhaps, a disposition to laughter. Then, if the association of ideas can be thus destroyed, we are not to be told that the argument for it is effectual when applied to edifices making but a second-hand appeal to the imagination. When we see coat-tails disappear in the entrance to Exeter Hall, are we dunces because we do not think of the Eleusinian mysteries, or because when we hear a speaker we are not reminded of Demosthenes by the pure Greek plaster of Paris honeysuckle above his head? Familiarity (if nothing else) will make us callous to these appeals from the architects.

If it be not presumptuous, I would mention some of the things that, in my opinion, should be used in the promotion of any style:—a fitness of design for the purposes of the building, to express which perfectly recourse must be had to sculpture or painting; geometrical proportions, for which we derive an admiration from natural objects; a constant endeavour to take advantage of the requirements of convenience and peculiarities of situation, which would often give to such an artist hints for the production of original beauty; decoration instead of concealment of constructive parts:—thus, when requisite to use iron beams or supports, it should be considered better to make them in themselves agreeable objects, than to encase them and make them wretched attempts at the expense of classic art. I would prefer the appearance of brickwork to that of stucco; but, wherever necessary to use that externally which needs the preserving quality of paint, I would thence endeavour to produce the pleasing by the means of paint; certainly it would not content me to adopt the colour now used, and which (so some say) is intended to represent freestone; neither, since iron work must be painted, do I think that the lead colour which satisfies the ambition of our architects, ought so to satisfy it:—a total disregard of, and contempt for the notion that calling monotony "classic" will make it charm, or that by calling a lopsided or straggling building "Christian" or "Gothic," it will be in any way improved. Study of all styles and mastery of composition are essential to the man who would produce an original architecture more suited to our materials than the ancient styles. Whatever degree of credit we afford to him who adapts ancient styles, our utmost praise will belong to the producer,—there is no fear that his originality will be mistaken for that of ignorance. Be it ours, even when we see faults in his design, to applaud his endeavours and to encourage him in his progress.

* We are glad to learn that the society is in a flourishing state, and has now eighty members. A class for the study of ornament has been formed among the junior members. In reply to some correspondents, inquirers should address the secretary at Lyon's-Inn hall, Strand.

## THE THOROUGH IMPROVEMENT OF LONDON.

Sir,—From the statements contained in your leading article of the 30th ult., I greatly fear that *another* opportunity for the improvement of the metropolis is about to be irretrievably lost, as it most assuredly will be, if the suggestions of the "Metropolitan Improvement Commission" (which would be more properly termed the "Metropolitan Spoliation Commission") are carried out; and I therefore wish once more to raise a voice against any further perseverance in such an absurd, costly, and piecemeal system as at present obtains.

The necessity for a new grand line of thoroughfare, from the west end of Cheapside to the east end of Queen-street or Long Acre, is generally admitted, as such a line would tend very materially to relieve both Holborn and Newgate-street, and the Strand and Fleet-street; but such a line, to be effective, must be direct, and, to be carried out at least cost, must be done by one directing body, and in the shortest possible time. But there is no possibility of these requisites being complied with if the street is to be formed conjointly by the commission and the corporation, as proposed.

That it will not be *direct*, you, Mr. Editor, have shewn; and the cost must of necessity be greater if carried out by *two* public bodies than if it were (as it ought to be) under the control of one efficient commission; and then, as to the time in which it is to be completed, if we may judge from the time that has been spent in merely *talking* about this projected new street (which you state at thirteen years), I will not venture to say that any of the present generation will live to make use of what they will have paid for.

The cost of forming an important thoroughfare such as this, would be, if properly executed, very materially reduced, if not altogether liquidated, by the increased value which would be obtained for the frontages; and, if speedily completed, the loss of rent during the time it was in operation would be very small, in comparison with what it must be at Victoria-street, *alias* New Farringdon-street, *et hoc genus omne*.

In your notice of this subject, Mr. Editor, you speak of Lincoln's Inn and Fields as "forbidden ground." I certainly cannot concur in that idea; and a properly-constituted "Improvement Commission" would not surely "knock under," if I may use the expression, to any public or private body, especially if such a course would injure *or obstruct* any public improvement.

Why, I would ask, is not the erection of *all the courts of law* in the vicinity of the inns of court and the new street (as proposed by Mr. Barry), and the widening of the Chancery-lane end of Fleet-street, included in the proposed plan?

But, however the proposed new street may be carried out, it will have the effect of further burthening Cheapside, if that is possible, unless, at the same time, another direct street is formed from London-bridge to St. Paul's. But the reply would be, the Improvement Commission must not venture within a small space in the heart of the metropolis, called the "City," as that is "forbidden ground." Again, therefore, this must be left to the corporation; and what will they do? Nothing, or worse than nothing! And so things go on, and ever will, unless the "thorough improvement of the *whole* of the metropolis, upon one specific and well-digested plan" (without respect of persons, as benchers, aldermen, common councillors, &c. &c.), is intrusted to one efficient Improvement Commission, with ample powers, so as to obviate the necessity and consequent delay and cost of applications to Parliament in each case; and then Southwark, Lambeth, and the outskirts will receive a due share of attention, as well as the more wealthy quarters of the city and west-end.

Hoping, with you, for a better state of things, I remain, Sir, &c.,

A Londoner.

City Union Workhouse Competition.—We understand that fifty-one competitors have sent in plans for the City Union Workhouse. The designs are placed in a room in the Auction Mart by the Bank, and the decision will probably be arrived at in the beginning of the week.

## OPENING OF THE SOCIETY OF ARTS.

### HISTORY OF BOOKBINDING.

Nov. 10.—Mr. Thos. Webster, F.R.S., in the chair. The secretary read an address on the opening of this the 94th session of the society, and stated, that the council had great pleasure in congratulating the members on the prosperity of the society and its prospects of increasing usefulness. It referred to the changes recently introduced into the constitution of the society and the great general benefits which had resulted therefrom. It next alluded to the suggestion which had been made at an early period by H.R.H. the President, indicating one direction in which the arts and manufactures of England admitted of advancement, and eminently required improvement and the success which had attended the offering of large premiums for the production of improved specimens, uniting decorative art with manufacturing skill, and the ready sale which manufacturers found for their improved productions. It then referred to the efforts of the past session to establish an annual exhibition of British manufactures, and announced the intention of the council to open the second exhibition in February or the beginning of March next, after which, in June, the exhibition of the paintings by W. Mulready, R.A., is to take place. The address concluded by stating that H.M. the Queen had, at the request of the Prince Consort, granted to the society a Royal Charter of Incorporation, bearing date 10th of June last.

Mr. J. Cundall read a paper "On Ornamental Art as applied to Ancient and Modern Bookbinding." He commenced by stating, that the earliest records of bookbinding prove that the art has been practised for nearly 2,000 years, previous to which time books were written on scrolls of parchment. Some inventive genius, however, to whom the Athenians erected a statue, at length found out a means of binding books with glue. The rolls of vellum, &c., were cut into sheets of two and four leaves, and were then stitched somewhat as at the present day. Then came the necessity for a covering. The first book-covers appear to have been made of wood, probably merely plain oaken boards, which were afterwards succeeded by valuable carved oak bindings; these were followed by boards covered with vellum or leather, and specimens of such of great antiquity still exist. The Romans carried the art of bookbinding to a considerable perfection, and some of their public officers had books called Diptycks, in which their acts were written. An old writer says, that about the Christian era the books of the Romans were covered with red, yellow, green, and purple leather, and decorated with silver and gold. In the thirteenth century some of the Gospels, Missals, and other service books for the use of the Greek and Roman churches, were covered in gold and silver; some were also enamelled and enriched with precious stones and pearls of great value. In the fifteenth century, when art was universal, such men as Albert Durer, Raffaelle, and Giulio Romano decorated books. The use of calf and morocco binding seems to have followed the introduction of printing, and there are many printed books bound in calf with oaken boards, of about the fifteenth and beginning of the sixteenth centuries; these are mostly stamped with gold and blind tools. The earliest of these tools generally represent figures, such as Christ, St. Paul, coats of arms, &c., according to the contents of the book.

In the reign of Henry the Eighth, about 1538, Grafton the printer undertook to print the great Bible, for which purpose he went to Paris, there not being sufficient men or types in England; he had not, however, proceeded far before he was stopped in the progress of this book, when he returned to England, bringing with him presses, type, printers, and bookbinders, and finished the work in 1539. Henry the Eighth had many books bound in velvet, with gold bosses and ornaments, and in his reign the stamping of tools in gold appears to have been introduced. In the reign of Queen Elizabeth some exquisite bindings were done by embroidery; the queen herself used to work the covers with gold and silver thread, spangles, &c. Count Grolier seems to have been a great patron of the art on the continent, and all his books were bound in smooth morocco or calf, ornamented with gold. The style of the books of Maioli was very similar to that of Grolier or those of Diana of Poictiers, the specimens done for her being among the finest ever produced, and were no doubt designed by Petit Bernard. Roger Paine was the first Englishman who produced a really good binding, and some of his best works, such as French romances, were powdered with the fleur-de-lis. His books on chivalry had suitable ornaments; on poetical works he used a simple lyre, and carried the emblematical style of binding as far as emblems ought to be used. The following bill of his for binding a work is a curiosity, and shews how moderately he charged:—

Vanerii prodium Rusticum Parisiis, MDCCLXXIV.

| | | | |
|---|---|---|---|
| Bound in the very best manner, in the finest green morocco, the back lined with red morocco; fine drawing-paper, and very neat morocco joints inside; their was a few leaves staind at the foredge, which is washed and cleaned ..... | 0 | 0 | 6 |
| The subject of the book being Rusticum, I have ventured to putt the Vine Wreath on it. I hope I have not bound it in too rich a manner for the Book: it takes up a great deal of time do these vine wreaths. I guess within time I am certain of measuring and working the different and various small tools required to fill up the vine wreath, that it takes very near three days work in finishing the two sides only of the book; but I wished to do my best for the work, and at the same time I cannot expect to charge a full and proper price for the work, and hope that the price will not only be found reasonable but cheap ..... | 0 | 18 | 6 |

The author, after alluding to the numerous specimens of modern bindings which have of late been produced to the public, and regretting their want of originality, concluded by urging the necessity of attempting something original, and suitable to the advancing and improving taste of the time. Then we may hope, that ere long ornamental art in bookbinding will be wedded to our present perfect execution, and that the nineteenth century will be able, like the fifteenth century, to boast of a style of its own.

Mr. Henry Cole, assistant keeper of the Public Records, exhibited a number of very curious and beautiful specimens, among which was one of Henry the Seventh's time, containing the deeds relating to Henry the Seventh's Chapel at Westminster, and in which the monks undertook to pray for the soul of the king, as its founder, as long as the world is.

## DISREGARD OF CITY ANTIQUITIES.

At a meeting of the British Archæological Association on the 12th instant, amongst various interesting matters brought forward, Mr. Roach Smith announced the discovery of Roman remains in Lad-lane, opposite Pickford's warehouse, which, he said, were connected with a building of considerable extent, which occupied the site of that portion of the street, a part of Wood-street and St. Michael's Church. The excavations recently carried on had cut through about 30 feet of a tesselated pavement, but the apathy and something worse which existed in the court of common council towards the antiquities of the city, rendered such discoveries comparatively useless. On a former occasion he had hoped to have preserved for a museum, which, it had been proclaimed, was to have been established in the Guildhall, an interesting fragment of coloured tesselated pavement found near St. Michael's Church; but, although he obtained the ready co-operation of the town-clerk and the comptroller, their combined efforts were not sufficient to resist a counteracting influence. It would seem it could not be removed to the Guildhall without some further sanction, for upon the matter being brought before a gentleman of power in the Board of City Improvements, he declined going to inspect the pavement, and summarily ordered it to be brought before him, in compliance with which fiat the pavement was shattered in a thousand pieces.

Mr. Price gave an account of discoveries made a few years since upon this site, and said he himself witnessed the destruction of a curious pavement opposite that under consideration. He stood by and saw it wantonly cut to pieces, and he did not hesitate to say that the reason alleged for its rapid destruction was to prevent, as much as possible, the researches of Mr. Roach Smith.

The chairman (Mr. Pettigrew) said it was perfectly disgusting to hear of these continued acts of destruction, especially while attempts were being made in certain quarters, to exhibit on the part of the city authorities a show of feeling for the works of art in the ancient city, which feeling they evidently did not possess. There was also an everlasting talk about *the City Museum*, while the objects which alone could form such an institution, were ruthlessly neglected and destroyed. He was in hopes their colleague, Mr. Alderman Johnson, would exert his influence to induce a regard for the works of ancient art which illustrated the history of the city of London.

Mr. Jerdan said that if the details of the acts of destruction alluded to were drawn up, he would ensure the case being represented in the proper quarter, so as to secure redress or public reprobation.

## CARPENTERS' BENEVOLENT INSTITUTION.

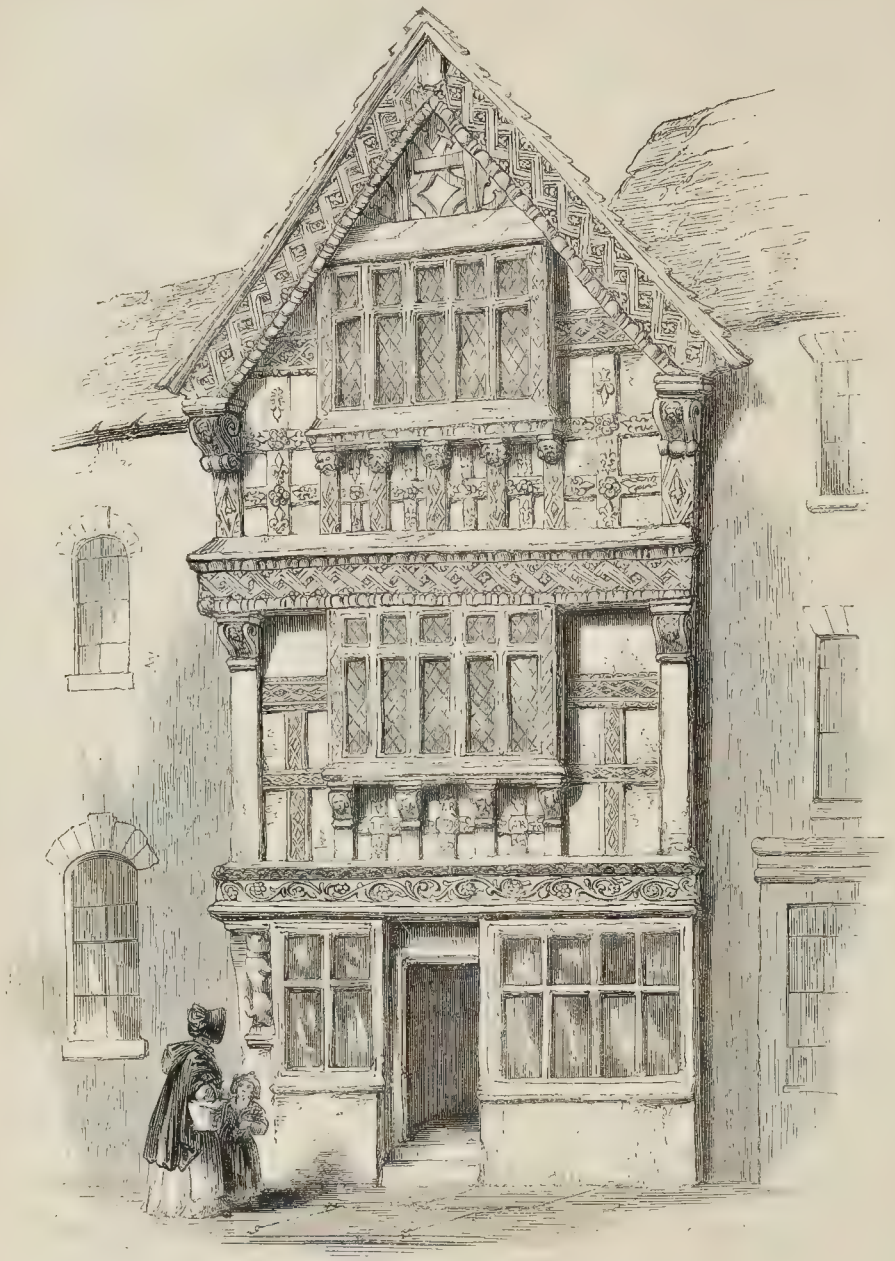
A numerous meeting of carpenters was held on Tuesday night, at the Bell Inn, Old Bailey, for the purpose of adopting rules, previous to enrolment, for a Benevolent Institution, for the support of aged and infirm carpenters, and the erection of an asylum for the reception of members and their wives. Mr. Waltenbury was called to the chair.

The chairman regretted that some one more efficient than himself had not been called to the chair, and better calculated to discharge its duties. At the same time he could assure the meeting that no one felt greater anxiety to carry out the object they had met to promote, and he hoped they would give every one a fair and impartial hearing, and discuss the merits of every proposition, no matter by whom brought forward.

The secretary (Mr. Bush), on the part of the committee, reported that they had waited on the different societies, and the universal opinion was, that such an institution had been long since required, and they would give it their support. The secretary then read the proposed rules, which were afterwards put *seriatim* from the chair. The rules provide that any carpenter, on subscribing six shillings annually, shall become a member, and be entitled to vote at all general meetings. A like privilege is conferred on donors of ten guineas, and subscribers annually of one guinea, payable in advance. Any member, incapacitated by old age or infirmity from following his employment, may become a candidate for the benefits of the institution, and on his election will receive 10s. per week from the funds until provided for in an asylum; and on the death of a member receiving relief (if married) the board of directors are empowered to assist the widow according as circumstances may require.

The rules up to No. 14 were discussed, and passed with a few verbal amendments. Mr. Aygate thought it was a great reproach to the carpenters of London, that while nearly every other trade had their almshouses, they, who were so actively engaged in erecting them, even from the time of staking out the ground to their completion, should have no place of their own. The meeting then adjourned to Tuesday next.

Building on a Quicksand.—A fine large house, says the *New York Journal of Commerce*, has just been built on the corner of the yard of Columbia College. In digging for the foundation, the earth proved to be a mere quicksand, with no cohesion at all between the particles, and it caved-in from far into both streets. The foundation was, nevertheless, laid; but, as the house went up, the cellar wall moved down, a little and a little more, but not enough to produce absolute discouragement to our go-a-head bricklayers, until the building had gone up six stories above the ground, with one or two below the surface. Then, when the cornices had been put on and the rafters raised, it became apparent that the house would not be safe, and the melancholy order was given to take it all down again! Men are now employed in bringing down the bricks which they had carried up with so much toil, and very soon there will not be one brick left upon another!

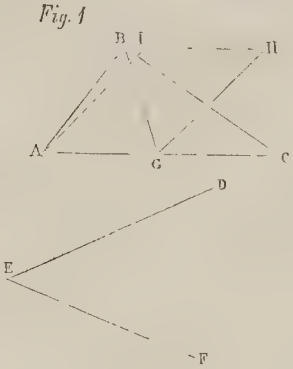


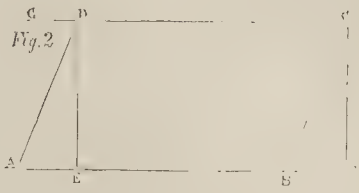
CARVED HOUSE AT STRATFORD-ON-AVON.

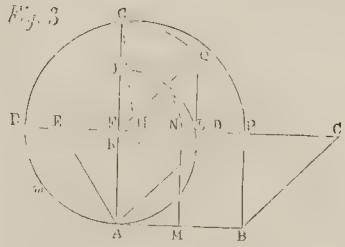
CARVED HOUSE, STRATFORD-ON-AVON, WARWICKSHIRE.

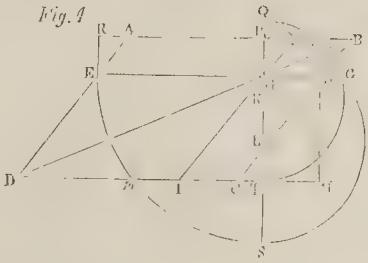
The natal town of Shakspeare possesses few ancient houses of higher character than that shewn as his birthplace, which originally was a habitation fit for a substantial yeoman. The elaborate ornamental carving, which is so profusely displayed in the neighbouring towns of Coventry and Warwick, meets with no counterpart here. It is probable, however, that Stratford at one period boasted similar decorated mansions, some of which may have been destroyed in the fatal fire which consumed a great part of this town in the seventeenth century. The house depicted in our engraving stands in the High-street, but a few yards from the site of New-place, the residence of Shakspeare, and his eye must have been frequently arrested by its quaint carving and picturesque appearance. Beneath the window of the first floor is the date 1596, carved upon the beam, above which are the initials W. R., with on one side T. R., and on the other A. R. These indicate the family of the builders, as a reference to the town books shews that a thriving trader, one Wm. Rogers, resided at that period in this house.

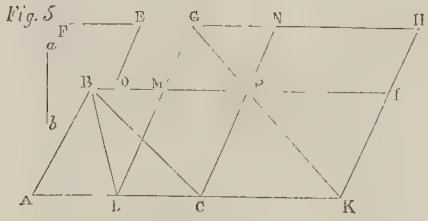
## CONVERSION OF PLANE FIGURES.

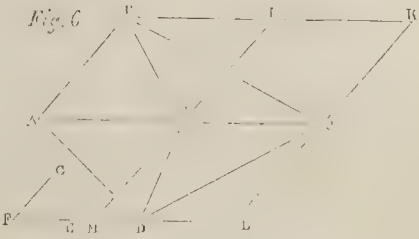



### PRACTICAL GEOMETRY.

#### THE CONVERSION OF PLANE FIGURES.*

PROBLEM.—*To construct a parallelogram that shall contain an area equal to a given right-lined triangle, and have one of its angles equal to a given angle; that is, to convert a given triangle into a parallelogram of equal area, having one of its angles given.*

*Example.*—Let ABC (Fig. 1) be the given triangle, and DEF the given angle; it is required to constitute a parallelogram that shall contain the same area as the right-lined triangle ABC, and have an angle equal to the given angle DEF.

*Construction.*—Divide AC, the base of the given triangle ABC, into two equal parts in the point G, and at the point A, one extremity of the base AC, make the angle GAI equal to the given angle DEF; then, through G, the middle of the base AC, draw GH parallel to AI, and through B, the vertex of the triangle ABC, draw the straight line BIH parallel to the base AC, and meeting the sides AI and GH in I and H, and AIHG will be the parallelogram required, containing an area equal to the given triangle ABC, and having an angle equal to DEF.

*Demonstration.*—Draw the straight line BG connecting the vertex of the given triangle at B, with the middle of the base at G; then, because AG is equal to GC by construction, the triangle ABG is equal to the triangle GBC, for they stand upon the equal bases AG and GC, and are between the same parallels AC and BH; therefore, the whole triangle ABC is double of the triangle ABG; but the parallelogram AIHG is double of the triangle ABG, for it stands upon the same base, AG, and is between the same parallels AG and HI; consequently, the parallelogram AIHG is equal to the triangle ABC, for things that are double of the same thing are equal to one another, and it has, moreover, the angle GAI equal to the given angle DEF.

*Note.*—When the given angle DEF is a right angle, the construction is somewhat simplified, as in that case we have only to erect perpendiculars at the points A and G to meet BI drawn through B parallel to the base AC, and the thing is done.

PROBLEM.—*To construct a right-angled parallelogram that shall contain an area equal to a given oblique-angled one; or, in other words, to convert an oblique-angled parallelogram, or rhomboid, into a right-angled parallelogram of equivalent area.*

*Example.*—Let ABCD (Fig 2.)be a rhomboid or oblique-angled parallelogram; it is required to convert the oblique-angled parallelogram ABCD into a right-angled one containing the same area.

*Construction.*—From D and C, the angles adjacent to one side of the given figure, let fall the perpendiculars DE and CF upon AB the opposite side, the one of them, DE meeting AB within the figure as at E, and the other, CF, meeting AB produced at F; then is DEFC the rectangular parallelogram required, being equal in area to the oblique-angled parallelogram ABCD given.

*Demonstration.*—Produce CD to G, then, since AD is parallel to BC, and GC meets these parallels in the points at D and C, the exterior angle ADG is equal to the interior and opposite angle BCG; and because DE and CF are each of them perpendicular to AB and its production, they are also perpendicular to GC, which is parallel to AB; consequently, the angles EDG and FCG are right angles; but the part ADG has been shewn to be equal to the part BCG, and, therefore, the remainder ADE is equal to the remainder BCF, and the triangles ADE and BCF are equal and similar, so that the part ADE, which is cut off from the rhomboid or oblique-angled parallelogram ABCD by the perpendicular DE, is equal to the part BCF, which is similarly applied to it by the perpendicular CF, and the whole EFCD

* See also "Geometry of the Square," p. 454.

is therefore equal to the whole ABCD; but EFCD is a rectangular or right-angled parellelogram, and it has been derived from the given oblique-angled parallelogram ABCD, so that the thing required by the problem is done.

PROBLEM. — *If a parallelogram and a triangle have the same base and are between the same parallels, it is required to prove by the principle of conversion, that the parallelogram is the double of the triangle.*

*Example.*—Let ABCD (Fig. 3) be a parallelogram and AEB a triangle, subsisting on the same base AB and lying between the same parallels AB and RC; it is required to prove that the parallelogram ABCD is double of the triangle AEB.

*Construction.*— Reduce the oblique angled parallelogram ABCD, into the equivalent rectangular one ABPF, and in like manner, reduce the triangle AEB into its equivalent rectangular parallelogram AMNF, and the parallelogram ABPF shall be double of the parallelogram AMNF, since the base AB is double of the base AM; but the parallelogram AMNF is equal to the triangle AEB, and ABPF is equal ABCD; hence the equality enunciated in the proposition is already manifest, but to carry out our principle of conversion, we shall throw each of the rectangles ABPF and AMNF into an equivalent square, as this is the figure which we have adopted as the standard of comparison.

On F as a centre with FA as a radius, describe the quadrant A*m*R, meeting CF produced in R and making FR equal to FA, so that PR is equal to the sum of PF and FA, the sides of the parallelogram ABPF extended in one line. Bisect PR in H, and on H as a centre with HR or HP as a radius, describe the semicircle RGP meeting AF produced in G, and making FG a mean proportional between FP and FA the sides of the rectangle ABPF, and consequently it is the side of an equivalent square.

Again, on F as a centre, with FN as a radius, describe the quadrant N*n*I meeting AF produced in I and making FI equal FN, so that AI is equal to the sum of FA and FN the sides of the rectangle AMNF extended in one line. Bisect AI in K, and on K as a centre with AK or IK as a radius, describe the semicircle ALI intersecting FP in L; then is FL a mean proportional between FA and FN the sides of the rectangle AMNF, and is therefore the side of an equivalent square. At the point L erect the perpendicular LQ equal to LF, and draw FQ; then since FL is equal LQ, the square of FQ is twice the square of FL; but FQ is equal to FG, for if they be carefully applied to each other they will be found to coincide; hence we infer the specified condition of the figures mentioned; that is, that the parallelogram is double of the triangle.

PROBLEM.—*It is required to prove by the principle of conversion, that in every parallelogram, the complements of those parallelograms which are about the diagonal of the given parallelogram are equal to one another.*

*Example.*—Let ABCD (Fig. 4) be a parallelogram of which the diagonal is BD, the complements of the parallelograms which are about the diameter being AEHN and CFHI; it is required to prove that these complements are equal to one another.

*Construction.*— Convert the oblique parallelograms AEHN and CFHI into the equivalent rectangular ones EHPR and FHTM; then on H as a centre with the radii HE and HF, describe the circular quadrants E*m*S and F*n*Q meeting HT produced in S and HP produced in Q, so that HS and HQ shall be respectively equal to HE and HF; then is PS the sum of the sides EH and HP extended in one line, and QT is the sum of the sides HF and HT similarly extended. Bisect PS in L and QT in K, and on K and L as centres with radii KQ and LP describe the semicircles QGT and PGS intersecting EH produced in G; then is HG a mean proportional between HQ and HT, and is consequently the side of a square which is equivalent to the rectangle HFMT; but HG is also a mean proportional between HE and HP, and is therefore the side of a square equivalent to the rectangle EHPR; these two rectangles are therefore equal; but they are equal to the complements AEHP and HFCI; hence the equality of these complements is manifest.

PROBLEM.— *To construct a parallelogram upon a given straight line, that shall be equal in area to a given triangle, and have an angle equal to a given angle; that is, to convert a given triangle into a parallelogram of equivalent area, having one of its sides and one of its angles given.*

*Example.*—Let *ab* (Fig. 5) be the given straight line, DEF the given angle, and ABC the given triangle; it is required to constitute a parallelogram on the straight line *ab*, that shall be equal in area to the triangle ABC, and have an angle equal to DEF.

*Construction.*—Bisect AC, the base of the given triangle in L, and at the point L make the angle CLM equal to the given angle DEF; then through C, the extremity of the base AC, of the given triangle ABC, draw the straight line CP parallel to LM, and through B, the vertex of the triangle ABC, draw the straight line BI parallel to AC, the base of the triangle, and intersecting LM and CP in the points M and P. Produce LM and CP directly forward to G and N, making PN equal to *ab*, the given line; through the point N draw the straight line GNH parallel to BI, and join GP, which extend directly forward to meet AC, the base of the triangle produced, in K, and through K draw KIH parallel to CPN, and meeting BI and GH in I and H; then is PNHI the parallellogram required; being equal in area to the given triangle ABC,—having an angle equal to the given angle DEF, and a side PN, or IH equal to the given line *ab*.

*Demonstration.*—Because AC the base of the triangle ABC, is bisected in L, the triangle ABL is equal to the triangle LBC, and consequently the whole triangle ABC is double of the triangle LBC; but the parallelogram LMPC is double of the triangle LBC, and for this reason the parallelogram LMPC is equal to the triangle ABC, and it has by construction, the angle CLM equal to the given angle DEF. But the parallelogram PNHI is equal to the parallelogram LMPC, being complements about the diameter GK, and it has the angle NPI equal to CLM, and moreover it is applied to the line PN, which is equal to the given line *ab*; but it has been shewn that LMPC is equal to the triangle ABC; hence also PNHI is equal to the triangle ABC, and as the other conditions of the problem have been shown to be satisfied, the thing required is done.

PROBLEM.— *To construct a parallelogram that shall be equal in area to a given four-sided right-lined figure, and have one of its angles equal to a given angle; that is, to convert a given right-lined figure into a parallelogram of equal area, having one of its angles given.*

*Example.*— Let ABCD (Fig. 6) be the given right-lined figure, and EFG the given angle; it is required to convert the given right-lined figure ABCD into a parallelogram of equal area, and having an angle equal to the given angle, EFG.

*Construction.*— Draw the diagonal AC, dividing the given figure ABCD into the two triangles, ABC and ADC, and divide AC into two equal parts in the point P. At the point P, make the angle CPH equal to the given angle EFG, and produce HP in the opposite direction to M. Through C, the extremity of the common base AC, draw the straight line LCK parallel to MH, and through the opposite angles, B and D, draw the straight lines BK and ML parallel to AC the diagonal, and to each other, and meeting MH and LK in the several points, M, H, and L, K, thereby forming the parallelogram MHKL equal to ABCD, the given figure, and having an angle equal to EFG, the given angle.

*Demonstration.*—Because the diagonal AC is bisected in the point P, the whole triangle ABC is double of the triangle PBC; but the parallelogram PHKC is double of the triangle PBC, since it stands upon the same base, PC, and is between the same parallels, PC and BK; consequently, the parallelogram PHKC is equal in area to the triangle ABC, and it has the angle CPH equal by construction to the given angle, EFG.

Again, since AC is bisected in the point P, the whole triangle ADC is double of the triangle PDC; but the parallelogram PMLC is double of the triangle PDC, since they are upon the same base PC, and between the same parallels PC and ML, therefore the parallelogram PMLC is equal to the triangle ADC, and it has the angle LMP, equal by construction to the given angle EFG. But the two triangles, ABC and ADC, are together equal to the given figure ABCD; hence, also the two parallelograms PHKC and PMLC are together equal to the given figure ABCD, so that the given figure has been converted into a parallelogram of equal area, and having an angle equal to the given angle EFG, according to the conditions of the problem.

*Note.*—EUCLID performs this problem differently, but not so simply and elegantly as by means of the foregoing; his mode of construction is as follows:—draw the diagonal AC, dividing the figure into the two triangles ABC and ADC, and bisect the diagonal AC in the point P; then, upon half the diagonal PC, constitute the parallelogram PHKC equal to the triangle ABC, and having an angle equal to the given angle EFG. To the straight line PC apply the parallelogram PMLC, equal to the triangle ADC, and having an angle equal to the given angle EFG; then is the whole parallelogram MHKL equal in area to the given figure ABCD, and having an angle equal to the given angle EFG, the same as before. The preceding is the general method of solution; but when the given angle is a right angle, the operation is somewhat simplified, and the resulting parallelogram is better adapted for practical purposes.

## EARLY AND RIGHT-DIRECTED PATRONAGE TO ARTISTS.

SIR,—In your last week's paper I saw a succinct account of the early career of Gibson in his profession, and what struck my attention was, that while he was unknown to fame, and obscure (as every genius must be in the beginning, until some kind hand is stretched forth to bring him into notice), Mr. Roscoe came forward, and was not only his early patron, but was the means of procuring a succession of munificent patrons. Surely, under such an auspicious beginning, any man that had abilities for his profession must have prospered. Give a "sound" vessel but fair wind and deep water, and you may be certain of a prosperous voyage. I consider, sir, the commencement of Gibson's career as a sculptor an auspicious one indeed; and I would here observe, that the most important part of an artist's life is the beginning; and it may not be out of place if I further observe, that all those who wish well to art and its cause, could not confer a greater blessing upon it than to direct attention to the able who are obscure and for the first time send their works for exhibition.

Attention thus directed might be the cause of not only aiding art, but of rescuing many (who have spent the best part of their lives in arduous study) not only from disappointed hope, but despair and an untimely grave. It is a strange matter of fact, that many who have devoted themselves to this profession have more or less been martyrs for the cause. A score of such cases occur as the year rolls round, that the world knows nothing of, because they are obscure. Little do the thoughtless think (when they are gazing upon some painting) of the weary hours, and it may be at last, the disappointed hope, which has driven the author of it to despair and an untimely grave. It is true he may have produced a creditable piece of work, and sent it forth to the world; but the world had contented itself by looking to those only which were familiar to it, and well known to fame. The critic, too, might pass it with indifference; or if he did stop to say any thing, it might be to cast upon it some thoughtless brand. In such a case it is no wonder,—in fact, a man must be more than human if he did not sicken under this state of things.

Now, had such a one received the timely aid, such as Roscoe gave to Gibson, there would not only have been one saved from an untimely grave, but, through his talents, a blessing conferred on generations yet unborn. Now mark the inconsistency (it may be an "oversight") of the world,—let us hope so. It may be that such hath lain in his grave three, four, or a score of years, when the value of his painting becomes appreciated; then there is offered for it not only the amount which he asked for it (which would have saved him from a world of woes), but twenty, ay, forty times the amount. But what good does this now? Nay, is it not a mockery to the dead? Can *that* bring back life? Can it

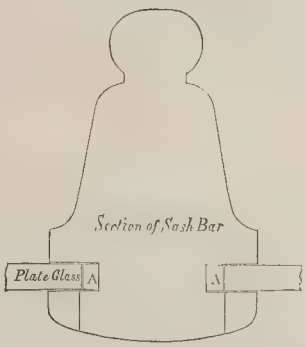
pour balm in that broken heart, and recover that distracted mind? Then would it not be more prudent as well as human for those that would be patrons and aid art, to take Roscoe as their model in this case? In doing so, they would not only confer a lasting benefit on art and posterity, but it might be that "the blessing of him that was ready to perish might come upon them," and perhaps in the end it might be said that they had "caused the widow's heart to sing for joy." It will be readily perceived, that when I say this I mean not those who have been surrounded with "appliances and means" of every kind from their youth up,—who take it up as a novelty, not as a profession,—but those who have devoted their very heart and soul to this laudable work—who have spent all that they had in their studies and travels; and who now sit down, asking no more than that their abilities will be appreciated and rewarded accordingly.—I am, Sir, &c.,

T. W.

## NOTES IN THE PROVINCES.

The Eton College Chapel alterations and improvements, begun in the summer, under Mr. Noel's superintendence, will be finished early in December.——A central site for the Bucks Lunatic Asylum has been advertised for. ——A committee has been appointed by the council at Southampton for the establishment of baths and washhouses. —— The Earl of Digby has given the munificent donation of 2,500*l.* towards the repair and restoration of the Sherborne Abbey Church, for which 5000*l.* will be required.——We perceive that the Diocesan Church Building Associations, both at Ripon and Bath, have been holding their meetings, and reporting their grants towards various church and other works, for which we must refer to a separate paragraph.——Consecrations of churches have recently taken place in the Ripon and Lichfield districts, at Lichfield and at Manstone in Barwick-in-Elmet, and Wyke in the 'umquhile' parish of Birstal,—one at Baptist Mills, in the south-western district of the country, also, will shortly take place. The Manstone and Wyke buildings are in the early English style, the last for 700 and the first for 300 persons. That at Lichfield will seat 400,—pews all open. The architects of that at Wyke (St. Mary's) were Messrs. Mallison and Healey of Bradford and Halifax, and those of St. James's, at Manstone, were Messrs. Perkin and Backhouse of Leeds.—— The foundation-stone of St. John's Church, Little Holbeck, was laid on Saturday week. It is to be built in the early pointed style, from a design by Mr. Scott, and will consist of a nave, aisles, and chancel, with high-pitched roofs supported on lofty-clustered pillars, and carried out interiorly 'with more finished details than is usual for modern churches,' and at more than ordinary expense.——The inhabitants of Hull, according to the *Packet*, have at length 'got an excellent supply of good water' through their new water-works, which are said to be well constructed, but not sufficiently extensive. The wholesale system of dosing the people with oceanic salts, as heretofore, will thus be a benefit of which they will be likely to be forthwith unfortunately deprived. The question of either expending an additional 7,000*l.* on the new works, or repairing the old for occasional service, however, is at present under discussion.—— The new barracks to be erected at Sheffield, the contracts for which have been advertised for, will, it is said, be on a scale of some magnitude. ——The trustees of Sir John Wm. Ramsden have at length begun to lay out the 20,000*l.* left by the late Sir John Ramsden for the improvement of Huddersfield. The improvements have been commenced at the George Hotel, by the very appropriate enlargement of the door through which the tenants of the lord of the manor, with their pockets full of the rents, may with less difficulty than heretofore arrive at the place usually occupied by the stewards. This, says the *Bradford Observer*, is the beginning of the laying out of the 20,000*l.* left by Sir John Ramsden, Bart., several years ago, to improve his own town of Huddersfield. By those who know the pace at which the coach travels which is driven by the gentlemen who have the management of the fund, it will be fully appreciated.—— Several hundred men are engaged in the various works connected with the Sunderland Docks, which are proceeding 'with great energy and spirit.'——In the village of Wellow, Notts, a house, in the Gothic style, has been erected of brick with dressed stone windows, copings, and other decorations, for Mr. W. S. Ward. Immediately in the neighbourhood are in course of erection a chapel, and two class-rooms, in addition to the Ollerton National School, with stone bell-turret, &c., all from the designs of Mr. J. A. Blenkarn, architect.——A small church, with chancel and bell-turret, is now in progress at Leverstock-green, near St. Alban's, under the able direction of Messrs. R. and J. Brandon, the erection of which is principally due to the liberality of the Earl of Verulam. The church will afford accommodation for about four hundred worshippers, and the contract is taken at 1,600*l.* The walls are to be built of flints, and the windows, piers, and arches, base mouldings, strings, &c., of Caen stone.

## TO PREVENT FRACTURE OF GLASS IN SASHES BY VIBRATION.




Sir,—Above is the section of a sash-bar, such as is used for heavy plates of glass in modern shop-fronts. It is no unfrequent thing to find large and valuable plates of glass cracked and ultimately fractured, not by any accidental blow, but from the weighting of the fronts, the pressure of the sash, or the vibration of the streets. Any one of these causes may act independently, but frequently all combine to fracture the large plates of glass at present used. The settling of the fronts must be remedied in the construction of the beam thrown over the opening; but cracks, through the nipping of the sash-frame and the vibration, may be prevented by the means shewn in the accompanying section. Plough a groove in any sash-bar, as shewn at A, and fill it in with vulcanized indian-rubber. This may be purchased in sheets, and then cut up into strips of the required breadth, and let into the groove so as to receive the bearing-edge of the plate-glass all round. It will not need any argument to prove that the glass will be no worse for resting on this yielding pad, and that it will be so preserved from fracture. I have had it in trial for nearly twelve months in some shops in Manchester, where the glass is in two squares, 15 feet deep: it has answered admirably. Robert Rawlinson.

Liverpool, Nov. 5.

Wood Pavement.—The repaving of Lombard-street with wood was proposed on Tuesday before the Commissioners of Sewers, City. It was opposed by Sir Peter Laurie, but strongly supported by others; and it was eventually carried by a very large majority—23 to 6. The cost will be about 900*l.*; but the bankers residing in that street have undertaken to defray one-third of the expense of the new paving.

Stain for New Oak.—A correspondent, who objects to the use of lime-water as a stain for oak, on the ground that the colour produced, though good at first, becomes in two years of a foxy red, says,—For new work, especially church work, let no oil, no ash come near it, but wash it with *hot beer*, and rub it well; the grain will show admirably, and time will mellow it down to a tone which never could be acquired if it had been previously doctored.

## RAILWAY JOTTINGS.

We rejoice to observe that there at length appears to be even a commendable emulation amongst the railway directors of different lines to be amongst the first to institute a series of experiments for the establishment of the means of safety and convenience to passengers in railway transit. Besides those already recorded, we now find that the Eastern Counties Company have adopted a 'railway train alarum,' called 'Dutton's Railway Communicator,' in one of their daily trains, for what the advertisers of the apparatus declare to be the 'instantaneous and unerring communication between the guards and engine-driver, and, if desired, between the passengers and guards.' On the Brighton and Chichester branch line, too, experiments have been gone into, on a plan of Mr. Brett's, for the completion of the electro-magnetic circuit through the mere hooking of the safety chains between an alarum bell beside the driver and a battery in the last carriage of the train. A like communication, it is remarked, may also be established between the passengers and the driver, but that would never do; the guards must be the only connecting wires, or hooks, or rods, between these two ticklish extremes, and probably no better plan than the one at first suggested by ourselves, and since by others, for the conversion of one of the side foot-ways, or both, into a regular *beat* for the guards, has yet been proposed, unless it be the opening of a similar beat through the carriages themselves, which certainly is less *un*objectionable. Of course spring or alarum bells, beside the seats of the guards, and made to wind up and be capable of repeating an alarum for a number of times, like Messrs. Brett and Little's, with some sort of bell-pulls and handles in the carriages, might be added, for further promptitude or convenience; and even for the trifling or wanton annoyance of the guards, foolish passengers might be made liable to be fined,—to a small extent of course,—commensurate with the limits to which their mischief-making or alarum-exciting faculty would thus be effectually confined. A more complete system of surveillance and *guard*ianship will probably not be readily attained at less expense or inconvenience otherwise; and if there should, we would as readily advocate its adoption. As to the communication between guard and driver, that of course is a desideratum apart from that between passengers and guards. We confess it would warm our heart to hear the stirring sound of the bugle or the trumpet on the rail of new, as on the road of old; and surely one guard might at least be able to pass on the echo to another, till it rang in the driver's ears beyond even the wildest screech of 'hell in harness,' or the din and rattle of the rail. And what, then, could be simpler, or more prompt, or ready, or effectual, than two such systems as those just recommended acting in mutual concert, and infusing life and liberty into railway transit, in place of the present passive, helpless, hurrying onwards in the midst of accidents, 'through thick and thin,' to so frequently 'inevitable destruction?' Of the practical working of highly scientific apparatuses, such as electro-magnetic wires, cords and pulleys, rods, &c., linking along a whole train of carriages, &c. &c., we have great and reasonable doubts, and in the same category we fear, too, even though *per se* a simple and ingenious enough suggestion, we must class a proposal, recently revived, to provide the driver with a mirror facing him on the funnel, in order to reflect the guards' dumb signals. Notwithstanding the compatibility of the angles of incidence and of reflection, the gradients and the curves, with the driver's all but uninterrupted process of 'taking a sight,' there is one objection which a very small angle of reflection might have by incidence suggested, *videlicet*, that but too frequently the whole of the guard's dumb show might, at the critical moment, end in *smoke*, and the driver thus fail to obtain his 'sight,' even while he might be looking, without ere a mote in his eye, for the wave of the 'ensign' by day, or even for the beam of the bull's eye by night.——By the way, we were led to attribute the suggestion of the connection of the certainly most effectual screech of the whistle with the completion of the galvanic circuit (either by wires, we presume, or by Messrs. Brett and Little's more practicable method) to Mr. Crampton, at the meeting of mechanical engi-

neers at Birmingham, whereas Mr. Edward E. Allen informs us that the suggestion was his, although Mr. Crampton appears to have also taken part in the discussion.——The cognate subject of the break is still exercising the inventive and appropriative faculties of many who are anxious, some to be of use to others, others to themselves. Amongst the more recent inventions, one has been patented by a Mr. Tibbet, which is to act as a drag on the wheel, while the break block is pressed with force on the rail. It is to be suspended between the wheels from a strong bearing spring, which keeps it away from the wheel and the rail when not required. The command of it is in the hands of the guard, who works it by means of levers acting on a flanged wheel, or barrel, placed in the centre of the axle, which has a spiral thread cut on its surface, into which cogs or teeth, on the under sides of the levers, take, and prevent the spring from pulling up the break block, as long as it is necessary to keep it in action.——The plan and description of another sort of break, a self-acting one, have been submitted to our inspection by the inventor, Mr. Vincent Yardley. The re-action on the buffers when the driver checks the engine brings this break into action. When the momentum of the carriages, as each comes close up to the one preceding, presses on the buffers, these in their turn press on a rod which turns an eccentric lever, and thus, by the flattening and elongation of a spring (kept back apparently by the counterspring of the buffer when not in action), an elm block with an iron worm surrounding the axle is pushed towards a screw on the end of the same axle, and as the screw enters the worm in order to lock the axle, the block, by means of a pair of iron rods, also brings a pair of strong carriage springs into action on a pair of friction blocks, which grip the axle and retard its movement till the climax of the lock is reached,—by the sliding of the block along a rod as the screw enters,—when the worm, having arrived at its limit on the screw, arrests the motion of the axle and the wheel, unless, indeed, the break itself be broken. In such an invention as this, doubtless, a *simplification* of the mechanism might be easily suggested. The carriage springs, the friction blocks, and the rods connecting the springs with the worm block, for instance, *might* be all dispensed with and the simple break alone remain, if mere simplification of mechanism were to be looked to; but it seems evident that a simplification here would be precisely what would lead right headlong into danger, by leaving nothing but the abrupt,—though certainly simple and effectual,—break of the worm and screw to arrest the carriages,—a simplification probably almost equal to a collision itself—if the break or the axle withstood the simplification, which, of course, they could be made to do without any increase or complexity of mechanism. Indiscriminately to recommend simplification therefore, in such inventions, is much more likely, we should think, to engender danger and evil than would even a like recommendation designedly to complicate the mechanism. A reversal of a few yards, Mr. Yardley adds, will be sufficient to unlock this break.——Mr. Charles Fox, engineer, and Mr. John Coop Haddan, civil-engineer, have recently patented improvements in chairs and trenails or fastenings, in machinery for preparing trenails and sleepers, and in switches. The chairs have a stud for a recess in the sleeper, and the holes for the trenails are rounded to prevent injury to the trenail: the chairs are to be moulded thus, and the trenails to be made of a form suitable to the chairs, by new self-acting machines. The sleeper-machinery is for recessing them for the chairs. The switches at sidings are to move vertically. The specifications of most of these inventions, however, are too long even for abstract here.——British engineers and mechanics have not only been for a series of years enticed into France by high remuneration, but have at length taught the French to vie with ourselves in all that regards the science and art of engineering, although their railway system has progressed so rapidly that in spite of high protecting duties they cannot yet do without us altogether,—a circumstance, it seems, which gives them no little annoyance. In 1820 there were only 15 steam-engines in all France; while, at the present time, there are 4,500, representing the power of 53,480 horses, and having 7,980 boilers.——The average contribution by the English railways to the local and parish rates every year is said to amount to 5 per cent. of their earnings, estimated at nearly 8,000,000*l.* a year; in round numbers, 400,000*l.* towards the 6,000,000*l.* annually raised for the poor,—that is, a fifteenth of the total rates, and fifty times what the same quantity of land contributed before its conversion to railways.——Three cases of compensation have just been decided at Antrim, where three brothers had been offered 50*l.* each for their interest in the one-eighth of two acres, three roods, eight perches of farm ground, which they refused, and demanded three separate juries, who accordingly awarded to each of them 36*l.* 15*s*, with 9*l.* 7*s.* 6*d.* for 'consequential' expenses,—thus causing them to defray one-half the expense of the counsel on their three-juried trial, besides losing 20*l.* each.——The bridge or viaduct over the Boyne, at Drogheda, on the Dublin and Belfast Junction, will be composed of iron lattice-work, and supported on four columns; and will, it is said, combine strength with apparent lightness. The height over the river is 95 feet, and the span between the two inner columns 230 feet, so as to permit the free passage of ships, &c. The railway will be continued over Gothic arches up to the main land on either side. The whole expense including a shipping wharf, and an inclined plane on arches, is estimated at 50,000*l.*

## SUSPENSION OF WORKS.

The sharp notice to quit, which so many thousands of those lately engaged in laying the foundations of the railway wealth have already got, has not yet exhausted its dispiriting *fiat*, for the process of discharging workmen and labourers by hundreds and thousands is still going on. On Saturday week upwards of 500 men were paid off by the Great Northern Company. The Oxford and Rugby works are now entirely suspended, and a quantity of bricks made for the works were to be sold on Friday at Upper Heyford, under a 'distress' for duty. Near Aynhoe some of the land staked out for the line is about to be ploughed up and sowed with vetches! Messrs. Sherwood, the contractors for the line, had to face their creditors the other day, and assure them that the money to become due to them in three and six months would be sufficient to pay their demands. A Birmingham correspondent of the *Morning Herald* writes:—"I am sorry to say the mechanics and labourers heretofore well employed by railway companies are being daily discharged. On Saturday last a considerable number of hands employed in a large carriage manufactory were discharged, and many more will follow on Saturday next. Add to these thousands of navvies in this town and neighbourhood, and we shall have an enormous number of unemployed persons immediately thrown upon the rates and the roads."——The men employed on the South Western line, known as 'metal men,' and others, having been ordered to work only from nine in the morning till five in the afternoon, for wages of 1*s.* 6*d.* per day each, refused to comply, and struck work almost to a man. They do not seem to know yet that half a loaf is better than none. But the masons on the new bridge and viaduct across the Tweed, at Berwick, seem to have yet to learn that a whole loaf is better than half a one, for they have thought proper to strike in consequence of an attempt to reduce their weekly wages from 27*s.* to 24*s.* How many hundreds of masons are there already who will thankfully strike into that provision for their families whence their free but unaccepting brethren have just struck out? The Irish, too, are now, as ever, at cross purposes with every one else, themselves included, as one of themselves, if he were only some one else, would readily add. The labourers on the Killarney Junction, in a numerous body, have also struck work, though certainly in the somewhat sympathizable resistance to a proposed reduction of wages from 8*s.* to 6*s.* a week, as a full equivalent for their labour. They have also, however, endeavoured to compel the masons' labourers to quit their work, and thus throw the masons idle. This they were fortunately prevented from doing, and two of the ringleaders were lodged in Bridewell. The poor masons and their labourers, we fear, would require good ball-proof sheds to work in; and as for the contractors, we would rather be in a good coat of ancient armour than within their devoted epidermis.

## WESTMINSTER COURT OF SEWERS.

A special court was held on Friday, Nov. 12; Capt. Geo. Bague, R.N., in the chair.

The clerk (Mr. Hertslet) reported, that in obedience to the order of the last court that he should remind the Lord Chancellor, through his secretary, of the period when this commission would expire, he had waited upon Mr. Wing yesterday, and remarked that this court had received no answer to the petition they some time since presented for a new commission. Mr. Wing said he could state that it was the intention of the Lord Chancellor not to renew the commission until the report of the Metropolitan Sanatory Commission had been received. Mr. Hertslet reminded the secretary that, unless it was renewed, it would run out on the 5th of December. Mr. Wing replied, that *it must run out*, unless the report of the Sanatory Commissioners should be made in the meantime.

This answer led to a short conversation, which was terminated by an order to the clerk to report the matter officially to the next ordinary court.

*The Action against Mrs. Webb.*—Mr. Allason brought under the notice of the court the subject of the order given to Mr. Smith, the solicitor, to defend the action entered by Mr. Farlar in the Marshalsea Court, for an amount claimed by him on the part of a Mr. Gigner, for the accommodation of a sewer constructed by him at Chelsea. (This matter was reported fully in The Builder of last week.) Mr. Allason now wished to know how far they could proceed, not being the *bonâ fide* defendants in the case, and whether they could legally apply the money of the rate-payers to defend the law-suit involved in these proceedings? By the orders thus given to their solicitor, he believed they were establishing a bad precedent, and it might lead to resistance to their assessments.

The chairman said, that during his walks within the last few days he accidentally fell in with Mr. Whitehead, and casually mentioned to him Mr. Farlar's claim of ownership of the sewer in question, and that gentleman assured him that he had himself built the whole of the sewer from the centre part of the church to the river-side, therefore it would appear very doubtful whether any portion of it really belonged to Mr. Farlar. By some means or other Mr. Farlar had turned one of the sewers from Cromwell-lane to drain it, and, houses having been subsequently erected near to it, he had claimed the sewer as his own.

Mr. Gunter thought that parties acting on advice received from this court should be borne harmless; and he was quite ready to subscribe his share of the expense incurred in defending the action.

Mr. Le Breton protested against the question being re-opened, and thought that before any alteration could be made notice must be given, as it would be unfair to the ten gentlemen who had voted for the resolution that it should be altered in their absence.

The solicitor was of opinion that the commissioners could defend any thing that in sound reason they might deem necessary. However, he thought it was a dangerous precedent for this court to take up the cases of parties who were quite able to defend themselves. As he had not the honour of practising in the Marshalsea Court, he should be compelled to hand over the case to another solicitor.

The matter was terminated by an order to the solicitor to report on the whole subject at the next court.

The next order of the day was a notice given by Mr. T. L. Donaldson at the last court:—"To consider the proceedings to be taken in regard to compelling parties to drain into sewers already built, and to pay contributions to the cost of the original construction; and to rescind, if necessary, the resolution of the 27th of July last with respect thereto."

Mr. Donaldson said, as considerable discussion arose at the last court on this subject, it was his opinion that a special court should be called to consider the question, without at all committing himself to any desire to rescind the resolution. The latter sentence of the resolution he had inserted at the suggestion of the clerk, so that this court might be quite free, if they saw any reason to modify their former resolution. He was of opinion they should form their orders in such manner, profiting by the experience derived from the resistance of Mr. Farlar, to render them as efficient as possible, and moved, in pursuance of these views, the following resolutions:—

"That the surveyor do report on the plans and

statements delivered, and report the same to the next court."

"That the owners of sewers built within thirty-five years prior to the 2nd of July, 1847, who shall make application under the new Act for parties to be compelled to lay drains into such sewers, be required to present a plan of the entire length of the sewer or sewers so built by them, shewing the several houses and premises fronting thereon; with a statement of the sums contributed by this commission, or other bodies or parties, in aid thereof, and the sums already paid for each house from which a drain has been laid; and also shewing the length of frontage, and the amount demanded for laying a drain from each of those houses from which they desire that a drain should now be laid into the sewers so built by them."

"That when the court shall have considered the report of the surveyor, and have apportioned the sums to be paid for draining into the sewers, the following form shall be forthwith issued by the court:—'Sir,—By virtue of the provisions of an Act of Parliament made and passed in the session of Parliment held in the 10th and 11th years of the reign of her present Majesty Queen Victoria, intituled an Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster and part of Middlesex, notice is hereby given to you, by the Commissioners of Sewers for the City and Liberty of Westminster, &c., that you have not drained your house and premises, situate No. — in ———————— by any covered drain leading from such house and premises into the sewer which is in front of such house; and take notice that you are compellable by law not only to construct a covered drain to lead into such sewer, but also to pay such sum of money as the said Commissioners of Sewers shall deem just towards the original construction of such sewer. And further take notice, that you are required to drain your said house and premises in manner aforesaid, and to make contribution towards the building of the said sewer, and that you are also required to attend at the office of the commissioners, situate No. 1, Greek-street, Soho-square, any day (Sunday excepted), when particular information will be given to you as to the mode of obtaining leave of the said commissioners for making such covered drain, and as to the regulations to be observed in constructing the same. Such work to be done within twenty-one days from the date hereof.'"

The resolutions were adopted.

## Correspondence.

### REMOVAL OF THE QUADRANT ARCADE.

SIR,—The announcement in your last number relative to the proposal by the Commissioners of Woods to remove the Quadrant Arcade, cannot be allowed to pass unnoticed. The object they can have in doing so it is difficult to conceive; for as an architectural feature it is equally pleasing and unique, and forms a most graceful termination to the street; besides which, it is one of the few places in London where there is a footway sheltered from the weather. If the objection to it is the description of loungers for whom it forms an attraction, that is easily prevented, as it has lately been by the police, or by the erection of such a number of additional arcades in the newly-forming streets, that one should not be more attractive than another; or if the deficiency of light to the shops is unsatisfactory to the inhabitants, the roof may easily be made almost entirely of glass. While Paris rejoices in its Palais Royale and galleries, Venice in its Piazza, and Berne and other cities in their arcades, the convenience and beauty of which are so strikingly felt by all who visit them, why should a feature possessing originality as well as beauty and propriety, be swept away to gratify some foolish prejudice?

The want of new buildings to ornament our metropolis, and render it worthy of its place among the capitals of Europe, is to be lamented; but the destruction or injury of an existing monument is to be doubly reprobated. And we have reason to fear that the same taste which allows the pictures of the National Gallery to be scrubbed, and permits the Wellington Statue to remain, while it removes the Quadrant, and still more deforms the ugly palace of Pimlico by an incongruous addition, will find further scope for ingenious spoliation among existing works of art, as well as let slip opportunities for the embellishment of this city in addition to the many that have been already lost. L.

*** It is only right to say, that this step has been *forced* on the commissioners by the inhabitants of the houses.

### GIRDER BRIDGES.

SIR,—As the girder bridge is often a subject of remark in THE BUILDER and other journals, allow me, through your pages, to suggest the substitution of the principle of the balance in lieu of that of the *unbalanced* beam (the present girder). I am not singular in the opinion, that by adopting it in this branch of mechanics it may lead to great results; but whether it did or not, while circumstances prove—and every one knows—that there is something wrong in the present system—the safety of the public demands that every means should be tried for finding out that error. The principle of the balance is certainly the greatest mechanical power known, and that of the girder the weakest. Now, if the former can be substituted for the latter, it would be a great point gained; or at all events, my suggestion may lead to some improvement in bridges. I find the difference of power in the two principles to be, namely, in a girder 18 feet long, 1 foot deep, weighing 10 cwt., and only equal to bear a load of 10 cwt.,—that on the principle of the balance, of the same length and weight, it will sustain 7 tons 10 cwt., or a fifteen times greater load than the girder. The truss of these bridges, also, might be on the principle of the balance, and that would increase their power to the same extent as the girder; then, in combination, they would enable the bridge, upon the most economical and powerful principle known, to sustain to the outside power of the material, be what it may, every kind of transit-load in safety.

I am, Sir, &c.

A LOVER OF MECHANICS.

Nov. 16th, 1847.

## Miscellanea.

NOVEL APPLICATION OF ELECTRICITY.—The *Pittsburgh Journal* has examined an invention made by Mr. Lilly of that city, in connection with Dr. Colton, which seems to challenge attention, not only for the ingenuity which it displays, but the useful results which it promises. The machine is a small locomotive, and is placed upon a circular railroad, around which it is driven by electricity. The power is applied, not to the locomotive, but to the track, and herein consists the novelty of the invention or discovery. Two currents of electricity, negative and positive, are applied to the rails, and from thence communicate with the engine. The latter is provided with two magnets, which, by a process of alternate attraction and repulsion, drive the car over the track. A piece of lead was placed on the locomotive, making in all a weight of about ten pounds, and on the application of the battery, the machine moved with astonishing rapidity up a plane inclined about five degrees. Heretofore the propelling power has been used on the car itself—in this instance, however, the power is placed in the rails, and an engineer might remain in one town, and with his battery send a locomotive and train to any distance required.—*New York Literary World.*

EFFECT OF BRITISH SHEET GLASS IN VINERIES.—Having used British sheet glass for glazing two vineries, says the Bishop of Rochester's gardener, Mr. J. C. Dwerrihouse, I beg to add my testimony to its scorching effect upon plants, and likewise to recommend a simple plan of preventing it. As burning in general may be traced to blisters, it is common to touch them with white paint. Now, in British sheet glass there are numerous spots and wavy lines, similar to those produced by a common burning lens, even though invisible when examined from the inside of the houses, but, I find, easily detected and remedied by taking off the lights, and leaning them, one at a time, against any smoothly-painted surface (having a southern aspect) during bright sunshine. A little thin white paint and a camel's hair brush will dim them sufficiently to prevent, I think, further mischief. Where it is impracticable to remove the lights, a thin light screen or board might be used, and moved along by a person inside; whilst another, with a paint-brush, on the roof, could perform the necessary operation. No person will be much pleased with the appearance of the glass afterwards; but it is much more agreeable to me than that of burnt leaves.

LET IN THE LIGHT.—In an article on country cottages, *Bell's Messenger* observes truly, that "in considering the size of the windows of even our own rooms, the beneficial influence of light is far too rarely regarded. That such good effect, however, is constantly and materially exerted, is undoubted. It is an error to suppose that the action of light even upon the general health of man is immaterial; the natives of the deep dark forests of North America attest this by their unhealthy hue, as much as the blanched plants of the gardener. That the very nature of the gases evolved by plants is altered by the absence of light is known to almost every one; that small animals are often perceptibly affected by its absence is equally well ascertained. The experiments of Dr. Edwards on this subject are remarkable. He has shewn, for instance, that if tadpoles are nourished with proper food, and exposed to the constantly renewed contact of water (so that their beneficial respiration may be maintained) but are entirely deprived of light, their growth continues, but their metamorphosis into the condition of air-breathing animals is arrested, and they remain in the form of large tadpoles. Dr. Edwards has also noted that persons who live in caves and cellars, or in very dark and narrow streets, are apt to produce deformed children; and that men who work in mines are liable to disease and deformity beyond what the simple closeness of the air would be likely to produce. Do the constructors of the labourers' cottages in general sufficiently regard these things? Do they remember how great an influence the absence of light and of ventilation produces upon the health of their tenants? We dwell the more readily upon this too little heeded object in the construction of labourers' cottages, since it is naturally one of the most neglected and least understood advantages in a dwelling-house. It is too probable that the owner in general pays but little regard to these things, since he neglects even others of a still more important kind; and this arises most commonly, not from any unwillingness to serve his poor tenants, but from a want of consideration. Let the owners of such ill-constructed dwellings remember also, that when their inmates thus suffer in their health, they also from that cause suffer very considerable inroads upon their only capital, their labour. And again, other evils follow: their crowded home is rendered comfortless and distasteful, and the laws of decency and morality are alike outraged.

THE DIOCESAN CHURCH BUILDING SOCIETIES at Ripon and at Bath have recently held their usual meetings, and have reported various grants, of which the following are the principal. The Bath Association have granted 680*l.* during the year towards the enlargement or building of various churches, including St. James's at Bath, Rowbarton at Taunton, Wellington, Penselwood, Hinton St. George, Kingsbury Episcopi, and Stanton Drew, providing in all for the accommodation of 1,584 persons; sittings mostly altogether free. The total amount of accommodation, in the providing of which the association has been instrumental, now numbers 21,432 additional sittings, of which 16,435 are unappropriated, and the total amount of grants is 9,252*l.* The association at Ripon have granted 4,138*l.* during the same period towards the erection of seven new churches, the enlargement of three, and the erection of eight parsonage houses, besides the endowment of two churches. They have in all provided church accommodation for 3,107 persons; sittings mostly altogether free. During the last eight years this society has expended 42,527*l.* odd, out of 200,000*l.* expended within the diocese, on the building of 54 new churches, the enlargement of 20, and the rebuilding of 12. Thus 32,668 additional sittings have been obtained, of which 28,404 are free, or let at a trifle; 41 churches have been endowed, and 54 parsonage-houses erected or purchased.

LINCOLN MECHANICS' INSTITUTION.—Sir C. Anderson, Bart., of Lea, delivered a lecture on the architecture of the early ages, at the Mechanics' Institute in Lincoln, on Tuesday evening in last week: his object being (as the baronet said) to kindle amongst the mechanics and labouring classes a taste for the beautiful in art, convinced as he was that those classes could appreciate the beautiful, and that the cultivation of good taste would lead to beneficial results.

MANUFACTURE OF IRON IN GREAT BRITAIN.—In a report on this subject made to the British Association, at their last meeting, Mr. Porter stated, that in 1788 the whole quantity of pig-iron made in England and Wales, of amounted to no more than 61,300 tons; of which 48,200 were made with coke of pit-coal, and 13,100 from charcoal: in the same year the amount raised in Scotland was 7,000 tons. In 1796 the quantity, owing to Watt's improvement of the steam-engine, was nearly double, being 125,079 tons. Ten years later, viz. in 1806, it was found to have more than doubled, being—

| | |
|---|---|
| England and Wales ..... | 234,966 tons. |
| Scotland ..... | 23,240 ,, |
| Total ..... | 258,206 ,, |

In 1823, this quantity had risen to 482,066 tons, and in 1830 it was further increased to 678,417 tons. Since then a great saving has been effected in the fuel required, and in Scotland the production of iron has risen from 37,500 tons in 1830 to nearly 500,000 tons in the last twelve months. In 1836 every iron-work in Great Britain was visited by M. F. Le Play, chief engineer to the Paris Board of Works, and he estimated the amount produced that year at 1,000,000 of tons. The quantity of iron made in 1840 was 1,343,400 tons; but, in consequence of the commercial depression, this fell to 1,046,428 tons in 1842, being a depreciation of 22 per cent. It is the opinion of the iron-masters, that, since 1840, nearly all the increased production of iron in the kingdom has been drawn from Scotland. The make of pig-iron there, for the first six months of 1845, was 260,000 tons. From the cost of production, combined, perhaps, with other causes, the amount of production in England for 1845 was only 917,500 tons, being 238,000 tons less than the production of 1840. Up to the beginning of the present century, nearly two-fifths of all the iron used in this kingdom was imported from the north of Europe; but in 1806 this proportion had fallen to one-eighth, and foreign iron is now only imported for the manufacture of steel. Our exports, on the contrary, have so increased as to become an object of national importance. In 1827 we exported 92,313 tons, at the declared value of 1,215,561*l*. In 1845 we exported 351,278 tons, at the declared value of 3,501,895*l*. There is room for a very extended increase in the use of iron in England.

ARRANGEMENTS FOR RAPID INTELLIGENCE.—The electro-telegraphic arrangements for the concentration of all the lines at the central office, in Lothbury, says the London correspondent of the *Liverpool Albion*, are rapidly advancing towards completion. The coming importance of this new and wondrous agency is already foreshadowed in the announcement of a daily paper, to be exclusively devoted to the promulgation, in print, of the news received by lightning. The journal is to be called the *London Telegraph;* its hour of publication, twelve at noon; its price, threepence; its size, a folio, about half the dimensions of *The Albion;* and, that rapidity may be a characteristic of it in all respects, it is to be printed by one of Little's patent double-action machines, at double the speed hitherto obtained. It is to be ready simultaneously with the opening of the central station, but is unconnected with the company. It is understood to be a project of Messrs. Brett and Little, the inventors of the electric telegraph called after them: gentlemen who have made large and valuable contributions to science in various departments; and who have lately instituted a series of experiments on the Brighton and Chichester Railway, which bid fair to achieve, by extremely simple and inexpensive means, the long-sought desideratum for enabling passengers in trains to communicate with guards, and the latter with engine-drivers.

IMPERIAL AND CONTINENTAL GAS COMPANY.—A general meeting of proprietors of shares in this undertaking was lately held, at the offices of the company, White Hart-court, Lombard-street. The report of the board of directors congratulated the shareholders upon the continued prosperity of the company, and recommended a dividend of five per cent. on the paid-up capital of the company, for the half-year ending 30th June. The half-yearly report on the second capital was subsequently read, and a similar dividend on that, too, declared.

PROJECTED WORKS.—Tenders have been called for by advertisement for the erection of officers' barracks, with mess establishments, at Sheffield; the construction of a new floating dock at Leith, with an extension of breakwaters, and the erection of a low-water pier, and other works; also, for the building of a toll-house and offices near Leeds.

OXFORD ARCHITECTURAL SOCIETY.—At the first meeting this term, held on Wednesday, Nov. 3rd, after the report of the committee and the list of presents had been read, Mr. Jones, in behalf of the Dorchester subcommittee, announced the near completion of the restoration of the sacravium of the abbey church; the painted glass, however, was not yet fixed in the window. Mr. E. H. Lechmore, of Christ Church, one of the committee, read the first part of a paper, illustrated by plans and drawings, "On the Architectural Antiquities of the Cathedral of Basle." Mr. Lechmere, first briefly enumerating the leading events in the early history of the cathedral, which was founded by the Emperor Henry II., in the year 1010, proceeded to trace the remains of the earliest and most curious portions of the building. The cathedral, which is dedicated to the Virgin, and is as usual built in the form of a Latin cross, consists of a nave, decidedly the earliest portion of the edifice, two aisles on each side, two transepts or cross aisles, and two towers at the west end. The prevailing style it characterises in the earlier features of the cathedral is the early Romanesque or Byzantine, while in the later additions the style which prevailed towards the middle of the fifteenth century, called the third pointed, is chiefly perceptible. Basle Cathedral possesses an advantage which distinguishes it from most other continental churches, namely, that of being complete; and though chiefly built in a transitional period, its leading features harmonise with each other, and form a whole of surpassing beauty. Mr. Lechmere then proceeded to a minute description of the west front, the towers, and their details, the north porch, and other portions of the buildings, and concluded with some general remarks relative to the architectural character of the edifice. Mr. Portal, of Christ Church, noticed two Romanesque churches in Sicily, one at Moriani, near Palermo, and the other attached to the palace of the Viceroy. It appears that these were richly ornamented with mosaic work, composed of agates and other rich materials.

## TENDERS.

TENDERS, opened in the presence of the parties, for building a house at Knightsbridge for Mr. Phillips; Mr. Beeston, architect.

| | |
|---|---|
| Todd ..... | £2,150 |
| S. Bird ..... | 2,110 |
| Burgess ..... | 2,105 |
| King ..... | 2,090 |
| Dickson (accepted) ..... | 2,027 |

For the new Wesleyan Chapel, opened on the 15th inst: Mr. J. Simpson, of Leeds, Architect.

| | |
|---|---|
| Lonsdale, Nottingham .... | £1,611 |
| Pocklington, Boston ..... | 1,590 |
| Jackson, Newark ..... | 1,576 |
| Pilkington, Bowen ..... | 1,575 |
| Baker, Sleaford (accepted).. | 1,500 |

## TO CORRESPONDENTS.

"*J. and T.*"—We shall be happy to make use of the sketch sent, and to see any others with which we may be favoured.

"*J. T.*" (Stamford-street.)—We are obliged, but have not time.

"*An Artizan,*" (Cumberland).—The cause of smoky chimneys is so various that we cannot venture to suggest a cure for one we have not seen.

"*P. D.*"—We will call.

*Received*—"Zero," "Reader from the beginning," "M. P." "Scribe," "Wood's Edition of the Songs of Scotland," edited by G. F. Graham. Nos. VIII. and IX. (Novello, Dean-street.) &c.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent Garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

CHARGE FOR ADVERTISEMENTS IN "THE BUILDER."

| | £. | s. | d. |
|---|---|---|---|
| For Sixty Words or less..... | 0 | 5 | 0 |
| Every additional Thirty Words..... | 0 | 1 | 0 |
| One Column ..... | 2 | 2 | 0 |
| One entire Page..... | 6 | 6 | 0 |

For a series of advertisements above 5s. a reduction will be made.


## ADVERTISEMENTS.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

TO BUILDERS, OWNERS OF HOUSES AND PROPERTY, AND OTHERS.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that, by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of her present Majesty, chap. 70 (local and personal), intituled, "An Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," it is enacted (sec. 4), that after the passing of that Act (3 July, 1847), it shall not be lawful to build any house (and the word "house" is thereby declared to comprise every species of building) within the limits of any level division or district formed, or thereafter formed, within the limits of the said Commission, unless a sewer to carry off the drainage thereof be first constructed to the satisfaction of the Commissioners of Sewers, of such material, of such size, at such level, and with such fall, as they shall direct, which sewer shall lead to and communicate with such other sewer as the Commissioners shall direct; provided that, if there shall be already a sewer sufficiently near, in the judgment of the Commissioners, to any such premises, then a drain shall be made to lead from such house into such existing sewer: and it is thereby declared that the expense of building such sewer or drain shall in all cases be borne by the owner of such house, unless the Commissioners shall think that a portion of the expense of the sewer (but in no case a drain) should be borne by the level in which such sewer shall be situate: And further it is by the said Act enacted, that if any person shall proceed to build any house in contravention of the said provisions, the Commissioners are authorized to punish him, and any person employed by him, by fine, amercement, or otherwise, as in the said Act is directed; but it is thereby provided that no person shall be required to expend a greater sum for such purpose than after the rate of 25s. per foot according to the extent of his frontage, and that any house wholly unconnected with any public sewer, and at a distance of not less than 200 feet from any public road or other house, shall not be liable to make such sewer or drain, unless such sewer or drain shall be required by the presentment of a jury: And further take notice, that the said Commissioners of Sewers hereby strictly require all persons to comply with the provisions of the said Act, and with this view persons intending are requested to attend at the Office of the Commissioners, No. 1, Greek-street, Soho, between the hours of nine in the morning and four in the afternoon, where a map and plan of the sewers under the jurisdiction of the Commissioners may be seen, and the form of sewers and drains required, ascertained, and a form of the written request required may be obtained, and all further information and assistance given: And further take notice, that parties are requested forty-eight hours at least before they shall so attend at the said office to send, by post or otherwise, to the Surveyor of the Commissioners at the said office, a description of the house or erection intended to be built, with the mode in which it is proposed to join any sewer, or provide for the drainage of such premises.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

BUILDERS' BENEVOLENT INSTITUTION, Freemasons' Tavern, Great Queen-street, Lincoln's-inn Fields, for the Benefit of Decayed Masters; and also to afford Relief in case of Accident to their Workmen.

PRESIDENT.
Hugh Biers, Esq., Carlton Villas, Edgware-road.

VICE-PRESIDENTS.
S. M. Peto, Esq., M.P., Great George-street, Westminster.
Thos. Grissell, Esq., F.S.A., Lambeth.
Stephen Bird, Esq., Kensington.
William Ham Peirce, Esq., Clapham-common.
John Vale, Esq., Devonshire-place, Edgware-road.

TRUSTEES.
William Cubitt, Esq., M.P. | Stephen Bird, Esq.
Hugh Biers, Esq. | George Spencer Smith, Esq.

TREASURER.—Mr. George Bird, 38, Edgware road.

BANKERS.—Sir Samuel Scott, Bart., and Co., 1, Cavendish-square.

SECRETARY.—Mr. William Grubb.

HON. SOLICITORS, Jaques, Edwards, Jaques, and Layton, 8, Ely place, Holborn.

The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations; and the additional Names, with the liberal Donations and Subscriptions appended, are highly gratifying. They beg to intimate they have appointed Mr. Edward Herbert, 43, Crawford-street, Marylebone, and Charles Jackson, 3, Paradise-terrace, Holloway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, and the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of the Institution will shortly be printed.

Offices, Poland House, Broad street, Golden square, where all communications are requested to be sent.—Attendance, Mondays and Thursdays, from 10 to 4.

SOCIETY for the ENCOURAGEMENT of ARTS and MANUFACTURES, &c.

H. R. H. PRINCE ALBERT, F.R.S., D.C.L., President.

The Ninety-Fourth Session will commence on WEDNESDAY EVENING, the 17th instant, when the Royal Charter will be laid on the table, the Address of the Council will be presented, and communications relating to Arts and Manufactures will be read.

The LIST of PREMIUMS, offered for this Session, for subjects in FINE ARTS, MANUFACTURES, MECHANICS, CHEMISTRY, and AGRICULTURE, has been issued, and may be had at the Society's House (if by post, inclosing a stamp).

The ANNUAL EXHIBITION of Select Specimens in the Decorative Arts and Manufactures, including Works in Glass, China, Earthenware, Mosaics, Marbles, Carved Wood, Ornamental Iron and Brass Work, &c. &c., will be opened in the Society's Large Hall in the beginning of March; and MANUFACTURERS, ARTISTS, and DESIGNERS, are requested to send in their Works on the 5th of February.

The FIRST VOLUME of a New Series of TRANSACTIONS of the SOCIETY, with numerous Engravings and Coloured Plates, is nearly ready for delivery to Members.

The EXHIBITION of the WORKS of WM MULREADY, Esq., R.A., for the Promotion of a NATIONAL GALLERY of BRITISH ART, will take place in June.

All Letters and Communications to be addressed (pre-paid) to the Secretary of the Society of Arts, at the Society's House, John-street, Adelphi.

BRITISH MUTUAL LIFE OFFICE.—The Public are invited to examine for themselves the advantages gained for assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

LONDON and PROVINCIAL JOINT-STOCK LIFE INSURANCE COMPANY.—The Directors invite the Public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and striking advantages offered by this Office.

Every kind of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE FOURTHS of PROFITS divided. For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No. 29, Nicholas-lane, Lombard-street

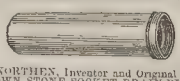
MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN-PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronised by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth.—A stock of elbows, tee-traps, and various shapes always on hand.

UNION BROWN STONE POTTERY, CHEMICAL APPARATUS, and DRAIN-PIPE MANUFACTORY, 14, Vauxhall-walk, Lambeth, at Albion Wharf, Holland-street, Blackfriars; Kingsland Basin, Kingsland-road; and Lime Kilns, Lanehouse. Patronised by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster.



WILLIAM NORTHEN, Inventor and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and Others to the following list of prices:—

Straight Barrel Pipes, with Socket Joints, in 2-ft. Lengths.

| 6-inch. | 9-inch. | 12-inch bore. |
|---|---|---|
| 1s. 1d. | 2s. 4d. | 3s. 8d. each. |

Bends and Junctions equally low.

The following unsolicited Testimonial is respectfully submitted

Sewers' Office, 1, Greek-street, Soho, July 20, 1847.

Mr. ——

DEAR SIR,—Should you at any time be in want of Stone-ware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly,

JOHN PHILLIPS, Surveyor.

CHAS. WM. WATERLOW,



MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames always on sale. Glazed goods securely packed for the country. Steam struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.





TO THE BUILDING WORLD.

H. BANKS,

Manufacturer of Shop-Fronts, Sashes, and Frames, and Joiner to the Trade, 78, Bethnal-Green Road, London. Parties engaged in building, will find the charges at this establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.

N.B. Glazed Goods securely packed for the Country.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably.—Large squares at from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and plate work on the most moderate terms.—CHARLES LONG, No. —, King-street, Baker-street, Portman-square.—Cash only

PLATE GLASS,—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate-Glass Company. Liberal discounts allowed on glazing qualities. London Warehouse, 99, Hatton-garden.—Joseph H. CHRISTIE, Agent.

N.B. ROUGH PLATE-GLASS supplied one-fourth, three-eighths, one-half, and three-fourths of an inch thick.

SOHO PLATE-GLASS WAREHOUSE, 19, SOHO-SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirac and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

PHŒNIX PLATE-GLASS WAREHOUSE, 24, St. Mary Axe, City.—E. MOSS, Proprietor.

Builders, Upholsterers, and Consumers of Plate Glass, will find the most extensive assortment in London for Interiors, Shop Fronts, Looking Glasses, Pictures, and other purposes. Colour, Quality, and Size in unrivalled by any other house in the Kingdom. ROUGH PLATE GLASS for Skylights, Roofing, Flooring, and Paving. All Plate Glass for Shop Fronts delivered within the walls of London free of all charge, and estimates given, free of expense, to any part of the country. No connexion with any other house.

PLATE GLASS! PLATE GLASS!! PLATE GLASS!!! East London Plate and Sheet Glass Company, Leman street, Goodman's-fields.—We beg to call the attention of the Trade to our Plate Glass; the Strength, Colour, and Quality of which remains unrivalled by any other Company. It is admitted by the trade that our glazing quality is superior to that used for silvering by most other houses. Rough Plate for Skylights and Flooring purposes, &c. All orders to be addressed, E. MOSS and Co., Leman-street, Goodman's-fields.

N.B. The business of this establishment is in no way connected with any other house in London of the same name.

WINDOW-GLASS, LEAD, VARNISH, COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopsgate-street Without. Lowest prices charged. Please inquire them.

Builders, Painters, Glaziers, and others, supplied with every article in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop fronts, Show cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

Ground and Dry Colours of the best quality; Brushes, Drugs and every article used in the Trade Warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water closets, Baths, Brass work, and all materials used by Plumbers.

WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 87, Bishopsgate-street Without, London; THOMAS MILLINGTON, Proprietor.

LONDON and MANCHESTER GLASS COMPANY.—PLATE GLASS.—Architects, Railway Contractors, Builders, and the Trade generally, are respectfully informed the London and Manchester Glass Company have now opened their London Warehouse, 12, Rathbone-place, Oxford-street, for the Sale of PLATE GLASS, suitable for Silvering, Glazing, and Ornamental purposes. The Colour and Polish are very superior to the best Continental. The Facilities of this Company is the same as the most eligible situated for the Trade, from which very LIBERAL DISCOUNTS will be allowed on each description of Glass.

ROUGH PLATE, suitable for Railway Stations, Warehouses, Skylights, and Floors, may be had of every thickness, at very MODERATE PRICES, upon application to

J. L. GRUNDY, Company's Agent.

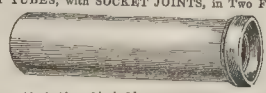
12, Rathbone-place, October 21, 1847.

FIRE BRICKS.—WARD and HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks and Tiles of every description.—Dutch Clinkers.

RAILWAY BREAKS.—To Railway Companies, Capitalists, or Inventors. A novel description of RAILWAY BREAK, the invention of a distinguished Foreigner residing abroad, which is perfected for Patent, is to be DISPOSED OF. It is self-acting, requires no manual management, and capable of being fixed and acting on any number of carriages at once. A Company or Individual desiring to secure this valuable Patent right, will apply to Mr JOHN GEDGE, Patent Agent, 4, Wellington-street South, Strand, London.

TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY HENRY DOULTON AND CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths.



3-inch bore, 5d. PER FOOT. 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 1½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose, I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

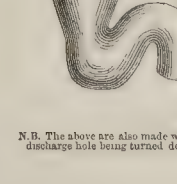
From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

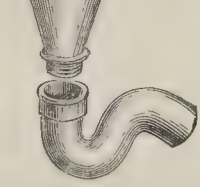
Sewers Office, Hatton garden, August 26th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.





N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

Delivered in London or its vicinity free of charge.

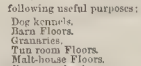
HEAL AND SON have just completed the erection of Machinery for the purifying of feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam: thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way.

Old Beds re-dressed by this process are perfectly freed from all impurities, and by expanding the feathers the bulk is greatly increased and consequently the Bed is rendered much softer. The following are the prices of New Feathers:—

| | | | |
|---|---|---|---|
| Mixed, per lb. | 1s. 0d. | Foreign Grey Goose | 1s. 8d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 2s. 0d. |
| Best Irish White Goose | 2s. 6d. | | |
| Best Dantzic Whitepoint | 3s. 0d. | | |

HEAL and SON'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

| | | |
|---|---|---|
| Foot Pavements. | Dog kennels. | Covering of Railroad and other Arches. |
| Kitchen Floors (particularly where it is essential to keep damp from rising). | Barn Floors. | The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Granaries. | |
| Carriage Drives. | Tun room Floors. | |
| Coach-houses and Stabling. | Malt-house Floors. | |
| | Pigeries, &c. &c. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

J. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

By Her Majesty's  Royal Letters Patent.

PITT'S PATENT SELF-ADJUSTING LOCK FURNITURE and SPINDLES.



The improvements in the above upon other methods of mounting and fixing Door Furniture, consist of the following: the Spindles are not fastened to the knobs, but drift loosely in them, and will therefore adjust themselves to doors of different thicknesses, without alteration, and the objectionable side screw in the neck of the knob is not required. The mountings by which the knobs are secured to the door form bearings for each knob, and consequently there is less friction on the follower; the action also is more pleasant than with ordinary mountings, and being fixtures, prevent the disfigurement of the door which frequently occurs when the common rosette is used.

The knobs are rendered both stronger and neater by the omission of the screw holes from the necks, and the liability of breakage in spindling, especially of china or glass, is avoided; they are likewise more easily fixed, and are suitable for every description of Door Lock now in use.

They are made to suit every style of decoration, in Plain and Ornamental China, Crystal, Amber, and Opal Glass, Brass, Ivory, Ebony, Maple, Buffalo Horn, &c. &c., en suite with Finger-plates, Bell-pulls, and Levers, and may be obtained of all Ironmongers, or of the Proprietors and Sole Manufacturers, HART and SONS, Wholesale Ironmongers, 63, 64, 65, Wych-street, Strand, London.

N.B. PITT'S PATENTED SPINDLE being the only one that does not require a screw in the side of the knob or mounting, the use of any Lock Furniture without such Side Screws would be an Infringement of the Patent.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.** This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them coming through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

TO BUILDERS.

**A LIST of BUILDING GROUND** to be Let, upon favourable terms, in various parts of London and the Suburbs, can be had free upon application, or by post, upon inclosing two stamps for postage. It is important to Builders and others also to know that our offices afford peculiar facilities for the speedy Sale by Private Contract of Houses and Estates, and also for the Letting of Houses. No charge whatever unless business is done. BECK WITH and SALMON, Estate and Land Agents and Auctioneers, 25, Bucklersbury.

**WANTED**, in the neighbourhood of London, a DETACHED FAMILY HOUSE, containing Three good Sitting-rooms, Seven Bed rooms, Two Kitchens, and about half an acre of Garden Ground. Rent not to exceed 70*l*. Direct, post paid, to A. B., at Mr. NASH, Builder, Ball's-pond Gate, Islington.

**FREEHOLD BUILDING LAND**, the most eligible in London, being near the end of the Long Walk in continuation of Portland-place. Inquire of Mr. LANGLEY, at the "Engineer," Gloucester-road, Regent's-park; or Mr. TURNHAM, 13, Sackville-street, Piccadilly.

TO SMALL CAPITALISTS AND BUILDERS.

**BATTERSEA, adjoining the New Park.**—FREEHOLD GROUND TO BE LET in small Plots, at a very low ground rent. Houses of a small class readily let in this rapidly increasing neighbourhood; boats running from London Bridge to Battersea every ten minutes for only one penny. Inquire of Mr. HENRY BROWN, Hungerford Fish Market.

**WATERSIDE PREMISES.**—To be Sold, by PRIVATE CONTRACT, those very eligible Premises, in Narrow street, Limehouse, known as GILMAN'S WHARF, and suitable for carrying on the business of a Sailmaker on an extensive scale, or the warehousing of goods.—For particulars apply to Messrs. MILLER and HORN, Solicitors, 77, King William-street, City.

TO BUILDERS AND CONTRACTORS.

**TO BE LET on Lease from Christmas** next, the complete BUILDING PREMISES of the Firm of GRISSELL and PETO, of Lambeth, and the Business therein carried on, together with the Plant. The Premises have a Wharf on the River, with Steam engine and Sawing Machinery. A Premium will NOT be required; and the party taking the premises off only be required to pay for such portion of the Plant as may be agreed upon.—Apply, for particulars, to Messrs. WINSTANLEY and Co., Paternoster-row.

**TO BE SOLD**, at Islington, in an excellent respectable situation and good Thoroughfare THREE SIX-ROOMED CARCASES, Ninety eight Years' Lease, together or separate. The Sewers and Drains are completed. Apply to F. W. LANKESTER, Surveyor, 38, Upper Seymour street, Euston square.

TO BUILDERS, CABINET AND COACH MAKERS, Turnbridge Ware Manufacturers, and others requiring roomy Premises, with valuable Machinery for Sawing, Planing, Turning, &c.

**TO BE SOLD, OR LET on Lease**, most ELIGIBLE PREMISES, situate No. 12, Dorset-place, Dorset-square, in the immediate vicinity of the Regent's Park, comprising a most commodious dwelling-house replete with fixtures and fittings; at the rear of which, with a back entrance into New-street mews, are premises adapted to a large trade, and consist of a large yard, excellent workshops, counting-house, saw-pits, deal and other sheds, stabling, and an abundant supply of spring water. There is also the advantage of the machinery, which has been very recently erected for sawing, planing, corkcutting, turning, &c. by horse-power, and which will be valued much below its cost price.—For further particulars and to view, apply on the premises between 10 and 4. No written applications can be attended to.

TO BUILDERS.

**TO BE DISPOSED OF, most Eligible** FREEHOLD BUSINESS PREMISES, situate in a flourishing Watering-place in the south of England, in which the Trade of Builder, Joiner, and Joiner, as now, and has been successfully carried on for many years by the present proprietor, who is about to retire from the same. There is an Excellent Jobbing Connection with it, and a good business is now doing, with advantages seldom to be obtained. The premises are most complete, in good repair, the principal part having been recently erected with a the best twelve years, and comprise a commodious DWELLING-HOUSE, replete with every convenience, at the rear of which is Forenan's House, Cottage, Garden, Extensive Yard, with Workshops, Drying House, Painter and Glazier's Shop, Stores, Deal Sheds, Sawpit, Stables, Cart and Chaise Houses. There is also an excellent spring of water running through the premises. For further particulars apply to A. F. LIVESAY, Esq., Architect, Portsmouth

**SALES BY AUCTION.**

1,200,000 OF CAPITAL ASSORTED BRICKS.

**MR. MARSH has received instructions to** SELL by AUCTION, at the "Eagle and Child," Forest Gate, adjoining the Railway Station, near Wanstead Park, on TUESDAY, November 30th, at Twelve o'clock, in Lots adapted to the convenience of all purchasers, ONE MILLION TWO HUNDRED THOUSAND of superior, full-sized, washed, very hard, STOCK and other BRICKS. The Brick Field is situate about half-a-mile from the Forest Gate Station, on the Eastern Counties' Railway, abuts on the Romford-road, and within a mile and a half of water carriage. The Lots may be viewed one day prior to sale, and Catalogues obtained at the place of sale, the various Inns in the neighbourhood, of Mr. J. PEARMAN, Brick-maker, Forest Gate, Walthamstow, and at Mr. MARSH'S Offices, 27, Bucklersbury, Mansion house.

No. 26, OLD COMPTON-STREET, SOHO.—Handsome Stoves, Fenders, and Furnishing Ironmongery.

**MESSRS. CAFE, SON, and REID** will SELL by AUCTION, on the Premises, on WEDNESDAY, November 24, and two following days, at Twelve o'clock each day, by order of Mr. BROOKES, in consequence of the removal of the Business to Messrs. CUTLER and SON'S Manufactory, 16, Great Queen-street, Lincoln's-inn, the well-manufactured STOCK; comprising Sixty Register, Sandringham, and other Stoves, including several of an expensive description suitable for Drawing and Dining-rooms; Eighty Fenders to correspond; Boiler, Oven, and other Ranges; Stove-Grates; Hip, and other Bath-; Bronzed Urns and Kettles, Cutlery, a capital assortment of Copper, japanned and Metal Goods, Enamel Tin and Ironware, Twenty Iron Bedsteads, three Tons of Rod and Bar Iron, Tools, eight Forges, ten pair of Bellows, &c. May be viewed on Monday and Tuesday preceding the sale. Catalogues had on the premises; and of Messrs. CAFE, SON, and REID, Great Marlborough-stree

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Granages, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS**, Southwark-bridge-road, the Grove, Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles as usual.—The Trade supplied.

**PATENT BELLS.**—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal.—Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

**PATENT METALS for Bearings.**—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort, for bearings and engineering purposes generally, will be found superior in quality and cheaper than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface, and bearing a higher polish than any ordinary brass.—Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING** of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

**ARTESIAN WELLS, BORING TOOLS,** PUMPS, &c.—Engineers, Architects, Surveyors, Builders, or others requiring a good supply of WATER, may have any quantity procured by applying to W. SPELLER, 14, York-street, Blackfriars-road, London; where can be had any quantity of Tools for Sinking or Boring, from 2 to 20 inches diameter, and from 100 to 2,000 feet depth; also, Men and Tools to Bore for Railroads, Minerals, &c., in any part of the world. Boring Tools and suitable Pipes for Exportation, with full instructions for their use.

Builders, Contractors, Bricknakers, Barge and Ship Builders, and others, can be supplied with Wrought or Cast-Iron Pumps, Double or Single, for Excavation or Deep Wells, from three to twelve inches in the bore, and from 6 to 130 feet in length.

HOT WATER APPARATUS for Conservatories, &c., on the most economical and improved principle.

**COLLINGE'S PATENT HINGES.**—Sole Manufactory, 64, Bridge-road, Lambeth, where a great variety are always on view, for church, park, railroad, coach-house, and all other Doors and Gates, of large or small dimensions, a gate of a ton in weight moving with these engines as easily as a wicket; they are also admirably adapted for drawing-rooms, being highly ornamental, and folding-doors fitted with them may be removed and replaced in an instant. Rising and spring hinges, with very superior fastenings, for exterior gates, at moderate prices. To be seen at CHAS. COLLINGE and Co.'s Patent Axle-tree, Sugar-Mill, and Spherical Hinge Manufactory, 64, Bridge-road, Lambeth. A liberal discount to the trade.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,

WITH SECRET AND SECURE FIXINGS.

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall: or from the sole Agent, Mr JOHN FAULKNER, Ironmonger, 62, St. Martin's-le-Grand, London, opposite the new Money-Order Office

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as also their much improved Revolving and Panelled Iron Shutters,

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PATENT CASEMENT FASTENINGS AND SILL-BARS,

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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

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GEORGE BAILEY, } Hon. Secs.
J. J. SCOLES, }


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Bedford, November 20th, 1847


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JOSEPH GLOVER,
(Late HENDRY and GLOVER,)

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**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK MAKERS' PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description.** These Pipes are made to stand hot liquor and gas with safety, and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes. Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

**COLLINGE'S PATENT HINGES.—Sole** Manufactory, 64, Bridge-road, Lambeth, where a great variety are always on view, for church, park, railroad, coach-house, and all other doors and gates, of large or small dimensions, a gate of a ton in weight moving with these engines as easily as a wicket; they are also admirably adapted for drawing-rooms, being highly ornamental, and folding-doors fitted with them may be removed and replaced in an instant. Rising and spring hinges, with very superior fastenings, for exterior gates, at moderate prices. To be seen at CHAS. COLLINGE and Co.'s Patent Axletree, Sugar-Mill, and Spherical Hinge Manufactory, 64, Bridge-road, Lambeth. A liberal discount to the trade.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS, WITH SECRET AND SECURE FIXINGS.

**THIS CHEAP and USEFUL ARTICLE,** obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall, or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 62, St. Martin's-le-Grand, London, opposite the new Money-Order Office.

**PATENT COPPER-WIRE CORD.—** Manufactory, Gateshead-upon-Tyne. R. S. NEWALL and Co.'s PATENT IMPROVED COPPER WIRE CORD for Window Sash Lines, Hothouses, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen rope has hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above. Specimens of the Wire Cord may be seen at the office of the Patentees, No. 163, Fenchurch-street, London; W. T. ALLEN, Agent.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS AND CARPENTERS.

**A CONSIDERABLE SAVING will be** effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

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| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d., per inch.

Self-acting Kitchen Ranges, with Oven and Back Boiler. Wrought Bars and Bright Fittings.
3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE most respectfully solicits** the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6½d. per inch and upwards.
Bright Ditto, with Black and Bright Bars, 9d. do. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3 ft. 6 in. | 4 ft. |
|---|---|---|
| 3l. 3s. | 3l. 14s. | 4l. 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

**H. MORRELL'S FINE PREPARED** DRAWING PENCILS. Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East India Company.

The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.

Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

**ARCHITECTURAL SUBJECTS (Out-** lines) coloured for Competition or Exhibition, and embellished with Landscape, &c. Buildings, Portraits, and Views of every description, Lithographed in a superior manner, by GEORGE CHILDS, 12 Amwell-street, Pentonville.

**LONDON and MANCHESTER GLASS** COMPANY.—PLATE GLASS.—Architects, Railway Contractors, Builders, and the Trade generally, are respectfully informed the "London and Manchester Glass Company" have now opened their London Warehouse, 12, Rathbone-place, Oxford-street, for the Sale of PLATE GLASS, suitable for Silvering, Glazing, and other purposes. The Colour and Polish are very superior, and the substance strong. The Tariff of this Company is the same as the one at present adopted by the Trade, from which very LIBERAL DISCOUNTS will be allowed on each description of Glass.

ROUGH PLATE, suitable for Railway Stations, Warehouses, Skylights, and Floors, may be had of every thickness, at very MODERATE PRICES, upon application to

J. L. GRUNDY, Company's Agent.

12, Rathbone-place, November, 1847.

**CHEAP ORNAMENTAL GLASS.—I beg** to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square. Cash only.

**ORNAMENTED, COLOURED AND** PAINTED GLASS FOR WINDOWS.—CLAUDET and HOUGHTON, 89, HIGH HOLBORN, execute every description of Ornamental Glass for Windows, in ancient or modern style, at the lowest prices consistent with superior workmanship, either in Plain Colour, Ornamented in White, Neatly Embossed, Engraved, or richly Painted. Patterns and specimens may be seen at their Warehouse, 89, High Holborn.

**PLATE GLASS.—Architects, Builders,** and the Trade generally, are solicited to inspect the quality and substance manufactured by the Union Plate-Glass Company. Liberal discounts allowed on glazing qualities. London Warehouse, 96, Hatton-garden, Holborn. H. CHRISTIE, Agent.

N.B. ROUGH PLATE-GLASS supplied one-fourth, three-eighths, one-half, and three-fourths of an inch thick.

**SOHO PLATE-GLASS WAREHOUSE,** 26, SOHO-SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

**PHŒNIX PLATE-GLASS WARE-** HOUSE, 24, St. Mary Axe, City.—E. MOSS, Proprietor. Builders, Upholsterers, and Consumers of Plate Glass, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Railway Carriages, Mirrors, and other purposes. Colour, Quality, and Substance unrivalled by any other house in the Kingdom. ROUGH PLATE GLASS for Skylights supplied ¼, ⅜ths, ½, and inch thick. All Plate Glass for Shop Fronts delivered within five miles of London free of all charge, and estimates given, free of expense, in town or country. No connection with any other house.

**WINDOW-GLASS, LEAD, VARNISH,** COLOUR, and PLUMBERS' BRASS WORK MANUFACTORY, 87, Bishopsgate-street Without. Lowest prices charged. Please inquire them.

Builders, Painters, Glaziers, and others, supplied with every article used in the trade upon the best wholesale terms.

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BRITISH CROWN — PROPAGATING GLASSES

Coloured and Ornamental Glass, Fluted Crown and Sheet Plate, for Shop-fronts, Show-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.

Ground and Dry Colours of the best quality; Brushes, Dryers, and every article used in the Trade Warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS; Lead Pipe, Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

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**PATENT PLATE GLASS, BRITISH** PLATE GLASS, SHEET AND CROWN WINDOW GLASS.

SHEET GLASS FOR HORTICULTURAL PURPOSES, of every thickness manufactured.

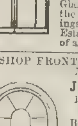
PROPAGATING GLASSES of every size, from two inches upwards.

BEE GLASSES of every size, from two inches upwards.

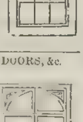
CUCUMBER GLASSES of every length.

All at the very lowest prices, at CLAUDET and HOUGHTON'S Window Glass Warehouse, 89, High Holborn.

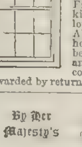
**CHAS. WM. WATERLOW,**



MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

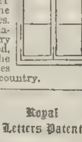


SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



**JOHNSON and PASK,** 1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS. To be had of EDWARD BAILLIE, Glass Painter and Stainer, 128, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

VENTILATION IMPROVED, AND SMOKY CHIMNEYS CURED.

**BAILLIE'S PATENT TRANSPARENT** VENTILATORS are at once efficacious, neat, and easily adapted to any sash, and, where thorough ventilation without draught is required, will be found invaluable, and especially as a cure for smoky chimneys.—Supplied Wholesale and Retail by E. and W. H. JACKSON, Window Glass Warehouse, 315, Oxford-street.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

**GREAVES'S LIAS LIME and CEMENT.** RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

**PORTLAND CEMENT.—Testimonials** received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes—such as the Building and Lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For External Plastering and Ornamental Castings, it requires neither Colour nor Paint; it never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON having completed exten-** sive alterations and erected new and powerful machinery at his CEMENT and PLASTER WORKS, MILL-WALL, POPLAR, enables him to execute orders on an enlarged scale. He thereby solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the article being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

**ATKINSON'S CEMENT.—WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London. Sole Consignee of Atkinson's Cement.

**CHEAP ROMAN CEMENT is sold in** Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 20 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

TO AGRICULTURISTS AND BUILDERS.

**A LARGE SUPPLY of BRICKS,** DRAINING PIPES, and TILES, of every description, is now ready FOR SALE. Architectural Tiles and Pottery made to order on the shortest notice.—Apply to Mr. COPENER, Langham Lodge Brick, Tile, and Pottery Works, near Epping, Essex. Specimens of the above may be seen at the office of "The Builder," 2, York-street, Covent Garden.

**WILLIAMS'S PATENT SLATE** RIDGES and HIPS.—The above article is recommended as the best and the most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 50 per cent. cheaper. Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvidere-road, Lambeth, London.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly.

These Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Millhill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

HEALTH OF TOWNS.

**KIRRAGE'S PATENT SEWER,** DRAIN AND BUILDING BLOCK.—The Patentee, observing the evils which arise from the perishable nature of the materials in general use for building sewers, foundations, and other Works, much exposed to the action of water, was induced to attempt the production of a material which should at the same time be impervious to and indestructible by damp, and unaffected by atmospheric influences, and combine great strength and durability with facility of moulding into any required shape. In this he has been successful; and he is now enabled to offer to the Public his Patent Blocks, which will be found to possess all the qualities of great strength, indestructibility by water, facility of working, and great cheapness, on the invaluable for all subaqueous and subterraneous structures, more especially for forming the bottom of Sewers, which at present, from the nature of the materials used in building them, not only permits very considerable leakage, but constantly require repair. The use of the Patentee's material is not confined to the purposes above mentioned, but may be applied for all building purposes, especially Floorings of Barns, Granaries, Malthouses, and other places where there is a tendency to damp and dryness is essential, as also for the formation of Baths, Cisterns, and Reservoirs.

For common Building purposes, the material of which the Patent Blocks are composed may be used as a coating for Concrete Blocks, formed of a cheaper substance.

The price at which the material can be supplied is 1l. 10s. per ton.

The material for sewerage of the shape and size herein given of the Holborn and Finsbury districts, cost at 6 inches in thickness 10s. per foot; if reduced to 3 inches in thickness, 5s. per foot; and 1s. 6d. per foot for the Barrel, or small drain of 9 inches in diameter.

Contractors, Engineers, Surveyors, Builders and Public Companies carrying on Public Works, are invited to inspect the Patent Sewer and Drainage Blocks; Drawings and Specifications of which can be seen at the offices of Messrs. DREW and SHADWELL, 22, Abingdon-street, Westminster, where also all applications for Licenses are requested to be made.

The Builder.

No. CCLI.

SATURDAY, NOVEMBER 27, 1847.

FOR the last two or three weeks we have put aside the various letters which have reached us concerning the estimating system, the present mode of executing work, the position of builders, their oppression *by* architects, and their impositions *on* ditto. Need we say that these form a curious pile of contradictory import? One builder who wrote ten days ago, inclosing a list of tenders shewing a ruinous or knavish difference in the amounts (his being about the average) is pointed out, this week, by a second builder as being the lowest of nine in another matter, and 40 per cent. under the highest; an "Experienced Architect" shows that the most stringent clauses in a contract do not enable him to get his work done satisfactorily, unless the contractor be a respectable man; and a "Young Beginner" urges that it is shameful that he should be placed entirely at the mercy of architects, as he considers he is when forced to sign an undertaking to leave all matters in dispute to their decision. And while the latter, in continuation, complains that so few opportunities of tendering are afforded to young builders, in consequence of architects always sending to nearly the same set of men for estimates, instead of publicly advertising for tenders—another writer denounces altogether the system of tendering at a sum, makes various suggestions of too restrictive a tendency to be listened to in these times, and calls on the builders as a body to refuse to contract, excepting on a schedule of prices.* One thus answers another.

In the course of the last letter the writer says:—"It is very much to be regretted, that when builders have just had their eyes opened to the evil, and that most of our public boards have abandoned the system of contracting by the *lump*, as it is termed, the only board which for many years led the van in the improvement of the system of contracts in building has fallen back upon this old, and, I should hope, nearly expiring, system. I mean, with all due respect, the Board of Ordnance, under which for many years I have contracted by the schedule system, by which I could live; but now that the contract system of estimates has been introduced, as a respectable individual I must, amongst many others of the same class, give place to men of inferior pretensions, and who, it is beginning to be notoriously known in that service, are giving much inconvenience to the officers of the board."

Of the evil results of the present system no person acquainted with it can entertain a doubt,—construction, credit, and the morals of a large class are all injured by it to a fearful extent. The advance of skill in our operatives is prevented, the fair trader is made to look like a rogue, the uninformed builder is ruined, and the knavish one led to ruin others.

The extraordinary differences constantly to be observed can only be ascribed to error or fraud: look, for example, at one of the most recent lists of tenders submitted to us,—tenders for the erection of a parsonage house at Homerton, whereof the highest of nine was 2,173*l.*, and the lowest 1,286*l.** And what makes this the more extraordinary is, that the quantities, if we are rightly informed, were, as is often the case, supplied to all the parties; so that a main opportunity for mistakes was got rid of. Comment is unnecessary.

Again, look in our report (this week) of the proceedings of the Westminster Sewers' Commissioners, and it will be seen that, while one builder put down the sum of 1,112*l.*, as the cost of 1,825 feet of sewer, another undertook to do it for 779*l.* The number of bricks required to do a yard of this sewer, the quantity of lime and sand for mortar, the time occupied in laying the bricks, the extent of digging, and the positive cost of all these items, are as well known as that two and two make four; and yet, by some means or other, the tenders for executing a given quantity of the sewer run (in round numbers), 1,100*l.*, 1,000*l.*, 900*l.*, 850*l.*, and 780*l.*!

One of the letters, to which we are thus generally referring, made a statement to which we were not disposed in the first instance to give the slightest credit, as it reflected severely on the honour and honesty of a large body of men. It was to the effect, that when a limited number of builders are invited to send in, it is not unusual for them to agree among themselves as to who shall be the successful competitor, and then to send in merely nominal tenders, something over the amount named by the selected party. That this system is practised to any extent we cannot for one moment think; indeed, we can scarcely believe in isolated instances of it: but we have learnt with pain, from two builders of good standing, who mentioned the fact as if it were of such constant occurrence as scarcely to need concealment, that it was not unusual with them, when indisposed or unable to accept an invitation to tender, to learn the amount about to be sent in by one of the other parties who might be known to them, and forward a tender at a larger sum.

They could scarcely think that they were practising a gross deception on parties who trusted them, and that, carried to the extreme, they might be aiding to rob them,—that they were telling a mean lie, of which in any other shape we consider them incapable, believing that they not merely think

"Good name in man and woman, dear my lord,
Is th' immediate jewel of their souls,"

and so would preserve it in the ears of the world, but that they would be good for goodness' own sake, and in obedience to a High command.

Let them refuse to tender in competition if they please, and can afford it,—they shall have our praise for the refusal; but do not let them aid in making an architect believe that he has the conscientious opinion of several experienced men as to the cost of the works his employer requires—the price which each honestly puts upon his wares—when in reality he has nothing of the sort. Want of thought could alone lead right-thinking men to act thus fraudulently.

We have but opened the subject, and shall speedily return to it.

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* The following are the suggestions alluded to:

"1st. That the builders of localities should assemble at periods not exceeding one in every three months (having first held preliminary meetings, at which a stated schedule of prices should be framed, based upon calculations from the current prices of the day for each locality), those quarterly meetings being held with the view of altering such prices as the state of the markets, or other local circumstances may require.

2nd. That those prices be calculated so as to allow a fair living profit and per centage upon the outlay, and that they be classed in subdivisions of works exceeding certain sums; say, for instance, that works not exceeding 100*l.* value should be under in the price of each particular item than works for 200*l.* or 500*l.*, and so on in proportion.

3rd. That the builders in each locality bind themselves not to work for less than the prices agreed upon by their locality, under penalty; but that they may propose to execute the works at any degree or amount of per centage above those prices of schedule which to them seem desirable.

4th. That all works executed by builders be measured and valued agreeably with the aforesaid schedule of the locality in which the work is performed, by a competent surveyor; and that in no case a system of estimating be permitted by the Union of the Craft, or whatever other term they may think fit to adopt.

5th. That a general central committee be appointed to watch over the interests of the trade, claiming from Parliament a power to restrain fraudulent builders or inexperienced persons from carrying on the mysteries of the craft."

* This is the list, and a startling one it is:

| | |
|---|---|
| Jay | £2,173 |
| Lawrance | 2,157 |
| Skinner and Hughes | 2,119 |
| Nesham | 2,075 |
| Mansfield | 2,060 |
| Trego | 1,952 |
| Jeffrey | 1,760 |
| Curtis | 1,697 |
| Norris | 1,687 |
| Crook and Son | 1,286 |

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## SOME ACCOUNT OF THE CATHEDRAL CHURCH OF S. MARIA DEI FIORI, AT FLORENCE;

*And Description of the Design for a New Elevation to the West End, by the Cavaliere Matas, Architect.**

THE very name of Florence excites a deep interest in the minds of all acquainted with Italian history or attached to the literature of classic Greek, or who are versed in the revival of letters on the banks of the Arno. The names of the Medici and of Dante, of Michael-angelo, Galileo, and Machiavelli, present themselves to one's view; and memory dwells upon the extent of the commercial relations of the merchant princes of the City of Flowers, or the skill, the intelligence and enterprise of her great men, and the desolating contests of the Guelfi and Ghibellini. The triple-arched bridge of the Trinity, which spans most gracefully the Arno, a miracle of science and taste; the fortress palaces of the Strozzi and Riccardi, her stupendous cupola of Sta. Maria dei Fiori, and the profusion of works of high art which embellish even her grand ducal piazza, announce a thinking, an art-cultivating and imaginative people, full of intense feeling.

Her metropolitan cathedral now alone claims our attention,—a worthy object for our consideration; for its vastness attests at once the noble piety of a generous and wealthy people, who could contemplate and at once undertake so gigantic an enterprise; and to its realization were consecrated the expanding genius of Arnolfo and Giotto, themselves lights in an age of artistic darkness, and the native science of the daring Brunelleschi, who, amidst the majestic construction of the temples and baths of ancient Rome, had, with a noble ambition, prepared himself for executing in his native city a cupola, which equals in size that of St. Peter's at Rome, and precedes it in date by a century and a half.

We will now proceed to the history and description of the church.

This cathedral is situated in the centre of a vast open space. In front of it and totally distinct, at a short distance, is the octagonal baptistery—an arrangement of usual occurrence in the earlier churches of various parts of Italy, and in imitation of the position of the baptistery of Constantine, near the Church of the Lateran at Rome. This relative position of the church and baptistery indicated that the neophite could only enter the church by baptism. Near the south-west angle of the nave is the exquisite campanile of Giotto—a perfect gem in design and execution, graceful in form and profuse in marble. This also is an usual arrangement, which exists most strikingly at Pisa.

It appears that there was an ancient cathedral church on the very same spot as the present, but in what style of art, whether of Italian Gothic as at Orvieto, or the Tedesco or German taste of Pisa, is not recorded. In 1294 the Florentine senate decreed that the old cathedral should be rebuilt, and in 1298 the works commenced under the direction of Arnolfo, who, however, died thirty-two years afterwards, and was succeeded by Giotto in 1334. Arnolfo was both an architect and sculptor, a combination of studies and occupations which has seldom if ever been successful. He apparently followed, in the nave, the usual Gothic arrangement, adhering possibly to the original plan of the old cathedral; but instead of the ordinary combination of transepts, we find a bold departure from previous practice by the introduction of a large octagonal vestibule flanked by three chapels, and surmounted by its enormous dome—a daring transition from established ideas to a new epoch.

For one hundred years these works proceeded gradually although slowly, for we find that it was not until 1376 orders were issued to commence the piers of the cupola; and at

* Read at the Institute of Architects, by Professor Donaldson, on the 19th inst.

the beginning of the fifteenth century the nave had been completed and covered in, and the central octagonal part had been carried up to the drum, immediately over the large arches, and the three large chapels domed in.

At this point a new period in the construction and character of the work commences. We will, therefore, for a while, examine particularly the work as far as it had then proceeded.

The plan consists of the nave, flanked on each side by a side aisle.

| | FEET. |
|---|---|
| Total length from the west door to the further end of the church, within the walls | 491·6 |
| Total length of nave from the entrance-door to the arch of the octagon | 260·0 |
| The width of the nave between the walls | 53·5 |
| The height of the nave from the pavement to the ceiling | 137·7 |
| The internal width between the aisle walls | 128·0 |
| The total width of transepts between the walls | 154·0 |
| The piers are square, and in diameter | 10·0 |
| The inter-columnar space between the piers | 52·0 |

There are three doors at the west end, leading respectively into the nave and side aisles; and there are two on each of the north and south sides leading into the side aisles. We may remark, that the piers consist of a group of four pilasters: from the two facing east and west in each pier, large pointed arches spring; but above the pilaster facing the nave another pilaster rises, surmounted by an entablature of peculiar design, above which spring the arches or groined domes that form the ceiling of the nave, having very much the appearance of a Gothic roof. In fact, the whole character of this part of the interior of the church bears a Gothic impress, modified by a certain sentiment derived from the monuments of antique art, which were the great objects of study of the artists of those days.

A noble arch leads from the nave to the octagon, and small yet still noble apertures on the axes of the naves lead from them into the octagon, also peculiar—a feature which this cathedral has in common with our own Ely Cathedral and St. Paul's of London. I may, perhaps, be permitted to call attention to this arrangement, by which the vista in the side aisles is uninterrupted, and the view of the spectator in the side aisle is carried at once into that important portion of a church—the very centre of attraction—under the dome.

Arrived under the centre of this imposing feature, we find chapels to the right and left, forming, as it were, transepts, and to the east another similar apsidal end, forming the other arm of the cross. Each of these polygonal chapels contain five smaller radiating chapels, with an altar in each. Two of the piers of the octagon are hollowed, to form robing-rooms, and in the other two piers are staircases to ascend to the cupola. The high altar is placed immediately under the centre of the dome, surrounded by a very cumbersome and inelegant screen of formal architecture, designed by Baccio d'Agnolo, another painter-architect.

The effect of the interior is extremely sombre,—not the dim religious light of the poet, but a heavy monotonous gloom. There is great poverty in the decorations, and bareness in the appearance of the walls. There are very few windows, quite insufficient to give that play of light and shade which is the great charm of our Gothic cathedrals. There is, in fact, in the building a deadness and chilling effect.

We now pass to the exterior. The east end has never been completed, and although faced up to a certain height, in the same style as the sides, the casing was subsequently removed, and the façade underwent various modifications, to which we shall have occasion hereafter to refer.

On the elevation of the northern aisle there are, from the N.W. angle up to the second pillar of the nave, a series of slightly projecting piers, with a succession of small windows, with an intermediate doorway. The windows are narrow and lofty, divided into two lights by a central twisted column, surmounted by a crocketed arch, above which rises a gable head, or species of canopy. The whole composition of this feature is fanciful yet elegant, presenting in the leading and general mass a Gothic sentiment, yet in the detail a capricious and irregular combination, at variance with its own primary style; twisted columns are used instead of buttresses, and are surmounted by buttresses, above which are crocketed finials. Instead of deep recessed reveals we have flat faces, and in lieu of sunk panels byzantine forms, indicated by mosaic or inlaid marbles in parquetted patterns, for which the Florentines have been ever famous.

The door also presents the same details and features—by no means deficient in grace. On each side of the square aperture there are slender twisted columns, the bases of which rest on lions. A square vertical buttress surmounts the columns, and has on its top a small statue. A two-centre pointed arch rises above the lintel of the door, fringed on the inner edge, and having a group, in the centre, of the Madonna and child, with an angel on either side. A truncated gable end rises over the arch crocketed, and on the truncated apex of the pediment is a niche with twisted columns, arched head, buttresses, finials, and crockets.

The plain face of the wall is thus divided: there is a kind of podium or dado as high as the aperture of the door, and level with the bottom of the windows; from this to the cornice it is divided into four heights of panels, not sunk, not moulded, merely indicated by the patterns of various coloured marbles; and as there are similar marble panels in the podium, there are in all five rows of these flat panels in the height. Then comes a species of cornice, indicated rather by its continuous horizontal lines than by any bold or projecting mouldings, for the mouldings are few, small, and without any material advance from the face of the wall. There is then a kind of attic, which is surmounted by another species of cornice, the projection of which is produced by machicolations, consisting of trefoil arches resting on corbels, above which is an impanelled parapet. Behind this attic is a flat roof, above which rises the clerestory similarly panelled, and with a series of large circular bull's-eye windows.

The same style of ornamentation prevails throughout the exterior along the aisle walls, as also around the polygonal chapels which flank the octagonal centre, here somewhat varied by the flying buttresses which counterpoise the thrust of the smaller domes of the polygonal chapels, and which polygonal chapels act as abutments to the drum of the great dome.

Considerable contradiction exists as to the date of the death of Arnolfo. It appears that the ceremony of laying the first or corner stone by the Cardinal Legate took place in 1295; Milizia and Quatremère de Quincy state that our architect died in 1300; Sgrilli in 1330; and the latter seems the more probable date, as it is acknowledged by all that he carried up the walls to a considerable height ere he died, and that he turned three of the arches of the great cupola. So great an advance in so gigantic an edifice could not have been accomplished in so short a period as five or six years, and particularly when we consider its slow progress until the time when Brunelleschi took it in hand—about 1410, or 115 years after the laying of the stone.

Let us for a moment, then, consider the style of decoration adopted in the exterior of this cathedral. It would appear that the object of Arnolfo was to give great breadth of effect to his façade. To avoid the established practice of the introduction of storeys of columns, one above the other, of small dimensions, as we find at Pisa and in other parts of Italy: he has abandoned the playful effects produced by the protruding buttresses of Gothic buildings, of which, however, there are few examples on that side of the Alps, and of which he was doubtless ignorant; and he did not avail himself of the varied outline produced by vertical pinnacles, finials, or other upshooting members rising above the line of cornice. Casting off the trammels of the rules of the fantastic style hitherto prevalent, and unacquainted with the severe refinements of classic art, which did not come into vogue until a century after his decease, he yielded apparently to his own feelings alone, and has produced an enormous but a timid and flat development of surface, mechanical and tame, devoid of bold and striking sentiment, and with a total absence of those dignified and impressive modifications of outline, chiaroscuro, and advancing and receding planes, which form the charm as well of Gothic as of classic art.

On the death of Arnolfo, Giotto was appointed to continue the work, in which he seems to have followed most strictly the design of the original architect, not only in the cathedral, but also in the campanile or bell tower, which he erected near the S.W. angle of the cathedral. It is, of the kind, the most beautiful production of the art.

The cathedral seems to have advanced very slowly after the death of Arnolfo. The nave was covered in, and the exterior of the side walls completed, as also the octagon and the polygonal chapels branching from it both on the outside and inside, and the octagon had been carried up to the general line of cornice, but the west end only presented a bare wall, partly faced with marble by Arnolfo, as high as the doors. Here there was a pause, for it was discovered that no one evinced sufficient capacity to undertake the addition of a dome to cover the vast central octagon of the cross. Many were the strange and senseless projects submitted to the trustees of the fabric. Some proposed a central pillar, from which radiated arches should be turned; others recommended that the space should be filled with earth mixed with coin, up to the required height, and that upon this centre the cupola should be turned, which done the people should be admitted to remove the soil, their labour being recompensed by the coin they should find in the load carried away.

In the mean time there was one moved by the powerful incentive of a noble ambition for distinction. He was cherishing the thought, that for him was reserved the splendid task of completing in a worthy manner the cathedral of his native city, which should out-eclipse every preceding erection. Laborious, determined, and endowed with a mechanical genius, he gave himself up to this achievement. He went through the drudgery of the first principles of the art. He looked around in vain for monuments, the taste and skill of which should be worthy models upon which to create a new epoch. Rome was then the El Dorado of art. Her temples, her thermæ, her amphitheatre, her columns and triumphal arches, opened a new field of delight and instruction. Year after year Filippo Brunelleschi drew, measured, and deeply studied them; and again and again returned to the absorbing occupation. Disregarding time, labour, nay, the very food which should keep body and soul together, he denied himself the amusements and almost the necessities of life, in order to return to his dear Florence a worthy citizen, an accomplished architect of the proud republic.

The problem was at length solved in his mind, and he prepared a model, which, however, he prudently kept from the sight of all.

In 1407 Brunelleschi, on his arrival at Florence, found all parties in confusion, disputing the proper steps to be taken to complete the dome of the cathedral. He was consulted on the subject, and, without communicating the principal portion of his conception, he advised the trustees to construct a drum 38 feet high, pierced with eight circular windows, to give light to this portion similar to those already in other parts of the fabric. This suggestion was adopted and carried into effect, and as his fellow-citizens seemed hardly to value his capacity, he left them once more for Rome, in 1419, to reconsider his project, and compare its practical details with the construction of the baths and other ruins of that city. The curators of the cathedral and the government again called a meeting of the scientific men of all Europe to receive their ideas upon this absorbing question, at which Brunelleschi attended. One person suggested one means, another another, and each seemed more preposterous than the other, more senseless and impracticable. Brunelleschi alone was calm, but, without showing his model, stated that his idea was to construct without centering a double dome, with free passage between the outer and inner one, to allow people to pass all round, between the two. He was scoffed and derided, and urged to explain it further. This he refused. He was then accused of trifling with the authorities and other distinguished men around him, upon which, to gain their confidence, he adopted, according to Milizia, an illustration of his argument, attributed to Columbus a century after. He produced an egg, and challenged them to make it stand upright. This they said was impossible. He then took it, broke the end, and placed it on the table. "Ah!" said they, "we all could have done that." "Yes," said he, "when I have shown you how to do it;

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and so you would say of my design for the cupola, were I to show you my model: appoint me your architect, and it shall be done." They then felt that he was capable of the great enterprise, and although the malice and envy of rivals still strove to crush the daring innovator, he was appointed in 1420; and when he died, in 1444, it was carried up to the cupolino, which was subsequently completed agreeably to his design.*

Up to this moment the façade of the west end has remained incomplete, and it appears so to have continued until Sansovino, about 1514, by the desire of Leo X., erected a false elevation of wood. It consisted of a lofty basement, surrounded by coupled Corinthian columns, with niches and statues for the Apostles, surmounted by a pediment, and interspersed with pictures by Andrea del Sarto—a strange medley, totally at variance with the spirit of the design of the rest of the building. This temporary structure at length threatened decay, or the citizens became disgusted with it, for we find that in 1586 a certain Benedetto Uggucciori, the chief officer of the fabric, ordered it to be taken down, under the reign of Cosmo de Medici. Towards the end of that century Luigi Agoli produced a design for the front, which was much approved. About a half century afterwards, or towards 1650, Gherardo Silvani, a Florentine, designed another façade, which was approved but not executed.

On the occasion of the marriage of Ferdinando de Medici with a Bavarian princess, the whole of the west elevation was plastered over, and a scenic front painted by Bolognese artists, which still remains,—a shame to the city!

We may now consider the causes which contributed to the want of success in the able men who had devoted much time to give a fitting elevation to this noble building. Each one had mistaken the great principles which should guide an architect in the completion of a monument of art the production of another age, and having a distinct individuality of character of its own. If the great charm of an edifice of this sacred class be unity of conception, which should produced on the mind one continuous impression, free from these rude contrasts of feeling resulting from an incongruity of parts, the production of different epochs, with details of contradictory character, and as it were of contradictory sentiment, then it must be allowed that he alone rightly feels the subject who follows out the sentiment of the original type,—who imbues himself with the spirit of its general aspect and minuter decorations. It is true that the Gothic architects were not impressed with this conviction, and we find the additions to our cathedrals strongly contrasting with the original portions of the earlier epochs. This may produce picturesqueness, but in the educated mind there also arises a feeling of disappointment and dissatisfaction. So was it with Sansovino, Silvani, Pierratti, and the other artists who had given designs for this façade. They seem to have sought their own glory, not that of the building; they forgot the tribute due to the fame and the production of the original architect, Arnolfo, and thought only of themselves.

The Cavalière Matas, however, of our day, has more judiciously and more generously entered into the spirit of the task he has undertaken. He has felt, and felt truly, that he had to combine the baptistery and the tower (now disconnected by the incongruous front); and by the adoption of the original style, to complete the grouping and the picture in one sentiment: he has gone back to the thirteenth century, and imbued himself with the spirit which guided the first conception of Arnolfo, and with a happy success has reconciled incongruities, giving a finishing touch to the side elevations, and rendered what is now poor and meagre a noble and dignified idea.

The view which is before us presents the elevation of the west front, with a lofty central gable end, formed by the continuation of the clerestory of the nave, flanked by boldly projecting square piers or buttresses. This forms the middle portion. On each side are wings rising to the height of the general cornice of the building, and level with the flat roof over the side aisles, thus producing three simple grand divisions for the elevation. Each division has its entrance-door, above which rise the circular windows already existing in the present wall, and each of which is inclosed within a pointed arch. The doorways are of noble size, designed in the spirit of the ones on the side front by Arnolfo; and, in fact, the whole elevation is evidently a conception founded upon the proportions and details of the ancient doorways, modified as circumstances required.

But there is a departure,—or perhaps I should call it a carrying out,—of the original design, which gives animation and movement to the composition: it is that he has surmounted the angular square buttresses with noble niches or tabernacles, crowned by pinnacles, and has repeated them along the flanks of the building. This relieves the outline, hitherto tame, and gives variety to the grouping. The apex of the pediment is also terminated by a cross and group of angels, and the inclined cornice of the gable end is fringed with foliage, thus softening the hardness of the architectural lines. The faces of the buttresses are relieved by niches filled with statues.

By these modifications the Cavalière Matas has most judiciously satisfied the requirements of the difficult programme. He has retained all the leading features of the original building, and restored its upshooting character. He continues the lines of the cornices, and repeats the divisions of the panelling; but, in addition to this, he has given greater projection to the angular buttresses, and by introducing the side doors in recesses, and by giving greater depth to the reveal of the central door, and the adoption of the tabernacular niches above the cornice, he superadds a spirited movement in the lines, and marks more decidedly their vertical tendency akin to that of the tower. He throws in a depth and variety of chiaroscuro, and accomplishes this with wonderful propriety, without departing from the individual character of the original.

The genius of Arnolfo is thus vindicated;—that which hitherto seemed an impossibility has been realized. The cathedral of Florence may be finished in a manner consistent with good taste and in harmony with itself. The magic group of the Duomo, the campanile, and tapistry are united by one sentiment. And if the Florentines be so fortunate as to see this design carried into effect, the Cavalière Matas deserves the credit of having escaped the rock on which many able men have wrecked their reputation, and of having completed a monument which for five centuries remained unfinished, and this with a dignity and originality worthy the best times of Italian mediæval art.

T. L. Donaldson.

* Some of the details of this cathedral, and illustrations of the campanile of Giotto, are well engraved in some recent numbers of the work now in course of publication, entitled, "Ancient and Modern Architecture."

## MONUMENT TO WASHINGTON AT NEW YORK.

On the 19th of last month thirty thousand persons assembled to witness the ceremony of laying the first stone of an enormous monument to Washington, in New York. The members of Congress, ministers of state, foreign ambassadors, and a triumphal car drawn by six white horses, containing a bust of the American hero, surrounded by thirteen young girls in white, to represent the thirteen original states, formed part of an immense procession to the site. The monument is commenced on elevated ground, and being intended to serve as a landmark for ships at sea, is proposed to be of very considerable height. The New York *Weekly Herald* gives a small view of it, showing it to be a tower in six stories, pretending to be Gothic in character, but, so far as we are able to judge, quite contrary to the principles of the style, ill proportioned, and, as might therefore be expected, abominably ugly.

Verticality is the distinguishing characteristic of pointed architecture, as horizontality is of classic architecture, and specially fits it for the production of towers and spires, which are scarcely consistent with the spirit of classic art, and can only be made endurable by the exercise of great skill,—such as was shown by Wren in his London churches. The architect of the Washington monument has entirely sacrificed the principle which so happily adapted the style to his purpose, and has piled story upon story, gradually decreasing in size, and separated by hard horizontal lines, after the fashion of what is believed to have been the arrangement of the Tower of Babel, or a monstrous opera-glass pulled out to its furthest extent. It is much to be regretted that the large sum which this structure will necessarily cost should be thus wasted; and we venture to express a hope that the committee may see this remark in time to obtain a reconsideration of the design before it is carried out.

The "first stone" was a large block of granite, with a cavity formed in the middle of it, in which was placed a leaden coffer containing the current money, the act incorporating the society by whom the monument is to be erected, the journals of the day, &c., and the cavity was covered by an inscribed slab of marble. The inscription sets forth, amongst other things,—that "This section of the foundation was laid by the gratuitous contributions of materials and labour, by the following persons, viz.: the masonry by John T. Allen; the stone by Elisha S. Mott; the corner stone by Beals and Fraser; tablet by Joseph H. Barnes; the cement by J. P. and S. Cummings, Jun.; the lead box by Joseph Aken. The land conveyed to the association by the corporation of the city." Calvin Pollard, architect; Edwin Smith, surveyor.

Our authority says, that when the coffer had been deposited, a shower of money and bouquets rained in from the surrounding spectators, each anxious to make his offering to the memory of Washington. With so strong a temptation to dishonesty, it is to be feared that posterity would have found more had less been given.

In the first volume of The Builder (p. 506), a view and description are given of Mr. Pollard's first design, which was in three stories, surmounted by a metal crocketed spire, the pinnacle of which was 425 feet from the ground. The plan was a pentagon 68 feet in diameter, with a rotunda inside, 40 feet in diameter, for statues of Washington and other great men. There was a projecting buttress at each angle, containing in each a room 22 feet by 19 feet, fitted up as a free library, to contain 400,000 volumes. There were apartments above for the study of the fine arts, and an astronomical observatory, and spaces for large numbers of pictures and statues. How much of the original design, in this respect, has been retained, we are not informed. The estimated cost of the work then, was 400,000 dollars.

## SHALL THE INSTITUTE REPORT ON FOREIGN ARCHITECTS' DESIGNS?

Sir,—I must own myself surprised at the opinion you have given respecting the conduct of the Institute of British Architects, in proceeding to take into consideration the merits of the Signor Matas's design for completing the western façade of the cathedral at Florence. In this instance the author has forwarded a view of the project, and solicits the opinion of the members upon his idea. You object that that body should pronounce a judgment on the matter. If it be composed of men learned in the history of their art, versed in the principles of taste, and accustomed themselves to design and execute buildings, surely they are qualified to form a correct opinion; if so, why should they fear to give that opinion, or even to have it published before the world? You object to the precedent—I rejoice at it; for I think it highly honourable to the Institute that a foreign artist should send from the heart of Italy, to ascertain whether his professional brethren in England approve his design. I rejoice in the precedent; and do *not* think it a very dangerous one, for the completion of such an edifice does not occur more than once in a century. If the Institute be alarmed at giving an opinion, under the apprehension of arriving at an erroneous conclusion, or of offending the author, the members are unworthy of the high position they have assumed, as representing the profession in this country. If their opinion be favourable, it surely can be founded upon a matured judgment and justified before Europe. If not, it doubtless can be expressed in terms to carry at once conviction to the mind of the artist, and not unnecessarily wound his feelings.

You have yourself occasionally accused the Institute of not speaking decidedly upon certain mooted questions. The advice you give on this occasion is not likely to promote the

* On some future occasion we may give the details of the dome, the construction of which is singularly ingenious.

expression of a frank opinion upon subjects submitted to their judgment.

I should observe, that the Cavalière Matas applied to the Royal Institute of France: they referred the matter to a commission, who have given a most judicious and argumentative report, to which are appended the names of Vaudoyer, Le Bas, Le Clerc, and of other distinguished men. May such an example prove infectious, and the Institute not adopt the opinion, that in such a case they best maintain their dignity by a timid reserve!—M. I. B. A.

*** Strong in the correctness of our remarks last week, we willingly give insertion to the above contrary view of the case, to have such weight as it may with the committee who were appointed: at the same time, we repeat the expression of our hope, that they will not be led into needlessly and *uselessly* "flattering the vanity or wounding the feelings" of the author of the design in question. The fact of the French Institute having already done so, would of itself lead us to oppose the course proposed, if there were no other grounds of objection; for we confidently ask, without wishing to underrate the design, whether it is of such a character as should entitle it to the deliberations of England and France, besides those of Italy? It is giving the design an importance beyond its due. There have been several proposals for the completion of this cathedral: there may be, and probably are, more designs for it before the authorities at this moment; and, as we said last week, an opinion given by the Institute might be brought to bear injuriously to superior merit. Let the Institute speak out as loudly as they please, where their speaking will do service, but not in a case like this, where no good *can* be done by it, and harm may.

We have received several letters (four) taking the same view as ourselves—but have room for the following only:—

Sir,—Your account of the proceedings of the Institute of British Architects, at their last meeting, is calculated to inspire considerable misgiving in all men who have attentively watched the tendency of chartered societies to outstep their original purpose, in order to gain a more influential but really less useful position. This observation refers entirely to the appointment of a committee to report on the Cavalière Matas's design for a west front to the Duomo, or rather of the Sta. Maria dei Fiori at Florence, in consequence of a special application to the Institute for its written opinion of that design. The reading of a paper for or against any work of art, provided it be in proper language and fit for a society of men of talent, is a legitimate occupation for the Institute; conferring prizes or premiums on successful competitors for their advertised designs or essays is equally so; but to sit like a grand jury, to decide on *ex-parte* statements on the merits of the whole profession all the world over, and issue certificates of merit, can never have been contemplated by those who granted the charter, nor, at the time, by those who sued for it. Assuredly, if they had put forth such an intention in their application to the Crown, it would have endangered its success, and very properly so; for in an age when the principle of equal rights and fair play is recognised, even grand juries, once the only mitigation of oppressive laws, are become a nuisance from the frequent damage done to the character of persons not in court to rebut imperfect statements. You have very properly remarked, that there may be other designs for the purpose, not before the members of the Institute, by men of talent, who would suffer from a one-sided opinion. It would not be the first competition for this very purpose of a façade to the Florentine cathedral; and if it is to be looked upon as a matter of great importance, so as to allow a dangerous departure from the ordinary mode of proceeding of the Institute, it is to be hoped that the appointed committee will require all the evidence that can be procured, such as the designs that have been on former occasions made for the purpose, and inquire whether any besides that of Cavalière Matas's divide the attention of Italy at this moment. It has been suggested that the designs of Palladio and of Vignola and Peruzzi are well deserving the notice of the architects of this country: let them be sought and compared with each other, and with the worthy knight's performance. Then, and not till then, the committee will be enabled to produce a report worthy of themselves, of the profession, and of our country; then they will be competent to speak of its originality and merit, and do justice to all parties, as it is quite certain they wish to do; for I am fully persuaded that the very eagerness of those gentlemen for the appointment of the committee proceeded from that excellent motive, but prevented them, in the hurry and excitement, from seeing what may be the consequences of a rash enthusiastic proceeding.—I am, Sir, &c. An Amateur.

## APPLICATION OF GEOLOGICAL SCIENCE TO THE CHOICE OF BUILDING MATERIALS.

Professor Ansted, in the course of his lectures at King's College, London, has treated largely of building materials, especially of Stone. He said,—The best way to obtain a true knowledge of the nature of the stone, was to look at it in the neighbourhood of the quarry; and, having thus obtained some idea of the action of the weather upon it, one might go into the churchyard, and study the condition of the tombstones, which, being erected in every imaginable direction, were liable to every phase of exposure, and would inevitably show how disintegration was most likely to be produced. A good idea of the value of stone for common use might thus be formed. For stone to be good for ordinary purposes, it must possess several qualifications. It must be of a tolerably even texture, for if it were very uneven it would be acted upon irregularly by the weather. It should possess a moderate degree of hardness, for if it were too hard, it could not be worked, except at great expense; or, if too soft, it would not bear the requisite amount of pressure. If it were very absorbent of water, it would be unfit for external work, as, in that case, the expansive action of frost would be very injurious. Many of the cathedral churches in England showed the results of this particular action of the weather, in cracks and crushes, often in portions of the structures which rendered the condition of the whole very precarious. The professor described, at some length, the various evils resulting from absorption of water by the stone used in building, and concluded his remarks on that point by observing, that great care should be taken to put stones of a laminated or fissile character into the building, in the same way as that in which they existed in the quarry, unless, indeed, they exhibited there a great inclination to the horizon.

The effect of atmospheric action upon stones being a matter of great importance in forming an estimate of their positive and relative value, the possibility of devising some measure of their various qualities, in this respect, was evidently a question of importance. A Frenchman, named Brard, discovered, some time ago, a method which, although not infallible, afforded a pretty accurate indication of the effects of atmospheric action, and which had often been adopted for the trying and describing the qualities of different stones. This method (which the lecturer described at length) consisted of boiling cubes of stone, selected from different parts of the block to be tried, in a saturated solution of Glauber salts, for a certain time. The cubes were then to be suspended by a string, completely isolated from the touch of any thing else, over a vessel full of the solution in which they had been boiled, taking care that no fragments of stone detached in the boiling remained in it. Twenty-four hours afterwards, the cubes would be found covered with small crystals of salt, which were to be got rid of by plunging the cubes into the solution over which they were suspended; this to be done every time crystals of salt were thrown out. The experiment should last four days, and at the end of that time, the amount of disintegration, by the effects of frost and weather, would be indicated by the weight of the particles of stone found in the solution, which had been forced out by the salt.*

Besides the quality of disintegration, there were a number of others necessary to be studied, in order to arrive at a true estimate of the value of stones. The chemical composition of stones, and their power of cohesion, were also of the last importance, and must all be considered carefully.

Passing over the new red sandstone and lias, he came to the *oolitic rocks*, which were very extensive. They were generally arranged in three groups—the upper, consisting of limestone, with clay below; the middle, of another limestone, with clay below; and the lower, of a variable group, chiefly limestones, containing a few clays and a few sandstones. The most important of these beds were the lower part of the lower division, and the upper part of the upper division. That was the case in England and, to a certain extent, in France,—the *Caen stone* being a continuation of that worked in the west of England, and, probably, of the same age and condition as the Bath stone.

Several useful limestones were obtained from the upper oolites; but, of all these, the *Portland stone* was most extensively known. There were different kinds of Portland stone, varying in value according to the manner in which the different beds were placed, a knowledge of which was very important to the English architect. The most valuable qualities of this stone were its hardness and weight—though both these were qualities which tended to make it expensive both in quarrying, in carriage, and in working. It was a tolerably pure carbonate of lime, of which there was in its composition 95 per cent., with 1 per cent. each of silica and carbonate of magnesia. This was a very good mixture, and the stone possessed an even grain, and was exceedingly durable. Its colour was generally a creamy white, and it was often the whitest of the oolites found in England. It was, therefore, a handsome stone when first worked; but it was liable to blacken very soon when exposed to the action of smoke. All stones, more or less, would blacken in London; but none more so, or sooner, than Portland stone, and it appeared to resist the pyroligneous acid in smoke rather less than others. The west front of St. Paul's Cathedral, which was built entirely of Portland stone, was a remarkable instance of this, being now, though only erected a moderate time, completely covered with soot. The Reform Club, the Goldsmiths' Hall, and many other buildings in London, were, nevertheless, built of this stone. Its cohesive power was not so great as might have been expected from its specific gravity, which was 2·145. It bore heavy weights, however, exceedingly well. In St. Paul's, for instance, though there was a vast accumulation of materials, there was no appearance whatever of the stone being crushed. It was, however, more remarkable for its hardness than for its cohesive power.

The next stone he described was one of a very different quality, and it was that quarried at *Bath*,—a material so soft and so easily worked, that its cost in London was considerably less than that of Portland stone. Bath stone was so soft in the quarry, that it could almost be cut like cheese; but it hardened to some degree afterwards by exposure. It was not so uniform in quality as Portland stone, there being three distinct kinds, which differed in several important points, and in value. The great faults of Bath stone were its softness, which no amount of exposure could overcome; the lowness of its cohesive power, which made it certain to be crushed with only a moderate weight; and its lightness. Its specific gravity differed very greatly indeed from that of Portland stone, being only 1·839. For these reasons it was more adapted for ornamental purposes; though there were some public buildings, and many private houses, built of it, probably on account of its cheapness. It was not at all good for such purposes, however, as might be seen by an inspection of Henry VII.'s Chapel, in Westminster Abbey, where this stone, of which that edifice was built, being exposed under circumstances in no degree unfavourable, was very much decomposed and decayed, and the freshness of its workmanship everywhere lost. Pieces of Portland stone, on the contrary, which were intended for St. Paul's Cathedral, though rejected and probably of inferior quality, bore the marks of the chisel as fresh as possible to this day. Many of the buildings at Oxford were of Bath or Heddington stone, and in that city it had peeled to such a degree as to give the various colleges the appearance of falling to ruin. The carbonate of lime, in its composition, did not differ much in quantity from Portland stone, being 94½ per cent. as compared with 95. It had, however, 2½ per cent.

* The value of this process has been questioned by Mr. C. H. Smith. See "Transactions of Institute of Architects."

instead of 1, of carbonate of magnesia, which was an important difference, and there was an entire absence of silica. Its disintegrability was, however, widely different—Portland stone, being exposed by Brard's process to an action supposed to be equivalent to two centuries of exposure to the weather, lost only 2·7 grains; while Bath stone, subjected to the same process, lost 10 grains.

The next stones of this class were those of Rutlandshire and Northamptonshire, of which most of the beautiful churches in the middle of England, remarkable for their good condition, were built. The best of these were the Ketton and Barnack stones. The Ketton was a pure oolite, having a rather coarser grain than the Portland, and not quite so good in appearance. It was, however, better than the Portland, inasmuch as it was worked much easier, and was, therefore, cheaper. It was also not so heavy, and yet quite heavy enough; its cohesive power was greater, and, though at first inferior in colour, it rather improved than otherwise by exposure. The church of St. Dunstan, in Fleet-street, was built of this stone, and, though not very old, had been erected long enough to shew the character of the stone. Its specific gravity was 2·045,—not materially varying from Portland stone, from which it differed in a very marked manner in its composition. It contained 92 per cent. of carbonate of lime, and 4 of carbonate of magnesia, with a little silica. It was much used in Cambridge in the construction of the colleges there, and looked remarkably well; and has been employed in the modern repairs of Ely and Peterborough cathedrals. Its loss by disintegration was 3·3 grains.

The next stone was the Barnack, which was more a shelly rag than a regular oolite; its colour was somewhat inferior, being a white mottled stone, and, therefore, not handsome. It consisted of 93 per cent. of carbonate of lime, and 3·8 of carbonate of magnesia; and its cohesive power was only two-thirds of that of Ketton stone. Its disintegration was very great by Brard's process, being 15 grains; but experience proved that it stood very well, and thus shewed that Brard's method could not always be depended upon.

Besides these, there were limestones which enjoyed a local reputation, such as that of Chilmark, in Wiltshire, which was remarkable for its cohesive power, and that of Ancaster, in Lincolnshire, and others.

The cretaceous beds did not afford building materials, the only chalk used for that purpose being those lower beds, locally called *clunch*, which was a very durable material for ornamental work in situations where it was not either exposed to the weather or to violence. For instance, the small chapels in Ely Cathedral, decorated with carvings of this material, had, after several centuries, preserved the freshness of even the most delicate portions.

The next group was that of the magnesian limestones, which were chiefly quarried in Derbyshire, Nottinghamshire, and Yorkshire. These were exceedingly valuable, as they not only stood exposure well, but were of a beautiful texture. The excellent qualities of the stone quarried at Bolsover were well tested in Southwell Church, Nottinghamshire, in which it had been exposed for many centuries, that edifice being now in better preservation than any other of the same period in England. This stone had become celebrated of late years in consequence of its being selected as the best material that could be obtained in England for the New Houses of Parliament. Though cheaper than Portland stone, it was greatly superior in every quality of importance. Its colour was good, its structure uniform, it could be obtained in blocks of any required magnitude, its specific gravity was greater than that of any other limestone, while its cohesive power was four times that of Portland stone. It was this high cohesive power which made it so decidedly the best stone for the New Houses of Parliament, where the enormous quantity of material to be supported, particularly in the Victoria Tower, rendered this important quality in an unusual degree so indispensable. Added to its other good qualities, on being subjected to Brard's process, any disintegration was scarcely perceptible. It appeared to be, in short, the best building stone produced in England.

Of the sandstones much need not be said. There were a great variety of them, but very few could be called good for building; and those which were good were so hard, that it was unlikely they would ever be used, except locally. They were chiefly the old red sandstone, the millstone grit and the coal grit; but, among these, there were some exceedingly bad, and others could only be used in a rough state, as they would not make ashler.*

## CHURCH BUILDING.

The parish church of Sutton Waldron, near Shaftesbury, having been rebuilt, was consecrated on Tuesday, the 16th instant, by the Bishop of Salisbury. It has been erected at the sole expense of the rector, the Rev. A. Huxtable and his lady, at a cost of about 3,000*l.*, and accommodates from 200 to 250 persons. The style adopted is the decorated. It consists of nave and south aisle, with south porch and chancel, with vestry attached: western tower, with broach spire. The total length inside, 80 feet; width, 30 feet; height of tower and spire, 112 feet. The body of the church is paved with stone, the whole of the seating being uniform and moveable. The chancel floor is inlaid with encaustic tiles by Minton. The windows of the chancel are of painted glass by Hudson and Powell; the ceiling is powdered with gilt stars on an ultramarine ground. The beams of the chancel are illuminated, having scriptural texts, and other inscriptions will be added on the walls as soon as they are sufficiently dry. The communion-table is carved in oak; and a gilt eagle-desk stands at the steps to the chancel. A portion of the west end of the aisle is devoted to the baptistery, the floor and steps to the font being of encaustic tiles, and illuminated inscriptions being written on the walls. The font-cover is carved in oak. The principal windows of the body of the church are of stamped and painted glass, by Powell, and the remainder will be filled with painted glass hereafter. The exterior is faced with flints, and the dressings are of stone from Maperton.

In order to render the whole complete, the rector has furnished the church with new bells and silver communion-service, as well as carpets and velvet furniture to pulpit, desk, &c. The work has been very well executed by Mr. Green, of Pimperne, Dorsetshire, *without* a clerk of works, from the designs of Mr. Alexander.

In the week before last the Bishop of Ripon consecrated the new church at Wyke, near Halifax, built from the designs of Messrs. Mallinson and Healey, of that town. The church, which is called by the name of St. Mary, is in the early English style, and consists inside of a chancel, nave with clerestory, and north and south aisle. There is a sacristy on the north side of the chancel; a tower and spire at the west end of the south aisle; and a porch on the north side of the church. The roofs are open, the timbers being of deal, stained and varnished. The seats will accommodate upwards of 700 worshippers, and are all of deal, stained and varnished, without doors, and *all free*. There is a small gallery at the west end. The pillars and arches, as well as the window mouldings, are all of wrought ashlar; and there is a font opposite the north entrance, the bowl of which is sufficiently large for immersion. The pulpit, reading-desk, altar rails and table, are of oak. The dimensions of the church are as follow:—Chancel, 35½ ft. by 17½ ft.; nave, 68 ft. by 20 ft.; aisles, 54 ft. by 11½ ft.; height from floor to ridge of chancel, 39 ft.; nave, 43 ft.; height of tower and spire, 110 ft. The first stone of the church was laid on Wednesday, February 11th, 1846.

The district church of St. Mark, Staplefield, Cuckfield, the foundation-stone of which was laid on the 19th Nov., 1846, was consecrated on the 18th inst. It is a sandstone building, in the early English style, with double and single lancet windows. The eastern window, of three lights, is to be filled in with painted glass at some future period. The church consists, of nave, 59 ft. by 25 ft.; chancel, 25 ft. by 20 ft.; porch, 11 ft. by 11 ft.; vestry, 10 ft. by 10 ft.; and a projecting bell-turret, with openings for three bells. The nave is the only part appropriated to the use of the congregation, and is fitted up with open benches, containing accommodation for 320 persons, nearly the whole of which are free. The chancel is entirely free of seats. The floor within the altar rails is paved with Minton's tiles. The altar rails are of iron, painted and gilded, and moveable. The porch on the south side, with a deep archway, supported by columns, forms the entrance. The roofs are of deal, stained dark oak, and varnished, and covered with Dampier's patent tiles. The architect was Mr. B. Ferrey, and the total cost about 2,000*l.*

* In the *Mining Journal* fuller report of these lectures will be found

## PARKS FOR THE PEOPLE.

Sir,—In consequence of two letters in The Builder, relative to the once intended park at Copenhagen-fields, and the plots of buildings about to cover that interesting spot, I have visited it, and am sorry to find that all hope of saving it from the sulphureous vapours of the brickmaker and the fencing-in of the bricklayer must be given up, and in a short time the whole space between Holloway and Camden Town, to beyond the new road leading to Tottenham, will be covered with houses; several on each side of that road being already covered in, and forming landmarks for various determined lines of streets, &c. To one who, like myself, first courted the beauties of Nature in those very fields, when, in pursuit of a splendid butterfly, or gathering daisies, butter-cups, or wild hyacinths, the view between the White Conduit and Highgate was uninterrupted by any building save the one isolated, countryfied Copenhagen House, beyond the little wood that bore the same name,—the change is conducive to serious reflections, like the fond illusive visions of early youth. To think that the expenditure of a few thousands might have saved those green fields and hedgerows from the encroachment, seems to throw some doubt on the consistency of those who talk much of Schools of Design and a Health of Towns' Bill, whilst they neglect obvious opportunities of securing healthy recreation and the sight of beautiful Nature to our working classes, who can ill afford the expense of railway excursions. I have also visited the Victoria-park, near Homerton, a space of, I believe, 157 acres of ground, purchased several years ago. If the management of that concern is a sample of what may be expected if government carried out the public park system, there is some consolation for their negligence in purchasing a belt of public ground round the metropolis, for nothing can be more unsatisfactory than the way that the ground has been smoothed, cleared of hedges and trees, planted in tasteless squares of small dimensions, &c. None of the advantages of the locality have been understood or turned to account. First, a field or two towards the Lea river ought to have been added, to prevent buildings from shutting in one of its finest prospects: the undulations of nature might have been assisted so as, by raising a considerable mound on the elevated centre, to command distant prospects, which will soon be built out. It used to be a favourite, a beautiful spot, rather wild, varied, and luxuriant; it is now comparatively dreary, tame, and of course insipid. It is evident that in annihilating the charms of nature, no principles of art have been resorted to, to compensate for the injury of the sad system of stopping up pathways alluded to by your correspondents. I may, with your permission, on a future occasion, mention a few interesting instances indicative of the unprotected rights of the people.

I am, Sir, &c., A Faithful Observer.

Machine for Raising Heavy Bodies in Deep Water.—A new machine, of which a gentleman of Worcester, Massachussetts, is the inventor, designed for lifting heavy articles from the bottom of deep water, is thus described:—A large vessel, containing materials for generating gas, is let down to the bottom, filled with water. The weight is attached, and the combustibles are ignited for the creation of the gas, which expels the water, and raises the vessel to the surface with a force of over 60 lbs. to the cubic foot. The machine is said to be simple, cheap, and likely to be very useful.

## NEW LONDON COAL EXCHANGE, LOWER THAMES STREET.

MR. J. BUNNING, ARCHITECT.



### NEW COAL EXCHANGE, THAMES STREET.

THE former Coal Exchange being inadequate and inconvenient for the purposes required, an enlarged site was purchased by the corporation of London for the erection of a new Exchange, having a frontage next Lower Thames-street of 113 feet, and a similar frontage next St. Mary-at-Hill; and on this the building represented by the annexed engraving is now being erected from the designs of Mr. Bunning, the architect to the corporation. It is arranged so as to give an increased width to these thoroughfares, and presents two distinct elevations, connected by a circular tower, 100 feet high, within the re-entering angle formed by the two fronts. The front of the whole is to be faced with Portland stone.

The building will contain on the ground-floor, in addition to suites of offices, an area of upwards of 4,000 superficial feet for the meeting of the merchants, including a circle 60 feet in diameter, the whole height of the building, covered with a glazed dome of cast-iron ribs, supported on each story by ornamental cast-iron stanncheons. This, from its magnitude and novelty of design, will form a prominent feature of the building. The height from the floor to the top of the dome will be about 70 feet.

There are likewise provided suites of spacious well-lighted offices and committee-rooms, occupying four stories of the building, for the accommodation of the merchants, factors, and meters; the accesses to them being by projecting galleries of fire-proof construction, within the circle under the dome.

The cost of the building will be about 36,000*l.* Mr. William Trego is the contractor for the erection of the building, excepting for the founders' work, which is to be executed by Messrs. Dewer, of Old-street.

### TRANSFERENCE OF PAINTINGS ON WALLS TO CANVAS.

THE preservation of the paintings on plaster, with which certain of the ceilings in the old rooms of the British Museum were decorated, being deemed impracticable or not desirable, they were given up to destruction, and were for the most part knocked to pieces. Dowling, a modeller, being anxious to save some of them, applied himself to transfer some of the groups to canvas, chiefly from the library, and has succeeded admirably. The following was the course he pursued. With a paste composed of equal quantities of boiled oil, flour paste, and glue, he fastened a cloth to the whole surface of the painting proposed to be removed, and formed a frame-work in front, to support the painted plaster when loosened from the wall behind. He then cut away the timberwork (in some cases brickwork) to which the plaster was attached, and, with scrapers, gradually removed the plaster from the back of the picture till the colour began to show, leaving a surface of about the thickness of a penny piece. With a similar paste to that first mentioned, the painting was fastened to canvas strained on a frame, and the picture being freed from the cloth on the face of it by the application of warm water, and afterwards cleaned with soap and water, the operation was complete.

The patience and ingenuity of Dowling are so praiseworthy, that we consider it but an act of justice to mention the circumstance, and to say that the various portions he has thus preserved, some of them large groups, are at his lodgings, No. 12, Drury-lane.

### RESTORATION OF THE "THEATRE-FRANCAIS," PARIS.

THE decoration of the Théâtre-Français, which has been going on for some time past under the direction of M. Fontaine, the architect, is now finished, and is highly praised by our Paris contemporary, the *Moniteur des Architectes*. It includes some structural alterations and arrangements to improve the house for hearing. The front of the boxes has been brought forward considerably; the royal box removed from the centre, where it was greatly in the way, to the left side of the proscenium; and the domical ceiling has been lowered. The general decoration is white and gold, and the hangings of the boxes cherry colour. Open partitions separate the boxes in lieu of the former close divisions, which had a bad effect on the sound. Simplicity with great dignity is said to characterise the whole.

## MODERN CARVINGS.



CANOPY AT ELVASTON CASTLE.



ALTAR RAIL, CHRIST CHURCH, ENDELL-STREET.

### MODERN CARVINGS.

The accompanying illustrations of wood-carving recently executed in England, will be interesting to those of our readers who are watching the progress of taste and consistency in ecclesiastical decorations. One specimen represents the altar-rail, 2 feet 3 inches high, and 20 feet long, recently executed in oak by Mr. W. G. Rogers, from the design of his son, for Christ Church, Endell-street. The style which has been adopted for its fabrication, viz., the early English—a style in which modern works of a similar nature are rarely found to be successful—makes it form part of the edifice which its introduction adorns.

The other example is a repetition of an elaborate Gothic canopy, brought from Nuremburg some years back, and now in the possession of the Earl of Harrington, for whose magnificent castle at Elvaston the accompanying work was required. It is about 5 feet 6 inches wide, and divided into three principal compartments, which are intended to surmount figures of mediæval character, while its minute parts are crowded with a profusion of crockets and pinnacles. Among the chief merits of the design, however, may be mentioned the harmony which exists between the boldness of the more prominent details and the faint character of the enriched background. We are indebted to our excellent contemporary, the *Art-Union Journal*, for these illustrations.

### CONSTRUCTION OF FIRE-PROOF STRONG-ROOMS.

The difficulty of constructing an efficient fire-proof room for the preservation of papers is considerable, the need for ventilation warring with the necessity of being inaccessible to fire. The trustees of the Bridgewater Estate have recently constructed at Hulme, Manchester, a room of this sort, at a cost of about 400*l.*, concerning which a correspondent has sent us some particulars.—A back parlour has been gutted for the purpose, and a safe of the dimensions of five yards square has been built, from the ground, of fire-proof bricks and cement, the roof being composed of the same materials and supported by three arches of iron. The wall is formed of two very strong fire-proof shells, the space between them all round being filled with a non-conducting substance. The entrance is down a flight of several steps. The door-jambs, lintel, and threshold, are of solid iron, clamped, or built in by long flange-like projections, at three points on each side, to the main wall of the building, so as to be immovable. The door consists of three parts—the fraud-proof plate, the lock-case, and the fire-proof chest, which is filled with a patent composition which at a certain temperature becomes steam, finds entrance to the safe, and, saturating the papers, prevents them from firing. The bolts are fourteen in number, five on each side, two at the top and two at the bottom. The whole door turns upon thick iron pivots springing from the top and bottom, and working in sockets, cavities in the lintel, and threshold of the door. As thorough ventilation is necessary for the preservation of deeds, papers, &c., channels for the passage of air are prepared in the room, and a ventilator provided at the top; but this very necessary arrangement to some extent defeats, as we have said, the purpose of the trus-

tees, by rendering the room liable to fire within. A party going into the place with a candle or lamp, as must always be the case, on account of the total exclusion of light, might drop a spark among any loose papers, and, the door being shut, the current for ventilation might possibly fan it into a flame, and the whole contents be consumed. To guard against this, the sides of the room have been fitted up with ranges of iron shelves, supported by iron pillars, and to occupy these shelves the trustees have fireproof iron safes, in which to deposit the title-deeds, books, and vouchers.

## OBSERVATIONS ON DESIGN.

Sir,—Design, in its plainest sense, may be considered as a creative faculty, acquired by copying simple forms. The study is as unlimited as nature, and not confined to any particular sphere or region. Want of means and opportunity may check the student's progress towards perfection; but whatever may be the prejudiced opinion of the world, there is no partiality in the bestowal of the endowment requisite for becoming eminent; whilst talent in the humblest grade is sometimes found equal to the most studied and refined, when combining members for the purpose of forming some great superstructure.

It is but falling back on the observations of others to state, that the greatest masters in the school of design were those whose works are marked with an astonishing degree of simplicity in construction; but it may be further noticed, that he who effects by some plain principle of science what takes in others a combination of complex forces, has made the greatest progress towards perfection. This simplicity can only be retained by keeping in view the unalterable laws of material, and making them subservient to the purpose. And in all instances where labour or solidity is wanting or thrown away, it must arise from aiming at unnecessary durability, or from ignorance of the detailed members into which every design must be subdivided.

As an example, man is the masterpiece of design in the world. The original intention is fully carried out, both as a whole and in the minutest section. It is impossible, according to our ideas of creative power, to introduce into so small a compass, composed of such fragile material, more action and force than a man is capable of exerting. The simplicity apparent in every movement is the consequence of perfect articulation; and the leverage and deflection of the members are all regulated by a general law. From the beginning he was a labourer, and toiled for his sustenance, combining within him all the strength suitable to his calling. By degrees he raised himself from the earth as a mere drudge, and, by transferring a portion of his own mechanism to metal and wood, learned to mentally direct what he before physically executed.

Our improvements in mechanical arts, our inventions, and our wonderful discoveries, are nothing more than segmental copies from ourselves, excepting that the motive power requires a complex arrangement, in consequence of the system being fragmentary; and it is very possible, since we have so far progressed in the knowledge and application of those forces, that we may still approximate to perfection, and ultimately bring the manual labour of the civilized world altogether within the range of machinery. Still, let the degree of perfection be what it may, it is nothing more than a copy forced on man by necessity, and therefore cannot take an exalted range as a section in the School of Design, notwithstanding which, we learn from our knowledge of the subject, that in order to progress with confidence, where the imagination may have its greatest license, we must not lose sight of first principles for an instant.

These fundamental axioms are learned by every person when first about to enter the field of construction; but they are not followed out subsequently. Can it be that our knowledge is so ample, that we may substitute ideas which shall safely supersede those pointed out by scholastic laws? We require ornament and convenience, which cannot always be reconciled with purity of construction; and though we quit for a moment what was established centuries ago, and confirmed in accuracy by the lapse of ages, we fancy we never wander so far as to render our designs inharmonious. Limited means suggest alterations, and it is prudent that economy should be practised either in a private or a national undertaking.

In this does the proof of ability consist. In producing perfection is true genius to be found. An ordinary architect may design a faultless specimen of construction, and carry out the same, as long as his means are not limited; but to introduce this purity of style and requisite convenience with niggardly economy, can only be achieved by the man of intrinsic judgment. As long as prejudice and chimera are the leading ideas in formations arising from the mind, we must not be surprised at any innovation forced upon us, however disproportioned or monstrous it may appear; yet must the world grieve that the architects of the Choragic monument and of the Wellington statue drew inspiration from the same source with such different results.

Francis Sullivan.

Manchester.

## RAILWAY JOTTINGS.

The suggestion of a safe mode of raising and working such tubular bridges as are in course of construction at the Menai Straits and the Conway, is one, says a correspondent of the *Mechanics' Magazine*, that may save the pockets of the shareholders in the first instance, and the necks of enterprizing travellers in the last. Regarding the results of formulæ deduced from models in a case such as this to be fallacious, especially as regards vibration, as the most destructive element in all such railway works as bridges, viaducts, and even slopes and tunnels, he proposes, in an unprecedented experiment such as this, to keep on the safer, though less venturous and enterprising side of so untried a novelty, by erecting only one tube and one set of rails, and not only preventing two trains from ever meeting on such ticklish ground, but the locomotive head and front of all possible vibratory offence from ever accompanying a train on such an expedition. "I would suggest," he says "that the trains in each direction shall be drawn by stationary power, or even by rope machinery with revolving cylinders, so as to bring the driving-wheels of the locomotive over these cylinders and by the action of the engine (which being placed on a revolving cylinder could not progress), give motion to the rope machinery, and thus even save the expense of stationary power. By this arrangement, also, the stability of the structure, and the safety of the passengers, would not be endangered. The weight of the locomotive would not have to be borne by the tube, and the motion of the train would necessarily be so slow, as not to generate any destructive vibration. In adopting two tubes," he adds, "they cannot be any mutual help, unless they are attached to each other: if so attached, the combined effect of the vibration caused by the passing of trains in opposite directions may prove much more destructive than can be anticipated; and should it be said that it is not intended to allow two trains to pass each other on the bridge, it will then follow, as a matter of course, that one tube is as good as two for all useful purposes."——The amount of traffic for last week, on upwards of 3,227 miles of railway, says the *Railway Chronicle*, was 178,975*l.*, thus accounted for:—82,091*l.* for passengers, 47,998*l.* for goods, and 48,886*l.* for passengers and goods together; being an increase of 25,091*l.* over the corresponding week of last year, when the mileage was about 2,525.——Enormous quantities of fish are daily arriving in London from Ramsgate. Heavy fish trains reach the Bricklayers' Arms station of the South-Eastern Railway almost every morning, at an hour suited for delivery in Billingsgate market. During the last week, trains of nearly 30 trucks of fish have been thus received. "We believe," says the *Times*, "that this great increase is partly to be attributed to the increased energy of the fishermen, consequent on the facilities and advantages they derive from railway communication. The South-Eastern Railway are doing their best to encourage the trade. Let us hope that Ireland may take a lesson from the fishermen of Ramsgate, Broadstairs, Deal, and Dover." Ireland, however, has peculiar views of her own on this particular subject, as the ready reply of a native to the like recommendation,—"Sure you would not take all the fish out of the sea?"—sufficiently attests. ——The other morning, says a contemporary, a novel scene took place at the Chelmsford Railway station—nothing less than the officers of justice marching on the line, with warrant in hand, and clutching a first class carriage, with the strong arm of the law, in payment of the sum of 31*l.* due for poor-rates to the parish of Margaretting. The directors, it seems, had imagined themselves aggrieved by the weight the overseers had laid upon them, and commenced an appeal at the last quarter-sessions, when it was thought the question was in a train for decision, but they suddenly stopped short and abandoned it, while still the cash was not forthcoming; so that nothing was left for it but a little compulsion. ——The efforts of the Trent bridge contractors to find a firm foundation, says the *Lincolnshire Times*, have hitherto proved abortive. The works, we understand, have been let for the sum of 30,000*l.*, but from the enormous expense incurred already, and the great outlay yet required, there is every prospect of its costing considerably more than the estimate. ——The High Tor tunnels at Matlock, on the Manchester, Matlock, and Ambergate line, are progressing. The tunnel nearest Matlock-bridge is completed for 80 yards; and at the south, or Matlock-bath end, 50 yards are finished, besides 28 yards of heading in the middle cutting. Between 30 and 40 yards of tunnelling have been cut during the last month, and the whole will probably be completed by August next. The still more difficult tunnel at Willersley is now being wrought at eight points at once, by the contractor, Mr. Harding.——The great tunnel under Liverpool is about the only one in connection with the London and North-Western system on which there are no particular appearances of suspension, the object being to connect as soon as possible, by a tunnel of 2¼ miles, the goods depôt at Edghill with the North Docks at the water's edge, where the bulk of all the foreign shipping centres. This is the 'Victoria Tunnel,' contracted for by Messrs. Holmes and M'Cormack, who have between 1,000 and 2,000 men at work on it, and have already carried the driftway half through. The operations are very dangerous, and in some places shake the foundations of the houses, which at many points are only at 50 to 80 feet above the level where the rails are to be laid, while, in other places, there is a variation of from 90 to 100 feet. This tunnel undermines in its course three or four places of worship, churches, Quakers' meeting-houses, and Baptist chapels, which will be only 66 feet above the run of the locomotive. One-half the tunnel is good to work through, consisting of rock and sandstone; but as it approaches the locks, the soil is of a treacherous kind and rubbish. The railway company have to pay compensation to the owners of every house and building the tunnel passes under.——The operations at the Tweed viaduct and bridge, where the masons lately struck work, have hitherto been making rapid progress. Pile-driving has been going on for several months; a wooden communication has been established between the two sides of the river, and at each side large portions of the temporary wooden bridge have been erected, which, from their height and intricate construction, are said to have an imposing effect.——The contractors for the Beattock contract of the Caledonian line have eight of the drilling machines already noticed in The Builder, at work on the lower part of their laborious summit cuttings. This machine consists of a ponderous rod sharpened at the lower end so as to form a round hole in the rock, and is alternately raised and depressed with great force by means of a driving-wheel, worked by eight men, a ninth attending generally to the machine, and keeping the drilling rod at a low temperature by a plentiful supply of water. In the evening, when the holes have been finished, they are charged with gunpowder, the machines removed, and a general blasting effected. The introduction of these machines, it is said, has facilitated operations very much. Though invented in America, the inventor, it seems, is an Englishman. For about a mile in length to which it extends, by about 50 feet less or more in depth, this summit-cutting still employs 700 men, although several hundreds have been paid off; and the blasting process has consumed no less

than three tons of gunpowder and 30*l.* worth of beer per week for many months past. The Evan, a stream which has cut its way through a goodly portion of the same work without the aid of either blasting, beer, or any thing stronger than water, is to be remunerated by the accommodation of 'a huge iron tank,' open, of course, at each end, and laid along the route which this useful stream had cut out for itself, but at a higher level than that of the railway line. The Evan, however, appears to be any thing but satisfied with this arrangement, for it has swelled up and 'given a good deal of trouble during recent floods, by filling up with gravel the culvert or bridge built for the control of its waters.' Rows on rows of huts, says our informant, here form a temporary town in the wilderness, "with shops, stalls, stables, storehouses, even a post-office, all on the bleak moor, whence in turn they must again disappear, and allow the wilderness to resume its wonted quietude, undisturbed save by the occasional whistle of the engine as it whizzes past." We well remember the impression of human power and progress which the striking contrast of a good old mail-road winding its way through this dreary district, years since produced on our mind; but little did even the most extravagant visionary then anticipate the advent of a time, so speedily too, when such an impression would be remodelled and recast, as it were, into a fresh and matter-of-fact, utilitarian, and unexaggerated mould, like that which follows:—"The mail road which winds along the same valley was an able and great work in its day; but, contrasted with what has now been accomplished, the one may be likened to the cart which creeps along it at three miles an hour, and the other to the locomotive whirling away on it with a train of ponderous carriages at ten times the speed!" Arrangements, we understand, are in progress for the opening of this line from Beattock to Edinburgh on the 20th of December, so that then the route from London to Edinburgh (and indeed by branch to Glasgow) *vid* Carlisle, will be complete.

## SUSPENSION OF WORKS.

On the various lines of railway in course of formation in the Birmingham district, a further discharge of several hundred labourers has been ordered, and, amongst the disastrous consequences on a small scale of suspending the railway works, may be noted the effect of the panic on the brickmakers. "Acting upon the great and continued demand," says the Birmingham correspondent of the *Daily News*, "and presuming upon its continuance, many persons embarked in this trade have, from the causes referred to, been involved in ruin. A failure is spoken of to the extent of some seven or eight thousand pounds, and others to a smaller amount, but the injury is not the less deeply felt." The works in this district, especially the Birmingham and Oxford Junction, have for some time proceeded very slowly. The London and North Western Company, who, about a month or six weeks since, had nearly 50,000 labourers employed in new works, have now discharged more than 25,000 of them, reserving the remainder for indispensable works. Many more have been discharged from the Chester and Holyhead, now that the works to the Conway are completed. About 400 were discharged last week from the Stamford and Rugby works, near Morcott, Rutland; and Mr. Pickering, the contractor, states that 1,200 others will be discharged from works in which he is concerned in other parts of the country. With those works, besides, which are still in progress on the same line, orders have been given to proceed slowly, the contracts being extended over double the original time. This is also the case on the Rugby and Leamington. The Stour Valley works are partially suspended. Those on the Buckinghamshire lines are to go slowly, and some of the branches, for which Acts have been obtained, are, it is understood, to be abandoned altogether. The greater part of the works upon the Edinburgh and Hawick line have been stopped, and the labourers employed upon it paid off to the number of about 5,000. On Friday and Saturday week nearly 1,400 labourers were discharged. "We are sorry to learn," says the *Montrose Review*, "that the various contractors on the line of the Aberdeen Railway, north of Dubton (Montrose), have received notice from the directors that it is their wish to suspend operations for the present. In consequence, numbers of navvies who have been discharged have gone southwards in quest of employment; but not a few are lounging about our streets." In short, the only works on which any degree of activity is continued, are those of the Caledonian, the Leeds and Dewsbury, the Great Northern, the Sheffield and Grimsby, and the Chester and Holyhead. The expenditure on even these works, however, or the most of them, has been reduced one-third. Besides the works in actual progress, many of those about to be commenced have of course been also hung up, for the present at least. This is the case with the Shropshire Union, the Northampton and Banbury, the South Staffordshire, the Birmingham and Lichfield, Coventry, and Nuneaton, the East and West India Dock Extension, the Bristol and South Wales, *et multis aliis*. The general suspension of works has already begun to react injuriously upon the iron works, it is rumoured, and much and wide-spread future distress is dreaded in various quarters.

## ELECTRO-TELEGRAPHIC PROGRESS.

There are at present 1,050 miles of telegraph in daily operation, 262 miles in progress, and 928 miles about to be commenced, making a total of 2,240 miles, the whole of which, it is expected, will be completed early next year. Interesting as this considerable progress towards the nerve-like organization of the surface of our own country is, however, there is something even still more interesting in the fact, that our American brethren have completed, by one continuous line of telegraph, the instantaneous communication between two places,—Montreal and New York,—distant, literally, in space, or by telegraphic route at least, no less than ten hundred miles and upwards,—an odd twenty miles, indeed, which of course, in such a case, are not worth mentioning. In consequence, by the way, of what is regarded on the other side the Atlantic as extravagant charges, — probably moderate, however, even as they are, by contrast with our own,—the editors of newspapers in Quebec have determined not yet to avail themselves of the telegraph from Montreal.——The telegraphic newspaper lately announced in The Builder, has been advertised. It is to be called the *London Telegraph*, and will be a threepenny paper, published daily at noon, with electric expresses, through the Telegraphic Company's establishment, from Birmingham, Bristol, Barnsley, Bradford, Berwick, Bridlington, Canterbury, Coventry, Chester, Cheltenham, Chesterfield, Cambridge, Chelmsford, Colchester, Deal, Dover, Dorchester, Derby, Darlington, Edinburgh, Folkestone, Glasgow, Gloucester, Gosport, Halifax, Hull, Huntingdon, Hertford, Ipswich, London, Liverpool, Leeds, Leicester, Lincoln, Lowestoffe, Margate, Maidstone, Manchester, Northampton, Nottingham, Newcastle, Norwich, Peterborough, Ramsgate, Rotherham, Rochdale, Southampton, Sheffield, Stafford, Scarborough, Stamford, St. Ives, Tunbridge, Wolverhampton, Wakefield, Winchester, Wisbeach, Ware, Yarmouth, York.——The electric communication has been completed by the Telegraphic Company between Manchester and London, and closing prices in money and share markets are now transmitted by telegraph.——The arrangements have been decided upon for opening a direct line of telegraph between London and Vienna.

## NOTES IN THE PROVINCES.

The improvements and additions to Ipswich have become so extensive of late years, that not only is the appearance of many of its localities entirely changed, but what a few years since was termed its vicinity, is now studded with dwelling-houses. "During the past week," says the *Cambridge Chronicle*, "very extensive plots of building ground have been opened up to the public in an entirely new direction—Mr. Fonnereau having had an opening cut through Tower Ditches in a direct line with Tower-lane, removed old houses that had stood for centuries, and made a complete opening into that portion of his estate which lies to the west of Dairy-lane." Two roadways, 40 feet in width, are being formed, on each side of which are to be erected villa residences, in view of the Orwell, Stoke Hills, and Christ's Church Park. It is also proposed to establish a public park near Ipswich.——The Board of Ordnance are now looking to the more complete fortification of Gosport. They have ordered the purchase of about 600 acres of land, for circumvallating the north side of the present fortifications either by a continued line of rampart, or by detached forts or Martello towers.——The building committee of St. Thomas's Church, Winchester, still require 600*l.* besides the 7,000*l.* already expended on the new church, which, besides, has not yet been provided with either belfry, tower, or spire. The outlay, however, seems to have already exceeded the original estimate for building a new church, capable of accommodating the population of the parish, which is said to have been 4,000*l.*; and the old church, which was pulled down, might have been made as large, it it said, for an outlay of 1,000*l.*——The plan and estimate of Mr. Davis, of Frome, for the erection of the new Town Hall and Market House at Yeovil, have been adopted. The cost, exclusive of the site, will be about 3,500*l.*, and the work, we understand, will be forthwith commenced.——The second list of subscriptions towards the restoration of Hereford Cathedral, now amounts to upwards of 8,000*l.*——The Coventry Cemetery, commenced in 1845, has been consecrated. It comprises an area of rather more than 18 acres, of which about one half has been set apart for dissenters. There is a church in the Norman style, and a dissenters' chapel in a sort of Italian style. The walks are about two miles and three quarters in extent, adorned with numerous evergreens, flowers, &c.——The walls of Cranoe Church are nearly ready for the roof. It is regretted that the tower could not have been also rebuilt, but the funds are deficient even as it is.——The 21,000*l.* expended in the erection of the sea-wall north of the entrance to the great float, at Birkenhead, is to be refunded by Government, on condition that it be applied at once towards the furtherance of the other unfinished works. An early resumption of the works, therefore, is now anticipated.——At the instance of the Leeds Council, the Bishop of Ripon has closed the burial-grounds in that town.——In accordance with a resolution already recorded in The Builder, the directors and subscribers to the National Monument, Calton Hill, Edinburgh, have issued parliamentary notices of an intended application to the Legislature for power to alter and enlarge their act of incorporation. The capital stock is to be increased by new shares, a church and place of sepulture dispensed with, and the building decorated with sculpture: maintenance and repair to be upheld by charges for admission.

Syro-Egyptian Society, Nov. 9. — Dr. John Lee in the chair.—Mr. W. F. Ainsworth, the honorary secretary, announced the presentation to the society of rubbings made by Dr. Holt Yates, the Syrian secretary of the Ameatic inscriptions contained on the sculptured monument lately discovered at Larnaka, in the island of Cyprus. Also, of rubbings of an inscription to the Emperor Vespasian, found near Beyrout, in Syria, made by Capt. Newbold. Also, a number of books presented by Dr. Schwartz, of Vienna; and an engraving of the new Protestant church at Alexandria, by the architect, through M. Bonomi. Dr. Feate read his first part of a memoir "On Frankincense," being such portion as referred to the frankincense of India, the origin of which he referred to various species of Boswellia. Mr. Samuel Sharpe read a paper on the "Determination of the Alphabetic Sound which should be given to a Hieroglyphic." It was the well-known character for "good," to which he gave the force of B, and supported his opinion by nine words and names, in which it is found. On the determination of this letter depends the reading of the names *Chebra* and *Scemiophra*; and Mr. Sharpe thence brought forward what he considered proof that Manetho's XIIth dynasty immediately preceded his XVIIIth, thereby annihilating the larger number of centuries that Chevalier Bunsen and others place between these two dynasties. Mr. John Landseer exhibited and made some remarks upon a cast of a Gnostic emblem of Homo and Typhon, that was nearly covered with hieroglyphics.

## GIRDERS WITH TENSION RODS.

*Fig. 1*

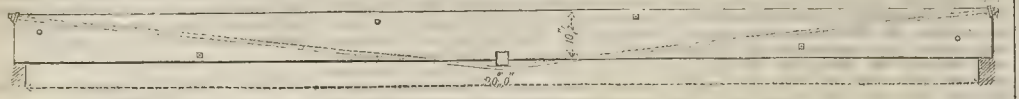
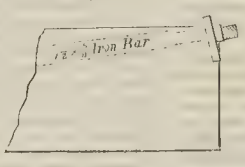



*Fig 2*



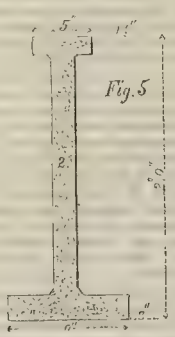

End Enlarged.

*Fig. 3*



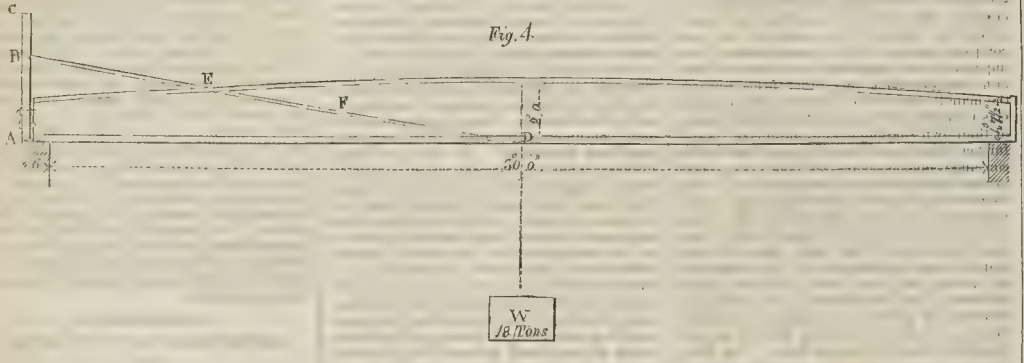

Section through Centre of Fig. 1.

*Fig. 5*




Section through Centre of Girder, Fig. 4.

*Fig. 4.*




### EXPERIMENTS ON THE UTILITY OF TENSION RODS,

AS SOMETIMES APPLIED TO GIRDERS.

The following is a record of the experiments conducted at Mr. Cubitt's, Thames Bank, to which we referred in a recent number.

Fig. 1 is an elevation and fig. 3 a section of a wood beam, trussed with an iron rod. The two pieces of timber forming the beam were bolted together, and the tension-rod introduced between them. The beam was at first tried with the nuts at end of rod loose; they were afterwards tightened up, and the beam loaded precisely as before.

Only 52 cwt. were applied to the beam before the tension-rod was tightened up; had more been added, it was considered the beam would have been strained, and the tension-rod would not have had a fair trial. The results are given in the following table:—

| Weight applied to middle of Beam. | Deflection with Nuts of Tension-rod loose. | Deflection with Nuts of Tension-rod tightened up. |
|---|---|---|
| Cwt. | Inches. | Inches. |
| 12 | ·35 | ·325 |
| 20 | ·71 | ·637 |
| 32 | 1·105 | 1·01 |
| 40 | 1·375 | 1·29 |
| 52 | 1·75 set 1-16th * | 1·7 |
| 60 | | 2·05 |
| 72 | | 2·35 |
| 80 | | 2·75 |
| 92 | * This set ought to be added to the deflection in the adjoining column | 3·75 |
| 100 | | 5·875 |

Fig. 4 is an elevation of a large cast-iron girder or beam, at the end of which is shewn a piece of wood AC securely fixed. EF is a stout rod (representing the position of a tension bar), one end turning on a centre B, and the other end resting on a block D fastened to the bottom flange of the girder, at equal distances from the bearings.

The object of this experiment was to shew, on applying the weight W, how much the distance BD increased; or, in other words, to what extent a tension bar fixed at the points BD would be stretched.

The variation in the distance BD was taken by a vernier, one scale of which was affixed to the block D, the other to the rod EF. The height of the point B, above A (or the bottom of the beam), was varied in the experiment.

The weight or load was applied by means of hydraulic pressure, and the deflection with 18 tons was 6-10ths of an inch.

When the height of the point B above A was 1 ft. 5½ in. the distance BD increased ·038 inch.

When the height of the point B above A was 2 ft. the distance BD increased ·0217 inch.

When the height of the point B above A was 3 ft. the distance BD increased ·0064 inch.

A similar experiment was made with a cast-iron beam of different dimensions; the particulars and details are as follow:—

Length of bearings ..... 24 ft. 10 in.
Depth of beam in middle 1 ft. 4½ ,,
Do. at ends..... ,, 7½ ,,

The weight applied to the middle was 12 tons, the deflection 7-10ths of an inch.

When the height of the point B above A was ½ in. the distance BD increased ·0382 inch.

When the height of the point B above A was 10 in. the distance BD increased ·013 inch.

When the height of the point B above A was 1 ft. 8 in. the distance BD *decreased* ·0145 inch.

When the height of the point B above A was 2 ft. 6 in. the distance BD *decreased* ·034 inch.

We leave our readers, for the present, to make their own deductions.

We have before us a long and valuable series of experiments on girders, made for Mr. C. Parker, architect, by Mr. G. B. Cooper, of Drury-lane, to which we shall give early attention.

### MEMS. ABOUT GAS.

Our further remarks on the returns made by the gas companies to the House of Commons must give place, in the meantime, to an accumulation of miscellaneous notes on points, for the most part, of a more temporary and fleeting interest in the progress of the general movement towards cheap gas and an abundant diffusion of its benefits.——The Gas Movement is gradually but steadily worming itself into the most vital interests, and anxieties, and resolutions, of the people, far and wide.——At Abergavenny, an improvement of the 'farthing rushlights' at present dispensed to the public, is said to be much wanted, and a new gas company, therefore, is about to be formed.——Under the now well-recognised head of 'The Gas Movement,' the *Bedford Times* intimates that the price of gas at Bedford has been reduced from 10s. to 7s. 6d., and that the inhabitants are much in want of an extension

of the street lights—and no wonder—as well, no doubt, as of the house lights likewise, although the darkness that there prevails—in gas light, at least,—is not yet so visible as it will be when another half-crown or two is deducted from the prohibitive price.——A correspondent, "X. Y. Z.," informs us that The Movement is at work in Slough, where Mr. J. C. Buckmaster has been endeavouring to enlighten the inhabitants, both mentally and ocularly, by lecturing on the subject, and advising the Sloughites to take so safe an investment into their own hands ere the Great Western monopolize it, (by the establishment of some coke manufactory, we presume). His hearers took the hint, and next day called a meeting and opened a share-list with 500*l.* on the spot.——A company, too, was lately initiatived at Tottenham and Edmonton to purchase the private works recently erected there, for the purpose of pushing the supplies into private houses, and meeting the increasing demand which cannot be supplied by the metropolitan establishments,—from a deficiency, it must be, either in quantity, quality, or price, but most probably from a threefold deficiency in all these essential respects. The projected company was gone into with the anticipation of realizing 6 per cent. the first year, and "greatly increased dividends in future." We have not yet heard how it further progresses.——The gas monopoly in Marylebone is likely to be very soon broken up, so far, at least, by the introduction of the pipes of the Kensal-green New Western establishment, which is expected to give an article 75 per cent. stronger and purer at the present price. The subject was the other day discussed in the vestry's committee, and resolutions in favour of a trial of the new company passed.——In consequence of the important and significant movement of certain manufacturing and other firms towards the manufacture of their own gas, the Lincoln Gas Company were again lately urged by some of their own shareholders to authorize "a still further reduction of the price, as a boon to the consumer, and a matter of policy, *to prevent private enterprize in the manufacture.*" The shareholders, however, were too inert, at the moment at least, for such a motion, but "there cannot be a doubt," as the *Lincolnshire Times* lately remarked, "that little time will now elapse before the company will [be compelled to] reduce the price from 7s. 6d. to 5s. per thousand," and the demand will then, it is believed, be greatly augmented.——Dissatisfaction, however, is working its own remedy elsewhere than in Lincoln alone. The Winchester consumers cannot see why they should be called upon to pay the enormous price of 11s., while at Southampton the charge is now reduced to 6s., and this is likely hence to be 'the winter of their discontent,' which will be followed by a summer of comparative satisfaction.——The Romsey gas consumers have been grumbling, and aggrieved, not only at the enormity of the price of their gas—12s. 6d. per 1,000—but at being obliged to pay more for it than the commissioners for lighting the town do. The commissioners have *power*, probably: they are united as an association, and might soon erect gas works for themselves, as other companies are doing and threatening to do. The shareholders at Romsey, however, were alarmed at even the shadow of a gas league which the one common grumble evinced, and accordingly came seriously to consider of the prudence of slackening the rein by a reduction of 3s. 6d. per 1,000, leaving 9s., which the hopeless disunited are inclined to regard as a 'reasonable charge!'——The 'British' Branch Company have been feasting 'several of the *large* consumers' at Norwich!—as if the Norwich public were not the largest consumers in the town. Mr. Wilkin, who presided, also intimated to the large consumers a reduction of price from 6s. 8d. to 5s. 10d., and assured them that "this reduction was a voluntary act on the part of the directors, and did not arise from any pressure from without"—recent threats and doings of 'large consumers,' a little to the west-north-west of Norwich, and nearer home, notwithstanding. The 'British,' however, as times go, must be allowed the credit of setting a fair example to other 'British' gasholders, in further intimating, that if their present reduction lead to a further diffusion, that diffusion will lead to a still further reduction, as their only desire is 'to realize a fair and legitimate profit.' The sooner a multitude of other companies *profit* by this example the better for themselves as well as for consumers—large and small.——On account of the high price of the article in Barnsley, says the *Doncaster Gazette*, the shopkeepers, with a view to abridge their gas bills, have, one and all, taken the pruning-knife and lopped off two hours' burning from their lights.——At Doncaster itself, by the way, the price has been reduced from 6s. 8d. to 5s. 10d. Every little helps towards what seems to be earnestly yearned for at Doncaster as well as every where else, viz., "the introduction of gas into dwelling-houses and other places which have not hitherto enjoyed the advantages of a safe, cheap, and brilliant light." For public companies at Doncaster,—in whom even the Doncaster Gas Company seem still to stand in salutary awe—the price charged is only 3s. 0½d. per 1,000 feet. But why not regard the *public* itself as a *large company*, and charge them all the same? *It is indeed a company—a league alone—that will do.* Why, the average prices charged to public companies almost everywhere else, significantly point in the same direction, when contrasted with the heavier charges wrung from the less formidable, because not yet associated, public itself. We shall take another opportunity of enlarging a little further on this point, but, in the meantime, we may just allow our gas-consuming readers to ruminate a little on the hint already given—especially when reinforced, in the meantime, by such facts as these (of which, also, more anon), viz.—that the average price paid by public companies at Bradford, Barnsley, Dewsbury, Halifax, Huddersfield, Leeds, Pontefract, Rotherham, Sheffield, Wakefield, &c., is very little more than that at Doncaster, namely, 3s. 3½d. per 1,000.——A new consumers' company, by the way, was some time ago determined on at Belper, where the price to 'private consumers' has been 9s. per 1,000 cubic feet. This is the way to convert *small* consumers into *large* ones, only they must feast themselves. We have not heard, however, what has been the result of this attempt to 'light the town of Belper in a more effective and less expensive manner than it is at present lighted.' Safer investments than *many* such projects must inevitably prove to be, in preparation for the coming 'general illumination,' cannot well be conceived.——There seems to be now no doubt of the staminal vitality—suspended, in the meantime, though it be—of those competitive measures that were brought before the Parliament which is now itself defunct. We specially allude to the Liverpool Consumers' Company, and that of the Southampton Consumers. As the *Albion* reminds its readers, the committee of the Guardian have already saved nearly 50,000*l.* per annum to the people of Liverpool—nay, while even greatly improving the *acknowledged* prospects of those very companies from whose pockets the 50,000*l.* per annum have been taken or withheld! The Guardian therefore ought to live. As for the Southampton consumers, they have already manifested unequivocal symptoms of a revival from the suspended animation of the interregnum, having now issued their notices of movement in the new Parliament.——A sort of small ferment has been excited by the Gas Committee at Walsall announcing that they would refuse to supply gas to any party not employing one particular gas-fitter for the erection and repair of their fittings, the interests of that favourite one being further supported by the equivocal compliment to all other gas-fitters, in Walsall or out of Walsall, understood, though not expressed, in the assurance that this determination was come to for the purpose of preventing the "loss and danger arising from the imperfect manner in which the work may be done by other parties." The consumers imagined that they ought to have been allowed the possession of some small discretion and judgment in a matter affecting their own interest and safety no less than that of the gas committee; and that they had a clear right to employ the cheapest and best gas-fitter that could be had. A motion was accordingly lately made in council, and carried by a majority of one, in recognition of the public right.——Of the progress of the gas movement elsewhere we have much more to add than what we can possibly find room for, but we may just briefly observe, in conclusion, that the old Brighton Gaslight and Coke Company have—some time ago indeed—reduced their price by meter from 7s. to 6s.; that gas works are about to be established at Morley, Staindrop, Brierley-hill, Alfreton (where they are already in progress indeed), and elsewhere, and that a successful experiment has been made at Hartlepool in lighting the lighthouse there,—the first on a large scale or of any great importance that has yet been lit with gas.

## LONDON UNION-WORKHOUSE COMPETITION.

In reply to the advertisements for designs for a workhouse, declaring "that the architect of the design which should be selected by the guardians as the most eligible for their purpose, should be engaged to superintend the execution of the same; that the architect of the design secondly selected should have a premium of 100*l.*; and the architect of the design thirdly selected should have a premium of 50*l.*,"—forty-three designs were sent in, two of which the committee appointed to examine them rejected, as "not being in accordance with the instructions." The received designs were then hung up in two rooms at the Auction Mart, and eleven of them were first selected. Ultimately, three were chosen from these by the committee—Nos. 7, 15, and 18, and their choice being ratified by the board, the authors of these were declared to be the successful candidates, in the following order:—1. Mr. Tress (No. 7, "*Vivo Spem*"!); 2. Mr. Daukes (No. 15, "*Humanitas*"!); and 3. Mr. Taylor (No. 18).

The decision has brought us at least a quire of MS., setting forth the whole matter in the strongest language as an unmitigated job, demanding the strictest inquiry. We have not yet seen the designs, having been refused admittance last week with such small courtesy as made us pity the poor paupers, and therefore cannot speak so loudly and so clearly as would otherwise be the case. We cannot hesitate to say, however, on the evidence before us, that the accommodation afforded by the plan selected for execution (No. 7), is quite inadequate, the classification defective, and the circumstances attending the selection suspicious. We earnestly entreat the guardians (some of whom, we know, condemn the decision entirely) to seek professional assistance in the examination, and to pause before they consummate an injustice.

## WESTMINSTER COURT OF SEWERS.

A GENERAL court was held on Friday, the 19th inst., Capt. Bague in the chair.

*Fever in Soho.*—A letter was received from the inhabitants of Charles-street, Soho, in confirmation of one received at the last court, complaining that cesspools existed in the houses, of the most offensive description; that one death had taken place by typhus fever engendered thereby; and calling upon the court to extinguish the evil. The clerk of the works for the district (Mr. Webber) upon being called on for his opinion, said he examined the premises in question, and that cesspools certainly existed, but that there was a very efficient sewer in front of these very houses, if parties would only avail themselves of it. It was then agreed that notices should be served upon the owners of the premises, under the provisions of the new Act, calling upon them at once to drain the said houses into the public sewer.

*The Drainage of Long Acre.*—The court next proceeded to open tenders for the construction of 1,825 feet of sewer in Long Acre, which were as under:—

| | |
|---|---|
| Yeoman | £1,112 |
| Hill | 1,022 |
| J. and S. Williams | 910 |
| Robinson | 894 |
| Dethick | 843 |
| Humphreys & Thirst (accepted) | 779 |

After which the following tenders were received for 1,130 feet of sewer in Newman-street, Oxford-street:—

| | |
|---|---|
| J. F. Watson | £900 |
| Yeoman | 879 |
| Hill | 866 |
| Radley and Rogers | 850 |
| C. Bell | 840 |
| J. and S. Williams | 805 |
| Robinson | 795 |
| Perkins | 766 |
| Humphreys and Thirst | 739 |
| Dethick (accepted) | 723 |

*The Expiring Commission.*—The clerk repeated at this court the answer received by him from the Lord Chancellor's secretary in reference to the renewal of the commission: the particulars of this interview appeared in THE BUILDER of last week.

The chairman, on so important a matter, wished the opinion of the court:—Whether the answer of the Lord Chancellor's secretary, being a verbal one, could, in point of law, be received; and whether a written communication should not be obtained from the Lord Chancellor on the subject?

Mr. Willoughby said the court could not be appointed at the whim of the Lord Chancellor, as Acts of Parliament had declared that commissions of sewers should issue, and merely invested the Lord Chancellor for the time being with powers to nominate and appoint the commissioners; and these powers had been followed up, confirmed, and ratified. Something, too, he thought, was due to themselves, who had laboured for the benefit of the public, to know on what grounds they were to be deprived of the commission. He had himself for many years been honoured with the commission, and he knew that the large body of gentlemen had been appointed on public and not on private or personal grounds. The court had recently been invested with additional powers by Act of Parliament, and those additional powers had been granted with the concurrence of Government itself;—for to his knowledge Lord Morpeth had said, that if the Government were not in a position to carry their own measure, they should support the bill for extending the powers of this court. Was that the time, then, he asked, for reasons they did not know, to be struck out of the commission? It was due to this court that some means should be taken to draw the Lord Chancellor's attention to this circumstance,—that one Parliament had conferred additional powers, which were just being developed, and before the Parliament could meet again that they were to be deprived of that power. As a legal man, and having every respect for the high office of Lord Chancellor, he could not consent, after years of service on behalf of the public, to have his name struck out of the commission without having some reason why it was done. He submitted, that as their powers had been conferred by Parliament, they could not be taken away until Parliament in its wisdom should think proper to do so. The commissioner concluded by moving:—"That a deputation do wait upon the Lord High Chancellor, respectfully urging him, for the benefit of the public, to renew the commission."

Mr. Hawkes thought they had done quite enough already, and that it would be the most dignified course not to complain of not being re-appointed. As to what had been said of the court now sitting, and the slanders uttered against them at Gwydyr House, why had they not appointed some person to answer these slanders? Even their own surveyor had declared here and elsewhere that that court ought not to continue. He hoped the commission would not be renewed, for the commissioners were anxious to get the power they so long held and so long misused; and instead of going bowing and scraping it would be better for them at once to wind up their affairs and retire with something like dignity.

Other commissioners having spoken, the chairman put the motion, which was carried by a majority of 12 to 8.

Messrs. Alderman Johnson, E. Willoughby, T. L. Donaldson, France, and Allason, were chosen to form the deputation.

*The Case of Mrs. Webb.*—The solicitor reported that no declaration had been filed in the case of Mrs. Webb by Mr. Farlar; and in reference to this subject a letter was read from Mr. Farlar, protesting against the rates being used for defending Mrs Webb's case, and in which the terms "dishonourable," "dishonest," "ridiculous," "robbery," &c., were plentifully scattered. No order was made on it, and it was laid on the table.

*Improvement of the Drainage of Westminster, Government Offices, &c.*—The court next proceeded to consider the report of the surveyor on the drainage of the parishes of St. Margaret and St. John, Westminster, and the formation of a new sewer on the proposed line of Victoria-street, discharging itself into the river Thames at Richmond-terrace, and affording a complete drainage of the Government offices in Whitehall, Downing-street, &c. The expense is estimated at 5,000*l.* A letter was read from the Westminster Improvement Commissioners, stating that their works were at a stand, and must remain so until the proposed sewer was built.

After some discussion, a long conversation ensued on the propriety of 9-inch work for a sewer of such dimensions, and it was agreed, that if in the execution of it the surveyor should see any objection to it, he should make a special report to the court.

It was then resolved that the report and plan of the surveyor be adopted, and that the work be sanctioned as soon as the necessary estimates can be prepared.

*The Sanatory Movement in Hammersmith and Fulham.*—Mr. Bathurst laid before the court the following memorial from the parishes of Hammersmith and Fulham:—

"*To the Commissioners of Sewers for Westminster and Part of Middlesex.*

Board Room, Hammersmith, Nov. 18.

That this board having instituted an inquiry into the sanatory state of the parishes composing this union, and as to how far the health of the inhabitants may be affected by nuisances existing from, or caused by the want of sufficient drainage or sewerage, or otherwise, and having received the reports of their medical officers, and also reports from the respective boards of highways (which reports are of the most unfavourable nature), do deeply deplore the circumstances in which the parishes both of Hammersmith and Fulham are placed for want of effectual and sufficient sewerage and drainage; and the nuisances seriously affecting the health of the inhabitants, which exist from those causes, appear to this board to require immediate attention.

That a copy of this resolution, and of the reports on which it is founded, be transmitted to the Honourable the Commissioners of Sewers for the City and Liberty of Westminster, and their attention called to the subject, in the hope that they will provide an early and efficient remedy.

A. G. CHANCE, Clerk."

The commissioner, in support of the memorial, said this court could confer no greater favour than taking these parishes under their protection.

Mr. Crook, of Hammersmith, expressed his willingness to advance 1,000*l.* for this object, if the court would ensure him a return of his capital.

## New Books.

*Principles of the Mechanics of Machinery and Engineering.* By JULIUS WEISBACH, Professor of Mechanics and Applied-Mathematics in the Royal Mining Academy of Freiberg. Vol. I. London: Hippolyte Baillière, Regent-street.

PROFESSOR WEISBACH has by this production rendered very essential service to the mechanical and engineering professions, and it is to be hoped that his labours will be duly appreciated, and that he will meet the reward to which he is so justly entitled by his merits as a mechanical engineer.

The book before us is a translation from the German, and we are led to infer, from the style and manner of the performance, that the spirit of the original has been well preserved. The work is divided into sections, and subdivided into chapters; and these chapters are again distributed into paragraphs, distinguished by numerals. This system of division and subdivision is convenient for reference, but it has always appeared to us as having a tendency to disfigure and confuse the page, at least when carried to excess, as we are somewhat apprehensive is the case in the present instance; and unless the numerals are so applied as to form a connected chain, the scheme had better be abandoned altogether.

The book opens with a section on *phoronomy* (the term is new to us), or the pure mathematical science of motion. This is a very important department of theoretical mechanics, and Professor Weisbach has done it ample justice: his definitions of the different kinds of motion are the best that we have seen; the examples are well chosen and appropriate, and the graphical representations quite to the purpose. Chapter I. treats of simple motion, and Chapter II. of compound motion, which completes the section.

The second section treats of mechanics, or the physical science of motion in general; it consists, like the former, of two chapters: the first chapter is devoted to the fundamental principles of mechanics, and the second to the mechanics of a material point. The division of forces, and the division of mechanics in the first chapter, is much to the point, but we cannot accord our approval of the attempt to introduce so many new terms, even although, in some instances, they may bear a more definite signification than those in general use. In the second chapter, the parallelogram of forces is very skilfully handled, as far as it goes; and the diagrams, with white lines on a dark ground, which are here introduced, are well executed, but we cannot say that we approve of the notation employed,—we mean the mode of representing the same kind of quantities by the same letter of the alphabet, with a number at the lower right-hand corner of it. This mode of distinction may answer very well in the diagrams themselves, but it is very apt to cause confusion in the analytical expressions.

The third section treats of the *statics of rigid bodies*; it is subdivided into six chapters, embracing the several topics which are peculiar to this department of mechanical science. The subject of each chapter is skilfully discussed, and in several of them we are presented with some new and interesting ideas. In the first chapter, which treats of the composition of *forces in a plane*, and of *forces in space*, the subject of the parallelogram of forces is rendered complete, and, under our author's management, it becomes a very seductive branch of practical science.

The doctrine of the centre of gravity, as treated in the second chapter, is quite to our taste; and the properties of Guldinus, there incidentally alluded to, have long been favourite subjects of investigation to ourselves, yet we cannot help thinking that, in consequence of their extensive application to the determination of the surfaces and contents of solids of revolution, a very useful independent work might be composed on the subject.

The third chapter is on the equilibrium of bodies rigidly connected and supported. This is a very interesting topic, and comprehends the doctrine of *pressure on an axis; equilibrium of forces about an axis*; the *theory of the lever; pressure of bodies on one another; stability, statical and dynamical; theory of the inclined plane; principle of virtual velocities*, and the *theory of the wedge*. Chapter IV. is on the *equilibrium of funicular machines*. This is a topic fraught with the most fruitful consequences: it embraces the doctrine of the *tension of cords*; the *principles of the catenary* and *suspension bridges*; the *theory of the pulley* and of the *wheel and axle*. These several subjects are treated by our author in a skilful manner; and the same remark will apply to the remaining part of the work,—for to analyse the whole would far exceed the limits which can be allowed in the pages of our journal.

Upon the whole, the work which has called forth these remarks is one of the most interesting to a moderately-informed mathematician that has been laid before us for some time; and we may safely term it a *scientific gem*.

PROJECTED WORKS.—Tenders have been called for by advertisement for the excavation of an open cutting and earthwork for driving a plant or level near Swansea; for deepening four wells at the Barracks, Winchester; and for constructing a new floating dock at Leith, with an extension of breakwaters, and the erection of a low-water pier and other works.

COMPETITION.—Designs for a workhouse for 300 inmates, on the six-class system, are advertised for by the York Union Guardians. Premium for approved design 30*l.*, or employment to carry out the design, as the guardians shall decide.

MIDDLESEX LUNATIC ASYLUM COMPETITION.—The decision is not yet made, but may be expected, we are told, in the beginning of next month.

## TO CORRESPONDENTS.

"*J. S.*" (Vauxhall.)—We have an opportunity to give the invention a trial, if he is so disposed.

"*W. H.*"—Thanks

"*H. A. M.*" will find much advantage from drawing from cast friezes, foliage, &c.

"*T. S. D.*"—Further information is forthcoming. We shall be much pleased to hear from Mr. D.

"*S.*"—The Caxton Memorial seems to have "died the death."

"*J. T.*"—We should say it is a party-wall; but this would depend on the terms of the arrangement.

"*M. and C.*"—The inventor of the material in question does not at present give his name.

"*D.*" (Bath.)—Received. Further explanation is desirable.

"*J. S.*" will find mention of works on "Furniture" in our next number.

"*Fire-Proof Cement.*"—A correspondent wishes to know the best for stoves. Mr. Copeland (Lincoln's-inn-fields) has patented a cement of the sort.

"*Drilling Machines.*"—We refer our correspondents who asked for sources of further information on this subject to the present week's RAILWAY JOTTINGS.

*Received.*—"E. Davis," Mr. L. (Lewisham), "Peter Palette," "J. W.," "J. M." (Bridgewater), "An Architect and a Member of the Institute," "Regular Subscriber," "F. D.," "G. B. C.," "F. W. H." "No Guardian."

*Books Received.*—"Transportation and Convict Discipline Considered:" by Mr. Zachary P. Pocock (Simmonds, Bucklersbury). "Fowler's Patent for Improvements in the Construction of Iron Beams or Girders."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

# THE BUILDER.


## ADVERTISEMENTS.

**ROYAL POLYTECHNIC INSTITUTION.**—TWO LECTURES by Dr. Bachhoffner—one on the LAWS of NATURE, in reference to the IMPORTANT SUBJECT of SANITARY MEASURES; the other on the various modes of VENTILATION, in which the PHYSICAL PROPERTIES of a JET of STEAM will be exhibited, with Novel and Highly Interesting Experiments, daily at Two and half-past Three o'Clock. These Lectures will be given alternately in the Evenings at Eight o'Clock, except on Saturdays. The ELECTRIC TELEGRAPHS worked. The WORKING MODELS explained. An entirely NEW SERIES of DISSOLVING VIEWS. DIVING-BELL and DIVER, with HYDES' NEW APPARATUS for CONVERSING under WATER, &c. &c.—Admission, 1s.; Schools, Half-price.

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EVENING CLASSES for the Study of the Mathematics, the English, French, German, and Latin Languages.

Subscription, 3s. per quarter, and 2s. 6d. entrance. Tickets for the quarter commencing December 1st, are ready for delivery.

EDWIN LANNESTER, M.D., F.R.S., F.L.S., will commence a Course of Lectures on "The Natural History of Creation" on Friday Evening, December 3rd.

Prospectuses, containing particulars, may be obtained on application at the Library of the Institution.

A. McFARLANE, Secretary.

**LESLIE'S PATENTS.**—GAS CONSUMERS guaranteed the following important sanitary and economic advantages:

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3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bar wings the increase of Light is above 50 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas-mains, and renders the Burners Light-producers, and not Smoke-producers: these will vary in price accord ng to the duty they have to perform, from 8s. upwards.

PRICES.—Upright Burners, with Conyngham Spring Glass Holders, with other sized glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 9d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded, on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 8s. if a side burner, or 8s. 6d. if the upright be desired.

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FRENCH PAPER HANGINGS.

**THEATRE ROYAL LYCEUM.**—Messrs. MARKS and Co. having, under the directions of Mr Bradwell, furnished a considerable part of the DECORATIONS of that Magnificent Theatre, beg to call the attention of Architects and the Trade to the same, and to the fact of their always keeping stock ready for similar purposes in conjunction with their large Stock of generally useful Paperhangings, beginning from 8d. per piece to Two Guineas.—59, Princes-street, Coventry-street.

N.B. Their Splendid Collection of Patterns for the ensuing year is finished, and ready for inspection.

TO DECORATORS, PAPERHANGERS, AND THE TRADE.

**E. T. ARCHER**, of the late Firm of ARCHER and TAVERNER, of Nos. 140 and 141, Old-street, begs leave to state to the Trade that, in consequence of the increased demand for the DECORATIVE PAPERS, he has taken the opportunity to embrace the advantage of the above premises, lately occupied by Messrs. MERRICK, WILKINSON and Co., upon which establishment E. T. ARCHER will be happy to submit to the Trade in general all his various styles of Decorations, to which will be added all the large collection of Decorations, Figures, French Chintzes, and Decorative Borders and Papers of Messrs. Merrick, Wilkinson and Co., which E. T. A. has been successful in purchasing at the late sales of Messrs. M., W. and Co. E. T. Archer, at the same time, returns his thanks for the liberal support he has for the last eighteen years received at the hands of the Trade, and trusts that he shall continue to receive their confidence and support at the Manufactory and Show-rooms, Nos. 451, OXFORD-STREET, and Nos. 140 and 141, Old-street, where all orders will meet with promptitude and attention.

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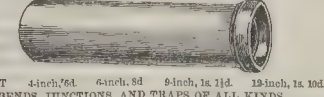
**PAPIER MACHE and CARTON PIERRE.** Just published, a LITHOGRAPHIC VIEW of IRONMONGERS' HALL, Fenchurch-street.

The spacious Banqueting Hall of the Worshipful Company of Ironmongers having been confided to Messrs JACKSON and SONS for redecoration, they have carried out the whole of the rich dressings of Ceiling, Walls, Dais, Orchestra, and the various parts in the Elizabethen style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is nobly designed with beams and panneau, panels with pendants, strap work, &c. &c., which finished in colour and gold; the walls have a rich high dado with the arms, the grade, and period of office of the Masters and other eminent members of the Company, chronologically arranged from the time of Edward IV. The orchesetra, principal entrance, Master's end, are also appropriately enriched.

A large Lithographic View of this Interior is now published and ready for sale, at their Papier Mâché and Carton Pierre Factory, 49 and 50, Rathbone-place, price 7s. 6d.

**TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY HENRY DOULTON and CO., POTTERS, HIGH-STREET, LAMBETH, LONDON**

STRAIGHT TUBES, with SOCKET JOINTS, in Two Feet Lengths,



3-inch bore, 5d. PER FOOT 4-inch, 7d. 6-inch, 8d 9-inch, 1s. 1½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. John Phillips, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent of little utility I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

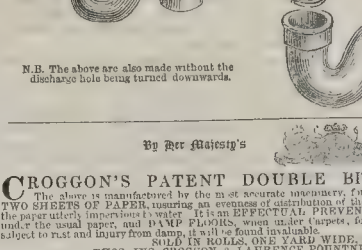
From Mr. John Roe, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers Office, Hatton-garden, August 26th, 1847.

Dear Sir,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR WATER-CLOSETS,**

With Trap in One or Two Pieces.

**DOULTON and WATTS,**

LAMBETH POTTERY,

HIGH-STREET, LAMBETH,

LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

Delivered in London or its vicinity free of charge.

By Her Majesty's Royal Letters Patent.

**CROGGON'S PATENT DOUBLE BITUMINOUS WATERPROOF PAPER.**

The above is manufactured by the most accurate machinery, for despatch; a DOUBLE COAT OF BITUMEN BETWEEN TWO SHEETS OF PAPER, insuring an evenness of distribution of the waterproof materials, thus rendering every minute portion of the paper utterly impervious to water. It is an EFFECTUAL PREVENTATIVE against the effects of DAMP FROM WALLS, if put under the usual paper, and DAMP FLOORS, when under Carpets, for Linen Packages, and Wrapping all Articles of Merchandize subject to rust and injury from damp, it will be found invaluable.

SOLD IN ROLLS, ONE YARD WIDE, AT SIX-PENCE PER YARD,

THOS. JNO. CROGGON, 8, LAURENCE POUNTNEY HILL, CANNON-STREET, LONDON.

**HEAL AND SON have just completed the erection of Machinery for the purifying of** feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way.

Old Beds re dressed by this process are perfectly freed from all impurities, and by expanding the feathers the bulk is greatly increased and consequently the Bed is rendered much softer. The following are the prices of New Feathers:

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|---|---|---|---|
| Mixed, per lb. | 1s. 0d. | Best Irish White Goose | 2s. 6d. |
| Grey Goose | 1s. 4d. | Best Dantzic White Goose | 3s. 0d. |
| Foreign Grey Goose | 1s. 8d. | | |
| Best Foreign Grey Goose | 2s. 0d. | | |

HEAL and SON'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.


**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them coming through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

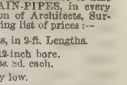
Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 73, Stamford street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and 7s. per gallon. The oak colour may be obtained in packets of 2s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

Sold also at the office of "The Builder," 2, York-street, Covent Garden, London.

**SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN-PIPES**, 2 feet lengths, in various bores, from 2 to 9 inches, patronised by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth. A stock of elbows, stink traps, and various shapes always on hand.

**UNION BROWN STONE POTTERY,** CHEMICAL APPARATUS, and DRAIN-PIPE MANUFACTORY, 14, Vauxhall-walk, Lambeth; at Albion Wharf, Holland-street, Blackfriars; Kingsland Basin, Kingsland-road; and Lime Kilns, Lewisham. Patronised by Her Majesty's Commissioners of Woods and Forests, also by the Right Honourable and Honourable Commissioners of Sewers for Westminster.



WILLIAM NORTHEN, Inventor and Original Maker of Salt GLAZED BROWN STONE SOCKET DRAIN-PIPES, in every variety of shape, begs to call the attention of Architects, Surveyors, Contractors, and Others to the following list of prices:—

Straight Barrel Pipes, with Socket Joints, in 2-ft. Lengths.

| 6-inch. | 9-inch. | 12-inch bore. |
|---|---|---|
| 1s. 4d. | 2s. 8d. | 3s. 8d. each. |

Bends and Junctions equally low.

The following unasked Testimonial is respectfully submitted.

Sewers' Office, 1, Greek-street, Soho, July 20, 1847.

Mr ——

Dear Sir,—Should you at any time be in want of Stone-ware Drain-pipes, I take the liberty of recommending you to purchase them of Mr. Wm. Northen, Stone Potter, Vauxhall-walk, Lambeth. I have used some hundreds of his Pipes, and have found them to be made of the best material and workmanship. As such, therefore, I beg to recommend them.—I am, dear Sir, yours truly,

JOHN PHILLIPS, Surveyor.

**SMITHFIELD CLUB PRIZE-CATTLE** SHOW, 1847.—The ANNUAL EXHIBITION of Prize Cattle, Seeds, Roots, Implements, &c., 8th, 9th, 10th, and 11th December, at the HORSE BAZAAR, King-street, Portman-square. Ladies are enabled to view this National Exhibition with perfect comfort and, for the better accommodation of Visitors, a large Saloon for Refreshments is this year added. Open from Daylight till Nine in the Evening. Admittance, One Shilling.

No. 15, GROSVENOR-SQUARE.

**SUPERIOR GARDEN MOULD.—Parties** desirous of CLEARING OFF THE GARDEN MOULD, may apply at Messrs. THOMPSON and MORGAN, Architects, 2, Conduit-street West, Hyde-park.

**WATERSIDE PREMISES.—To be Sold,** by PRIVATE CONTRACT, those very eligible Premises, in Narrow-street, Limehouse, known as GILMAN'S WHARF, and suitable for carrying on the business of a Sailmaker on an extensive scale, or the warehousing of goods.—For particulars apply to Messrs. MILLER and HORN, Solicitors, 77, King William-street, City.

TO BUILDERS AND CONTRACTORS.

**TO BE LET on Lease from Christmas** next, the complete BUILDING PREMISES of the late Firm of GRISSELL and PETO, of Lambeth, and the Business therewith connected, on moderate terms. The Premises have a Wharf on the River, with Steam-engine and Sawing Machinery. A Premium will NOT be required; and the party taking the premises will only be required to pay for such portion of the Plant as may be agreed upon. Apply, for particulars, to Messrs. WINSTANLEY and Co., Paternoster-row.

TO BUILDERS.

**TO BE DISPOSED OF, most Eligible** FREEHOLD BUSINESS PREMISES, situate in a flourishing Watering-place in the south of England, in which the Trade of Builder, Carpenter, and Joiner, is now, and has been successfully carried on for many years by the present proprietor, who is about to retire from the same. There is an Excellent Jobbing Connection with it, and altogether presents an opening with advantages seldom to be obtained. The premises are most complete, in good repair, (the principal part having been newly erected within the last twelve years,) and comprise a commodious DWELLING, replete with every convenience, at the rear of which is Foreman's House, Cottage, Garden, Extensive Yard, with Workshops, Drying House, Painter and Glazier's Shop, Stores, Deal Sheds, Sawpit, Stables, Cart and Chaise Houses. There is also an excellent spring of water running through the premises. For further particulars apply to A. F. LIVESAY, Esq., Architect, Portsmouth.

TO BUILDERS, CABINET AND COACH MAKERS, Tunbridge Ware Manufacturers, and others requiring Roomy Premises, with valuable Machinery for Sawing, Planing, Turning, &c.

**TO BE SOLD, OR LET on Lease, most** ELIGIBLE PREMISES, situate No. 12, Dorset-place, Dorset-square, in the immediate vicinity of the Regent's Park, comprising a most commodious dwelling-house replete with fixtures and fittings; at the rear of which, with a back entrance into New-street mews, are premises adapted to a large trade, and consist of a large yard, excellent workshops, counting-house, saw-pits, deal and other sheds, stabling, and an abundant supply of spring water. There is also the advantage of the machinery, which has been very recently erected for sawing, planing, cork-cutting, turning, &c. by horse-power, and which will be valued much below its cost price. For farther particulars and to view the premises between 10 and 4. No written applications can be attended to.

PORTLAND STONE.—Important to Builders, Masons, and Others.

**TO be SOLD, CHEAP, a large Quantity of** PORTLAND STONE, in Blocks, Landings, Slabs, &c., the remaining Stock of a Builder retiring from the Trade, and will be sold at the following low prices:—

Large Blocks, 1s. 6d. per cube foot.
Middling do., 1s. 3d. do.
Small do., 1s. do.
Landings and Slabs at equally low prices.

N.B. Can be Sawn on the Premises, if required.—For particulars inquire of Mr. SAUNDERS, the Langton Arms, Wenlock-street, St. Luke's, back of the Church.

TO SURVEYORS, ENGINEERS, AND OTHERS.

**OFFICE FITTINGS for SALE, consisting** of large Drawing Boards and Slopes, Stools, Pigeon-holes, Book ditto, Cupboard and large Drawers and Shelves for Charts, &c.; several Writing Tables, Chairs, &c., suitable for any Office. They are all nearly new, having been in use but four months at a Railway Engineer's Office, and sold in consequence of the Stoppage of Works on this part of the Line. The whole, or part, will be sold a decided bargain. To be seen at Mr. J. DOWSON'S, Auctioneer and Furnishing Warehouseman, Skelton-street, and Church-passage, Greenwich.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only.
70, York Road, Lambeth; and at 28, Cross Street, Blackfriars Road.

**ENCAUSTIC, VENETIAN, BATH, and** other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

**WORCESTER ENCAUSTIC TILES.—** Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREEN and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

**DR. ARNOTT'S CHIMNEY VENTILATOR.**—F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of Rooms of every description. Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of "no cure no pay."

**MAGNUS'S ENAMELLED SLATE.—** Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c. This beautiful material has been untimely placed into Buckingham Palace, the ... at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate-work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices. N.B. The trade supplied with whole cargoes, self faced, or planed on one or both sides, direct from the quarries. A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

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**THE LAWS OF HARMONIOUS** COLOURING, adapted to Interior Decorations, with Observations on the Practice of House Painting.
By D. R. HAY.
A New Edition (being the Sixth), in crown 8vo.
WILLIAM BLACKWOOD and SONS, Edinburgh and London.

Now ready, price 7s. 6d.,

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By FRANCIS BASHFORTH, M.A., Fellow of St. John's College, Cambridge.

The above Tables are applicable to every combination of "slope," and width of "formation level," and when the heights are given to tenths of a foot, only one multiplication is required on each prismoid.

"We cannot dismiss the subject without expressing our conviction that Mr. Bashforth's Tables are by far the most simple and generally useful of any that have yet appeared. Such we know is the opinion entertained by men who have for years past been engaged in the calculation of earthworks, and are consequently best qualified to appreciate the value of tabular modes of shortening the labour of calculation."—Civil Engineer.

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**ON the HISTORY and ART of WARMING** and VENTILATING ROOMS and BUILDINGS.
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The Work contains 240 diagrams, many of them of great value for practical purposes, inasmuch as they contain figures and sections of apparatus not accessible except in costly works.

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INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enable the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with flat or convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS OR COPPER, ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental; handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

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**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent raising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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That ARCHITECTURAL, SCULPTURIC, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.

S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

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**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

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This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others in England, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.

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TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

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**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

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N.B. Estimates given for Sawing and Planing.

WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood), known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licenses to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years' seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

**CANADIAN SLEEPERS.—For SALE,** well manufactured SLEEPERS, of Cedar, Hemlock, and Pine: a few thousands left on hand.—For particulars, apply to HANS MARCHER and Co., 11, Parliament-street, Hull.

**SOCIETY for the ENCOURAGEMENT** of ARTS and MANUFACTURES, &c.

H. R. H. PRINCE ALBERT, F.R.S., D.C.L., President.

The Ninety-Fourth Session will commence on WEDNESDAY EVENING, the 10th instant, when the Royal Charter will be laid on the table, the Address of the Council will be presented, and communications relating to Arts and Manufactures will be read.

The LIST of PREMIUMS, offered for this Session, for subjects in FINE ARTS, MANUFACTURES, MECHANICS, CHEMISTRY, and AGRICULTURE, has been issued, and may be had at the Society's House (if by post, inclosing a stamp).

The ANNUAL EXHIBITION of Select Specimens in the Decorative Arts and Manufactures, including Works in Glass, China, Earthenware, Mosaics, Marbles, Carved Wood, Ornamental Iron and Brass Work, &c. &c., will be opened in the Society's Large Hall in the beginning of March; and MANUFACTURERS, ARTISTS, and DESIGNERS, are requested to send in their Works on the 5th of February.

The FIRST VOLUME of a New Series of TRANSACTIONS of the SOCIETY, with numerous Engravings and Coloured Plates, is nearly ready for delivery to Members.

The EXHIBITION of the WORKS of WM. MULREADY, Esq., R.A., for the Promotion of a NATIONAL GALLERY of BRITISH ART, will take place in June.

All Letters and Communications to be addressed (pre-paid) to the Secretary of the Society of Arts, at the Society's House, John-street, Adelphi.

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The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations; and the additional Names, with the liberal Donations and Subscriptions appended, are highly gratifying. They beg to intimate they have appointed Mr. Edward Herbert, 42, Crawford-street, Marylebone, and Charles Jackson, 3, Paradise-terrace, Holloway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, and the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of the Institution will shortly be printed.

Offices, Poland House, Broad-street, Golden-square, where all communications are requested to be sent.—Attendance, Mondays and Thursdays, from 10 to 4.


LONDON: Printed by CHARLES WYMAN, of 16, Castelnau Villas, in the Parish of Barnes, in the County of Surrey, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the County of Middlesex; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, November 27, 1847.

# The Builder.

A JOURNAL FOR

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VOL. V.—No. 252. DECEMBER 4, 1847. Price ..... 3d. Stamped ..... 4d.


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FREE EXHIBITION of MODERN ART. Gallery, Hyde-park-corner. November 22nd, 1847.—Artists are hereby informed, that the Committee MEET every SATURDAY EVENING at seven o'clock, at the CRAVEN HOTEL, STRAND, where all communications and applications for space are requested to be sent, and where full particulars may be obtained.

E. J. NEAMAN, Hon. Sec. pro tem.
C. E. WAGSTAFF, Treasurer.

NOTICE IS HEREBY GIVEN, that a GENERAL QUARTERLY COURT of the Governor and Directors of the PROVIDENT FUND, for the Relief of Aged and Infirm Members of the INSTITUTION of BUILDERS' FOREMEN, will take place on WEDNESDAY EVENING next, December 8th, at the Bay Tree Tavern, St. Swithin's lane, to Audit the Accounts, and other general Business.

W. ALLARD, Secretary.

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TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.


### SALES BY AUCTION.

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MR. FRED. GODWIN will SELL by AUCTION, at the Mart, on TUESDAY, December 7th, at One o'Clock, by order of the Mortgagees, the GROUND LEASES of Nos. 6, 7, 8, and 33, Hereford's-place, Old Brompton, partly finished; held for Ninety Years, at Ground Rents of £8 and £9 per Annum.—The premises may be viewed, and particulars had of Mr. CORPE, Esq., 3, Lincoln's-inn-fields; of Messrs. RHODES and LANE, 63, Chancery-lane; at the Mart; and at Mr GODWIN'S Offices, 3, Halkin-terrace, Belgrave-square.

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SOUTH-WESTERN RAILWAY.—Metropolitan Extension and York-road Station.—Extensive Sale of Building Materials of Thirty modern Houses.

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TO ARCHITECTS, ENGINEERS, AND OTHERS.

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TO ARCHITECTS COMPETITION AND OTHER DRAWINGS

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### PUBLICATIONS.

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Contents:—1 Joseph is Sold by his Brethren. 2 The Cup found in Benjamin's Sack. 3 Joseph makes himself known to his Brethren. 4 Jacob Blessing Joseph's two Sons.

A HAPPY NEW-YEAR, by Miss BUNBURY. Price 2d.

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### CONTRACTS.

TO WELL SINKERS.

NOTICE.—TENDERS will be received by the Honourable the Board of Ordnance, at their Office, Pall mall, London, on MONDAY, the 13th day of December, 1847, from such Persons as may be willing to undertake the DEEPENING FOUR WELLS, at the Barracks at Winchester.—Specifications and Conditions of the Contract may be seen, and every information obtained, on application at the Board Master's Office, at Winchester; or at the Royal Engineer's Office, Mill-Dam, Portsea, between the hours of Ten and Four each day, Sundays excepted.—The Tenders are to be sealed up, and endorsed on the outside—"Tenders for Deepening Four Wells at Winchester Barracks."

Royal Engineer's Office, Portsmouth, 17th November, 1847.

NEW CHURCH OF ST. MARK, WOLVERHAMPTON.] TO CONTRACTORS, BUILDERS, AND OTHERS.

THE Committee for the Erection of the above Church are prepared to receive TENDERS for the DIGGING and PUTTING IN THE FOUNDATIONS of the same, and for the entire ERECTION of the CHURCH, either separately or together, as Contractors may see fit.—Plans and specifications may be seen at the Office of the Architect, Mr C. W. ORFORD, 19, Waterloo-street, Birmingham, on and after the 29th inst., and Tenders must be sent to THOMAS CORSER, Esq., Solicitor, Wolverhampton, on or before the 8th of December next. The Committee do not bind themselves to accept the lowest Tender.

TO BUILDERS.

BEDFORD LUNATIC ASYLUM.—Persons desirous of CONTRACTING with the Committee of Visitors of this Asylum for the Execution of certain WORKS therein, are requested to send TENDERS for the same, sealed and endorsed, addressed to the Committee of Visitors at the Asylum, by Ten o'clock on the Morning of THURSDAY, the 24th of December next. The Plans and Specifications may be inspected at the Asylum, and have further particulars obtained on application to Mr SMITH, County Surveyor, Hertford. The Visitors do not pledge themselves to accept the lowest Tender.

SAMUEL WILTON, Clerk to the Committee of Visitors.

Bedford, November 24th, 1847.

Guildhall, November 30th, 1847.

THE Committee for Letting the City's Lands will MEET at Guildhall on WEDNESDAY, the 8th day of December next, at One o'clock precisely, to receive TENDERS for LETTING on Building Leases for Sixty-one years, from Christmas next, a PIECE of GROUND on the north side of Narrow-street, Ratcliffe, and a Large PLOT of GROUND on the east side of Puddle-dock, on the south side of Upper Thames street, and on the north side of the River Thames; also to receive Tenders for Letting on Leases for Twenty-one years, from Christmas next, a HOUSE, No. 19, on the north side of Broad-street-buildings, and Nos. 7, 8, 9, and 10, on the north side of Crescent-place, Blackfriars; and also for 21½ years from Christmas next, a HOUSE in Bedfordpassage, Lime-street. Further particulars may be obtained and Plans seen, by applying at the Office of Works, Guildhall.

THOS SAUNDERS, Comptroller.

LONDON MECHANICS' INSTITUTION, Southampton-buildings, Chancery-lane.—The Public are respectfully informed, that LECTURES on the following interesting subjects will be given in the course of the quarter, commencing this day, December 3rd.

Dr. E. LANKESTER, F.R.S., F.L.S., on the Natural History of Animals. MUSICAL ENTERTAINMENTS by J. L. HATTON, Esq., and by F. N. CROUCH, Esq. The Cause of the present Pressure, a False Measure of Value; a Correct Measure of Value the only Remedy, by G. H. FELL, Esq. E. COWPER, Esq. (Lecturer on Manufacturing Art and Machinery in King's College, London), on Signals and Telegraphs, and on Self-Registering Instruments. J. SMITH, Esq., on the Moral of Fictitious Writings. W. H. DEMPSEY, Esq., on the Art of Preserving Animal and Vegetable Substances; and on India Rubber and Gutta Percha, and their Properties, Manufactures, and Uses in the Arts. C. LANE, Esq., on America as a Field of Enterprise for the Young Men of England; and on Duels. W. M. WILLIAMS, Esq., on the present Social Condition and Future Prospects of Italy. Dr. BACHHOFFNER, on the Physiology of Respiration, in reference to Sanatory Measures.—Prospectuses, containing particulars, may be obtained at the Library of the Institution.

A. McFARLANE, Secretary.

SOCIETY for the ENCOURAGEMENT of ARTS and MANUFACTURES, &c.

H. R. H. PRINCE ALBERT, F.R.S., D.C.L., President.

The Ninety-Fourth Session will commence on WEDNESDAY EVENING, the 15th instant, when the Royal Charter will be laid on the table, the Address of the Council will be presented, and communications relating to Arts and Manufactures will be read.

The LIST of PREMIUMS, offered for this Session, for subjects in FINE ARTS, MANUFACTURES, MECHANICS, CHEMISTRY, and AGRICULTURE, has been issued, and may be had at the Society's House (if by post, inclosing a stamp).

The ANNUAL EXHIBITION of Select Specimens in the Decorative Arts and Manufactures, including Works in Glass, China, Earthenware, Mosaics, Marbles, Carved Wood, Ornamental Ironand Brass Work, &c. &c., will be open in the Society's Large Hall in the beginning of March; and MANUFACTURERS, ARTISTS, and DESIGNERS, are requested to send in their Works on the 5th of February.

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All Letters and Communications to be addressed (pre-paid) to the Secretary of the Society of Arts, at the Society's House, John-street, Adelphi.

SMITHFIELD CLUB PRIZE-CATTLE SHOW, 1847. The ANNUAL EXHIBITION of Prize Cattle, Seeds, Roots, Implements, &c. will, (by kind permission) be conducted at the HORSE BAZAAR, King-street, Portman-square, on the 10th, 11th, and 13th December next, and for the better accommodation of Visitors, a large saloon for Refreshments is this year added.—Open from Daylight till Nine in the Evening. Admittance, One Shilling.

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(Signed) ROBERT SCRIVENER, Manager.

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The spacious Banqueting Hall of the Worshipful Company of Ironmongers having been enlarged by Messrs. JACKSON and SONS of Celine, Wall, Ingle, Orchestra, and the various parts in the Elizabethan style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is divided into panel and sunk wall, bearing and ornamental panels with pendents and drop work, &c., the whole finished in colour and gold; the walls have a rich high dado with the arms, ornaments of the Company, over a door all arranged for the time of Edward IV. The whole is a principal entrance, Messrs. Jackson are also appointed by each Hall.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES which are to be seen at work at Alperton, and at the Company's office, 193, Piccadilly, from 10 to 4 o'clock, Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Amslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly.

Plans, Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 133, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

HEALTH OF TOWNS

**KIRRAGE'S PATENT SEWER-** DRAIN AND BUILDING BLOCK. The Patentee, observing the evils which arise from the perishable nature of the materials in general use for building Sewers, Foundations, and other Works, which expose it to the action of water, was induced to attempt the production of a material which should at the same time be impervious to it, and which, like to many ancient and early architectural remains, and combine great strength and durability with facility of moulding into any required shape. In this he has been successful; and he is now enabled to offer to the Public his Patent Blocks, which will be found to possess all the qualities of great strength, indestructibility by water, facility of working, and great cheapness, and be invaluable for all subterraneous and subterraneous structures, more especially for forming the bottom of Sewers, which at present, from the nature of the materials used in building them, are only remedy considerable leakage, but constantly in quite repair. The use of the Patentee's material is not confined to the purposes aforesaid mixed, but may be applied for all building purposes, especially Floorings of Barns, Granaries, Malthouses, and other places where there is a tendency to damp and dryness is essential, as also for the formation of Baths, Cisterns, and Reservoirs.

For common Building purposes, the material of which the Patent Blocks are composed may be used as a coating for Concrete Blocks, formed of a cheaper substance.

The price at which the material can be supplied is 1l. 10s. per ton.

The material for sewerage of the shape and size herein given of the Holborn and Finsbury Blocks, and six inches in thickness to be perfect; 4 inches and 5 inches in thickness, 5s. per foot; and 3s. 6d. per foot for the Barrel, or small drain of 9 inches in diameter.

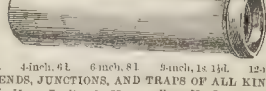
Contracts, Engineers, Surveyors, Builders, and Public Companies carrying on Public Works, are invited to inspect the Patent Sewer and Drainage Blocks; Drawings and Specifications of which can be seen at the offices of Messrs. DREW and SHADWELL, 23, Abingdon-street, Westminster, where also all applications for Licenses are requested to be made.

**TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY**

HENRY DOULTON AND CO., POTTERS,

HIGH-STREET, LAMBETH, LONDON.

STRAIGHT TUBES, with SOCKET JOINTS, in Two-Feet Lengths.



4-inch Pipe, 5d. PER FOOT. 4-inch, 6l. 6-inch, 8l. 9-inch, 1s. 1½d. 12-inch, 1s. 10½. 15-inch, 2s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use for other material than what I use new are Pipes for house drains and I can quite prove to them, how they will be conferring a great boon on public health, and I feel to some extent the little apology I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there can not be a better article.

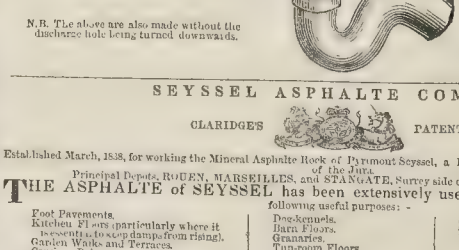
From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of sewers.

Sewers Office, Hatton-garden, August 29th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.



N.B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR**

WATER-CLOSETS,

With Trap in One or Two Pieces.

**DOULTON AND WATTS,**

LAMBETH POTTERY,

HIGH-STREET, LAMBETH,

LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

Delivered in London or its vicinity free of charge

**SEYSSEL ASPHALTE COMPANY.**

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrmont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

**THE ASPHALTE of SEYSSEL** has been extensively used since March, 1838, for the following useful purposes:—

| | | |
|---|---|---|
| Foot Pavements. | Dog-kennels. | Covering of Railroad and other Arches. |
| Kitchen Floors (particularly where it is essential to keep damps from rising). | Barn Floors. | The only effectual mode to prevent the percolation of water, which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Granaries. | |
| Carriage Drives. | Tan-room Floors. | |
| Conch houses and Stabling. | Malt-house Floors. | |
| | Pigeries, &c. &c. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantage to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to the Company, and to further prevent an imposition of material having been used from other quarters, and to guarantee that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the per per description of material has been used.

Before such may be obtained, all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,

Seyssel Asphalte Company, Stangate, London.

**LESLIE'S PATENTS.—GAS CONSUMERS** guaranteed the following important sanitary and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light producers, and not Smoke-producers. These will vary in price according to the duty they have to perform, from 10s upwards.

PRICES:—Upright Burners, with Conyngham Spring Glass Holders, with either sized glass, Combustion Chamber included, 2s. each; Bat Burners, ditto, 6s. each; extra Glass Combustion Chambers, 9d. each. SAME PACKAGES, with one Burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 8s. If a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of from 50 per cent, with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to fix them. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.

Offices and Manufactory, 59, Conduit-street, London.

**THE most perfect DRY GAS-METER** in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 10, Hampstead-road, in conjunction with his old-established premises, 67, St. Martin's-lane, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, by time, or by injurious gas. He invites attention to the fact of many of his large meters having been successfully tried at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club-houses, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping knots in wood, however loud, and preventing them exuding the sap and discolouring the paint above.

Many attempts have been used and much time spent in endeavouring to find out an for a bad knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

The Builder.

No. CCLII.

SATURDAY, DECEMBER 4, 1847.

OUR opinions on the subject of competitions are tolerably well known, as is our anxiety to obtain such an administration of them as would prevent the serious ischief to which they now give rise. Advice, xposure, and indignant remonstrance against njust proceedings, have all failed to produce y useful results, nor can any change be hoped r so long as architects are to be found capable availing themselves of the errors of the stem, and who are therefore interested in aintaining them. So long as architects will pply goods for nothing, and trust for a recogni-on of their merits to the decision of committees cessarily *incapable* of judging them correctly— en to the influence of friends and connec-ons—glad, indeed, of any thing to guide em in their dark search after what they don't ow when they see it—and, being *irresponsible*, t afraid to yield to this influence even when ey *do* happen to know better,—so long must chitectural competitions remain, even under t worse than ordinary circumstances, a mere me of chance, at which, as there are usually me cheats at the table, the fair player has tle chance of success. The prohibition of mes, and adoption of mottoes, the impartiality which is to result from the committee's pposed ignorance of any of the candidates, is ere sham and pretence,—a deceit and a are,—and should be got rid of at once, if esponsible parties, avowedly not fitted by ir calling or pursuits to judge correctly the mparative merits of the designs submitted, to make the selection. So, too, the old-hioned notion that it is dishonourable for the competitors, in a case where worth of the plan is alone supposed have weight, to canvas their judges, misrepresent their opponents, may as well given up, as it is sadly in the way of those competing architects who are so foolish still to entertain it. Let each stand on the ne ground as his neighbour in this respect at events, and let the part that ear-wiggery personal influence are to play be clearly derstood.

The degrading effect of open competitions now conducted, on architects, can scarcely questioned; and none will deny that alteron is loudly called for, when it is so clearly n that the character and well-being of the ole profession are at stake.

We have been led to make these remarks a consideration of the number of competis at this moment under our notice, and the xcerings and abuse to which some of these e given rise,—subjecting us to such an ount of really painful correspondence as ay would scarcely believe in. With regard special cases, however, we shall refer to this respondence as little as may be.

The most important of the current competions, that for the Middlesex Pauper Lunatic lum, was decided on Thursday. The comtee first selected twelve designs from whole number sent in, and a sub-comtee then pointed out the three which they sidered best entitled to the premiums red, which selection, if we understand rightly, was confirmed by the general board. The following is a list of the successful competitors:—

1st premium—Mr. Daukes.
2nd premium—Mr. George Godwin and Mr. Harris.
3rd premium—Messrs. Allom and Crosse.

We have at present no further particulars of this competition before us, and would therefore of course except it from any reference to our previous remarks.

The committee for erecting a Workhouse for the Aylsham Union, who offered through our columns one hundred guineas to the person whose plan should be approved by the Guardians and the Poor-Law Commissioners, unless he should be afterwards employed in the erection of the workhouse, in which case he would be paid the usual commission, have made their selection from a considerable number of plans which were forwarded to them. According to one of our informants, Mr. Hopkins is the successful candidate, while another (who ought to be equally well informed) says it is Mr. Donthorne. Whichever it may be, the statements show an amount of mystification that may account, in a degree, for some severe comments on the proceedings sent to us by a local observer, who states that the canvassing was scarcely disguised, and that those competitors who, without local influence, sent plans simply in reply to the advertisements, might more usefully have hung them up in their own waiting-room.

The competition for the London Fever Hospital was of a different character, being confined to three architects—Mr. C. Fowler, Mr. Mocatta, and Mr. Railton—with the understanding that fifty guineas would be paid to the two unsuccessful candidates,—a mode of proceeding highly honourable to the committee, and most likely to ensure a good plan. Saved from positive loss by such arrangement, each competitor would be led to give himself wholly to the task, and do his best. The estimate for the building was not to exceed 12,000*l.*; full instructions accompanied the letter, setting forth the requirements both for the hospital and living departments. The hospital was to accommodate 200 patients, half of each sex, with lifts from floor to floor, baths, closets, nurses' rooms, kitchen, sculleries, &c. The wards were to be divided into acute-disease, convalescent, and noisy wards; with a large ward for cases not of fever, but entered as such. The domestic arrangements consisted of the comptroller's, medical officers', and matrons' rooms; surgery, medicine and food lifts, the culinary and servants' departments; bedrooms for the whole establishment; besides the laundry, the usual outbuildings, stores, furnace, engine-rooms, deadhouse, &c. &c.

The extent of building necessary to fulfil all these demands, made the question of expense of the greatest consideration. The committee must be aware how cramped the architect is; and it is to be hoped, now the matter is settled, that they may ultimately relax in this respect, and afford increased facilities.

A building committee having examined them, the designs were referred to the medical officers for a report, and on the 19th the general committee decided in favour of Mr. Mocatta. The selected design consists of two wing buildings, two stories high, of double wards, for either sex, connected by corridors with a central building, which is appropriated to the medical officers, board-room, and physician, in front, and extends backwards for the matron, &c., with outbuildings still further removed. The style is Italian.

In the rooms where hang the designs sent in for the London Union Workhouse, the decision on which was mentioned by us last week, a battle of a singular character has been carried on. The author of the 2nd premiated design, Mr. Daukes, strengthened by the fact that the selected design (by Mr. Tress) was placed before his own by a majority of one only, that the decision was deemed irregular by some of the guardians, and that in the chosen plan there is a grave departure from the instructions, has, by the publication of printed papers and verbal declaration setting forth that there is great want of accommodation and means of classification in the selected design, with every thing that can be required in his own, sought to obtain a reversion of the decision.

Making all allowances for the extent to which the author of the second plan may consider himself aggrieved, we cannot hesitate to express a decided disapproval of the course he has adopted. Such proceedings as those we witnessed in the room, on the occasion of a meeting of the various parties interested, pained us more than we can express. The dignity of the profession is compromised by such strugglings,—the artist is lost in the tradesman.

The plot of land on which the workhouse is to be built is a parallelogram, 275 feet wide, in the road from Stratford to London, and about 720 feet deep. The selected plan has the entrance-front next the Stratford-road, that is, the narrow way of the land, and is of the H shape. In the centre, between the lower arms, or those next the road, is placed the chapel; and in a corresponding position between the upper arms, the kitchen; and, extending still further backwards, the dining-hall and infirmary. The plan is compact, and the architectural character good. The style is Italian, with a campanile: the material, brick, with stone dressings.

The main points to be considered, however, and which are properly dwelt on in the instructions to architects, are accommodation and perfect classification; and in these we are compelled to consider the design inefficient. To find where a thousand paupers are to be bestowed with any thing like propriety, requires more ingenuity than we possess. Mr. Tress, however, asserts that they can be provided for. The Poor-law Commissioners must settle the question between us.

We mentioned that the design shewed a grave departure from the instructions. This referred to the fact that the plan is made to occupy 292 feet in width instead of 275 feet, the extent given to the other competitors. This reflects considerably on the guardians, and would seem to justify those members of their body who assert openly that the selection of this design was determined on from the first announcement of the competition.*

Nor is it any answer to the objection to say, that nearly the same arrangement is compatible with the less extent,—the award was made on a design evidently prepared on different in-

* One correspondent, not a guardian, writes as follows:—

"There is the strongest reason for suspecting (from the mere face of things, and apart from rumour that under *any* circumstances No. 7 was the predestined design, or rather its author the predestined architect. Here is a building committee, who, after troubling by public advertisement forty-two other architects to compete for a workhouse to hold *one thousand paupers*, have selected a design providing accommodation for about 850 paupers, a large number of whom are huddled together in *double beds*; and, still worse, in dormitories usurping parts of the ground-floor, obviously principally day rooms,—albeit the competitors have the satisfaction of knowing that the lucky design displays the 'prettiest' model, and the 'nicest' tinted pictures in gold frames and glass, that are to be seen in the room; and the competitors who have provided for '*one thousand paupers*,' are now told that 'in point of fact no demonstration for that number is not required,' or words to that effect. A most unfortunate indifference to *plan* has been manifested, as many of the guardians now seem to be aware, and a motion to call in professional aid to the adjudication was resisted by the chairman of the committee, Mr. Alderman Gibbs. *Vive la bagatelle* seems the only consistent motto for a competition design, and an honest estimate, *felo de se*.'

structions from those followed by the other competitors.

We have no desire to say any thing which may be injurious to the author of any one of the designs; our remarks are directed wholly to the system,—a system which leads to the expenditure of the time, talent, and money, of a large number of persons on a false expectation.

No. 15, the second design, has the entrance-front next the long side of the ground, and presents one long range of building, extending nearly the whole depth of the land, with the infirmary for males at one end and that for females at the other, or next the Stratford road. The main building has a central corridor throughout its extent, open the whole height of the edifice, with balconies for approach to the upper stories, as in the Pentonville Prison and the Clerkenwell House of Detention. The elevation is plain,—an ordinary street front, with cornice and window dressings; but the accommodation is ample, and the means of classification good. No. 18, the third premiated plan (by Mr. Taylor), is an artist-like design externally. The chapel and dining-room, one on either side, are made the prominent features of the front, and the main building, seen behind, has a campanile at each side.

We have left ourselves little space for further remark at present, beyond pointing out one of the designs, which unquestionably deserved to be included in the rewarded list: we allude to No. 40, the authors of which, we learn, are Messrs. Jayne and Young. It unites with the H form of plan, placed in the reverse way from No. 7, namely, with the entrance front next the long side of the ground, two radiating wings at each end extending to the confines of the land, and offering the means of very perfect classification. The style adopted is Elizabethan, and, in an artistical point of view, as well as regards plan, the design has great merit, and eminently deserved to be rewarded.

## FIRST REPORT OF THE SANITARY COMMISSION.

IMPORTANT RESULT.

At the moment of going to press we have been favoured with an early copy of the first report issued by the Sanitary Commission, and proceed to lay such extracts from it before our readers, as seem the most important. The necessity for immediate legislation in respect of the sewers of the metropolis, has expedited this report, and prevented attention, at present, to several material points of inquiry. The immediate result of the investigation is, *the suppression of all the Metropolitan Commissions of Sewers*, including those of Kent and Surrey,—but excepting the City Commission,—and the appointment of one smaller body of men, twenty-two in number, who are said to have given attention to sanitary matters.* The report first treats of the prevention of cholera, but to this we cannot now refer. We proceed to those parts relating to drainage:—

"A primary objection raised under the sanitary inquiry to the system of drainage carried out in the metropolis was, that it retained and accumulated decomposing refuse in the sewers. Any system which does this effects the result which sewers were intended to prevent. In the evidence given before the Commissioners of Inquiry into the means of improving the health of towns, the means of remedy were pointed out and demonstrated. The chief means indicated were such alterations of the forms of house-drains and sewers as would increase the rate of flow of the sewer water and diminish the amount of deposit, and keep them clearer with the existing supplies of water; but it was also proved and urged, that for the perfect attainment of these objects, the command of artificial supplies of water was requisite. It may be averred that the principles of these remedies were demonstrated with a degree of clearness which admits of no misapprehension by well-informed minds earnestly directed to the attainment of the object. One of our first topics of inquiry was how far these expositions of evils and principles of remedies, which had now been made known several years, had influenced the subsequent administration of the authorities charged with this class of public works in the several districts;" and they found no result.

Evidence shows that drains should be smaller:—

"In general, the flow of water in the collateral sewers of branch lines of street, even where all the houses drain into them, are mere dribbles, and rarely rise above the invert of the wide bottomed sewers as at present constructed, even in streets where all the houses drain into the sewers. The following are the consequences which take place in various degrees in nearly all the collateral sewers of every form of construction, though the best is the egg-shaped form.

The flow of water, being impeded by the extent to which it is spread, is retarded, and a deposit is created; this deposit becomes indurated to a degree which prevents its being removed by the flow of water occurring in ordinary rainfalls, and is not often considerably affected by any other than the extraordinary storms which occur in intervals of several years.

The accumulations continue, and, during the process, the deposit from the house drains spreads on the sides, and decomposition ensues.

The accumulations in the sewers, as well as in the large house drains which communicate with them, are exposed to the action of much air, usually at such a temperature as greatly to facilitate decomposition.

The accumulations increase until the house drains are entirely stopped up, when the deposit in the sewers is usually removed by the offensive process of hand labour and cartage, leaving the deposit in the house drains untouched."

The report is severe on those who advocate large drains, in the face of contrary evidence:—

"One of the surveyors of the Surrey and Kent sewers, Mr. Joseph Gwilt, the author of an 'Encyclopædia of Architecture,' prescribes a size of drain of five square feet for a moderate-sized mansion, to enable a man to get at it to cleanse it from time to time. The Metropolitan Building Act prescribes that the *least* size of house-drains shall be 9 inches; the hypothesis being that, inasmuch as even these drains accumulate deposit, drains still larger are desirable.

Now, it is proved, that whilst house-drains of such sizes and construction as have been enforced by the Commissioners of Sewers accumulate deposit, drains of a much smaller size keep perfectly clear. Thus, whilst a 12-inch drain, which is required by the Kent and Surrey, and the Tower Hamlets, and the City Commissioners, accumulates deposit and generates noxious gases, a tubular earthenware drain, of nine times less capacity, or of 4 inches in diameter, or, proportional to the house, of from 3 to 6 inches, keeps perfectly clear. Even 3-inch drains convey away the refuse from middle-sized houses, and keep perfectly clear, whilst the larger permeable brick drains, which are usually charged three times the price, are choked up."

On the subject of house-drains, Mr. Phillips, the surveyor of the Westminster district, was asked—

"Have you, in passing along the sewers, ascertained which way the currents of air were flowing, either into or out of the sewers?—In going along the sewers I have been always anxious to ascertain that fact. The light which I had in my hand I have placed immediately by the side of and into the house-drains, and I found, almost invariably, the flare carried into the mouths of the drains, so that there must have been direct currents from the sewers through the house-drains, and so into and through the houses themselves. I rarely met with any instance, where there was not a current from the sewer into the house-drain, and also from the sewer through a large number of the gully-drains into the street. Of course, some gullies have a down draught.

Then it is to be presumed that your experience justifies the general description given of the existing sewers in the Sanitary Report of 1842, as retorts with necks carried into the houses for the conveyance of the gases there?—Yes, unfortunately, such I have found to be the case. The sewers are, in a very great degree, ventilated by the house-drains, which are badly trapped. It was in consequence of finding that to be the fact, by repeated observations and experiments in the sewers, that I was induced to lay before the court their real and absolute state, in order that so grievous an evil might be remedied without delay.

What was done upon your representations?—I cannot say that any steps were taken to remedy the defects; but I can say that it was considered that I was too bold, and that I said too much."

He afterwards shews that efficient drainage may be had for one sixth of present cost:—

"Will you contrast the expense of the general drainage of streets, courts, and alleys, with the expense at which an improved drainage might be carried out?—I have already stated that the cost of a first-class sewer of the upright-sided form was about 22s. 6d. per foot run., that the present first-class egg-shaped form ordinarily costs about 14s. 2d. per foot run., and that I think the expense, under an entirely different system, with constant supplies of water to keep the sewers clean, might still be further reduced to about 7s. per foot run. for the larger class of branch sewers, and to about 6s. 4d., 5s. 7d., 5s. 3d., 4s. 6d., and 4s. per foot run. for the smaller ones."

The Commissioners remark:—"When it is considered that, in the court of sewers for the chief district, that for Westminster for example, these reductions and amendments of the house-drains, and other proposed amendments, have been met by the positive opposition of a large minority of commissioners, which is sometimes a majority, whose proceedings are described by the witnesses and displayed in their acts,—when the important results of the regulated application of supplies of water, to which attention was directed by the Commissioners of Inquiry, have been passed over without any practical notice, not only in this one commission but in every other,—it will be perceived how slight are the grounds of any expectation of the principle of action in question being followed out, and of being accurately determined and applied by these authorities as at present constituted."

The surveyor having stated that without a plan and system of levels the arrangement of the sewers must be guess-work, was asked,—

"Have you ever represented this opinion to the commissioners?—Yes, repeatedly; both in court, and to individual commissioners out of court. About two years ago, I wrote an article in THE BUILDER, in my own name, in which I urged that no more work should be done until the actual condition of the sewers was ascertained, and a scheme laid down for their entire improvement. This is an extract from that article:—

"'It should be distinctly understood that no more work should be commenced until the sizes and falls of all the sewers have been determined on, and re-arranged according to a regularly graduated scale; and I have no hesitation in saying, that until either this be set about and done, or they be entirely rebuilt, there are very many lines which will never be any other than elongated and filthy reservoirs or cesspools, the matter in which will be continually contaminating the atmosphere with its deleterious products. The great evils require immediate reparation which should not be done piecemeal, but upon a well-organised system of arrangement; and if the matter be taken up, as I trust it will, the cost of putting the whole of the badly formed sewers into a state of comparative efficiency could be ascertained without great difficulty.' The paper containing that article was sent to the court by the editor of THE BUILDER."

In conclusion, the Commissioners find,—

"That it is expedient that a commission for the entire drainage of the whole of the metropolis should be appointed, with a special view to such measures, and with aid to carry them out."

"That the execution, by the district courts of commissioners, of large works of drainage or sewerage, without reference to any general plan or survey, involves great risk of erroneous and imperfect works, and waste of the rate-

* Of the late Westminster Commission only three members, we believe, are re-appointed, namely, Mr. Bidwell, Mr F. Byng, and Mr. Leslie. The duties of the new Commission will be very heavy.

hey are empowered to levy." And they say,—

"For the prevention of disease and the saving of health and life, by early carrying out efficient works of drainage, and diminishing the mass of atmospheric impurities, by which the public health is depressed; and for the prevention of expenditure upon inefficient works, we feel it our duty to recommend an immediate exercise of the powers of the Crown; and

That the several commissions appointed under its authority, in the metropolis, be recalled with the least possible delay.

That the law of sewers, now administered by numerous persons in these separate districts, be confided to one body of commissioners for the whole of the metropolis.

That to ensure executive dispatch, and obviate that weakening of responsibility which arises from its present division amongst large bodies, the commissioners should be limited in number, and competent — through their known attention to sanitary improvement — to select and sustain the labours of paid officers and the execution of works, in the attainment of this their proper object."

"Concurrently with the immediate works of flushing and cleansing, which the paid officers may be enabled to carry out, we expect that the first work which a consolidated commission must see the necessity of directing to be proceeded with would be the general survey (of the metropolis) by the officers of the Royal Engineers, under the direction of the Board of Ordnance."

They further say:—"It has appeared to be our duty to state, that we have had presented to us ground of exception against one class of appointments to these commissions, namely, that of surveyors, of architects in practice, of builders, traders, agents, and professional persons connected with building operations in their respective districts;" and the report is signed,

"R. Grosvenor,
Edwin Chadwick,
T. Southwood Smith,
Richard Owen,
Richard Lambert Jones."

## FURNITURE AND DECORATION.*

Thanks to the exertions of a small number of labourers, the field of art has now become greatly extended; the world is again tending towards that state in which the love of the beautiful is recognised as an ingredient of happiness, and an important aid in civilization.

He who has no desire to surround himself with beautiful works, who chooses, for example, that cup which will merely contain liquid, or that chair which is only comfortable, has little idea that he is renouncing one of the gifts of nature, not less calculated for his enjoyment than any of the senses. With the natural love of beauty implanted, he chooses to *bury* this *talent* in the earth, to exist in the state of him to whom returns not

"Day, or the sweet approach of ev'n or morn
* * * * * * *
* * from the cheerful ways of men
Cut off, and for the book of knowledge fair,
Presented with a universal blank
Of Nature's works, to him expunged and razed,
And Wisdom at one entrance quite shut out."

But such is the state in which doubtless many are yet existing, in the old fallacy that beauty of form must be accompanied by a sacrifice of utility, or in a "haughty ignorance" of the attributes of art, and the pleasures to which they are capable of conducing. With these people, every consideration which the artist deems essential, is troublesome: that which answers the purpose is proclaimed good enough,—although *some* evidence of an attempt at design would shew that they are not as indifferent to elegance of effect as they represent themselves. It is not understood that every amount expended upon that which is not the best that *could* have been designed for the money, is ill-spent. Those who, with ourselves, would wish to see the houses of our friends furnished with such articles of utility as may, in all cases, shew that the artist has been at work, have with this section of the public to carry on the usual battle against ignorance and prejudice. Like other labourers in the educational movement, our prospect is improving, notwithstanding our efforts alike are amongst those who are blind to the pleasures which might reward them, and insensible to the dictates of self-interest. But *our* proselytes are not so much required from the poor and the generally ignorant, as from those who are of reputed education.

It is perhaps the habit of mankind to undervalue requirements belonging to the peculiar vocation of a few; so it is not to be wondered at that some who are not artists should think lightly of the intellect of one who can make the leg of a chair, or the edge of a drapery, matter of serious thought and attention. But, purpose, materials, and cost being considered, design will fail in that which should be its chief object and result, unless it contemplate the very highest excellence which human skill can attain: any thing which can aim at less than perfection according to the premises, is in fact bad art. Both in design peculiarly architectural, in those departments of the art which embrace the furnishing and embellishment of buildings, and in every branch of ornamental and industrial art, it is essential that the general public should be brought to respect the opinions of those who in number possibly are the minority, just as a similar deference is shewn for other opinions, springing from the peculiar vocation of any other body of professors.—Your hospitable friend, who "invites to dine," is not satisfied if he set before his guests juice of the grape which nine out of ten of them would pronounce excellent, but caters for your discriminating palate, that appreciates the excellence of a particular vintage. And, if he has thus a consideration for your enjoyment, it would at least be consistent to minister also to the gratification of your intellectual taste. But, if your friend, when dining in private, for wine of Oporto should substitute blacking of Day and Martin, you might not be able to question his right to take whatever he found digestible, but you would feel interested about him, say for once, there was "no accounting for taste," but resolutely protest against his inviting others to his banquets. So, in intellectual taste, we may not have the power to convince all, at once, of the extent to which they sacrifice the gifts of Nature, by denying themselves enjoyments arising from the cultivation of a love of beauty and of art, but their right to inflict pain upon those who are susceptible of these emotions, and to interfere with the acquirement of these pleasures by others who may now be ignorant of them, is a point which there might be sufficient reason for contending.

There are many reasons for believing that such a conviction is approaching, when the influence of beauty, to civilize and refine, to exert its intended function in the economy of the world, will be found, not only in the works to which art has been hitherto supposed restricted, but as it was once, in every object of household utility. For such a result schools of design were instituted, and to which many recent efforts have contributed.

It has often been said that people will hazard an opinion upon a painting, a statue, or a building, with confidence, which they would shrink from in any other question requiring the possession of peculiar attainments. But this is in a much greater degree the case in other branches of design, forming the subject of the works now before us, in which it is with some difficulty that the world recognizes the presence of art. Therefore it is of the utmost importance that correct views should be communicated by all those who attempt to direct these branches of art in the early stages of their renewed progress, lest, through well-intended but misconceived efforts, mistakes should arise which may prevent art becoming what is hoped for. It is true that correct principles of design, difficult of discovery as they are confessed to be in architecture, are still more difficult in the department of art called "ornamental and industrial." In architecture, for modern purposes the extent to which consistency of style, and observance of precedent should be carried, to the end that the result may gratify the mind, are points upon which it is far more easy to suggest queries than to find definite answers. But in articles of furniture, and in other branches of industrial art, the demand for novelty can scarcely be held otherwise than paramount, even when rules and principles may be clear, and possibly conflicting with it. In architecture, whilst the materials for the exercise of genius are of great extent in comparison with the opportunities of using them, and where combinations of forms previously known, and even familiar, can be made to assume all the beauty, and be worthy of all the praise of excellent works, when governed by the hand of genius,—in furniture, there is a public demand for something which is far nearer to be assimilated to change of fashion in dress. However much an artist may desire to influence the taste of his country, or his time, to a certain extent he must follow it; and in this way we deem that he has no choice but to minister to the passion for novelty, wherever it may exist. In elevations of buildings, though invention is far too little regarded, it is right to estimate that quality as merely one of the objects of the architectural designer, and which can better be dispensed with than outline, proportion, fitness, character, and expression, although governing the arrangement of known forms. Thus the history of design in furniture, presents us with a multitude of changes, and to properly allocate some of these in their chronological order, is occasionally a task, in which the cotemporaneous architectural style affords no suggestion.

Still, whether it becomes the artist to pay that deference to the wants of manufacturers which seems to be required, or whether the unceasing demand for novelty be allowable in a branch of art which has not the stability nor the dignity of that which belongs to buildings, it would be inconsistent to say that there may not be rules, by which the forms of articles of utility, or of decoration, may be governed. We believe, then, first, that whatever form will interfere with the actual purpose in an article of utility, will be unsatisfactory, as part of a work of art; and, also, that the purpose should be evident. The form of an article of furniture, or of any utensil, should be, both actually and obviously, that which is best fitted for the purpose it has to serve, and it may be said, that it is not till those requirements have been satisfied that art comes into consideration. As we happen to have said more than a year ago,—"The type in objects of useful and ornamental [conjoined], is less readily explained than in those of fine art, and may be considered to be rather an embodiment of the principle of utility. Consequently, the forms of those objects must always be such, as it is at once evident are best fitted for the main end. The forms of nature and the rules of art are rather the matters engrafted upon this principle, than *obvious* in the design. The useful end should be completely fulfilled, and without danger of misconception." "All mermaids which turn out to be taper-stands, flowers which are curtain-holders, and bunches of leaves which are jugs, candelabra, or hat-pegs, we take to originate from entirely erroneous views." We know that cups have been dug up at Pompëii, and elsewhere, which take the form of grotesque heads; and we know that a theory, the reverse of ours, which would make a flower serve the purpose of a candlestick, or disguise the actual use under some other form, is apparently sanctioned by the example of the ancients, and is much in vogue now. But, however beautiful the works which might be shown to us as models, and as arguments against us, they are beautiful only for what they represent, not for what they really are. The case presented to the designer for solution was this—to produce a cup, or whatever object might be intended, which would answer the usual purpose of a cup completely; and, secondly, to invest the form with those attributes of beauty, of which the object was susceptible. But, if one who wanted to drink were uncertain what utensil had the capacity he required, the design failed in one of the most important stipulations. The work might be beautiful as a design, but clearly, the solution of the case presented to the designer had not been approached. In this way, some of the designs for Felix Summerly's "Art-Manufactures" are

* 1. "Designs for Furniture and House Decoration, selected from the Works of the best German and French Ornamentalists. With an Introductory Essay on Ornamental Art. By W. B. Scott, of the Government School of Design, Newcastle." Illustrated by nearly 600 figures in lithography. Fullarton and Co., Edinburgh and London. Parts 1–6.

2. "The Practical Furnishing, Decorating, and Embellishing Assistant; consisting of Original Designs in the Grecian, Italian, Renaissance, Louis-Quatorze, Gothic, Tudor, and Elizabethan Styles of Cabinet and Upholstery Work, Stoves, Ironwork, Chimney-pieces, Glass, China, Clocks, Pianofortes, Silverwork, Chandeliers, Monuments, Epitaphs, Stained-glass, Marquetry, &c. &c. Interspersed with Designs executed for the Royal Palaces, and for some of the principal Mansions of the Nobility and Gentry and Club-houses." By Henry Whitaker. Fisher, Son and Co. Parts 1 11.

3. "The Practical Cabinetmaker and Upholsterer's Treasury of Designs; in the Grecian, Italian, Renaissance, Louis-Quatorze, Gothic, Tudor, and Elizabethan Styles, &c. &c." By Henry Whitaker. Fisher, Son and Co. Parts 1–13.

* Vide Vol. IV. p. 134.

mistakes, which are much to be regretted, considering that they are the result of an endeavour to extend the influence of art in the direction to which we have attached so much importance, and are many of them, beautiful. Our able contemporary, the *Athenæum*, adopting much the same line of argument as that we have quoted, says, in remarking upon these "art-manufactures,"—"A cabbage-leaf in crockery, though as cunningly wrinkled as the most perfect specimen in the Margravine Sybilla of Baden's collection, makes—tried by this principle—an ineligible vegetable dish." "Nor is the most exquisitely enamelled *calla* or *datura*, convolvulus bell or honeysuckle tube, in taste when to be employed as a bouquet-holder." As regards all such things —"there is a touch of the practical joke in the best of them;"—"while we have fancy we must also have probability." "The professed design is," "to make what is convenient also beautiful. In this scheme, then, the utility comes first—the art is subsidiary. If the convenience be lost sight of, the scheme is reversed—and though things very beautiful in themselves may be produced, it is in a new intention."

We have deemed it requisite to enter thus deeply into general questions affecting what—there is much ground for hoping—will become a popular branch of art, because the works before us are not the only channels by which its salutary influences and its mercantile value have been made matters for national consideration. Much dissatisfaction as there may be still reason to feel with the present state of schools of design, much good has even now arisen from these institutions, if only in attracting the attention of many individuals to departments of art, the existence of which, as far as the public were concerned, was forgotten. The work first upon our list is that which seems of most pretension, and might, if well executed, have proved of great service: it professes to be comprised of designs selected from the best French and German ornamentalists. Though most of the representations have the appearance of selections, we are not informed where the originals are to be met with. The work is altogether very far inferior to the well-known French works, of which it is apparently an imitation: generally the selections are by no means judicious, and the drawing what we have no toleration for, in a work of this nature. Mr. Scott's preliminary essay on ornamental art, which contains a sketch of the history of design, is, however, an exception to the general character of the work, and it is only right to say that this gentleman disclaims any participation in the illustration part.—The author of the other works on furniture, has been employed in designing for Osborne House, the Conservative Club, and at other places. His work, though consisting entirely of designs, displays considerable novelty, and has a practical character which will render it more useful to decorators than many books which they are now compelled to consult. Such works, moreover, have few merits of any kind to recommend them, and even some which have been very lately published are of comparatively little service, and several in which the designs are practicable, are entirely deficient in good taste. Of Mr. Whitaker's two works, the last on the list is confined to cabinet-maker's and upholsterer's work, and includes the designs for work of this kind, previously given in the more general collection. The author is evidently an accomplished draughtsman, and has introduced many natural objects with great taste, although in the endeavour to get beauty of design, even he is not free from the common mistake of designing what, if not impracticable, would be found inconvenient to keep clean, and liable to be broken. This is the case in a conch in the "renaissance" style, where the pendant fruit and tendrils would require a good carver to execute, and even under the hand of the most careful domestic, would hardly remain entire till the end of the first week. Projecting ornaments on the front, too, which are liable to be in the way of a person sitting, are objectionable, and in the present instance the unity of the design would be greater were the ornament in question omitted.—Window cornices should, if possible, give the idea of supporting and containing the curtains which hang from them: in the house dining-room at the Conservative Club this is well managed, but in the Baron de Goldsmid's ball-room the cornice is merely festoons of leaves, from which the valance descends. The window cornice designed for Crewe Hall is called Elizabethan, but has all the outline of the Louis-Quatorze style.

In designing for furniture, to be adapted to old buildings, it is essential that there should be complete accordance of style between the building and all its accessories, but in new buildings, the extent to which good taste in design is assisted by observance of particular style, is a matter on which it is hazardous to give a hasty opinion. Mr. Whitaker has not been unsuccessful in any style, if we except the Gothic, in which he has shown us very few designs; and in comparing some of his "renaissance" designs with those which are called "Elizabethan," or with "Italian," we see how difficult it is for one individual to catch the peculiar characteristics of each, where shades of distinction are matters of nicety.

There is perhaps no article of furniture for which cabinet-makers have greater difficulty in procuring good designs, than for chairs; consequently, although plenty of designs have been published, those which can be executed have in most cases to be made in the "shop." Mr. Whitaker's designs appear, however, to be an exception, and the legs in several instances, evince really excellent taste.

In many of the designs, the author has perhaps fallen into the error to which all are so liable, viz., designing with an excess of decoration. This is objectionable, perhaps not so much on account of cost, as from the difficulty of obtaining real artist-workmen, a class which has yet to be created in England, and to whose institution we would gladly contribute.

Mr. Whitaker's works will, we think, do much to aid the efforts which are now making to improve the arts of design, and will no doubt prove acceptable to manufacturers, who are generally anxious to execute what is in good taste, but have hitherto lacked the means which the publication of a better class of books than has hitherto been in their hands, will afford them. When good principles of decorative art have become fixed, and artists properly imbued with them are numerous, we should rather urge, as in all parallel cases, that the artist be applied to in the first instance.

## CONSTRUCTION OF WROUGHT-IRON BEAMS OR GIRDERS.

The construction of iron girders, especially for bridges, occupies much attention at this moment: a Government Commission of Inquiry on the subject is now sitting, as our readers know,—experiments are going on in various quarters,—and improvements are suggested every day. Cast-iron is a valuable material; but where the span is large,—great weights are to pass,—and much vibration may be expected,—caution is required in its employment as a girder.

We have often urged on the attention of Government the importance of offering premiums, with a view to improvement in the *rolling of beams*. If this were done, there is little doubt that the cost of wrought-iron girders would speedily be lessened and their use be more general.

The difficulty of making cast and wrought-iron act in concert is great: by the way in which it has up to this time been effected, harm instead of good has been done. The Government engineers, appointed to report on the failure of the Dee-bridge, said:—"That the bridge was of sufficient strength, if the cast and wrought-iron be supposed to act together,—each taking its equal proportion of the strain.

That there is great difficulty in ensuring the joint-action; and that, if this is a part of the principle of the bridge, we do not approve of it.

That neither the wrought nor the cast-iron, taken separately, was sufficient for perfect stability; and that, to have ensured this, the cast-iron girders alone should have been of sufficient strength to carry the whole weight, with an ample allowance for various circumstances which we have explained."

The Commissioners of Railways, after considering the report, from which the above is extracted, thought it their duty "to call the attention of her Majesty's Government to the uncertainty which at present exists respecting the conditions to be complied with in employing iron, but more particularly cast-iron, in engineering works. Although the facts which have been collected, and the principles which are acknowledged, may have proved sufficient for the guidance of engineers in the application of iron to works which are not exposed to an action differing materially from the steady load, yet there appears to be great doubt whether the experimental data and the theoretical principles at present known are adequate to guide them in designing iron bridges, when these are to be traversed by loads of extraordinary weight with great velocities. When exposed to the rapid motion of railway trains the structure should be capable of sustaining, without permanent injury to any part, the concussions which any irregularity may occasion, and the vibratory action which a rapid alternating change of condition must produce. The commissioners have reason to believe that much difference of opinion exists among the most eminent engineers of the present day, as to the proper form and dimensions to be given to railway girders of iron, to resist the combined action of the several forces to which they are subject during the transit of trains; and until the subject has been further investigated, they cannot be considered as having sufficient data for their secure guidance."

The uselessness of tension-rods, as usually applied, has been conclusively shewn in our pages. We look with anxiety for the result of the girder-commissioners' inquiry.

In the meantime Mr. Fielder, in conjunction with Messrs. Baker, of Stangate, has taken out a twofold patent;—first, for the construction of girders entirely of wrought-iron; and, secondly, "of girders of wrought and cast-iron riveted together, by which means (says the inventor) their co-operation is secured in a manner which the systems heretofore adverted to have evidently failed to accomplish."

One that we saw consisted of top and bottom flanges (10 inches wide and 1 inch thick), of welded plates, and a rib, 2 ft. 8 in. high and eight-twelfths of an inch thick, of three pieces, secured and riveted at the heading joints. The flanges were secured by inch rivets to the rib, by means of an angle-iron on each side, $\frac{8}{16}$ths of an inch thick. This girder, with a bearing of 31 feet 4 inches, had been subjected, it was said, to a proof of 150 tons on the centre, without injury to the elasticity of the metal, the deflection being 1 inch. 180 tons were assumed to be the breaking weight, one-half of which, or 90 tons, the patentee considers might be taken as the *working* weight.

In respect of girders made of wrought and cast-iron together, the patentee states, that he riveted to the bottom flange of a girder which had been broken in the middle, a piece of wrought-iron 8 inches by $\frac{8}{16}$ths of an inch, and then proved it to 22½ tons without injury to its elasticity. The bearing was 20 feet; the height of the broken girder was 1 foot 8 inches. Another piece of wrought-iron, 8 inches by $\frac{8}{16}$ths of an inch, was then added in the centre only, about 3 feet long, and the girder was then proved to 52½ tons.

The next experiment was upon a cast-iron girder, the breaking weight of which, by Hodgkinson's rule, would be 20½ tons. "It was proved to 15 tons without loss of elasticity, and then as far as 18¾, where a permanent set of 1-16th inch took place, the total deflexion having been 7-16ths bare. Here it is supposed that the metal was in some degree injured. A wrought-iron bottom flange, 6 by $\frac{8}{16}$, which, by the patentee's rule, would be 14.1-5th tons working power, was then attached to it, and the compound girder thus created was proved to 30 tons, with the same deflexion as took place before the wrought iron addition, with a load of 18¾ tons, but in this instance without injury to its elasticity."

We subjoin a few jottings on the subject of girders from various sources:—Captain Coddington's report on the bridges of the Trent Valley line has been before us for some time. From his description of those constructed with cast-iron girders we learn, that fifteen of these do not exceed 30 feet opening; four others vary between 35 feet and 37 feet 6 inches; every girder was proved at the foundry—the proof always extending to half the calculated breaking weight. The deflection on the largest of these girder bridges, with a tram of three of the heaviest engines coupled together, was

half-an-inch. Iron girder bridges exist on every railway in the kingdom; and he considers that up to a span between 35 and 40 feet, a flat cast-iron girder, of strength calculated to the usual formula, affords security as a railway bridge. With respect to the compound girders, similar to those over the Dee at Chester, there are six bridges, with girders in three castings, bolted together at the flanges, clipped underneath, and strengthened by massive wrought-iron rods, forming an inverted truss. There are two over the Trent and Mersey Canal—span, 54 feet 3 inches; one over the turnpike-road, 57 feet; one over the Coventry Canal, 60 feet; one over the Oxford Canal, 44 feet; and one over the River Tame, 70 feet span. The latter bridge has had a double row of piles driven in the bed of the river under each of the joining flanges of the girders; these piles are connected at the heads by cup sills, extending under the girders, and the interval between them and the girders is made good with wedges—thus dividing each span into three spans, and covered by a girder calculated equal to three times the span: he has no doubt, therefore, of the strength and efficiency of this bridge. The other five range between 59 and 60 feet; and assuming that these compound girders, including their tension rods, are only half more in strength than the calculated beam, they fully come up to the proportions hitherto considered safe by eminent engineers. In testing these girders, there was but a deflection of three-quarters of an inch on a span of 60 feet. He remarks,—"In the same manner that I consider experience to have proved the sufficiency of a simple girder up to 40 feet, I consider it has also proved the sufficiency of the compound girders up to 70 feet."——Mr. Gibbons, of Corbyn's Hall Iron-Works, has patented a new method of trussing cast-iron girders, in which the rigid trusses heretofore employed are abandoned, and elastic ones substituted. The *Mining Journal* attempts to describe it, by supposing a girder of considerable length, formed of three sections, bolted together, through flanges at the end of each, in the usual manner. Mr. Gibbons now introduces beneath the centre section a powerful spring, made exactly similar to the bearing springs of railway carriages, with the convex side abutting on the girder; and wrought-iron truss-rods are fastened to each end of this spring, and bolted up tight to flanges, cast at the extreme ends of the two outer sections of the girder. Where the girders are of considerable width, a number of springs may be used, ranged side by side; or smaller springs may be used, and placed two together, with their concave faces inwards, one under each joint of the sections of girder, and one in the centre, trussed up tight by suspension rods.

## THE GOODWIN SANDS ONCE MORE!

'He will surely be mad who makes another attempt to raise a beacon-light on the Goodwin Sands,' was the ejaculation of a despairing cotemporary on the failure there of the late attempt to 'rule the waves,' and 'build upon the sand,'—two formidable and daring enough, if not foolhardy, projects, as, in an unqualified sense, they certainly would have been: but in truth the late attempt at the Goodwin Sands was not an attempt to do the one of these mighty deeds, by aid of the other, at all, but a bold and ingenious endeavour to rule the shifting sands themselves, by piercing them through and through, and nailing them down, as it were, to the solid rock below, even though at a depth of three-and-thirty feet beneath their shifting surface. Such was and is the hopeful scheme of which we, some weeks since, gave to the readers of THE BUILDER our own ideas, along with particulars furnished by one who had carefully examined the details; and we are glad to perceive that our remarks have already been suggestive, and that a modification of Dr. Potts's attempt to pierce the sands to the bottom, in connection with other and engineering means of taking more or less full advantage of the anticipated success of such an attempt, on what may be called a great scale or compass, to pierce, by pneumatic tubes, to the bottom of these sands, has been already suggested, with the view of once more even daring, with us, to renew the 'mad' attempt to strip this too long celebrated terror to our seafaring fellow-men of all its horrors.

In the *Mining Journal* of Saturday last, Mr. George Shepherd, C.E., presents the details, with plans, of such a suggestion. He proposes "to construct a wrought-iron cylinder of say three-eighths-of-an-inch boiler-plate-iron, of 30 feet diameter, which would give a sufficient base for a lighthouse of 120 feet above high-water mark. Such a light would be seen at a suitable distance. The cylinder should be made into sections of 4 feet in length, and should be fitted up on shore with the greatest care. A stage could be made on piles, driven into the sand, and the whole well braced together. Having adjusted the preliminary arrangements, 16 feet of the cylinder could be put together, suspended between four lighters; and then, by the aid of a small steamer, could be towed into its intended position, and there lowered into the sands. Having fixed and secured the first portion of the cylinder to low-water mark, the remaining sections could be floated off in the same manner. The joints being previously prepared, each section could be screwed together, and sunk to the required depth, in a short time. In case it was found that the cylinder had not sunk to the required depth, I should resort to Dr. Potts's atmospheric pile-driving system, by which means the cylinder could be forced down to the required depth. The next plan of operation would be to drive the external piles [in a circle, surrounding the great central pile, tube, or cylinder], also by Dr. Potts's system, the whole well braced together. When the pile-driving is completed, the sand between the cylinder and the piles should be taken out as deep as possible, with the bag and spoon apparatus; and the space thus excavated should be immediately refilled with the best concrete, which would entirely protect the foundation against every storm. The cylinder being so far perfectly secured, a few ship pumps could be fixed inside to pump out the water; and, in order then to secure the cylinder against the external pressure, a [temporary] process of timbering should be resorted to.

After having pumped out the water, and well secured the cylinder against the external pressure, the sand inside the cylinder could be taken out, and the same process of timbering repeated every 5 feet, until the whole of the sand is excavated to the chalk formation. The sand being excavated, the concrete foundation for the lighthouse should be put in without delay. The concrete being set in one mass, the stone work could be commenced; and, as the stonework rises inside the cylinder, the timber could be taken out. The stonework should be of the strongest construction, and every block well bound together.

All works of this nature should be commenced in the early part of the spring. While the apparatus lies in readiness on shore, the cylinder could be quickly sunk into its position, and perfectly secured by piles and concrete in a few months. In case of storm, or bad weather, it would be only requisite to let the water into the cylinder, to counterbalance the external pressure of the waves, and which could be easily removed, when the storm had abated. This plan of effecting a firm foundation for lighthouses is not only applicable to the Goodwin Sands, but can be extended to all bars of rivers, and other places where a light is required to warn the mariner of danger."

BUILDERS' ASSOCIATION AT LIVERPOOL.—In consequence of what has been conceived to be the needlessly arbitrary and costly regulations of the local sanitary bill, and the requirements of the council's committee of health, supported as they in general are by the magistrates even in cases where appeal, it is thought, would lead to a reversal of their decisions, an association has been established, according to a correspondent of the *Albion*, not with any adverse feeling towards those sanitary measures which must rather benefit the property of house proprietors and builders in general than the contrary, but simply for mutual protection against oppressive measures and decisions by a general defrayment of the costs of appeal, &c., in cases which affect the interests of the body at large and not of individuals merely.

## SOCIETY OF ARTS.

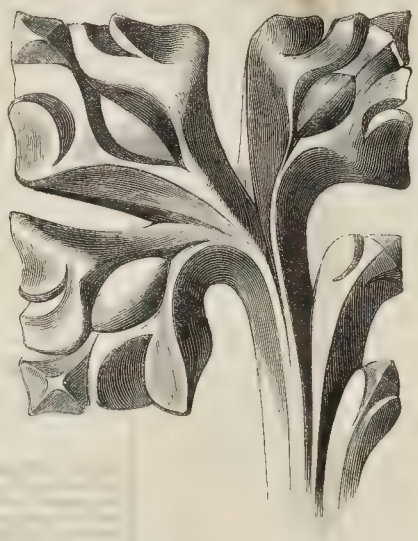
At a meeting on the 17th ult. a communication was read by Mr. Briant, "On his plan for overcoming the difficulties of a break of gauge, and of uniting the broad and narrow gauge railways." Mr. Briant commenced his paper by pointing out the difficulties which had arisen from the adoption of the two gauges in this country, and the objections which have been urged against the various plans, viz., the telescopic axles for the wheels, the shifting from the carriages of one gauge to that of another, laying down double lines of rails, &c. He then proceeded to describe his own plan, which is as follows:—At the point of junction of the two gauges a platform is to be fixed in the centre of the rails, the carriages are then to be placed upon wheels, the two ends of the axles of which are to be made as male screws; on the centre of the axle a pinion wheel is to be fixed, and under it, attached to the frame of the carriage, a lever, upon the upper side of which is a rack, and at the lower end an anti-friction roller. The naves of the wheels are to extend under the carriage in the form of a female screw, to receive the axles. By this arrangement, while the train is travelling on the narrow gauge the wheels would be screwed up to the required width, the racked lever hanging loosely under the pinion wheel, and the axle would turn with the wheels—but when the train reached the point of junction the lever would be caught up by the platform (which is to be forty yards long), and with it the rack. The axle would thus be prevented from turning, by the pinion wheel and rack; and the wheels, from the weight of carriage passengers, luggage, &c., pressing upon them, would immediately begin to unwind the screw, which, by the time the carriage has reached the other end of the platform, will have extended the axle to the required width: the lever would drop and free the pinion-wheel, and the axle would then turn with the wheels as before. The wheels are kept in their position when unwound by coupling rods: in backing the train the screw is prevented from acting by means of a stop fixed to the carriage, and blocking the axle. A working model was exhibited.—The second communication read was by Mr. D. J. Hoare, "On a railway telegraph and alarum to be used as a means of communicating between the guard and driver of railway carriages." The plan proposed is that a screw of rods should be passed through the carriages of a train and united at their extremities by a telescope-joint, so as to allow of extension and contraction. The rods being made with a universal joint, admit of a rotary motion—the only motion which a railway train has not. At the end of the rod, on the guard's carriage, is a crank, which, when the rod is turned, comes in contact with a hammer, and causes it to strike a bell. A signal is then to be raised, indicating the carriage from which the signal is made. The guard will then immediately ascertain whether it is necessary that the train should be stopped, (?) and if so, by turning the rod in the reverse direction to what the person signalling had done, will ring another bell at the driver's end of the train, or sound the whistle of the engine.

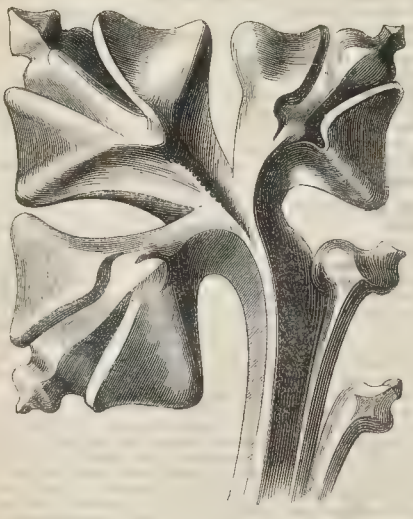
NEW GAS ENGINE.—An engine, on a new principle, has been invented by a Mr. Perry, of Herkiman, and is now in operation at the store of Mr. Samuel Perry, in Front-street, near Whitehall, and evinces an astonishing power in proportion to the minute quantity of material from which the power is produced. The machinery consists, in part, of a cylinder, piston, pitman, flywheel, and governor; in this respect similar to a steam engine. A small quantity of spirits of turpentine is kept in a warm state, and the vapour arising therefrom is mixed with fifty times its volume of atmospheric air. A small quantity of this hydrogenated air is drawn into the cylinder and ignited by a movement of the machinery, producing a slight explosion, whereby the remaining air—at least nine-tenths of the whole—becomes so heated that it drives forward the piston with great force by its expansion. This engine is said to be capable of working ten-horse power; and it is intended to substitute resin instead of turpentine, which will reduce the expense of feeding it to about 50 cents per day.—*New-York Journal.*

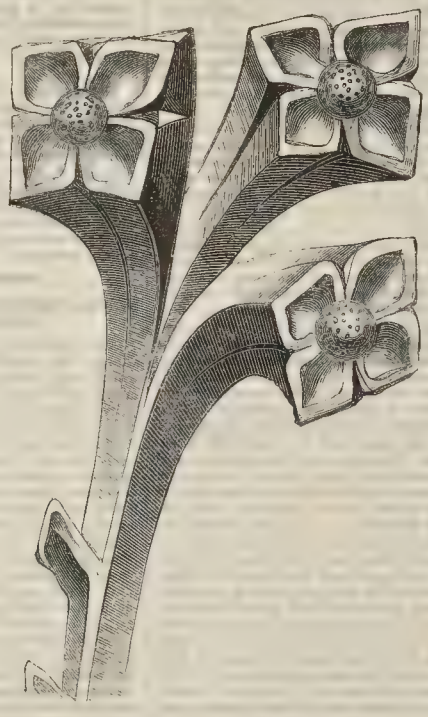
## SCREEN IN ST. MARY'S, LEICESTER.

### EXAMPLES OF CROCKETS.









SECTION OF THE UPPER PART OF SCREEN.





NORMAN DOORWAY, HARMONDSWORTH CHURCH.

## ARCHITECTURAL DETAILS FROM LEICESTER.

The town of Leicester, interesting alike from its past associations and for the ancient wealth of its monastic institutions, still possesses very numerous remains, domestic and ecclesiastical, which are worthy the attention of both architect and antiquary. The Abbey, which history and Shakspeare have interwoven with the fall of Cardinal Wolsey, has been long celebrated and repeatedly described; and its ruins constitute a favourite artistic haunt, and are often the subject of the scientific pencil. But to the churches of Leicester justice has not been done; for, although their main features are familiar to the topographical reader, their details, which are in many cases of extreme interest and peculiarity, have been overlooked, even by the laborious Nichols. St. Mary's and St. Margaret's are the chief architectural glories of the town; and the former of these edifices (the once collegiate church of St. Mary de Castro) differs in many important characteristics from most of its contemporaries. Its union on one side with the prebendal houses, which originally formed part of its foundation, is not the least remarkable, nor is the circumstance that a chamber of some size, carved in timber, and intended for the use of the *Janitor Castri*, projects into the church, but at the same time is considered extra-parochial. This appears to have been executed at the rebuilding of the church, which took place shortly before 1400, and is attributed to John of Gaunt, whose connection with the town of Leicester is universally known; indeed, his influence and that of his lady were felt not only here, but throughout the neighbouring villages, and are frequently found memorialized in sculpture, and in fragments of stained glass.* At the period of this restoration, it was found that the ancient church, which owed its existence to Robert de Bellomont, in 1107, had become too small to keep pace with the increasing population of the district; and its alteration by additional breadth caused the introduction of some strange anomalies. A Norman church stood, as it were, within one of perpendicular character; till the massive walls, decorated with a profusion of zigzag mouldings, were pierced and otherwise contorted, to harmonize in some measure with the modern exterior. A large carved oak screen, consisting of a series of enriched compartments, all differing in their minute adornments, was now erected; and although it has been lying for years in a state of uselessness in an obscure corner of the nave, will probably now, in consequence of the spread of ecclesiological knowledge, be restored and replaced in its proper position. One of its compartments is here given to a small scale, and those which are best preserved of its abundantly various crockets, represented full size.

The advantage of the present example, as an authority to be studied by the decorative artist of our day, consists in the fact that it is one of a class of objects now for a second time becoming prevalent in our churches, and that although it is not, like many remains of a similar period, crowded with elaborate profusion, it exemplifies that diversity of detail which characterises all mediæval productions, but is too often neglected in modern restorations and designs. W. H. Rogers.

* The arms of Constance, daughter of Peter, king of Castile and Leon, and second wife of John of Gaunt, are elegantly depicted in one of the windows of St. Denis's Church, Evington, near Leicester.

## NORMAN DOORWAY, FROM HARMONDSWORTH CHURCH.

About two miles south of West Drayton is situated the quiet little village of Harmondsworth, and, though possessing nothing very attractive to a casual tourist, the lover of antiquity may find, in a visit to the church, something to gratify, if not to instruct.

The building consists of a nave, with two aisles, a tower at the south-west angle, with a chancel and north chapel. The nave and aisles are of the Norman period, though much has been done to assimilate them with the chancel, which is perpendicular. There is a north and south doorway, the former of which is not at present used; and of the latter, which is inclosed in a wooden porch, I annex an illustration. The nave is separated from the aisles on the south side by semicircular arches, supported by massive Norman columns; and on the north side they have been altered into perpendicular. The north chapel is divided from the chancel by flat perpendicular arches and columns. There are no remains of a chancel arch, and where the perpendicular arches of the chancel intersect with those of the nave, which is at the centre of the arch, a very odd appearance is produced. There is a priest's doorway on the south side. The windows all accord with the date of the chancel, except the west, which is devoid of tracery. They are in a very decayed state, and require restoration. In the church is a Norman font, of marble, quite plain, of octagonal form, and recently reworked. There are also some few good perpendicular benches,—otherwise the church is filled with unsightly square pews.

The tower is of perpendicular date, and has an embattled parapet.

Within a short distance is a barn, known by the name of "The Long Barn," from its great length, which has a fine old timber roof; but, when we visited it, it was so piled with corn that it was scarcely visible—a disappointment which was more than compensated by the feelings induced by this evidence of the late abundant harvest. C. Innes.

## AWARDS OF OFFICIAL REFEREES.

### VERANDAHS.

Mr. De Wilde, a blind-maker, having formed a projection in the front of 39, Eaton-square, the whole length of the front, to which the district surveyor of St. George's Hanover-square objected, as not being built of proper fire-proof materials, the matter went before the referees. Mr. De Wilde contended, that the erection was a blind, an article of furniture, and no part or parcel of the building, and therefore that it did not come under the operations of the Buildings Act. He observed, that it was composed of light iron uprights, with a metal roofing, wholly uninflammable; the blinds and facia (13 in. deep), he admitted, were of wood, but contended the facia is a necessary portion of the blinds, and permitted by the special award or certificate, No. 3,488, made the 3rd of May, 1845, and transmitted from the office of Metropolitan Buildings the 7th of May.

The referees determined "that the projection in question is a projection from an external wall, not forming part thereof, of the nature of a verandah, and in so far as it is not composed of brick, tile, stone, artificial stone, slate, cement, or metal, or other proper and sufficient fire-proof materials, such projection is contrary to the Metropolitan Buildings Act; but that if the same be made conformable thereto by the removal of the wooden plates and facias, and other woodwork, it will not be contrary to the Metropolitan Buildings Act to place Venetian or other blinds in the front, nor upon the sides of the said projection; if such blinds be kept within and clear of the line of the inside faces of the party-walls."

## ARCHITECTURAL WORKS IN EDINBURGH.

We take the following from the *Companion to the Almanac* for next year. We shall refer hereafter to its contents generally, which are of a very interesting kind: *—

"To the slight notice, in our volume for 1846, respecting the Commercial Bank, and one or two other structures then in progress at Edinburgh, we can now add some further particulars, and have to correct an error into which we were led as to the façade of the Bank. Instead of the portico being a hexastyle *in antis*, from which description it would naturally be inferred that it was closed at its ends and recessed within the building, it is a simple hexastyle, monoprostyle (*i. e.* projects one intercolumn before the general line of the front, which is extended by an intercolumn between coupled antæ on either side of the portico); therefore, although the entire front consists of seven intercolumns, the portico itself, and the part within it, have only *five*. If that feature be considered by itself alone—as is unfortunately too generally the custom in all cases of the kind—it may be pronounced both classical and ornate, for not only are the columns fluted, but the pediment filled with figures in very high relief, representing Peace, attended by Abundance, Navigation, Commerce, and other allegorical personages. This piece of sculpture is the work of Mr. A. H. Ritchie, a native artist, and it is only to be regretted, that owing to the untowardness of the aspect (north) both that and the portico lose much of their effect. Even were the aspect ever so favourable, the portico would still show itself too much as a mere architectural appendage of studiedly templelike character attached to a structure decidedly *anti-antique*, its physiognomy being strongly marked by fenestration and other traits of modernism and Italianism. Not only are there two tiers of windows (which are continued within the portico), but the upper ones have arched heads, and balustrades below. Instead, too, of having a Greek podium or parapet, the building itself is crowned by a balustrade. Thus two distinct and hardly reconcileable systems are brought into contact, and even collision, with each other; therefore, either the portico should have been accommodated to the building, or the building to the portico; for at present the pure classicality affected for the latter is contradicted by all the rest. The ascent to the portico, however, and the extension of the lower part of the composition by balustrades carried from the pedestals that flank the flight of steps, to two insulated doorways or portals with open ironwork gates, produce considerable effect of a rather unusually picturesque kind. The interior is more satisfactory; one of its principal parts is a handsome inner hall, carried up the entire height of the building, and surrounded by an Ionic colonnade below, and a Corinthian one above. It is lighted entirely from above by a lantern, and has a staircase on two of its sides. The principal banking office, to which this hall conducts, is, for a room of business, the most highly decorated apartment of the kind in the kingdom: it is a spacious apartment, square in plan, with a Corinthian colonnade of three intercolumns on each side, and is surmounted by a dome whose section is of elliptical form, and richly ribbed and panelled, through which the light is admitted from ornamentally glazed compartments. The architectural effect of this saloon, as it may fairly be called, is enhanced very considerably by the abundant employment of decorative painting, gilding, and marbling, executed, we believe, by Mr. Hay, of Edinburgh, who embellished the great room of the Society of Arts in the Adelphi.

Donaldson Hospital has, we are glad to say, proved an equally worthy and important feature in the architecture of Edinburgh, being a fine and imposing mass of building, in what we could before only vaguely characterize as the Elizabethan style, but can now describe as partaking largely of that particular mode of it exhibited in Burleigh House, and in which ogive-domed turrets, and towers, and chimneys contribute so greatly to picturesqueness of outline. The edifice is completely insulated and apart from other buildings; and at each of its four angles is a square pavilion, with a projecting three-storied bay on each of its two outer sides, and four domed turrets of the kind just mentioned rising up from it. The centre of the south or principal front is marked by a larger and loftier pavilion of similar composition, but with octagonal turrets, and domes more ornamented than the others. The general mass of building or parts between the pavilions, has only two series of large square-headed mullioned windows, and a parapet broken into a series of small gables with chimney shafts rising out of them.

The new Debtors' Jail, of which, we understand, Mr. Rhind is the architect, is in what may be called the castellated Norman style, and presents in its general composition an upright group of variously-shaped towers, rising above the external wall of enclosure, and so disposed as to produce much picturesque effect of outline from different points of view. We may also mention the chapel of St. Columba, lately erected by Mr. Henderson, in the vicinity of the castle, as being, though a small and unobtrusive structure, a far better specimen of Gothic than other attempts in that style at Edinburgh, most of which are exceedingly unsatisfactory, the Scott monument being not the least so. Some time ago it was rumoured that a Roman Catholic church and college were to be erected in the Lothian-road, after designs by Mr. Pugin, but, if it really existed, such intention seems to be now dropped. Edinburgh is now about to be greatly benefited, and in some degree architecturally improved also—at least to acquire several new architectural features—by the erection of several terminuses and other railway buildings, some of which are now in progress. Little more than a year ago the railroad from Glasgow to Edinburgh was the only line of importance which communicated with the latter city; and its terminus, at the western outskirts of the New Town, presents little more to the eye than what is suggested by utility alone. Since then, however, the opening of the North British line to Berwick, and the completion of the railroad between Berwick and Newcastle, in continuation of the eastern route from London, have given importance to Edinburgh as a focus of communication, and have led to schemes of considerable magnitude, if not of extraordinarily high architectural pretension. The Glasgow line having been lately extended eastward, to meet the North British, a joint-terminus, unrivalled for convenience of situation, has been formed for those lines, and also for the short railroad to Leith and Granton, in the hollow between the Old and New Towns, formerly called the North Loch; the buildings for which extend from the North Bridge on the east, towards the mound on the west. Lying in a low situation, as this joint-terminus does, and where any spreading and lofty pile of building would interrupt the picturesque view between the Old and New Towns, its architectural masses are very judiciously kept down, nor has any more decoration been bestowed upon them than serves to produce a requisite degree of finish. The great rival to the eastern line of communication is the Caledonian Railway, which approaches Edinburgh on the west, from Carlisle, having a line also diverging at Lanark to Glasgow, and completing the communication with London by means of the Lancaster and Carlisle, and the North-Western railways. Of the Caledonian line, however, a length of forty miles north of Carlisle is all that has been yet opened, though the remainder is in such forwardness that the entire line to Edinburgh is expected to be finished by the end of the present year (1847). Its terminus will be in the Lothian-road, at a point due west from the castle; a locality of no architectural interest at present, but which may be expected to acquire much from the extensive works and improvements now commenced. The buildings will form a parallelogram of about 400 by 200 feet. The south or entrance front, which is on one of the longer sides, presents a façade with a handsome colonnade of the Ionic order, behind which rises an elevated central pile, containing the directors' rooms. The east or Lothian-road front exhibits an open screen of three large arcades, whose piers have coupled Ionic columns attached to them, which connects the two wings or extremities of the composition. The design is by Mr. Tite, the architect of the Royal Exchange, London, and architect for the stations and other buildings on the Caledonian, Lancaster and Carlisle, and Scottish Central lines of railway. The joint station of the two first-mentioned lines at Carlisle is, we may observe, now nearly completed; it is a Gothic pile of considerable pretension, and fully equal in extent to that just above mentioned, and of which we hope to be able to give a detailed description next year. In the same style as the one at Carlisle, but of greater extent, will be the station now just begun at Perth for the Scottish Central and Midland Companies."

* "The British Almanac for 1846, and the Companion to the Almanac, or Year-Book of General Information." London, C. Knight.

## VENTILATION OF ROOMS.

Sir,—We have heard of late a great deal about the health of towns, as well as the ventilation of buildings, but as yet little has been effected.

Now, as the better ventilation of every apartment in every dwelling-house, especially those appropriated as sleeping apartments, would be highly conducive to health and comfort, permit me to describe a simple means by which this may be effected, at little expense, in every apartment of our dwellings, and also in shops, schools, hospitals, factories, churches, and other public buildings, as well as in those buildings also appropriated to animals of various kinds, and equally applicable in old as in new buildings.

A farmer, on a small scale, who had made a cellar his dairy, found the milk and butter would not keep sweet, owing to some offensive smell in the cellar, of which, for a long time, he in vain endeavoured to find the cause. The farmer then turned his mind to making a vent, or escape, for this offensive air, to effect which he made a hole in the ceiling large enough to receive a funnel, the large end or mouth of which he turned downwards and well plastered to the ceiling, so that air could escape only through the funnel; to the other end he attached a long small tube, which he conveyed along a joist above the ceiling, and out through the main wall of the building. To the great joy of the farmer, the cellar or dairy was thus rendered perfectly free from smell, and the butter and milk would keep sweet. Curiosity, however, induced the farmer to mount a ladder, and apply his nose to the small tube outside the building, when he found issue from it an excessively offensive stench.

A neighbour of the farmer, to whom had been related the above case, on visiting the County Asylum soon after, perceived an offensive odour in one of the wards, for which the matron found a plausible excuse; but the gentleman desired to be conducted to the water-closet of the ward, as he was sure the offence originated there, and this proved to be the case; but the remedy was not so obvious, until the farmer's statement occurred to his mind; he then immediately sent for workmen, and applied the farmer's remedy in the water-closet, which was in this case also equally effective.

We know that where three or four servants sleep in the same chamber, whether in a farmhouse or otherwise, that chamber is unfit to be entered the following morning—the atmosphere of it is so offensive, whether there be a chimney-place in it or not. Now, if an inverted funnel, say six inches diameter, were introduced through the ceiling, with a long small tube, say one inch diameter, and conducted along the joist above and through an outer wall, the foul air would escape, the chamber be freed from offensive smell, and consequently be more wholesome for the inmates. The same will apply to shops, school-rooms, work-shops, work-rooms, &c.

To drive a hole through the ceiling to the open space above would not so well answer the purpose, because the cold air would often rush down, and then the aperture would be certainly stopped up; or there might be two currents—one of warm air upwards, the other of cold air downwards—all of which the inverted funnel and tube would prevent.

To conduct the tube horizontally, and out at a side wall, will be found more effective than to carry it up perpendicularly through the roof, which, besides, cannot be done except in an upper chamber; and there can scarcely be a doubt that the atmosphere of all our rooms—eating-rooms, sleeping-rooms, and sitting-rooms, as well in cottages and farmhouses as in the dwellings of the middle and upper classes—would be improved by such

means. Nor let any suppose that opening a window—either the upper part or the lower—will be all-sufficient; for, to go no further, we may be quite sure so soon as the cold air were felt the window would be closed: besides, our dining-rooms are shut up, and our sleeping-rooms would not be open all night, except in few cases.

The inverted funnel might be rendered more or less ornamental in the centre of the ceiling, and never unsightly; our public buildings, also, as our places of worship, might be thus ventilated, in lieu of having a large aperture to the loft above, through which so much cold air often rushes as renders it necessary to be closed.

Our stables, cow-houses, feeding-stalls, &c., might be thus rendered more healthy, so necessary in this time of prevailing disease, without danger from a current of cold air. This, together with frequent white-washing with *hot* lime-wash to all parts of the building, would greatly tend to diminish the evil.

The funnel and long tube, made either of zinc or tin, will of course be varied in number and dimensions according to the ventilation required; and it must be remembered that the warm air, ascending in shape of steam or vapour, will, on meeting cold air, be condensed, and fall within the tube in form of water; therefore the long tube must be slightly inclined downwards, to allow the moisture to run outwards, instead of returning inwards or remaining in the tube, the end of which should project an inch beyond the wall of the building; and also the several lengths of the tube must so enter each other as to facilitate the outward current. A.

## CHURCH BUILDING.

On the 20th ultimo the corner-stone of a small church was laid at Dringhouses, in the parish of Holy Trinity, York, which will have the peculiarity of being erected at the expense of one individual, Mrs. E. Trafford Leigh, to the memory of her husband. A plate was placed in a hollow formed in the stone, thus inscribed:—

"In the family vault at Lymn, in the County of Chester,
Lie the remains of
EDWARD TRAFFORD LEIGH, Clerk, M.A.,
For eighteen years Rector of Cheadle, in the same County.
He Died on the 7th day of January, 1847, aged 45.
To the Glory of God, and to the Memory of His Servant,
This Church of St. Edward the Confessor is
Dedicated. November 20th, 1847."

The building will consist of a nave 55 feet long, and 25 feet 6 inches wide; with a porch to the north; a chancel, 27 feet long, by 18 feet 6 inches wide; and a sacristy to the south of the latter. The west gable will be crowned by a bell cot, with spiral termination, partly supported by a buttress against the centre of the west end. The style adopted in the design is early decorated: it will be executed in a lime-stone from Clifford. The roof will be open, of high pitch; and the seats, for 200 persons, will be of oak. Messrs. Vickers and Hugall are the architects.

At Pendleton, Lancashire, All Saints' Chapel was opened for service last week, erected like the last by a lady, Mrs. Blegborough, daughter of Mr. Aspinall, of Standen Hall; and if we understand the *Blackburn Standard* rightly, it was also designed by the lady.

From the description, it is similar in arrangement to the last. It is in the decorated style, and consists of a nave without aisles, and a chancel, the whole covered in with a roof of equilateral pitch. The western gable is surmounted by an octagonal bell turret, terminating in a spire of moderate height, and the two eastern gables by stone crosses. The principal entrance is on the north side of the nave, approached by a stone porch; and on the south side of the chancel is the vestry, of corresponding character. The whole is built of hard white freestone from Waddington Fell and Pendle, which, in the mouldings and dressings, bears a sharp finish, the ashlar work being rough-dressed. The roof is of Baltic timber stained of a dark oak colour, open to the top, and showing the rafters; the principals springing from moulded stone corbels, uninterrupted either by tie-beams or other cross timbers, except at the top, where a quatrefoiled brace strengthens the whole. The windows, which are of various designs, are all glazed by Powell, of London, in quarries of various patterns, the east and west windows being enriched with borders and heads; in the former are the symbolic representations of the four evangelists, and in the latter the words faith, hope, charity, on scrolls. The chancel is raised above the nave, and ascends gradually by three broad steps laid with encaustic tiles, each step of a different pattern, while the nave is floored with quarrels of Wortshorn stone. All the woodwork is dark Dantzic oak. The benches or seats, which are open, are ranged on each side of a centre aisle, and the upright ends terminate in poppy heads. The lectern or reading-desk, which is on the north side of the chancel arch, is also open, and the poppy heads and panels are of carved work. On the south side is an octagonal pulpit, also handsomely carved and moulded. The chapel is calculated to hold about 180 persons. The foundation-stone was laid in May, 1846, and the building was opened on Thursday, November 11th. The contractor was Mr. Thomas Chaffers, of Burnley. The stone-work is by Messrs. Hargreaves, of Clitheroe; the carving and woodwork by Messrs. Squires and Veevers, of Clitheroe.

## PROPOSED TOWN HALL AND MARKETS AT YEOVIL.

Sir,—I have just received my weekly number of your very valuable publication, and almost the first thing I saw was, that "the plans and estimate of Mr. Davis, of Frome, for the erection of the new Town Hall and Markets at Yeovil, have been adopted," &c. &c. If it is not contrary to rule, I shall esteem it a favour to have the name of your correspondent, because I think it is due to the profession and the public, that such men as Mr. Davis should be held up to public censure. The same advertisement has appeared in most of the local papers of this neighbourhood, even on the week following the regular announcement of the contracts and the names of the contractors. I am sorry to say this person is one of those who not unfrequently endeavour to prejudice committees and individuals against their architect, that his own name may appear in the public journals, as in the present case; and should it be ascertained that he is in any way the author of this advertisement, several gentlemen of eminence and considerable practice in the profession are quite prepared, with myself, to give him all the publicity he deserves. You will be doing myself and the public service by giving the most decided contradiction to the statement in this week's number of The Builder, as the individual in question has *nothing whatever* to do with the matter. He was the successful competitor for the building contract, but, not complying with the requisitions of the commissioners, the building was again left open, and *is at present uncontracted for*. During his interview with the commissioners he did propose, with his accustomed liberality, that he should be employed to superintend the works—I suppose, as compensation for his trouble, and receive the whole or part of the architect's commission, and probably, in expectation of the result, was premature in his advertisement. He neither knows, or makes any pretension whatever to, the study or practice of an architect, and is only a mechanic who has risen to be a master.—I am, Sir, &c.

Yeovil, Nov. 30. Thomas Stent.

*Copy of Resolution, April* 14, 1847.

Resolved,—That the second report of the Plan Committee be adopted, and that the first premium be awarded to Mr. Stent.

## THE FREE EXHIBITION OF MODERN ART.

Sir,—The gloom which now overspreads the commercial world will no doubt be severely felt by artists, and cause many works of merit to remain unpurchased on their hands; and those who are accustomed to visit the painting rooms will see much to regret in the present lamentable crisis. But, thanks to the beautiful allegory of Pandora's box, Hope was retained,—Hope still remains to console and cheer us on. To a man possessing a truly artistic mind, the first great gratification, the sweetest reward for his labours, is reputation. However humble may be his style of living, with a public name he feels that he shall not pass to his grave and leave "no sign." Now, although the present prospect, in a pecuniary point of view, is not by any means promising, yet it must be a source of comfort to know that active measures are now on foot to provide for the many artists of merit of the present day,—an opportunity of fairly bringing before the public their talents in a manner hitherto unattainable, instead of being condemned to be thrust into dark holes or hoisted up to the ceiling.

I hear great talk about the New Association of Artists,—the free exhibition of modern art,—that they have taken the fine gallery occupied by the late Chinese Exhibition,—that they have already a hundred members,—and that those artists who wish to join them must make early applications for space, as the daily demand will in a short time leave none to be disposed of. This is really gratifying, to find that artists have at length done for themselves that which for years has stared them in the face as being the one thing needful,—to provide a place where they may *stand* or fall fairly by their own act,—by their merits or demerits. No one but he who sees the progress of a work on the easel can imagine the amount of cruelty, the laceration of feeling, the blighting of hope, experienced by an artist who finds his labours for months, perhaps years, all thrown to the wind in a moment, by having a highly-finished work thrust out of sight, or in some dark corner where it is never seen. Here at one blow he is partially destroyed in mind and pocket; no help remained for him; he dared not complain; submission in quiet was his only course.

I have a sufficient remembrance of the size of the gallery, while the late Chinese Exhibition occupied it, to conclude that the room will afford a grand opportunity for an exhibition of the free and liberal character I have mentioned; and I look to it as the great panacea for the complaints of artists. I also am informed that the committee intend to build, whenever a sufficient demand for increased space may be made; and that a fund is to be raised to relieve the exhibitors, their wives or orphans, should they fall into adversity. This is indeed a proper mode of disposing of the funds which may in time arise.

I doubt not that you will agree with me that the removal of the gimcrack Chinese entrance to the gallery is a judicious one. The novelty of it had worn off; and however proper for the occasion which placed it there, it would be a better ornament in some gentleman's garden than as an entrance-porch to a gallery of modern art.—I am, Sir, &c.,

Peter Palette.

## FIRE-PROOF SAFES.

An obliging correspondent writes as follows:—

Property to an immense amount in title-deeds, foreign securities, &c., is now incapable of insurance from fire, on account of the excessive risk such articles are exposed to. A receptacle for articles of this nature has been devised which would afford for them perfect security from conflagration, and which might be constructed at an expense so moderate as might enable private persons to adopt it,—bankers, for instance, who usually hold in trust securities of very considerable value. It has been planned from a combination of the several expedients devised, and successfully introduced, by the late Sir S. Bentham, whilst Inspector-General of Naval Works, for the protection of the royal dockyards from fire, for the conservation of gunpowder in case of fire on board ship,—and for giving light to ships' powder magazines.

The proposed receptacle may be briefly described as follows:—

Where it can be constructed underground,—a chamber, of which the walls, floor, and roof, should be made perfectly water-tight, a cistern of water covering the roof.

The interior of the chamber either to be fitted up with a number of cells of metal, capable of being closed water-tight, or with separate moveable water-tight cases,—the cells or cases being for the reception of the property to be secured against fire,—these cells or cases being arranged in the middle of the receptacle, so as to leave a clear space between them, the walls, and the roof.

Pipes, communicating with the interior of

the receptacle, to be conveyed from the cistern, by which means, in case of danger from fire, water to be let into the receptacle itself, so as to fill it completely round and above the water-tight cells or cases. The cistern to contain a quantity of water more than sufficient to fill the interior of the receptacle; and means to be provided for replenishing the cistern in case of evaporation or other loss of water.

To render the flow of water into the receptacle self-acting in case of fire, the pipes of communication to be plugged with fusible metal: thus, should a neighbouring conflagration be such as to raise the water in the cistern to a boiling heat, the plugs would melt, consequently water would enter from the cistern to the receptacle, fill it, and preserve intact the contents of the cells and cases. After the danger ceased, the water would of course be pumped out of the receptacle.

The entrance would be most securely made through the roof and cistern above, by means of a cased trap-door closing water-tight, so as when not in use to be covered with water.

For giving light when needful to the interior of the receptacle, safety-lamps, encompassed by a double casing of glass, filled between with water; the pipes for supplying air, and for conveying away the foul air, to be siphon-shaped, so contrived that no sparks could issue from them.

Where such a receptacle could not conveniently be constructed under ground, the wall to be enclosed in an interior one at some distance from it; the interval to form a cistern filled with water, easily replenished like the cistern on the roof.

To dry and ventilate the receptacle, a ventilator, such, for instance, as that proposed by Dr. Hales a century ago, might be used; that is, a kind of wooden air-pump of very simple construction; means, at the same time, being provided to supply the place of moist air extracted by other air drawn from a chamber where it would be already dried and warmed.

As gunpowder, whether in bulk or in cartridges, was found to keep perfectly in Sir Samuel's water-tight cases, there can be no doubt but that parchments or papers might be equally well preserved in a suitable cell or case, supposing always that they were dry when inserted.

## THE SUN CORRECTED!

The authorities of the General Post-office, it appears, have recommended, and the various railway companies have agreed to, the uniform and literal adoption of *Greenwich time*, at the railway stations throughout the whole country; and it is even anticipated, that "should this uniformity of time become general on the railways in England, as will doubtless be the case, it must quickly be adopted by the nation," which adoption "will, of course, involve the necessity of a corresponding alteration of the public and other clocks," especially of those which are *not* regulated by the London Post-office authorities, as by the new sun of a new horological system, but merely by the old sun, which is thus about to be discarded for the brighter luminary of St. Martin's-le-Grand. In short, it really appears that we were wrong in lately giving the same announcement the credit of an interpretation certainly more correct in principle at least, by taking it for granted that what was really meant to be done was simply to *regulate the true local time* by the observations daily taken at Greenwich, instead of other local meridians. But we now find that it has been determined, chiefly for the sake of some more obvious or supposed convenience to the Post-office authorities in regulating the despatch and arrival of the mails, and in spite of much of an as yet somewhat less obvious but not the less real *inconvenience*, as well as error, and confusion,—to give the sun the lie direct, by declaring, and leading the nation at large to declare, that it is 12 o'clock noon at Holyhead, for instance, when the fact is that the sun has some twenty minutes' time to make up, or nearly so, before he reaches the meridian (or true 12 noon) at Holyhead. This go-a-head principle, in fact, is one that involves and affirmatives the celebrated proposition, that 'white is black and black is white;' for if the time at which the sun reaches the meridian at Greenwich be fixed upon and declared to be the very time at which he reaches any other meridian of longitude within the three kingdoms, a false principle is established that virtually and essentially declares it to be high noon where the sun is either only rising or where he is already going down!—a principle which, however obvious some of its conveniences may appear to be, is radically wrong, and therefore ought at least to be first of all well considered by astronomers and others competent, in all its bearings and its consequences, if not also to form a subject of previous international railway arrangement.

We should like to know what astronomical observers at Liverpool, or any where else than Greenwich, will say to its being nationally declared, by the local practice in the general regulation of clocks and watches in the respective localities, that it is there twelve o'clock noon ere the sun has risen to his meridian, or that it is not noon till after he has gone down from that meridian; or that at the equinoxes it is twenty minutes, half an hour, or a whole hour, or in short any definite time within twenty-four hours' past, or short of, six, at the moment when the sun either rises or sets, any where else than at Greenwich,— or rather St. Martin's-le-Grand it *should* have been.

If astronomers countenance at all so heterodox a *correction* of the sun's divisions of time into day and night and noon and morning, we mistake much if they would not rather at least recommend some local *centre* in the very *midst* of the empire thus induced to fix and stereotype, or, as it were, electrotype, by telegraph, a scientific error into one perpetual and conscious lie, or legion of diurnal lies, in the very face of the Sun himself: and such a mean or average centre could be easily found and as readily established, with a national observatory, and an electro-magnetic *rapport* with the telegraphic system, such as that already suggested in connection with the Greenwich noonday signal.

The questions at law which may originate in any attempt to derange the *only true time*, or true order of nature, in questions of time such as those connected with the starting of trains, the stoppage of banking or other branch establishments in different towns, &c., will be rather curious and interesting. But it is not our province here to enlarge on such topics. And moreover, although utterly false and indefensible in principle, really the electric telegraph is now so almost literally turning the world upside down, that the sun is getting quite into disgrace already as a notorious laggard, whose *ipse dixit* it is no wonder that St. Martin's-le-Grand at length despises and repudiates. A great demonstration of the capabilities of the telegraph, so far as now completed, took place on Tuesday week, on the recital of the Queen's speech by commission in the House of Lords. What may be called the national opening of the electro-telegraphic system was then accomplished, free to the public, by the Electro-Telegraphic Company. The speech was spoken in Parliament at one o'clock, and its electrical flash, in the broad sheets of the press, astonished and dazzled the eyes of the Edinburghers at half-past five!

Why even by the now more slow and cumbrous transit of the news by rail, the speech, together with a share of the debates of Tuesday, in the Wednesday morning papers, were in the hands of the Glasgow people, at a distance of 400 miles, by 8 P.M.—post horses from Beatock, 60 miles, notwithstanding. When we consider indeed, that even the 'cool hundred' miles an hour, as we have once already hinted, has been realized by rail, our patience with the very moderately rapid flight of time meted out to us by his highness the Sun, may well be now exhausted by ambitious doings such as those of the electric telegraph; for in the latitude of London, midday passes westward only at the rate of less than five and a half times more, the sun here travelling westward (or the earth's rotation eastward) only at the rate of 644 miles an hour; so that in not very much more northern latitudes it would actually be no very difficult task for a railway express to gain time upon the sun in travelling westward, or at least to fly before the darkness and escape being ever later at *any* station on such a line than 12 o'clock at noon of one and the same eternal day, as it rose to noon on each such station of such a railway 'girdle round the earth',—thus more, in fact, than realizing the horological paradox of St. Martin's-le-Grand! Though somewhat irrelevant in our columns, such reflections cannot but afford a just and striking idea of the comparative merits of the engineering and other means whereby "knowledge runs to and fro" over the face of the earth in the nineteenth century. These means must indeed be wonderful when they can so far sustain a comparison such as this, even relatively or ostensibly, with the tremendous rotary movement of the globe itself in our own intermediate and average parallel of latitude.

We may here observe that the Government bill to extend the time for the completion of railway works already begun, and to give directors a discretion in commencing new works, &c., has been read a first and second time, and ordered to be committed on Friday, the 3rd instant. The Chancellor of the Exchequer, in introducing the bill, disclaimed the idea that the money actually expended on railways had *occasioned* the recent difficulties, though he classed 'the railway mania' amongst the causes which led to these difficulties.

## NOTES IN THE PROVINCES.

The credence tables in Silksteade's Chapel, Winchester Cathedral, have been stripped, by the archæological 'solution,' of the old Puritan whitewash with which they were defiled, and a group of painted figures has been disclosed by Mr. F. Baigent, one of the members of the British Archæological Association. Though mutilated in some respects, three of a series of figures which appear to have been arranged in groups, under eight canopies, still exhibit a pretty fresh and entire subject, namely, "Christ and Peter on the Sea."——It is proposed to erect a memorial window in the parish church of Great Yarmouth, to be called the 'Martin Window,' in commemoration of an industrious and philanthropic needlewoman, whose labours amongst the reprobate in Yarmouth jail, from 1819 to 1843, appear to be gratefully remembered by the inhabitants of the town.——Great progress has been made during the last three years in the decoration of the Manchester parish church, and the enlargement of its accommodation. Amongst other decorations, the *Manchester Advertizer* describes the roof, which is of low pitch, as supported by seven four-centered beams, dividing it into six bays, which are again subdivided into thirty-two squares by longitudinal and transverse mouldings, at the intersections of which are carved wooden bosses 'of exquisite and wonderful workmanship,' no two of which are alike, though the unity of the whole roof is preserved. The wood-work of each bay, in fact, was a separate gift. All these bosses, says our authority, are now illuminated. The law of formation in the colouring is observed to be, all depths of blue; those not so far removed, red; the more prominent features, gold. The same law appears to hold throughout the roof, the panels being blue; the bordering fillet white; the succeeding cove red; and the mouldings below, whose section would show a trefoil, have the lowest white, and the others gold. The only deviation is in the principal beams, in each of which two members have been boldly treated in emerald green, and serve to relieve the eye after the blaze of the bosses. The principal beams show on each side five shields. On these shields are emblazoned the arms of the deans since the first foundation of the college. The glass in the west window of the south aisle was gathered there as the sole fragments of the acres of stained glass which once adorned this church.——Some improvements have recently been made in the Doncaster parish church, particularly where the chancel leads to the nave, hitherto encumbered with high doors and benches, which have been cleared away.——The local authorities at Gateshead are using commendable diligence in the purification of the borough. Dirty alleys and corners are being thoroughly cleansed, and the whitening-brush is in active and exemplary operation in hundreds of yards and houses, both in the hands of the corporation—by deputy, of course—and amongst the poorer classes, in whose hands they have placed it for the like purpose, and by whom even the loan of the brush and the gift of the whitewash have been thankfully and readily accepted.

## WESTMINSTER COURT OF SEWERS.

A SPECIAL court was held on Friday, the 26th ult., Capt. G. Bague, R.N., in the chair.

*Sanitary Improvement of Hammersmith and Fulham.*—Mr. Bathurst brought before the court the motion of which he had given notice, relative to the memorial presented at the last court from the parishes of Hammersmith and Fulham, praying for sanitary improvement, and moved that the application of the Board of Guardians of the Hammersmith and Fulham Union to this court be referred to the surveyor.

Mr. Gunter having borne testimony to the necessity of the measure, the question was put and unanimously adopted.

*Strutton Ground, Westminster.*—The clerk reported, that in consequence of statements received, that in many cases the drainage of Strutton Gound, Westminster, was passing through apartments which were inhabited, notices had been served on the owners of the property, calling upon them to drain their houses into the sewer, under the authority of the new Act.

*Deputation from the Marylebone Vestry.*—Three gentlemen attended the court as a deputation from the vestry of Marylebone, to ask permission of the court for the removal of certain gulley-holes in Portland Mews, by which a great improvement might be effected. The surveyor said he had examined the place, and found that several of the gulley-holes complained of were surreptitious, and not laid in under the authority of this court. Mr. T. L. Donaldson hoped, with this explanation, the matter would be referred back to the committee from which these gentlemen attended. As they were, however, present, he wished shortly to refer to the report issued a fortnight since by the Marylebone vestry. (The commissioner then read the passage, which stated that this court had authorised the large number of gulley-holes, and stated that the court had done their utmost to prevent the large number of gulley-holes, but that the parish surveyors insisted upon their being put down.) He wished also to call their attention to another subject, to show how little the vestry understood the authority of this court. He then read the following passage from the report in reference to the formation of cesspools:—"The evils are not confined to the absence of sufficient drainage provided by the commissioners themselves, but have increased by the absolute refusal of the commissioners to permit others to carry out those needful improvements which their culpable negligence has omitted. Every person who has at all considered the subject must be aware, that the formation of cesspools underneath and contiguous to inhabited houses is a fearful source of sickness and disease, and yet the formation of these noxious depositories of filth has been for a long series of years forced upon the public by the absurd practice, on the part of the Sewers Commissioners, of preventing any drain from a closet being laid into a sewer; of late, however, and since the evil has caused a frightful accumulation, the commissioners themselves are loud in their condemnation of cesspools." In reference to this, the truth was, that for half a century such a practice had not existed in this court, but, on the contrary, they were anxious and had done all in their power to compel parties to drain their houses into the public sewers.

The Chairman said there could be no doubt the report was a tissue of misrepresentations.

The question was referred back to the committee.

The deputation said they should not fail to represent all these facts to the vestry.

*The Action against Mrs. Webb.*—The solicitor reported, that this morning he had ascertained that a declaration had been filed in the Palace-court by Mr. Farlar (on the part of Mr. Gigner) against Mrs. Webb, charging her with trespass in entering his sewer. After a conversation it was resolved, "That the solicitor, having laid before the court a copy of a declaration in the case of 'Gigner *v.* Webb,' resolved, that the solicitors of this court do cause a plea to be made that the trespass complained of was done by and under the authority of this court, or such plea as counsel shall advise. Resolved also, that if it can be done, the cause be removed into the Court of Queen's Bench, and that the address of the plaintiff be obtained."

*The Want of Drainage near Buckingham-palace.*—The clerk said he had received a communication from the Commissioners of Woods and Forests, which was as follows:—

"Office of Woods and Forests,
"Nov. 23, 1847.

"On the part of her Majesty's Commissioners of Woods and Forests, I transmit to you a copy of a letter which they have received from Mr. Portwine, the honorary secretary to the St. Margaret's Association, representing the defective state of the sewerage of certain streets in the vicinity of Buckingham-palace, the houses in which streets are the property of the Crown.

"The subject of the want of drainage in these streets was under the attention of this board towards the close of the year 1843, and an extract from a report of Mr. Hogg, the clerk of the works at Buckingham-palace, was transmitted to you to be laid before the Court of Sewers for Westminster, with a request of this board to be made acquainted with the terms upon which the court would undertake the works necessary to place the locality in a proper state of drainage. In reply to that communication the board received a letter dated January 10, 1844, stating that the Court of Sewers had caused a plan and specifications to be prepared by their surveyors, and transmitted with your letter three unopened tenders for the performance of the work. (The document then stated the amount of the estimates.) From Mr. Portwine's letter, however, it appears very necessary that some measures should be adopted for procuring a proper sewerage for the property in question; and as the board understand that by a recent Act of Parliament, greater powers as to the construction of sewers in places destitute of that accommodation are given to the Court of Sewers of Westminster, I have to request that you will again bring the subject under their consideration, with a view to their constructing such a sewer as shall be necessary for the locality above mentioned.

"I have to observe, that as the houses in the streets referred to by Mr. Portwine are for the most part subject to long leases, it appears to the board reasonable that the lessees and occupiers, who will derive the chief benefit from the sewer, should be at some portion of the expense thereof, instead of having it all fall on the Crown as the freeholder. Whether or not the Court of Sewers have any power of apportioning it, the Board are not aware; but if not, they can perhaps point out a method of compelling lessees and occupiers to defray a share of the cost, which the Board apprehended there would be some difficulty in effecting.

"I am, Sir, your obedient servant,
"T. MILNE."

Accompanying the letter was a long memorial from the inhabitants of Catherine-street, Palace-street, &c., Pimlico, complaining that typhus fever raged in that locality from the want of drainage, and that this nuisance existed within 200 yards of Buckingham-palace.

As the matter has been for some time under consideration, the letter and memorial were referred to the surveyor, and an acknowledgment of them ordered to be sent to the Commissioners of Woods and Forests.

*The Expiring Commission.*—Mr. Hertslet said, in obedience to the order of the last court, he had written to the Lord Chancellor to ask when it would suit his lordship's convenience to receive a deputation from this court on the subject of the expiring commission, but that he had received no answer whatever to his communication. Mr. Le Breton was anxious to know, if the commission expired, into whose hands the property would pass? Mr. Broughton said, that such an anomalous position as the commission being allowed to expire he could scarcely believe would take place, short as was the time of its duration. If any property of the commission was stolen, the Commissioners of Sewers at present were the prosecutors, but no such persons could be charged when the commission became extinct, as there would then be no Commissioners of Sewers, and it might become a question, whether parties would even pay the sewer rates. It certainly would be a most remarkable feature if the commission was allowed to expire without a substitute being provided. They should, however, be prepared, and, if they were to become defunct, let them, like Cæsar, wrap their cloaks around them, and die with dignity. The chairman said, although the business of the court, after the commission was expired, would fall on the county magistrates, still he felt assured that the body of the magistracy would not attend to execute the duties of the commission unless they received the appointment from the Lord Chancellor. It was suggested, that the illness of the Lord Chancellor might account for no answer being received.

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GOVERNMENT SCHOOL OF DESIGN.—The new appointments at the school, now all complete, are,—Mr. William Dyce, A.R.A., master of the class of ornament; Mr. Richard Redgrave, A.R.A., master of flower-drawing and occasional lecturer; Mr. Henry Townsend, master of class of form; Mr. J. C. Horsley, master of class of colour; Mr. C. J. Richardson, master of geometrical, architectural, or perspective drawing; Mr. Burchett and Mr. Denby, assistant masters. The first lecture is to be given this (Friday) evening, at eight o'clock, by Mr. Poynter, on the arabesques of the Vatican.

## New Books.

*Aerial Navigation.* By DÆDALUS BRITANNICUS. Gilbert, Paternoster-row, 1847.

THE joker who proposed to traverse the sky by means of a congreve rocket, and to descend with the aid of his umbrella, enunciated the real circumstances under which aerial navigation may be hoped for. To ascend by being lighter than the air, is to be less powerful than the air, and admits of no strife against it. A steam-engine *may*, one of these days, take us with certainty through the clouds to a given point, but a bag of hydrogen gas *alone* never will.

The author of the pamphlet named at the head of this notice, seems to have a clear idea of this; but whether or not the means he points out are calculated to effect the desired end, is quite another matter. He proposes to obtain power equal to that of eighty horses, acting on wing-shaped adjuncts to a balloon, by the atmospheric pressure on a vacuum formed by ignition of gases. We hope, for the sake of his wife and family, if "Dædalus Britannicus" have them, that no good-natured people will encourage him in the construction of the machine shadowed forth in the pamphlet before us.

## Correspondence.

### THE DISGRACEFUL STATE OF WESTMINSTER ABBEY.

SIR,—Having had of late sufficient time for examining the architectural beauties of this magnificent edifice, I could not help (as is the case with many other visitors) being struck with the disgraceful and unclean appearance of the small chapels, and particularly that of Henry the Seventh. The niggardly practice of exacting the paltry sum of sixpence for their exhibition has been so often ridiculed and exposed, that I deem it unnecessary to trouble you with any remarks upon that subject. The public, at least, may expect to find the objects of exhibition as clean as their mutilated condition will allow; but even this is not the case, for many monuments are so completely covered with dust as to render their identity a difficult matter. The magnificent effigy of William de Vallance, in the chapel of St. Edmund, formed of wood and covered with a species of copper-gilt and enamel, is, although one of the finest objects in the church, hardly ever noticed by the casual visitor; but, were the filth removed, its beauties would at once attract the wonder and attention of every passer-by. This is not the only instance. The tombs of the kings in the Chapel of the Confessor are in as filthy a state; as is also the magnificent stall-work in Henry the Seventh's Chapel. I cannot help observing how much better the modern monuments contained in the nave and transepts are preserved, in comparison with those before alluded to. Men have of late been employed in cleaning those huge memorials which, so far from decorating that noble edifice, only disfigure it; whereas, its ancient architectural beauties are allowed to moulder away unnoticed and uncared for. The present dean and chapter, in some of the late alterations, have shewn good taste and selection (if we except the scheme for extending the choir into the transepts); and I cannot conceive the reason why they have suffered so important a part as the whole east end of the church, to remain in its present dilapidated and unclean state, this being without doubt the most attractive portion of the abbey. May I be allowed, then, to suggest that that part should be cleaned and restored to its pristine beauty forthwith?

I am, Sir, &c.,
E. DAVIS.

### NAMES OF STREETS.

SIR,—From the nature of your periodical, I infer that any suggestion tending to an improvement either in our streets or buildings is acceptable to you, therefore I submit to you the following alteration in placing the names of streets.

That which is to be *read* ought to be as near the level of the eye as possible, according to the standard of general height. This arrangement cannot be effected on the walls of buildings, because of the interruption of windows, &c. I therefore propose that the names be removed from that locality, and that they be

placed on a narrow strip or bar across the lamp-posts, at each corner, and occasionally in the centre of the street. The light will thus fall immediately on the name, which I further propose should be round and embossed, so that, if the light should be extinguished, it may be *felt*. At present there is a bar for the convenience of the lamp-lighter, but the one for the name of the street would be placed much lower, and would not interfere with the other. It may be feared that the name thus placed within the reach of the idle or thoughtless may be torn down or defaced; but the police will guard it till it ceases to be a novelty, when it will no longer attract particular attention.

Should this plan be adopted, I should like to have the credit of the suggestion.

I am, Sir, &c., R. J

55, Coleshill-street, Eaton-square, Pimlico.

## Miscellanea.

The Royal Society's Dinner.—The anniversary dinner of the Royal Society, whereat the Marquis of Northampton ably presided, passed off pleasantly. The Dean of Westminster (Dr. Buckland), in referring to an almost exploded notion, that scientific investigations were opposed to religion, made an excellent speech. General Pasley, who replied for the army, traced briefly the progress of the improvements in that wonderful example of human ingenuity, the locomotive engine, mainly due to Trevithick and Mr. George Stephenson. Sir Robert Harry Inglis spoke several times well. Sir John Rennie, on the part of the civil engineers, shewed that in all their operations they had to seek the aid of science. Sir John Lubbock advanced the claims to consideration of the London University, and said in respect of Oxford and Cambridge, there could be no feelings of rivalry in such a cause as education. Mr. Edward Blore, when replying for the Royal Academy, no academician being present, referred to what was going on in Westminster Abbey as "a great work," and said he had no doubt the public would approve, when the whole was completed. Colonel Sykes, Captain Smyth, Sir Henry Ellis, Mr. Christie, and others, also addressed the meeting. The annual medals had been presented in the morning to Sir John Herschell, Mr. Groves, and Mr. Fownes.

Matters Sanitary. — Meetings have been held,—in Holborn, by the 'Co-operative League,' in support of health of towns measures,—and at Kingsland, by the inhabitants, against the present local boards and in favour of other measures.——The baths and washhouse committee met at Euston-square lately, and resolved to supply the poorer classes of the western district of the metropolis with disinfecting agents, limewash, pails and brushes, &c.——The City authorities, taking time by the forelock, have announced an application to Parliament for increased and all-comprehensive sanitary power over cesspools, sewers, cemeteries, slaughter-houses, smoke, &c. &c. ——The 'New Smithfield, or Great Metropolitan Cattle Market and Abattoirs Company,' are also in the field; as are the Metropolitan Sewage Manure Company, who are to begin with a distribution of liquid manure to the Fulham meadow and garden districts.——At Wakefield and Halifax, too, applications to Parliament by 'Sewage Manure' companies, for bills to form conduits, aqueducts, &c. have been announced.——A medical 'inspector of nuisances' has been appointed at Wolverhampton, under 9 & 10 Vict. c. 96.——Private and confidential hints as to local nuisances have been advertised for by the authorities at Sheffield.——The medical men of Hull have formed themselves into a local board of sanitary inquiry.——The Newcastle and Gateshead Sanitary Association seems to be a most active and exemplary one. It, moreover, contributes to the ways and means of the metropolitan parent association, as every such association ought to do, who wish to have 'a friend at court,' or a helping hand at head-quarters. ——Sir Geo. Grey has been making repeated sanitary inquiries of the Lord Provost of Edinburgh, and recommending disinfecting agents, &c. in fever prevalent there.——A public meeting was lately to be forthwith called to form a Health of Towns' Association at Glasgow.

A Hard Case, if True.—A correspondent of a morning paper, mentioning some instances of injustice in respect of imprisonment for debt, makes the following statement, which certainly demands the attention of the Commissioners of Woods and Forests. "Two brothers, builders, in a respectable way of business, about a twelvemonth ago took some building ground near Battersea-bridge, upon which they constructed fourteen houses, expending in building materials alone 4,000*l.*, besides the value of the land. A bill was obtained soon after in Parliament for a park, on the very spot, and the Commissioners of Woods and Forests immediately took hold of the property, for which the owners made a claim of about 12,000*l.* The Government surveyor valued it at about double the value of the materials; but weeks and months passed over, and the owners could not obtain one farthing of that sum. They were told that as soon as the necessary grant was obtained from Parliament they should be paid, and in that way they were put off from time to time, whilst their business, the whole of their capital having been locked up in the property in question, went to wreck and ruin. At length their acceptances, given for part of the building materials, became due, and the creditors, as duly authorised by law, at once put them into prison, where they have been lingering now for *six months*. All their representations to the Commissioners of Woods and Forests have been treated with that contempt which it is but natural (being an every-day occurrence) that superior authorities should show towards a paltry tradesman, who has the bad breeding to "dun" them, and to tell them that it is their fault that he is rotting in prison, deprived of his bread, of all comforts of life, and punished like a criminal."

New Patents.—Amongst the more recent patents taken out in Ireland, we observe one 'for ventilating buildings, carriages, chimneys, and other places,' by Mr. Joseph Henry Tuck, of Paris; and another for 'a new mode of treating and applying wrought-iron,' by Mr. William Rocke, of Dudley, 'invented by him after much trouble and expense.'

Honour to Ingenuity and Probity.—It is said that the King of the Belgians has created a mark of distinction in the shape of a silver medal, to be worn on the left breast, for such artizans and workmen as have given proofs of superior skill and judgment in their respective arts and trades, and been at the same time of irreproachable conduct.

Bridge over the Ohio.—It is said that the plan of a bridge across the Ohio, at Wheeling, has been agreed upon. It is to be supported by two towers on each bank, 1,010 feet from centre to centre, 100 feet above the bed of the river, and 60 above the floor of the bridge.

The Works in Ely Cathedral.—We have already spoken at some length of this fine building and the works now going on there. Of all the improvements, the most conspicuous will be in the choir, which now extends from the east end, a distance of 101 feet, to the ante-choir or sermon-place. This latter measures 53 feet to the octagon, and is to be thrown into the choir, the length of which will then be 154 feet. It is proposed, in addition, to throw open all the arches of the present choir to the side aisles (the roofs of which have been restored), restoring the tombs of the Bishops De Luda (1290), Redman (1505), Kilkenny (1257, the most ancient in the cathedral), Hotham (1337), Barnett and Northwold (1252), and of John Lord Tiptoft, Earl of Worcester, and his two wives (1471). It is proposed to remove the present stall-work (arranged in 1770) and to provide new subsellia and other fittings to the three arches of Bishop Hotham. A screen is to be erected to separate the new choir from the lantern (the organ being removed into the triforium on the north side). The polishing the great marble piers of the choir and their capitals (hitherto disguised by paint and wash), is now in progress, and an enriched reredos and pavement is to be provided. The unsightly combination of woodwork and plaster is removed from the east end of the choir, and the ruined tomb of the Cardinal de Luxemburgh, on the south side of the altar, has been restored. The arrangements above enumerated will have the effect of securing the means of accommodating a much larger congregation in the choir, and will leave nearly unbroken the entire view of the cathedral from its western to its eastern end. The rich chapel of Bishop Alcock has been restored, at the expense of the Society of Jesus College, of which he was the founder. The pinnacles, pendants, and niches have been restored, as far as practicable; and a floor of encaustic tiles is to be laid down, the designs for which are now in preparation. According to the *Cambridgeshire Independent Press*, the expense of completing the enlargement of the choir in the manner proposed has been estimated at not less than 8,000*l.*; and if the works are extended to the lantern (as is proposed, in case the amount of the subscription warrant it), a much larger sum would be required; it is, however, extremely difficult to estimate beforehand the cost of such undertakings, where the amount and character of much of the work to be done can only be ascertained whilst the repairs are in progress.

Rapid Make of Iron.—Such is the celerity in manufacturing iron in this part of the country, that instances have occurred in which the calcined ore has been converted into rails, and actually delivered in Liverpool within two days. Bar and sheet-iron can, of course, be manufactured with similar rapidity.—*Wolverhampton Chronicle.*

Projected Works, &c.—Tenders have been called for by advertisement for the execution of certain builder's works at the Bedford Lunatic Asylum; for the whole or part of the excavation of about three miles of a new channel for the River Dun from Doncaster to Landall; for deepening four wells at the barracks at Winchester; for digging and putting in the foundations of St. Mark's, Wolverhampton; for excavating a further open cutting and earthwork for driving a plant or level at Loughor, near Swansea; and for a supply of 10,000 loads of British oak timber, 3,700 loads of British oak thick stuff and plank, and 300,000 British oak treenails for the Admiralty: also for lighting roads in Fulham parish with gas.

## TO CORRESPONDENTS.

"*Justice.*"—It is neither "a general custom nor a legal demand" for "an architect to require a per centage from a contractor on the amount of his contract."

"*M*" shall have an answer.

"*E. and W. J.*"—We have already expressed a favourable opinion of Baillie's slide valve ventilator.

"*W. N.*" We will call for more information.

"*J. C.*"—What a surveyor does he should be paid for.

"*A. E. C.*"—Make a formal application to the commissioners.

"*An Original Subscriber.*"—Arnott's valve will be found useful.

"*W. H.*"—Alum water is sometimes used to prepare paper for tinting. The question had not reached us.

*Received*—"G. T." "J. A." "W. F." (too late), "J. W." "J. M. McC." "D. H." "J. W. D." "W. C." "A Londoner" (will appear), "J. H. R." "Constant Reader." "G. B." "X. Y. Z."

*Books Received.*—"Dolman's Magazine," December. "Thoughts on the Degradation of Science." By F. R. S. (Rodwell, Bond-street.) "A Manual of Gothic Mouldings." By F. A. Paley. (John Van Voorst, Paternoster-row.) Second edition. "Art-Union Journal," for December. "Caldwell's Musical Journal," for December: Part 6. "Minutes of the Committee of Council on Education." 2 vols. 1847.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses


## ADVERTISEMENTS.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN-PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronised by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 73, Princes-street, Lambeth.—A stock of elbows, stink-traps, and various shapes always on hand.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of Her present Majesty, chapter [illegible] local and personal, intituled "An Act to explain and amend the laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," provision is made for the more effectually draining houses and property; and with a view thereto it is enacted, that where any house built before or after the passing of the said Act (2nd July, 1847), shall not be drained to the satisfaction of the Commissioners of Sewers, and if there shall be a sewer within 100 feet of any front of the building or of any inclosure about the same, it shall be lawful for the Commissioners to order the owners or occupiers, at their expense, to drain such house, by continuing the sewer along their frontage, and by making a drain to lead thereto; and if there be already a sewer in front, adapted to the drainage, then, that a covered drain into it shall be made, as the Commissioners shall direct; and that the parties shall contribute to the expense of the original construction of the sewer, if built within thirty-five years before the passing of the said Act. And by the said Act it is declared that no drains shall be made without first giving notice to the Commissioners, who are to regulate the construction thereof. And it is by the said Act further provided, that all drains and water-courses, as well within as without houses and other property, shall be cleansed and repaired by and at the cost of the owners or occupiers. The Commissioners are by the Act fully empowered to punish by fines and penalties any persons who may contravene the Act; and it is particularly required that all persons will proceed to comply with these regulations.

An officer of the Commissioners will be in attendance at the office, No. 1, Greek-street, Soho, from 9 in the morning until 4 in the afternoon, every day (Sunday excepted), when every information will be given to parties to assist them in complying with the provisions of the Act.—By order of the Court,

LEWIS C. HERTSLET, Clerk.

# THE BUILDER.

**PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS**, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles as usual.—The Trade supplied.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE. Kitchen-range, and Stove-grate Manufactory, 38, Crossstreet, Walworth.

**JOHN GRICE** most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in. and upwards.
Bright ditto with Black and Bright Bars, 3l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fitmans Bright:—

| 3 ft. | 3 ft. 6 in. | 4 ft. |
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| 3l. 3s. | 3l. 14s. | 4l. 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

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| Best Patent Cut Clasp. | | | | |
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| 3d. | 4d. | 6d. | 10d. | 20d. |
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Best Sheet Floor Brads 1½s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

| Best Patent Sash Line. | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 6 | 8 | |
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 13s. | per gross. |

Elliptic Stoves, 3l. per inch. Registers, 6½d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with oven and Back Boiler. Wrought Bars and Bright Fittings.

| 3 ft., £3. 3s. | 3 ft. 6 in., £3. 10s. 6d. | 4 ft., £4. |
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Lists of Prices had on application at the Warehouse; if by letter per paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 6s. | £3. 13s. | £3. 18s. | £4. | £4. 10s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £5. 15s. | £6. 5s. | £6. 10s. | £7. |

Bed Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 9d., 10d. and 1s. do.
Manufacturer of WOLFANSON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

IRON WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or Mouthpieces; Plates, Furnace Doors, and Full Sized Stoppers, Chimney-bars, Inside, Outside, and Ash pit; Doors and Frames, Bolting and Frames, Lamps, &c. &c., all of the best description, at very moderate prices.—CAST-IRON UPSETS.

**HOT-WATER APPARATUS.**—The attention of architects, builders, and others is respectfully requested to BENJAMIN POWLER'S paper or method of heating dwelling-houses, halls, staircases, conservatories, forcing and greenhouses, manufactories, and workshops, hotels for drying timber, &c., and every variety of purpose for which artificial heat is required. During the last twenty years some hundreds of buildings have been heated up on this principle, and the parties for whom they were executed are constantly expressing their satisfaction, as they will for many years to come, for their efficiency. An improved wrought iron boiler, which requires no brickwork, may be seen in action up in the premises. BENJAMIN POWLER, 63, Dorset-street, Fleet-street.

**PATENT BELLS.**—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and character, and those made of the ordinary bell metal. Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

**PATENT METALS for Bearings.**—Engineers and all Manufacturers in Brass, &c., are respectfully invited to call and examine the various qualities of that which have already received the sanction of eminent engineers and parties connected with public works for some time, for Bearings and Castings generally, will be found superior in quality and cheaper than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface, and bearing a higher polish than any ordinary brass.—Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

**IRON FOUNDRY, 9, Brick-lane, Old-**street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Rainbows, Stairs, Iron Casings, Balconies, Wind ow Guards, Verandahs, Ornamental Shutters, Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

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**JOSEPH GLOVER,**
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**BEGS** to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they cannot but be considered very advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

PATENT COPPER WIRE ROPE LIGHTNING CONDUCTORS, for the Protection of Churches, Towers, Chimney-Stacks, &c.

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which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

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N.B.—It has been satisfactorily ascertained that what are termed two-years-seasoned lumber yards, contain from 25 to 30 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

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THERMOMETERS of every construction, Wheel, Pediment, and Marine, at equally low prices. All kinds made to order for Chemical Purposes, Soap, and Sugar Boils, at 3l. 3s., and 3l. each

By Her Majesty's Royal Letters Patent.

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The Royal Agricultural Society of England,
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THE PRICES ARE GREATLY REDUCED, and BUNNETT and CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with counter-balance weights and the worm and wheel motion for raising and lowering the shutters, as secured by this Patent, is the only effectual means of effecting that object. In large shops, where thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security, and since your patentees' experience during which they have adopted every real improvement) enable the Patentees to say, decidedly, that they are the cheapest and best shutters in comparison with any others. They will guarantee all their shutters to keep good under, and last twice as long as any others in convex laths.

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Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plan or Ornamental; handsomely Engraved, Moulded, Sash-board Plates, Iron Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

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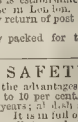
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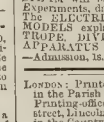


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## ADVERTISEMENTS.


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**WANTED an APPRENTICE to a highly-respectable Trade.** Will be treated as one of the family. Premium required.—Address to W. M., at Messrs. Robins and Sons, Stationers, Tooley-street.

TO MASTER CARPENTERS AND BUILDERS.

**WANTED to APPRENTICE** (in doors) a Youth, of respectable connections, who has been for some months in the Trade, but whom it is now, from circumstances, desirable to turn-over for the remainder of his indentures. A small premium will be given, and good references required.—Address, A. B., 81, Blackman-street, Borough

TO ARCHITECTS, SURVEYORS, AND BUILDERS.

**WANTED, by a Young Man, aged 23,** a SITUATION in either of the above Offices: has been engaged in copying and making fair Drawings, taking Plans for Leases, &c.; can measure and make out Artificers' Work. Would have no objection to be employed as Clerk of the Works.—Address to A. B., 22, Pentou street, Pentonville.

**EMPLOYMENT WANTED** by a Practical Person, who can act as Clerk of Works. The Advertiser would be thankful for partial employment for a few weeks in working to scale rule, measuring work, taking out quantities, &c. Address to A. B., Mr. Mortin, Butcher, Haverstock-hill, Hampstead-road.

**AN Architect and Surveyor in Practice,** not having his time fully occupied, would be glad to fill up the same by attending to architects or builders on very moderate terms, or he would impart superior instruction to a few respectable young men.—Address, 348, office of "The Builder," 2, York street, Covent Garden.

**A GENTLEMAN** who has for many years been engaged in Superintending the erection of Buildings, is desirous of obtaining a Situation as CLERK of the WORKS Satisfactory testimonials as to character and ability will be given.—Address B. W., Mr. Marple's, printer, Lord-street, Liverpool.

**A GENTLEMAN** who has had many years' experience in Superintending Works, making Finished and Working Drawings, Measuring, &c., in the offices of Architects of eminence in the Metropolis, is desirous of an ENGAGEMENT Specimen Drawings may be seen, and unexceptionable references be given.—Address, C. D., Mr. Smith's, No. 25, Silver street, Golden-square. A short Engagement not objected to.

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**A YOUNG MAN,** with ten years' experience as a Carpenter, considerable practice in Book-keeping, Accounts, and Measurements, and a knowledge of Architectural Drawing, wishes for an ENGAGEMENT of any kind these qualifications, with industry, regularity, and integrity would fit him for. Can give a respectable reference, and a deposit, as security, if required.—Address, D. K., 14, Upper Park-place, Regent's-park.

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**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, PORTLAND CEMENT & BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

CAEN SUFFERANCE WHARF, ROTHERHITHE

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemenne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-place, Borough, London.

Orders shipped direct from Caen to any port.

The Watterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

**SAMUEL CUNDY, Mason and Builder,** PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and others, that the Business now carried on at the above Works is strictly his;

That ARCHITECTURAL, SCULPTURIC, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.

S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

**WELSH SLATE SLABS of the Finest** Description, and planed both faces, supplied to the Trade at the same prices that rough self faced Slabs are sold at at the principal Slate Wharfs in town. A large deposit is also allowed, or, in lieu of discount, parties ordering 150 feet and upwards may, if they prefer it, have the Slabs delivered, carriage free, to any canal or railway point within fifty miles of London.

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**ENCAUSTIC, VENETIAN, BATH, and** other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

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N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Falace-row, Worcester.

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**THE AINSLIE BRICK AND TILE** MACHINE COMPANY James Smith, Esq., of Deanst n, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193a, Piccadilly, from 10 A.M. to 3 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 a, Piccadilly.

These Machines may also be seen at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs DRUMMOND and SON, Dublin.

**ROYAL POLYTECHNIC INSTITUTION.**—LECTURES on AGRICULTURAL CHEMISTRY, by F. H. Holmes, Esq., daily at Half-past Three, and every Evening at Nine o'clock, except Saturday Evening. TWO LECTURES by Dr. Bachhoffner—one on the LAWS of NATURE, in reference to the IMPORTANT SUBJECT of SANATORY MEASURES; the other on the various modes of VENTILATION, in which the PHYSICAL PROPERTIES of a JET of STEAM will be exhibited, with Novel and Highly Interesting Experiments, daily at Two, and at Eight o'clock in the Evening. The ELECTRIC TELEGRAPHS worked. The WORKING MODELS explained. DISSOLVING VIEWS. The CHROMATROPE. DIVING-BELL and DIVER, with HYDE'S NEW APPARATUS for CONVERSING under WATER, &c. &c. —Admission, 1s.; Schools, Half-price.

**WM. LAWRENCE and SONS,** Builders, of Fitfield-street, in answer to the numerous and inquiries of their friends and connections, hereto state, that although the late fire has done them considerable damage, they have made ample arrangements for carrying on their business as usual, and all communications will meet with immediate attention


## CONTRACTS.


TO BUILDERS.

**BUILDERS desirous of CONTRACTING** for the Erection of a NEW CHURCH, to be built at Colnbrook, Bucks, can inspect the Drawings and specifications, on application at the "George" Hotel, Colnbrook, from December 13 to December 20th, between the hours of 11 and 3. The Committee do not pledge themselves to accept the lowest tender. The tenders to be left by the 31st of January, to the Rev. G. A. Butler, Colnbrook, Bucks, endorsed "Tender for the Erection of the new Church, Colnbrook, Bucks."

TO BUILDERS.

**THE Magistrates of the County of Bucks** are desirous of receiving TENDERS for PULLING DOWN the OLD COUNTY GAOL at AYLESBURY, and for Assorting and Stacking the Materials upon the Site. A detailed Specification of the Works, and a Plan of the Buildings intended to be taken down, to be inspected at my office, in Aylesbury, until the 1st day of January, 1848, on which day sealed Tenders are to be delivered to me, addressed "Tender for Pulling Down Old Gaol." Further particulars may be obtained of the Surveyors, Messrs. PLOWMAN and LUCK, Oxford. The Magistrates do not pledge themselves to accept the lowest Tender, but such as, under the circumstances, they shall deem most eligible. By Order of the Court,

ACTON TINDAL, Clerk of the Peace for Bucks.

Aylesbury, December 3, 1847.

TO ARCHITECTS COMPETITION AND OTHER DRAWINGS

**MR. THOMAS S. BOYS,** Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From long experience, he has had much practice, he is fully aware of the trouble occasionally necessary to be attended to. Drawings and sketches lithographed in a superior manner. Address, Mr. BOYS, 81, Great Titchfield street, Oxford street.

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Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require time.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

**STEPHENS'S PROCESS for DYEING** or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which differs in wood, even in their natural state. To give an ornamental colour to the wood with out obscuring the grain is the object of this process, which surpasses paint in appearance, while at the same time it is economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finish in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Stamford street, Blackfriars-s., London in bottles of 6d. and 1s each, and at 10s. per gallon. For oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

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AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

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**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayer's Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

N.B.—T. A. has several Lots of Inferior Stuff to sell at reduced prices for cash, previous to stock taking at Christmas.

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MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
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Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

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WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

**THE Patent Desiccating Company beg to** inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment for seasoning, sawing, and planing wood, known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licenses to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years' seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

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INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.**—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enable the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental; handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

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**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, obstruct, or get out of order, and are safer. Persons about shutters with the patent [illegible] now used for iron shutters can have it removed and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

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The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety [illegible] possess all the requisites for the most valuable finished drawing.

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**CHEAP ORNAMENTAL GLASS.—I beg** to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

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BRITISH CROWN. PROPAGATING GLASSES.

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**UNION PLATE-GLASS COMPANY.**—Architects, Builders and the Trade generally are solicited to inspect the quality, colour, and substance manufactured by this Company. To encourage the use of Plate Glass for glazing, a further reduction in price has taken place in the quality used for that purpose.

ROUGH PLATE GLASS supplied ¼, 3-8, ½, and ¾ inch thick. Particular attention is requested to the superior colour and evenness of this article.

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ROUGH PLATE, suitable for Railway Stations, Warehouses, Skylights, and Floors, may be had of every thickness, at very MODERATE PRICES, upon application to

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12, Rathbone-place, November, 1847.

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**PATENT PLATE GLASS, BRITISH** PLATE GLASS, SHEET AND CROWN WINDOW GLASS.

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PROPAGATING GLASSES of every size, from two inches upwards.

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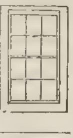
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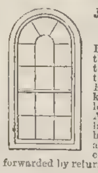


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JOHNSON and PASK, 1, Amwell street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



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By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

**BAILLIE'S Patent Transparent Slide Valve** VENTILATORS.—To be had of EDWARD BAILLIE, Glass Painter and Stainer, 12a, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

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**BAILLIE'S PATENT TRANSPARENT** VENTILATORS are at once [illegible], neat, and easily adapted to any sash, and, where thorough ventilation without draught is required, will be found invaluable, and especially as a cure for smoky chimneys.—Supplied Wholesale and Retail by E. and W. H. JACKSON, Window-Glass Warehouse, 315, Oxford-street.

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**DR. ARNOTT'S CHIMNEY VENTI-**LATOR.—F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas fitters, and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of Rooms of every description. Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

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Twenty-five years' extensive experience in all the branches of stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of "no cure no pay."

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**WILSON and Co.'s PATENT** VENTILATING CHIMNEY-POT. For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last three years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

J. W. and Co. had the honour of fixing upwards of fifty of the Patent Ventilating Chimney Pots in artificial Stone Cement, on the chimneys of Buckingham Palace: since which a number have been fixed at Windsor Castle.

The Patent Pots have proved to be the most effectual invention ever yet discovered, and are unrivalled for their ornamental appearance: they are manufactured of artificial Stone Cement, Iron, or Zinc.

The Trade supplied with them at the Manufactory,

VALE PLACE, HAMMERSMITH, MIDDLESEX.

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**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

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**PORTLAND CEMENT.—Testimonials** received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost and to become subsequently superior to every other for hydraulic purposes such as the Building and Lining of Reservoirs, Cisterns, Baths, Fishponds, &c. For External Plastering and Ornamental Castings, it requires neither Colour nor Paint, it never vegetates, and will carry from three to four times its own body of sand.

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**GREAVES'S LIAS LIME and CEMENT,** RUTTY and VEREY, 3, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

AS CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour similar to Portland stone, does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

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TO ENGINEERS, CONTRACTORS, BUILDERS, &c.

**JAMES WESTON having completed exten-**sive alterations and erected new and powerful machinery, at his CEMENT and PLASTER WORKS, MILL WALL, POPLAR, enables him to execute orders on an enlarged scale. He therefore solicits the favours of Engineers, Builders, and others, interested in works, who may rely on the articles being of the best manufacture, and prompt attention to all orders.

Manufacturer of Lias and Mastic Cements, St. Andrew's Wharf, Earl-street, Blackfriars.

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**ATKINSON'S CEMENT.—WILLIAM** WOOD, Jun., Manufacturer of Roman, Portland, and Bath Cement, Blue and White Lias Lime Works, CHURCH STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

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MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

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ARCHITECTURAL ENRICHMENTS.

**BIELEFELD'S IMPROVED PAPIER** MACHE, which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mâché ornaments, with a tariff, price £1.—Works, 15, Wellington Street North, Strand.

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**PAPIER MACHE and CARTON PIERRE.** Just published, a LITHOGRAPHIC VIEW of IRONMONGERS' HALL, Fenchurch-street.

The spacious Banquetting Hall of the Worshipful Company of Ironmongers having been confided to Messrs. JACKSON and SONS for redecoration, they have carried out the whole of the rich dressings of Ceiling, Walls, Dado, Orchestra, and the various parts in the Elizabethan style, in their PAPIER MACHE and CARTON PIERRE. The ceiling is richly designed with beams and minor associated panels with pendants strap work, &c., the whole finished in colour and gold; the walls have a rich high dado with the arms, the grade, and period of office of the Masters and other eminent members of the Company, chronologically arranged from the time of Edward IV. The orchestra, principal entrance, Master's end, are also appropriately enriched.

A large Lithographic View of this Interior is now published and ready for sale, at their Papier Mâché and Carton Pierre Factory, 49 and 50, Rathbone-place, price 7s. 6d.

The Builder.

No. CCLIII.

SATURDAY, DECEMBER 11, 1847.

THE design and arrangement of lunatic asylums have lately occupied the attention of many architects, and, indeed, will continue to do so, as several extensive buildings of this character are about to be erected in different parts of the country. The improved system of treating the insane which has been perfected in England, calls for a very different description of building from the structures formerly used as "mad-houses." Maddening houses they might truly have been termed; and their supervisors and keepers must have been more insane than many of the poor people who, in those times, were locked up in them, with few previous questions. The Asylum at Hanwell, under the management of the estimable Dr. Conolly, has established the great fact that kindness judiciously administered, and regularity enforced with firmness, will do what coercion, with all the aid of whips, strait waistcoats, leg-locks, muffs, straps, and chains, fails to effect. For some years past mechanical restraints have been wholly banished, and patients who are sometimes brought there manacled from prisons and parish receptacles, with the reputation of savage vindictiveness or unappeasable fury, are liberated, placed amongst a certain number of their fellows (properly classed), and a knife and fork put into their hands at dinner-time with perfect impunity.

A walk through this noble establishment, where a thousand patients of the two sexes, in all stages of madness, are congregated, removes the wonder which this fact may at first excite: all are so quiet and orderly, chains are so evidently not needed, that no credit seems due for avoiding the use of them. We forget how this has been brought about,—that it is the result of a system, to which let due honour be given.

The interior of Hanwell Asylum, with a fitting expositor, is a deeply interesting sight, though necessarily a sad one. The Bedlam of former times is now, we hope, simply a tradition.

For the perfection of such a system much depends on the nature of the building in which the patients are placed. In a gloomy, ill-arranged structure, without the means of perfect classification, nothing can be done. Bodily health and a cheerful tone of mind are most important for success, and to ensure these, as far as may be, good drainage and ventilation, light and airy chambers, and the most careful arrangement generally, are necessary. Everything repulsive or disheartening is to be avoided; a good situation, a cheerful aspect, and pleasant prospects are to be sought; and the means of general inspection by the directors, with the least fatigue and waste of time, the centralization of those offices and apartments which are used by the whole of the inhabitants of the building in common, protection of the patients from fire, and the most efficient and economical mode of heating the building, should be most carefully attended to.

Some persons are of opinion that a large asylum should be built on the villa principle, and resemble a little colony, the separate buildings being connected only by verandahs; whilst others of more experience, and who have resided in large establishments, state that such an arrangement would require nearly a double staff of officers to perform the duties. This seems evident; and when the extra expense in building, drainage, lighting with gas, and the extra number of boilers for warming, cisterns for the supply of water, and outlay for verandahs, together with other extra expenses which would be incurred in working such an establishment, are taken into consideration, we cannot venture to recommend such an arrangement.

Again: some few among those who take an interest in the cause of the insane recommend that the chapel of an asylum should be detached, and at some little distance from the main building. Those who entertain such an opinion, however, are not aware, perhaps, that the patients attend chapel, not on Sundays only, but twice a day throughout the winter as well as summer; and that to take feeble patients from the warm wards to the chapel, even though there be covered ways, would have a very prejudicial effect upon their health; besides, much needless expense would be incurred in the construction and working of a separate warming apparatus for the chapel alone, which would be avoided by having it conveniently situated in the asylum, and within reach of one of the boilers, from whence the heat for warming might be supplied when necessary.

The difficulties in arranging a lunatic asylum increase greatly when it is to accommodate more than five hundred patients. When it is for a thousand patients, as in the case of the additional pauper asylum for Middlesex, to be erected at Colney Hatch, to which we briefly alluded last week, there is a temptation to resort to a building *three stories* in height, which is very properly objected to by the Commissioners in Lunacy, and is decidedly to be avoided. The disadvantages of a third story are obvious, such as the additional fatigue occasioned by it, and the obstacle this affords to a proper supervision of it. Dr. Conolly, in a letter to the chairman of the Committee of Visitors, Benjamin Rotch, Esq., on the intended new asylum, which he published a short time ago, takes the same view of the question, and urges the magistrates to confine their new building to two stories.

In noticing this letter, the *Westminster Review** says:—

"Agreeing with the general principles laid down by Dr. Conolly on this point, it yet seems to resolve itself into a question of mechanical arrangement. His objection to the third story is on the score of physical labour, in ascending and descending. But this labour would not exist in a well-arranged asylum. Apart from these considerations there is no doubt that the average atmosphere is purer and better adapted for human breathing at a height of from fifty to one hundred feet above the surface of the earth than it is at the surface, whether that surface be composed of clay or gravel. The air is drier at that height, as we get beyond the line of surface evaporation, and within that line the deleterious gases are found most prevalent. Low spirits are synonymous with moisture; the nerves become flaccid and unbraced, like stringed instruments out of tune. Moist air carries off the electricity from the body; dry air does not. Moist air, with heat, is the atmosphere of fever and liver complaint. Moist air, with heat and stillness, is the atmosphere of putridity, the paradise of mosquitoes."

"In deep mines and in lofty factories, where the saving of human labour is an important element in profit, machinery is adopted to raise and lower the workmen without muscular exertion. Adapting the same machinery to hospitals and asylums, there seems to be no reason why four, six, or more stories should not be available. A steam-engine, or other labour-saving power, we take it, should be a concomitant of every well-arranged asylum, in order to furnish employment—that essential to the cure of mental disease—to patients. And that employment should be as various as human tastes. The two great sources of human misery are—want of employment, and individuals being misfitted to their employment. We can conceive it possible that an asylum under the best arrangements might be nearly self-supporting,—the patients doing nearly all the work of the establishment. Our ideas on the subject are, that the building should be of *six* stories in height, in the form of a parallelogram, or of two sides of a square, and with machine lifts: one in the centre and one at each end, rising and falling from floor to floor, alternately. The middle lift might serve as an observatory for watching the galleries. The whole should be fire-proof. The steam-engine should keep a constant supply of hot and cold water to the top of the building, and all refuse, wet or dry, should be conveyed down proper shoots. Warm or cold air should be introduced at pleasure through double floors, and gas laid on wherever required. In so large an establishment a gas-work would be a matter of course, and the workshops might be contiguous to it. As the engine would be constantly going, the lifts would be always in motion, but of course staircases would be provided for emergencies. One entire floor, probably the centre, should be appropriated for the residence of the officers of the establishment; and there is no reason why they should not be divided into suites of apartments, as private, and far more convenient than any detached houses. Along the galleries rails should be laid, on which small trucks should run with soft-tired wheels, giving no sound, and communicating with the lifts. In this mode food or fuel could be taken anywhere with the minimum of labour, either up or down. A sound reason, we conceive, for preferring several stories to an extended area, is getting the best aspect for the greatest number of rooms. There is but one south-west, and the best form would be a re-entrant angle forming two sides of a square, one looking south and the other west, over a garden; the galleries of access being at the back of the rooms, at the salient angle. From the centre the view might thus be attained down both wings. The length of the angles being regulated by convenience, they might be multiplied in number, each having the same aspect, yet not overlooking each other."

The height of such a building, with its consequent shade and gloom, presents an insuperable objection in our minds to such an arrangement, even were there none other: the observations, however, are sufficiently suggestive to deserve extracting.

The provision of a sufficient number of single sleeping-rooms, and the avoidance of dormitories with more than eight or ten beds in each, are essential points in a lunatic asylum.

Above all things, however, it is important that the building should be fire-proof. The commissioners, in their instructions, say:—"The staircases throughout the building should be of stone. In all cases, the store-rooms for inflammable stores should be thoroughly fire-proof. If timber floors are used, there must be a disconnection of the floor and joists at all the internal doorways, by means of a stone cill; similar separations, at not greater distances apart than 50 feet, should be made in the floor and joists of the galleries or corridors; and provision should be made for a complete fire-proof separation of the timbers of the roof, at distances of not more than 50 feet, according to the arrangements of the plan."

This, however is not sufficient to prevent the most fearful calamity in the event of a fire occurring. In all buildings appropriated to the sick, the infirm, or the old, the whole structure should unquestionably be fire-proof. Even in

* October, 1847, p. 119.

our ordinary dwelling-houses the absence of precautions in this respect is most short-sighted and blameable. We earnestly urge on the magistrates the necessity of attention to this in the proposed new asylum.

A few words now as to the designs for this building, which have been selected, premising that the land on which it is to be erected is situate at Bet's Stile, near Colney Hatch, between Finchley-common and Southgate. It consists of about 119 acres, lying on both sides, but chiefly on the west side of the Great Northern Railway, and has a sharp slope to the south-east. On the north side is a lane which runs from Colney Hatch to Bet's Stile. The first selected plan (by Mr. Daukes,* premium, 300*l.*), or rather plans, for there are three,—one for a two-story building, one for a three-story building, and a third, partly of one and partly the other—has the entrance-front next this lane, and presents a long straight line of building, from east to west, with wings at each extremity, extending from the central line on the two-story plan both north and south, and on the three-story plan to the north only. The offices are on the south side, and will interfere with the appearance of the building, as seen from the railway. The plan appears to have been well considered; the galleries are light and airy, chiefly single-warded; and the arrangements generally good, but the building being spread out so far as it is, the distance to the kitchen from some of the wards is very great. Externally, little has been aimed at: the dwelling-house style has been adopted (rusticated quoins and a dentil cornice), with a plain bell turret in the centre of the main building. In one of the perspective views the building is shewn to be roofed in compartments, and has the appearance of consisting of a number of distinct buildings brought together. The estimate cost of the building, if the accommodation be obtained in two stories, is 85,000*l.*; if in three stories, 75,000*l.*

It is right we should say that we have a personal bias in favour of the second design selected (by Mr. G. Godwin and Mr. Harris,† premium 200*l.*), and leave our readers to form their own judgment. This bias, while it aids, perhaps, in leading us to give unqualified preference to the second design both as regards arrangement and architectural treatment, forbids us to do more than describe it. The plan is the H shape on a large scale, two stories in height, with three short lateral projections towards the east and three towards the west, giving the means for very perfect classification and separation. The entrance is in the centre of the south front, to which importance is given by the chapel, which projects forward, and a clock tower rising from the main building behind.

In this design the females occupy the western division, and the males the eastern division; these are connected with the chapel and central offices by wards for aged and quiet patients on the female side, and by a passage at the back of various domestic offices and workshops on the male side, as well as by verandahs on the outside of the building.

The arrangement of the bedrooms and galleries is a modification of the single and the double-sided system, viz., of wards which have bed-rooms on one side only, and those which have bed-rooms on both sides. By the adoption of this plan, the asylum would not cover so large an area as it would if constructed with the single row of bed-rooms throughout, and it tends materially to keep down the expense of erection. The galleries are 11 feet in width, with a large window at the extreme end of each; these windows, together with open compartments for taking the meals, leave the asylum perfectly free from dark corners, and, at the same time, give a cheerful view of the surrounding country. By this arrangement, there are no nooks or hiding-places, and it is favourable for inspection.

The whole of the building was proposed to be fire-proof, the stories being separated by brick arches, and the roofs, sashes, and shutters, formed of cast or wrought-iron. The style adopted is Tudor, the materials red brick with white-brick dressings, excepting the central portion, where stone would be used, and the estimated cost was 82,000*l.* For a three-story building the cost was put at 75,000*l.*

The authors of the third design (Messrs. Allom and Crosse,* premium 100*l.*) appear to have inclined to a three-story building. The plan, as in number 1, presents an extended straight line of building, with a wing at each end projecting towards the south, and then again extending towards the east on one side, and towards the west on the other. The wards are mostly double. The style is Elizabethan, the materials red brick with white brick or stone dressings; and the estimated cost, if we understood rightly, also 75,000*l.*, a curious coincidence, considering that no amount was stipulated by the magistrates. The plan for affording accommodation in a two-story structure shews a square pile of building at each end of the main line, surrounding an open quadrangle.

There were several very clever designs amongst the rejected plans, but the majority of them were wholly unfit for the purpose, although set forth with much artistic ability at great cost. They shewed a fearful waste of time and money.†

* Motto—"*Humanitas.*"

† Motto—"Practice with Theory."

## AWARDS OF OFFICIAL REFEREES.

### ATTACHED OFFICES AND THE RATE OF BUILDINGS.

With regard to two third-rate dwellings in the district of Lewisham, built by Mr. Adams, the surveyor of the district gave him notice of what he considered an irregularity, namely, that certain additions were being built which increased the rate of the original buildings, the external walls of such buildings not being commensurate; also that the walls of these additions were only one brick thick.

This not being attended to, the district-surveyor lodged an information.

At the meeting, it appeared that the area of each of the houses was within 30 inches of the full area of a third-rate house, that is to say, six squares, exclusive of the alleged rear additions; and that, including the area of such additions, each would exceed six squares; that the thicknesses of the walls of the main buildings were such as are required for houses of the third-rate, and the thickness of the walls of the alleged additions was 8½ inches; that the said alleged additions extended through two stories; that such additions were each less than half a square in area, and consisted of a water-closet and a lobby, communicating by a doorway with the house and with the outside of the buildings in each story. It appeared also that such additions had been commenced at the same time with the main buildings, the footings and a few courses of one of the outer inclosing walls of each having been laid at the same time with those of the main buildings, and that toothings had been left in the back walls of the main buildings to receive such additions; and that when the walls of the main buildings had been nearly completed and the roofs were partly on, but not covered in, the builder proceeded to carry up such additions.

The surveyor stated, that under these circumstances he objected to the works, considering that the rule for ascertaining areas (as explained by certain awards of the official referees) required such additions to be included in ascertaining the area of the houses for the purpose of determining the rate, in which case the houses in question would be of the second rate, and their walls insufficient in thickness; and that he could not object to the footings and toothings, as indicating the intention to erect such additions, as they might have been intended for a portico, or other erection not to be included in ascertaining the area; and the Act would not prohibit the present additions if built after the roofs of the main buildings had been covered in.

On the other side it was contended, that the said alleged rear-additions were attached buildings or offices, which, under the rule for ascertaining area, ought to be excluded from the area of the houses to which they belong; but assuming the case to be otherwise, it appeared from a previous award of the official referees between the same parties, that it was the duty of the district-surveyor to have objected in the first instance, when he became aware of the intention to erect such additions, and that, under the circumstances, the official referees would make no direction thereon.

It further appeared that the working drawings of the buildings in question, being plans and sections of the same, upon which the said alleged additions appear in manner as they have been built in connection with the main buildings, were laid before the district-surveyor at the commencement, or at some time within a week after the actual commencement of the works.

The referees decided, "That the two rear-additions referred to in the said information, and hereinbefore described, being each a water-closet, with a small lobby thereto in each of the two stories throughout which the addition in each house respectively extends, and capable of being used only as closets and not as apartments, are offices belonging to the main buildings, and that inasmuch as the area of every building is to be determined by the number of squares contained in the surface of any floor which shall contain the greatest number of squares at or above the principal entrance to such building, but excluding from such surface the area of any attached building or office, area, balcony, or open portico; the said rear-additions, notwithstanding the communications with the main buildings through the back external walls of such buildings, may be built with the main buildings without increasing the rate of such main buildings; and that inasmuch as such offices are to be deemed in respect of the walls thereof, and all other requisites, as buildings of the rate to which they would belong if built separately, and are (when so rated) buildings of the fourth-rate of the first, or dwelling-house class, and the walls thereof are not of less thickness in the two stories than 8½ inches, the same are not contrary to the Metropolitan Buildings Act."

Expenses to be paid jointly by the surveyor and the builder.

* Motto, "*Labore et Honore.*"

† We are asked by more than one competitor to bear witness o the polite and considerate attention of Mr. John Shaifs, clerk to the committee for providing the asylum, and do so willingly, because we know it is deserved.

## WHAT SHOULD A SANITARY BILL CONTAIN?

Sir,—I think no time could be more opportune than the present to impress upon the new Parliament the necessity for early, efficient, comprehensive, and stringent legislation upon the sanitary system. After having been twice upon the point of success (however partial and imperfect that first success might have been), I do not doubt but that the third attempt will be successful, and I consider that we have now even stronger grounds for requiring a complete and really effective "bill of health" than we previously had, as the patient has been getting worse, and therefore requires stronger remedies than were at first proposed to be administered. I will then, with your permission, say a few words regarding the extent to which those remedies ought to be applied, and as to what they ought to be; and I hope that our lawgivers will see the policy of giving us a law which may be as nearly as possible perfect, as tending to save themselves and the public generally much trouble, and of promptly putting an end, as

far as possible, to the dreadful and wholesale extermination which has been, and is at present, going on amongst the masses of the population, to an extent considerably greater (as has been repeatedly shewn) than would be the case were we involved in a "perpetual civil war." As regards the extent of the proposed bill of health, and other accompanying remedial measures, they should not be selfishly confined to England, but the whole of Great Britain and Ireland should have the benefits which will assuredly result from them; and above all, I would bring the *metropolis* within the pale of the bill, as most of all requiring supervision.

The remedial measures of which I spoke in conjunction with the "bill," are the window-tax, the brick excise, and the soap excise, which ought immediately to be abolished; indeed, the only objection to such a step is, that they are sources of revenue; but when there are so many other means of raising taxes which would not operate so injuriously as these do (for instance, by a rightly-modified property-tax), that objection only appears in the light of a quibble. And here I would remark, with respect to an excellent suggestion which recently appeared in THE BUILDER, viz., the formation of societies all over the country, for the purpose of rendering the evils of these taxes more generally known, that I hope the brickmakers will take the lead in such a movement, as I believe the public are not sufficiently aware of the bad effects of the brick duty.

Amongst the remedial measures for which a separate but also coeval Act would be required, I class the removal of Smithfield market and the slaughter-houses with which it is surrounded, and the establishment of other markets and abattoirs in more suitable and suburban localities. The other points on which it would be desirable to legislate might all be included in the "Bill of Health," or the Sanitary Act (in prospective), and I will first briefly mention them:—

1. Sewerage and drainage.
2. Paving.
3. Scavengering.
4. Supply of water.
5. Supply of gas.
6. Prevention of intra-mural burial.
7. Establishment of cemeteries.
8. Establishment of public baths and wash-houses.
9. Establishment of public necessaries for both sexes.
10. Regulation of noxious and dangerous businesses.
11. Establishment and management of fire-escapes and fire-engines, and other means for extinction of fire.
12. The obligation to consume the smoke produced in manufactories and river steamers, or in the case of the latter, to burn coke.
13. The prevention of the use of unhealthy underground cellars as living rooms.
14. The opening up of narrow courts and alleys, and in some cases their abolition.
15. Ventilation.
16. Establishment of public gardens and playgrounds, &c.

Let us now consider some of the above subjects in the order in which they are placed; and it may be remarked, in passing, that although these observations may apply, for the sake of exemplification, more particularly to the metropolis, yet they are not on that account to be considered inapplicable to other places. I cannot help thinking that the efforts which have been made for the exclusion of the metropolis, and more particularly the "city," from the operations of the general bill, are merely a subterfuge for the real purpose of excluding the metropolis altogether from any sanitary improvement, in order that the corporation, the commissioners of sewers, paving, &c., and the various parochial vestries, may retain the power in their own hands, and that, in fact, those who are so clamorous for exclusion from the general bill do not desire a separate bill. However, to return to my sixteen heads:—First, as regards Sewerage and Drainage, perhaps the most important of the whole.

The general arrangement of the sewers, I think, should be such as have been, in part at least, adopted in the Holborn and Finsbury, and Westminster divisions of the metropolis, more especially as regards the provisions of the bill lately obtained by the commissioners of the latter district. The sewers, all agree, should be of the egg or oval shape, and of no greater size than is absolutely necessary for all present and reasonably prospective wants. All sharp angles in the sewers (and drains too) should be carefully eschewed, and the junctions formed of gentle curves in the direction of and so as to offer the least impediment to the current. This should be always enforced in the formation of house-drains, and their connection with the sewers. The sewers should have shafts or other means for the removal or neutralizing of the noxious vapours which are generated by the sewage matter. The material of the sewers, if small, might be glazed stoneware socket-pipes, the best material for drains also, (but green bottle glass socket-jointed pipes, as suggested in THE BUILDER, would do as well); and the large sewers should be formed of hard bricks. Terro-metallic bricks might be used with advantage, and would be better if glazed,—of a wedge shape, made to suit the form and size of sewer, and set in suitable cement or mortar.

There should be a compulsory clause in the bill, obliging the formation of public sewers in every public place, whether street, court, or alley, &c., and wherever a sewer exists within a reasonable distance, or wherever one may be formed, every dwelling-house should have an efficient trapped drain into the sewer, as well as all workshops and manufactories also. This clause of the bill should in every case be strictly enforced.

No sewage matter should be discharged into the river (and this applies equally well to all other towns, &c.); but it should be conducted to a considerable distance, and applied to agricultural purposes.

Immense advantages would accrue to the public if this system of conveying the sewage manure into the country were generally adopted. In the present state of things, the larger the number of sewers and drains constructed in the metropolis, and the more efficient its sewerage and drainage in other respects becomes, the more the Thames itself will approximate to a large open sewer; and I firmly believe that if we persist in discharging the contents of our sewers into the river, it will ere long become such an intolerable nuisance, that we shall be compelled to, shall I say "arch it over," as was the case with the "Fleet ditch," which was formerly a navigable "river," but has now, alas! degenerated into a common sewer. What would your readers think of the "Thames ditch," or the "Thames sewer," being the designation of "Old Father Thames?" Any one who has been in the habit of travelling by the river steamers, or who has resided or been taken by his avocations in the neighbourhood of the Thames, must be fully aware of the stench which arises from the river, especially at low water, when the accumulations of filth are exposed to the air: and the water, as is well known, contains so much filth in solution, that it cannot be used for any household purposes without filtration, which would not be the case if the sewage of the metropolis were not emptied into it, and the manufactories (gas works among the rest) were not allowed to throw what they deem their refuse (?) into our great highway.

A private company propose to obviate the evil; but although I am confident that the principle is good, yet I should not like to see it carried out by the company, for the following reasons:—

Because their scheme does not embrace the whole of the metropolis, and because the profits which would be derived from the undertaking would go into the pockets of the shareholders; whereas, were the same plan applied to the whole of the metropolis, under the superintendence of a General Metropolitan Sanitary Commission, the returns would enable them to considerably reduce, or perhaps abolish altogether, the sewer-rates; and in the hands of a public body it would be carried out with more attention to the public interests than by a private company.

The remaining points under my first head, which should be included in the Act, are the compulsory establishment in every dwelling-house, workshop, manufactory, &c. of water-closets, and the abolition of privies and cess-pools.

I will now proceed to the second subject—Paving.

The benefits of good paving should be extended to all footways and carriageways within the jurisdiction of the Act. For streets where the traffic is not very great red brick might be used, as at Brighton, or hard bricks or tiles in patterns. For carriageway paving, either small granite, as on London and Blackfriars bridges, or wood, might be used. The latter material is capable of great improvement; the wood, previous to being used, should undergo a chemical preparation, to harden and preserve it from decay. A good foundation, both for foot and carriageways, is a great requisite, not only to prevent settlements, but also to prevent the surface water from penetrating into the earth, and thus finding its way into the basements of houses, cellars, &c. This may be attained by the use of good concrete, or, what is better still, small granite, such as is used for macadamizing, run in with gas-tar, another use for the refuse (?) of coal-gas, and fine gravel. The paving should also be well grouted in, after having been first rammed, and it should not be used immediately afterwards, as is now the custom.

The macadamizing system seems unfit for application in towns; indeed, it should be only used for country roads. If you observe any of the streets of London which are macadamized, in wet weather you will find that they are always muddy, whereas those streets which are well paved with granite or wood, are always much cleaner. I do not mean to say that they are as they ought to be, because the scavengering (to which I shall refer presently) is so bad, that this cannot be expected; but still they are better in this respect. As a case in point, I have never seen Fleet-street cleaner than after a heavy shower of rain, and I have never observed parts of Oxford-street, which are macadamized, in a more filthy state than under the same circumstances. In dry weather, also, the macadamized roads are more dusty than paved roads; indeed, well paved roads, if kept properly swept, would be entirely free from both dust and mud, and such a state of things will, I hope, be attained ere long. Good paving is quite as essential as good drainage, indeed, it is itself a system of surface drainage, and sewers and drains are of very little use without it.

I have stated that a good foundation is a great desideratum in order to prevent settlements in the paving, which break the curve of the roadway and form puddles in wet weather, besides causing a continual expense in relaying the paving; but however good a foundation is made when the paving is first put down, it cannot be long retained while the roadways are continually being broken up to get at the gas and water-pipes.

The chief cause of the partial failure of the wood paving is simply this:—The grooves get choked up with mud, so that a smooth surface is formed, which renders it dangerous for the horses in wet weather, but this may be easily remedied by all the grooves being formed at exactly regular distances, and by the use of rakes with teeth to fit the grooves, and which the scavengers should use before sweeping the wood paving. This brings me to my third subject—Scavengering.

It must be admitted that there has been some improvement of late in the metropolis, and in the "city" in particular, in this respect, but the system is still very ineffective as regards the principal streets which, in the "city," are swept by men who are stationed the whole of the day along the principal lines of thoroughfare, and are provided with a broom and shovel, and an iron vessel somewhat like a pail, in which they deposit the sweepings, until the cart comes round to receive its contents; but this arrangement is a decided failure, and the best proof of this is, that the streets where it is adopted are never thoroughly clean except in dry weather, while the smaller streets, which are swept once a day, in the ordinary manner, are always in a much better state, although there is room for improvement in them. I consider that the principal streets, where the traffic is great, should be swept by a gang of men, accompanied by a cart or carts, twice a day, in the morning and in the afternoon; and the smaller streets, lanes, courts, alleys, squares, &c., once a day, in the same manner; and the foot-ways as well as the carriage-ways should come under the operations of the scavengers. In dry weather the streets, before being swept, should be watered, otherwise clouds of dust are raised to the great detriment of the shopkeeper, and the great in-

convenience and danger of the passenger; and if this plan were carefully carried out, there would be no need to water the streets at any other time, as there would be very little or no dust left to require it. The streets should be watered by water from the Thames (which would be also available in case of fire, and for cleansing the sewers), and which should be laid on to every street, &c., by pipes, which should be always kept charged, and applied to the streets by means of plugs, and a hose with a wide-mouthed, finely-perforated rose at the end.

The fourth point is the supply of water, which the Act should require to be constant and universal,—that is to say, the pipes, which should be always charged, should extend to every public place, and the water should be laid on to every dwelling-house, and supplied at a moderate charge. Should the sewers, as proposed, be diverted from the Thames, its water might perhaps be available for domestic purposes as well as for the watering, and perhaps occasional washing, of the streets, cleaning sewers, extinguishing fires, &c. All public pumps and springs should be carefully preserved and kept in order, and others formed in localities where they do not at present exist.

Then, as to the supply of gas. The Act should require every public place, whether street, court, or alley, to be well lighted with good gas, at a moderate price; and should the existing companies refuse to do this, or in places where no gas-works exist, the sanitary commission or commissioners should be required to establish works of their own; and the profits derived from this source should be applied to the reduction of the rates. Electricity might be applied to the lighting of the public lamps with advantage.

Instead of burying the gas, water, electric telegraph, or any other pipes under the roadways, as at present, they should, as already urged by you, be inclosed in underground tunnels, somewhat similar to sewers, with communications with every house, &c., by means of earthenware or terro-metallic pipes, so that any alterations or repairs to the pipes might be done at any time without the necessity of breaking up the roadways and paving, the expense of which would, of course, be saved.

Oxygen gas might, perhaps, be manufactured on a large scale, and supplied by means of pipes, &c., in the same way as the carburetted hydrogen now is, for the purpose of producing the brilliant light known by the name of the Bude light, or for increasing the combustion in furnaces, &c., for which purpose bellows are now used; and the underground ways would afford great facilities for laying the pipes along the streets, and communicating them with the houses, without the least occasion for opening the ground or taking up the paving and stopping the traffic. Should electric clocks ever come into general use, these ways might also be available for this purpose.*

Then, as to the prevention of intra-mural burial: this should be rendered compulsory by the Act; and vaults or burial-grounds which are in a very bad state, should be covered over with concrete and asphalte; and in churchyards or burial-grounds, where the interments have not been so numerous or recent as to require this, trees might be planted (as suggested in THE BUILDER), and the surface covered with gravel or with fresh earth, and turfed.

The consideration of other points must be left till next week. A LONDONER.

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WATER AND DRAINAGE.—At Richmond-terrace, Clifton, last week, according to the *Bristol Times*, there was scarcely a family which had not some of its members sick. It was not, however, until one death took place and several were in imminent danger, that the cause of this extensive illness was discovered, when it turned out to be produced by the use of a spring which supplied the place, and whose waters had been imperceptibly poisoned by a sewer breaking into it, and so greatly vitiating their character as to cause gastric fever in every family using it! On being found out, of course the evil was remedied, but not before much mischief had been done, and the necessity both for a pure supply of water and an improved system of drainage shewn.

* A supply of oxygen to improve the air in some buildings would be valuable, if it could be properly regulated.—ED

## WORKS IN PARIS.

THE choir of the church of *St. Germain des Prés* has been decorated elaborately. The vaultings are painted blue, sprinkled with gold stars; the walls present figures of saints and archangels larger than life, on a gold ground; the columns and the groinings are painted of various colours, and all the windows are filled with stained glass.

Rapid progress is being made in the works at the *Sainte-Chapelle*, and a magnificent result may be expected. The clusters of columns, the groins, the windows, and walls, are resplendent with colour, gilding, and enamel. An enormous sum has been spent there.

At the celebrated hospital of *Bicêtre* considerable works are going on, a part of the old structure being demolished for rebuilding. The cost is estimated at 12,000*l.*

Designs for a new *Palais de Justice* have been approved of by the *Conseil-Général de la Seine*, the expense of which would be about 500,000*l.*

The entrance-front of the Hotel *Soubise*, appropriated to the archives of the kingdom, has been adorned with groups of statues, and the peristyle of the principal entrance restored.

## SOMETHING FROM AMERICA.

IN an American paper we find an article, apparently from the pen of Mr. N. P. Willis, on the Art-Union of New York, which appears to be making satisfactory progress. The writer calls it a Rialto which bridges over the chasm between artists and the public, and says,—"The flowering of a plant which has been hitherto only known for its foliage, is a true but insufficient type of the relation which the formation of the art-union bears to the progress of our country,—for though a combined attention to art awakens an embellishing taste in all things, it has a fruit as well as a flower, viz., a counter-growth to the canker of business, and an ennobling substitute, for the excitements of care and anxiety, to successful merchants who retire to use their acquisitions. We look upon the 'Art-Union,' indeed, as, properly, our country's first conservatory for gentlemen; where men of taste and natural refinement, as well as wealth, may be made honorary officers and patrons of art, as, by a king, they are made counts and baronets for the same qualities and deservings."

In a second paper there is an article by Dr. Dewey, another American writer, on Mr. Power's beautiful statue, "The Greek Slave," exhibited in London some time ago. Those of our readers who remember it, will admit the truth of the following:—

"'The Greek Slave' is clothed all over with sentiment; sheltered, protected by it from every profane eye. Brocade, cloth of gold, could not be a more complete protection than the vesture of holiness in which she stands. For what does she stand there? To be sold; to be sold to a Turkish harem! A perilous position to be chosen by an artist of high and virtuous intent. A perilous point for the artist, being a good man, to compass. What is it? The highest point in all art. To make the spiritual reign over the corporeal; to sink form in ideality; in this particular case, to make the appeal to the soul entirely control the appeal to sense; to make the exposure of this beautiful creature foil the intent for which it is made; to create a loveliness such that it charms every eye, and yet that has no value for the slave-market, that has no more place there than if it were the loveliness of infancy; nay, that repels, chills, disarms the taste that would buy. And how complete is the success! I would fain assemble all the licentiousness in the world around this statue, to be instructed, rebuked, disarmed, converted to purity by it!"

The house in which Franklin spent his boyhood is threatened with demolition. A Boston paper says,—

"It will not be many years before this monument of the most celebrated man that Boston—not to say America—ever produced, will be demolished, and the place that knows it will know it no more, unless something be done to save it. It will be a burning shame and a lasting disgrace to Boston, with all its wealth, and its pretensions to liberality, and its affectation of reverence for its great men, to suffer the most historical of its houses to be destroyed, when the rise of real estate in that neighbourhood shall seal its doom. It is a shame that it has been left so long to take the chances of business! It should have been bought years ago, and placed in the hands of the Historical Society, or some other permanent body, in trust, to be preserved for ever in its original condition. It is not too late to restore it to something like its first estate, and to save it from utter destruction. If it be not done, it will be a source of shame and sorrow when it is too late."

On this subject the *Washington Union* remarks,—"The present fashion in our cities, of modernizing everything ancient, together with the increased and fast increasing value of building lots, is rapidly uprooting from our hearts a spirit of feeling which should never be destroyed—a feeling of veneration for the mementos of our great and remarkable men. Their ancient dwelling-places, which, but a glance at, used to bring up such countless recollections, are being rapidly obliterated. The old dwelling-house and shop, with all that association throws around them, are torn down to give place to some stately mansion, where man's pride and pomp may glory and display itself, or some spacious warehouse, where his goods may be stored and his gains counted."

## THE STATE OF THE BUILDING TRADE.

SIR,—I am gratified, as will no doubt be many in the trade, to find the leading article of your last number but one touching upon the subject of competition, and more gratified to find you promising to return speedily to it. It is a subject of such grave and serious importance, that doubtless there is scarcely any thing at the present time which more requires continued and increased agitation, in order that men's eyes may be opened to see the absurdities they have been indulging in, by carrying out the pernicious system to trade of making contracts any how, and under any terms and obligations. In the present disastrous state of things it would be well if all our journals were found endeavouring to outvie one another in exposing the follies, and I may justly say cruelty, produced by fostering the bane to a nation's welfare and the good feeling of its various members in society. So great a curse is competition, and so great a drawback to every thing that is just and honourable to a country, especially such as this, that it is the duty of a just and humane government to make a most searching inquiry into its effects, and the present and probable consequences to the people in general. You say you have received a number of letters of a contradictory character. This must naturally be expected, as it is not likely that the class who are benefited by the oppression of their less fortunate brethren should be anxious for a change. When we find a young architect, who, having little or no connection, in order to obtain one, stoops to means knavish and worthless, can we expect such a one to desire a change from the present reckless, cut-throat system? As an illustration, I herewith mention a circumstance, one out of many that have come within my own notice. A few years since I was acquainted with a shrewd intelligent man, one of our old-school surveyors, who was occasionally employed by a young man, an architect,—one who had but a short time previously commenced business,—to take out quantities for builders to tender from for various works he had occasionally to execute. The instructions we received from him were to this effect: "I wish you to understand that I require, in taking out your measurements, that you cut them as fine as a hair (a term not unknown to many pettifogging surveyors at the present time), pinch them, in fact, every way. The interests of the builder stand to us for nothing; the interest only of our *clients* we must regard." But this worthy young architect—this young wiseacre—knew not the integrity of the man with whom he was dealing. It has been frequently remarked, and I regret to say it is a fact beyond all dispute, that architects have been great auxiliaries to the ruin of the trade, as hundreds of examples would tend to confirm. I will furnish one of many within my own knowledge.

About ten years since a builder, with whom I had been long acquainted, had among his customers a gentleman of rank and title, and for whom, at various times and to his satisfac-

tion, he had performed much work. It happened that he now required an alteration of some extent, and gave directions for plans to be furnished of the same. The builder unfortunately introduced an architect, one whom he esteemed a sincere friend (and who is at the present time held in high repute) to furnish the same instead of himself. The gentleman agreed to the proposal; the plans were furnished (and good ones they were, though not free from extravagance); but this worthy architect, instead of placing the work to be executed by the person who obtained him the employment, immediately proposed general competition for the same, alleging that it would be done at a cheaper rate thereby. His whining persuasions had the desired effect, and the builder afterwards lost the future works of the gentleman he had so long retained. What is the scheme of many of our architects now? It is not generally known, but it is a truth, they are using every exertion to cripple little builders, and throw all their works into the hands of a few of our large ones,—some even have the hardihood to avow it.

If these practices are to continue, (and they are more likely to increase than diminish,) surely it is high time that a body of men like master builders should arouse from the lethargy in which they have so long been at ease, and take immediate measures for the overthrow of such a system as the present, and if they do not, insolvency and bankruptcy must henceforth be before their eyes, although we think there has been enough of that for these past few months to make up for the next hundred years, at least it is to be hoped such is the case. The present practices want a thorough uprooting, and a regeneration of things is absolutely necessary, if trade is again to be put in a sound and healthy state.

There has been a growing system for the last few years of furnishing quantities to builders about to compete, in some instances a surveyor being employed by the architect only for the purpose, and in others one being appointed by the builder also. In both cases the system is (and I say it from experience) *bad*, very *bad;* in the former case especially, nine times in ten it is disastrous to the builder. As one proof out of many I could name, not long since I knew a case where of Caen stone some hundreds of feet were omitted, and other articles were deficient, though not to such an extent. Should this reach the eye of parties who have some knowledge of the same, let them not attempt a contradiction, for in my possession are the bills of quantities and the dimensions, as furnished by the surveyor. It is a wiser plan altogether for each competing builder to have his quantities taken for his own especial use; it is not only more satisfactory, but the competitors become less in number likewise. But why, I should like to know, if we must have competition, why should not it be done by schedule of prices, as it was formerly? Surely it is a more honourable and honest way; besides, it gives employment to a most useful class of men, now all but extinct, viz., the surveyor, and it puts a check upon undue speculation; but without a combination we cannot again hope to see an improvement in the present state of things—a state of things bordering on perfect madness.

A correspondent observes, that it is now getting quite common to apply for an estimate, and then hawk the same about from one tradesman to another, in order to get the work done at a cheaper and still cheaper rate. This is correct; the mischief, however, ends not here. The subject is discussed with friends at the dinner and tea table, and the man of principle —he of the live-and-let-live ideas—has his mind thereby perverted, and he commences the system hitherto new to him; and so, from friend to friend, this pernicious doctrine is conveyed, till all just and honourable feelings are entirely lost. In the article of which I have before spoken, you question the truth of builders sending in nominal amounts: it is of every-day occurrence. It is even said that, among the largest builders, in nine cases out of ten, the contract is selected by the body for one. I remember a case myself where a contract, a few years since, was to be delivered for some works, under 5,000*l.* An hour or so before the time named for the delivery of the tenders, the builders met, opened their tenders, and prepared fresh ones. It was then and there arranged that 400*l.* should be added on each estimate, which said sum should be divided among the parties competing,—the measure was carried out, and the tenders delivered in due form, the lowest party being the successful man.

We are, certainly, all in a state of monomania, as regards trade; we certainly have forgotten that God created man to be dependent upon his fellow—the rich for the poor, and the poor for the rich; and we are forgetting that, if we subvert these laws, we must naturally go on increasing more and more in degeneracy, and, at last, we shall discover that we have acted no better part than some poor maniac, who, in his animosity, has been his own greatest oppressor.

A Surveyor.

## POSITION OF ARTISTS.*

Among the ancients, artists were the teachers of the people, and their works stood in the place of lectures on religion, morality, and history. Since the press has diffused its influence over all nations and classes, the arts of design are no longer so important as a part of public instruction, though still lending an useful aid to civilization, enlarging the sphere of intellectual enjoyment among the people, raising their moral character, and thus assisting in the maintenance of order. Good taste is nothing more than an emanation of knowledge, and can seldom be found but in minds which have been well educated and cultivated; it is, in fact, nothing more than the feeling in which all such minds are agreed, and the result of a common discipline. There may be truth in the saying that the artist, like the poet, is born, not made; and sometimes great works are produced by untutored genius; but in general the maxim of Horace will apply to every art:—

'ego nec studium sine divite venâ,
Nec rude quid prosit video ingenium.'†

Few artists can rise to the standard of a refined taste, without a better cultivation of the mind than can often fall to the lot of natural talents in this country of expensive education. Even with the most happy union of genius and cultivation, he will not be saved from the necessity of complying with the taste of an ill-educated public; because, in the absence of all other protection, the favour alone of that public can enable him to gain a livelihood by his profession. If a painter rise above the vulgar taste, his works will often remain unsold. An enlightened patron may occasionally secure to him a reward for the completion of some more elevated purpose; but such rare exceptions to the generality of purchasers will hardly, in the utmost conceivable aggregate, maintain the artist in his proper position in society, unless he devote also a large portion of his time to works adapted to the general market, such as portraits, scenes taken from the fashionable drama or romance,—works, in short, which, instead of aiming at a permanent reputation, recommend themselves merely as an elegant kind of furniture for the houses of those whose principal occupations are to accumulate wealth, and to employ its superfluities in a rivalship of ostentation.

The worldly condition of sculpture is still worse than that of painting, sculpture requiring a more educated mind, a more perfect conception of the beautiful, and a greater stretch of intellect in embodying that conception. The learned and skilful sculptor is therefore more rarely found: he meets with a smaller number of congenial minds to appreciate his efforts; and among the lower classes scarcely any that can understand them. And yet he has some advantages over the painter. While the latter, in his more perishable productions, derives little or no assistance from the ancients, the sculptor has the opportunity of studying some of those ancient specimens of the plastic art which seem to us like the productions of a different species of mortals. In high patronage, also, the sculptor has an advantage, in the public demand which continually occurs for memorials of great events or of distinguished individuals,—works which cannot easily be confined to Gothic sculpture. Nevertheless, the advances made in sculpture have not been such as the establishment of a rich museum of ancient works in the metropolis gave some reason to hope for, either in that first step to improvement, an imitation of ancient art, or in the application of the taste and skill so acquired to modern purposes: the demand for public monuments has not produced sufficient capacity to execute them, and the profession of a sculptor, like that of a painter, is chiefly supported by the manufacture of portraits,—a very pleasing branch of art, but created to gratify feelings of vanity or affection, totally unconnected with cultivation of mind, and indicating, by the immense preference given to it, the low intellectual tone of the present age, as well as that something more than commercial protection is required for improvement in the arts of design, not less than in science and literature.

* * * *

Had science possessed its due influence or authority during the past century, many great works essential to the safety or prosperity of the country would not at this time remain to be done; nor others of comparative inutility have been executed at an enormous expense, such as the royal canals of Scotland and Ireland, the Waterloo-bridge, and the Thames-tunnel. There would probably have been a better management of public works, a better system of naval architecture; and when steam was applied to communication by sea and land, the Councils of Science might have saved the community from much of the needless expenses, gambling and ruin, the mechanical errors, and disregard of the public safety, which the rapid increase of disposable capital in England, and an insatiable thirst of high profits, have occasioned in the prosecution of this great social improvement. Nor is it likely, if Science had had its due share in the national councils, that the taste and arts of England would have had for their representatives the York and Nelson columns, the discordant architecture and disproportionate objects which meet the view in Trafalgar-square, or the colossal figures on either side of the western entrance of the metropolis: one a copy of an antique figure holding a horse, which has been forced into the representation of a combatant; the other, an equestrian statue in repose, on the summit of a lofty arch.

* From "Thoughts on the Degradation of Science in England." By F. R. S. Rodwell, Bond-street.

† De Arte Poeticâ, v. 409.

## COMPENSATION—BATTERSEA PARK.

The first of a series of claims which have been made in respect of property required for the intended park at Battersea, was tried on the 2nd inst. before the Sheriff of Surrey, at the Horns-tavern, Kennington. The case was that of a Mr. Chabot, who claimed 10,212*l.* for three acres of land on the shore of the river.

In support of this claim his counsel called the following surveyors, viz.:—Mr. Porter, who, as we understand, valued the property at 9,499*l.*; Mr. Tress, at 8,578*l.*; Mr. Lee, at 8,500*l.*; and Mr. Hunt, at 7,115*l.* Mr. Lee and Mr. G. L. Taylor also valued the property upon the assumption that the claimant might inclose a further portion of the river; and, upon such assumption, Mr. Lee valued the property at 11,215*l.*; Mr. Taylor, 9,642*l.*

It was elicited, upon cross examination, that the owner had purchased the property at public auction from the late Earl Spencer, in 1835, for 120*l.* The jury viewed the ground, and, after a protracted inquiry, returned a verdict of 750*l.*!!

A correspondent asks whether more fools than rogues were concerned in this inquiry, and where he ought to look for them, in the witness or the jury-box?

Mr. Chabot complains gravely of the injustice done him. It appears that the sum given was for one acre only, the claimant's right to two acres, formerly a wet-dock, being disallowed, without notice to him that his title would be questioned.

Improvement of Labourers' Cottages. —The fourth report of the Northumberland Cottage Improvement Society* contains plans, elevations, and estimates of cottages erected at Craster; at Choppington, near Morpeth; at Doddington, and at Rock: they present nothing new, but, as serving to point attention to the necessity of improving the dwellings of the labourer, the efforts of the society deserve great praise.

* Whitaker, London: Smith, Alnwick.

## FORD'S HOSPITAL, COVENTRY.



### ANCIENT STREET ARCHITECTURE.

So very few remains of our ancient street architecture are now to be found, that every good specimen met with should be the more carefully examined. Every year some old building is removed to be replaced by another more in accordance with the taste of the present generation, and although we must much regret the loss of so many beautiful examples of domestic architecture, and feel that our streets have no longer the picturesque appearance they once possessed, yet much is gained on the score of light and air (those great preservers of the public health) by the wide streets and lofty houses of the present day. The great evil has been, that many of these interesting remains have been swept away without any thought or care to preserve correct representations of them; and although some improvement is manifest in this respect (thanks to the exertions of the various archæological societies), still there is much to complain of. Coventry, Chester, and Warwick, have perhaps more remains of street architecture than any other towns in the kingdom, and without doubt some of the most interesting. A few houses are yet to be found in Oxford, Tewkesbury, and other places, and in York are still to be seen some curious examples of entrances to courts, which appear to have been common to several houses. In other towns are some remains of houses, with the details much destroyed, many of them originally used as inns, as the George, at Glastonbury; another at Rochester; the New Inn, at Gloucester (the latter much modernized); and some others. In the market-place at Newark there is also a curious house of the time of Edward IV., built with timber and plaster, several small figures with canopies over them being formed of the latter material. In this as in many other instances are long ranges of windows extending across the whole front. We have been particular in pointing out as many specimens as occur to us, feeling sure that in some instances attention need only be called to them to prevent their being wantonly swept away; or if that is unavoidable, that at least some satisfactory representations of them may be taken.

Ford's Hospital, at Coventry (the street elevation of which is the subject of the accompanying illustration), is one of the finest specimens of ancient street architecture now to be found, and it is much to be regretted that no attempts are made to keep it in good repair, of which it stands greatly in need. We mentioned it some time ago, when the British Archæological Association visited Coventry.

The only entrance to the building is from the street, by the doorway shewn in the illustration. This leads to a narrow open court, on each side of which are ranged the dwellings, affording accommodation for thirteen persons. The design and the detail of the fronts in the court are equally good, and present as much variety as in the more important street front. The whole of the detail is of the most delicate description, and it was a matter of much regret that we had not time to do more, during a couple of hours' stay in Coventry, than make a sketch of the principal front.

### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

On the 29th ult., Mr. Poynter, Vice President, in the chair, the committee appointed to examine the Cavalière Matas's design for a new façade to the church of S. Maria del Fiori, at Florence, brought up their report, which was received, and will probably be sent to Florence. The opinions which we have expressed on this subject were fully borne out by the report itself, and, for the credit of the Institute, the less we say of this latter the better. We find that there is positively one series of complimentary opinions on this project in print already, for circulation, "patent-medicine" fashion, and repeat distinctly what we have already said, that the design is altogether incommensurate with such a proceeding.

Mr. Tite read some discursive remarks on pointed architecture, communicated by Mr. Joseph Gwilt, and which are to form a chapter in the second edition of his "Encyclopædia." They embraced notices of the freemasons, masons' marks, symbolism, which the writer condemned as an idle affair, and general proportions. These he considered were arithmetical rather than geometrical, and that the figures 3, 5, and 7 regulated many of the mediæval buildings. He considered it unfortunate that so much attention is given at this time to the study of details rather than to the discovery of general principles, which were more deserving of attention, because, if the stem of the plant were right, the leaves and flowers were sure to come so.

Some drawings of mural distemper paintings in the church at Lingfield, in Surrey, were exhibited, consisting of separate figures, about two feet high. The whitewash having been removed last summer, in the course of repairs in one part of the church, the "commandments" were found written, and then, under this writing, the figures in question.

Lingfield church, built in the time of Henry the Sixth, and one of the most important churches in Surrey, being 116 feet long and 64 feet wide, has been recently restored at considerable expense,—the interior, if we may believe a correspondent on the subject, not very satisfactorily.

Mr. Farlar and the Late Westminster Sewers' Commission.—Mr. Farlar has forwarded us a copy of his letter to the late commission (mentioned in The Builder, page 572), protesting against the use of the rates for defending an action brought against Mrs. Webb (which action, he says, was simply for the purpose of pressing on the commission to carry out the Act obtained in July last), and requests us to print it. The fact, however, of our not having done so at the time, shews that we did not consider it desirable,—it is now even less so.

## FORMS FOR DOMESTIC UTENSILS, OBTAINED FROM LEAVES.

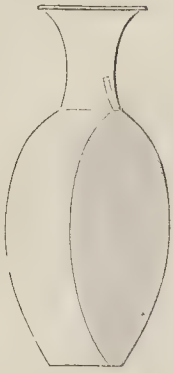


*Fig.* 1.

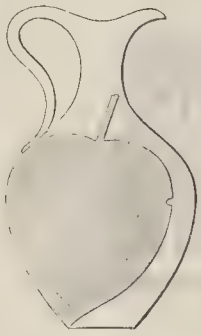


*Fig.* 2.



*Fig.* 3.



*Fig.* 4.



*Fig.* 5.

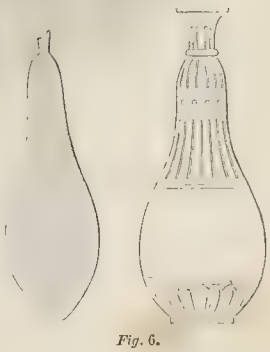


*Fig.* 6.

### FORMS FOR DOMESTIC UTENSILS, OBTAINED FROM LEAVES.

In a paper on Art, read at the Decorative-Art Society by Mr. Dwyer, and reported in our pages,* the reader observed, that whatever is truly great or practically useful is always based on simplicity. He was of opinion that the outlines of Greek and Etruscan vases, which had caused much abstruse geometrical investigations into conic sections, had not been produced by geometry, and he then exhibited a series of tracings from the curved outlines of leaves, to shew how simply very refined forms are obtainable. Above we give some applications of the outlines thus obtained. Fig. 1 is from a laurel leaf, fig. 2 from an apple leaf, and fig. 3 from thornbeam. A geranium leaf produced fig. 4, a second leaf of the same kind giving the neck; and fig. 5 is from a leaf of privet.

### THE DUOMO OF FLORENCE.

Sir,—Professor Donaldson's paper on the Duomo of Florence, read at the Royal Institute of British Architects, and reported *verbatim* in The Builder of the 27th ult., is so interesting a document, that I am induced to comment upon it as an example of the necessity of collateral research in professional pursuits after knowledge. When architects of no standing fall into a very usual negligence, the consequences are of little importance; but the fluency, zeal, and reputation of the worthy professor, and perhaps, above all, his blooming rhetoric, give charms to his communications which, like the florid decorations of latter Gothic edifices, serve to disguise errors of purpose and construction when they occur, and lead the unwary to a wrong appreciation of facts. He informs us, that the design of that edifice "is a bold departure from previous practice by the introduction of a large octagonal vestibule, flanked by three chapels, and surmounted by its enormous dome—a daring transition from established ideas to a new epoch." This is highly complimentary to Arnolfo's energy and talent. He adds, "On the death of Arnolfo, Giotto was appointed to continue the work, in which he seems to have followed most strictly the design of the original architect (Arnolfo), not only in the cathedral but in the campanile or bell-tower. * * * It is, of the kind, the most beautiful production of the art, a perfect gem in design and execution, graceful in form and profuse in marble." Mr. Donaldson further calls Arnolfo and Giotto, "lights in an age of artistic darkness."

Every student, and many others, who heard the professor, must have taken it for granted that Arnolfo was a great and exquisite architect, and that Giotto, from the hopelessness of excelling his productions, adopted them without any exercise of his own genius. But the tables are sadly turned on poor Arnolfo by the following summary charge of the worthy orator:—"In casting off the trammels of the rules of the fantastic style hitherto prevalent, and unacquainted with the severe refinements of classic art, * * he has produced an enormous but timid and flat development of surface, mechanical and tame, devoid of bold and striking sentiment, and with a total absence of those dignified and impressive modifications of outline, chiaroscuro, and advancing and receding planes, which form the charm as well of Gothic as of classic art."

I have, in this part of the inquiry as to the danger of giving way to the florid style, a few words to say on the epithet applied to Arnolfo and Giotto,—"lights in an age of artistic darkness." Artistic darkness, indeed! It is the very age of all that is most beautiful in Gothic, and of much that is exquisite in revived art;—the age of Edward the First. The cathedrals of Amiens and Salisbury, the Sainte Chapelle and Waltham Cross, the monuments in Westminster Abbey, of Henry the Third and of Edward's queen, Eleanor, are indications of the "artistic darkness" of that age. Nor must we forget that the sculptor of Edward's queen was the friend, assistant, and rival of Giotto. How can Cavallini and Gentile Fabriano be forgotten? In like manner the Pisanii, who preceded, and Taddeo Gaddi, as well as Pietro della Francesca, who immediately followed, must be rescued from "artistic darkness." In truth, the ages of darkness were gone: in 1230, Frederic the Second adopted knowledge from the Saracens and planted it in Italy, in spite of the church; he sowed the seed, and, after his defeat, the commercial republics, liberated from foreign dominion, reaped the harvest. Nor was it in Italy only that every branch, especially of mathematical science, was spreading. Alphonso, king of Castille, and the Polish Vitellio, were also brilliant contemporaries of Arnolfo; and the like must be said of our eminent countrymen John of Halifax (also called de Sacro Bosco), Friar Bacon, and Bishop Grothead. At the same

* See p. 539, *ante*.

time lived Petrarch, Boccacio, and other distinguished writers.

Instead of troubling you with further proofs of the inapplicability of this expression, allow me to question another leading surmise, viz., that from the death of Arnolfo until the building of the dome by Brunelleschi, not only was there no other man in Europe capable of vaulting so large a space, but that the grossest ignorance on the subject prevailed *all over Europe;* for we are told that the scientific men of all Europe were invited to the task. It would require some determination, and—you will perhaps agree with me—some consideration, to declare that William de Wykeham and William de Woorde were not competent to such a performance,—and they lived during the assigned period. And so did Brunelleschi's artistic rivals Donatello and the admirable sculptor Ghiberti.

The florid style does not suit historical research: inconsiderate praise heaped on one man too frequently carries with it censure on others, without its being intended; this was remarkably the case when the kind-hearted professor, in the glow of friendship, stated that the neglect of one of the excellences of Cavalière Matas's design for the west façade of the cathedral, namely, homogeneity of style with the original (bald, timid, and flat development, devoid of striking sentiment, &c.), was the cause of the failure of so many other designs. That, again, is a mistake, for several of those designs were approved, and only required, it would seem, one objection to be removed, and that objection—*expense*—is also an obstacle to Cavalière Matas's design. In science compliments are dangerous adjuncts, and to pass one to a living architect at the expense of Vignola and his compeer Palladio, is hardly prudent. Now that the members of the Royal Institute of British Architects have constituted themselves a high tribunal in these matters, their verdicts will come before the public, and will, of course, call for strict criticism.—I send you my name; and am, Sir, &c.

An Inquirer.

## IGNORANCE IS POWER, TOO.

At a *soirée* given by the Leeds Mechanics' Institution, last week, Mr. Charles Dickens, who presided, speaking of the spectral shadow of a certain dead and buried opposition to the spread of knowledge, said,—

"Imagine here, on either hand, two great towns like Leeds, full of busy men, all of them feeling necessarily, and some of them heavily, the burdens and inequalities inseparable from civilised society. In this town there is ignorance dense and dark; in that town, education—the best of education; that which the grown man from day to day and year to year furnishes for himself and maintains for himself, and in right of which his education goes on all his life, instead of leaving off complacently just when he begins to live in the social system. Now, which of these two towns has a good man, or a good cause, reason to distrust and dread? 'The educated one,' does some timid politician, with a marvellously weak sight, say (as I have known such politicians say), 'because knowledge is power, and because it won't do to have too much power abroad.' Why, ladies and gentlemen, reflect whether ignorance be not power, and a very dreadful power. Look where we will, do we not find it powerful for every kind of wrong and evil?—powerful to take its enemies to its heart, and strike its best friends down—powerful to fill the prisons, the hospitals, and the graves—powerful for blind violence, prejudice, and error, in all their gloomy and destructive shapes? Whereas, the power of knowledge, if I understand it, is—to bear and forbear—to learn the path of duty, and to tread it—to engender that self-respect which does not stop at self, but cherishes the best respect for the best objects,—to turn an always enlarging acquaintance with the joys and sorrows, capabilities and imperfections of our race, to daily account in mildness of life and gentleness of construction, and humble efforts for the improvement, stone by stone, of the whole social fabric."

At the same meeting, Mr. George Stephenson said—"he commenced his career at a lower standing than any man that was present there that night. He made that observation for the purpose of encouraging the youthful mechanic to do as he had done—to persevere. And he could tell them that they occupied a most advantageous position,—they had had teachers who, going before them, had left them their great discoveries as a legacy and a guide, if they would take advantage of their teaching. But he remembered the time when there were none to guide and instruct the young mechanic. He knew that if they profited by the experience of those who had gone before them, they would be saved much trouble and annoyance, for the free interchange of ideas amongst mechanics would prevent a great deal of capital being expended uselessly. Many young mechanics, if they did not avail themselves of the teaching of those who had gone before them, would perhaps be induced to believe that they had made some discovery in mechanics, and when they had spent a great deal of time and money, they would make the unpleasant discovery that what they had considered an original invention had been put forth, it might be, more than twenty years before."

## PROGRESS IN SLOUGH.

Sir,—The Sloughites are dreadfully slow to see improvements of any kind; they require the power of a steam-engine to set them in motion, but, when once moved, they go along at a railroad pace. They have just had such a power, even the power of the press, in the shape of The Builder, which is read in the mechanics' reading-room as regularly and thoroughly as the *Times*.

For several seasons past the gas question had been mooted, but received no encouragement. A committee was formed a few weeks since (in consequence of suggestions thrown out by a lecturer), to see how the affair might be arranged. They convened a public meeting, at which they procured the attendance of a gas engineer. The result was, a company was formed on the spot, with a capital of 2,500*l.*, in 250 shares of 10*l.* each. 155 shares were taken in the room: the remainder were disposed of the next day. A meeting of the shareholders took place on December 3rd, to receive the deposits, when the committee were authorised to enrol the society. The spot of ground was then fixed on, and Mr. T. Sharp, of Nottingham, was appointed engineer. The works are to be commenced in the spring, so as to have them ready for the next winter. Upwards of three miles of main will be required to reach the different streets. Thanks to The Builder for this great boon!

Subscriptions are still received towards the new church for the parish of Eton. The architect's estimate is 6,000*l.*

The alterations and restorations at Eton College Chapel are nearly completed. The temporary chapel, with its stained-glass windows, is advertised for sale by public auction. The bench ends are of poor design, and look very meagre. The roof, though well executed, appears very heavy. It is an open one, of oak, and is stained to an excessively dark shade. The featherings of the principal next the east wall interfere very greatly with the label and archivolt mouldings, and therefore have a bad effect.

The plan for establishing (or rather reviving) the general market at Slough, is unfortunately at a stand-still. As the greater part of the town is in the manor of Upton-cum-Chalvey, the mover of the scheme wrote to the lord of the manor, requesting aid: he declined sending cash, and "begged to warn the inhabitants from executing the works, as if they did he should take all the tolls, he having a patent for the same." The committee were thunderstruck, but, nevertheless, were determined not to be outdone, and decided upon erecting the market, &c. out of the manor, at the outskirts of the town. They, in consequence, entered into a treaty with a party (who owned the only suitable spot) for the purchase of about three-quarters of an acre, having a frontage of about 100 feet. After a length of time, an answer was obtained, and again they were baulked, the price required being 1,500*l.* They must now wait till a more favourable time.

It appears it is sixty-five years since any market was held at Slough, and about forty years since a fair was held; therefore the solicitor to the committee thought the lord of the manor had lost the right by desuetude, but as the lord of the manor was determined, and opposing him might lead to litigation, they thought it the wiser course to be out of his power. There was no lack of money, had other circumstances been favourable.

X. Y. Z.

## NEW COMMISSION OF SEWERS.

The ordinary meeting of the Westminster Commission, appointed to be held on Friday in last week, did not take place, in consequence of the supersedeas issued by the Lord Chancellor on Tuesday, and, therefore, all works and payments were declared to be necessarily suspended until the new commission should be properly constituted and sworn in. Great disappointment was expressed by several members of the old commission that matters were not properly closed and wound up, as had been proposed to be done at the final meeting, but which was prevented by the interference above referred to.

Late on Saturday night notices were received at the office in Greek-street, from the Metropolitan Sanitary Commission, calling upon the officers of the Sewers' Commission to give their attendance at Gwydyr House on Monday morning, at a general meeting of the board. They accordingly attended, as did also the officers of the other metropolitan commissions of sewers. At 12 o'clock Lord Morpeth took the chair, when the following members took the usual oaths of office:—Lord Ebrington, Lord Ashley, Dr. Buckland, Mr. Hume, M.P., Hon. F. Byng, Dr. Arnott, Dr. S. Smith, Mr. R. A. Slaney, M.P., Sir J. Clark, Rev. W. Stone, Professor Owen, Sir H. De La Beche, Mr. J. Bidwell, Mr. J. Bullar, Mr. W. J. Broderip, Mr. R. L. Jones, Mr. J. Leslie, and Mr. E. Chadwick.

Mr. L. C. Hertslet, of the Westminster division, and Mr. Staples, of the Holborn and Finsbury division, were appointed clerks of those districts provisionally; and Messrs. Phillips and Roe, surveyors of the above divisions, were re-appointed surveyors provisionally, and Mr. Austin consulting-surveyor. A few formal resolutions were then put and agreed to.

In consequence of certain necessary arrangements to be made, it was considered impracticable to hold a court before the 16th instant, to which day this meeting stood adjourned.

The constitution of this new commission will require consideration. The great object of change should be improvement.

Improvement of Roads in Kentish Town.—An action has just been decided in the Court of Queen's Bench, as to the liability of certain houses, situated in Kentish Town, to be rated by the commissioners appointed under 4 & 5 Vict. c. 67, for its improvement. The Kentish Town Commissioners had made a pavement all the way from Camden Town to Highgate, a space of three miles, up to the line of road in question, which they repaired, widened, and provided with footways, where the owners or occupiers had neglected to do so. In some places the pavement had to be widened about four feet, by going on the carriage-road, which, under 57 Geo. 3, was placed under the jurisdiction of the metropolitan commissioners, whose consent was obtained. This improvement involved an extension of the footway in a part of Southampton-terrace, from three feet, which it originally was, to seven feet; and it was the expense incurred in this addition of four feet in width, that formed the matter in dispute. The defendants contended that they were not liable, inasmuch as the footway was not that next or adjoining the frontage of their houses, that the money was not laid out on the three-feet footway in existence on the passing of the Act, or that it ought at all events to be shewn that it *was* laid out upon the footway *three feet wide*. Their lordships gave judgment in favour of the Crown, on the ground that the footway in question was one that must be considered to come within the meaning of the Act, and over which the commissioners for the improvement of Kentish Town had full and complete control.

## EXPERIMENTS ON THE FORM OF CAST-IRON GIRDERS.

SIR,—The following experiments are submitted, as laying before you, in a very simple form, first, the proportionate values or strengths of the simplest forms of cast-iron beams, as applicable to constructive purposes; and, secondly, the positive value of the application of the wrought-iron tension-bar or rod to the same, as a means of adding increased value in strength; and that the investigation is at this moment imperatively called for, the experience of the last few months witnesses.

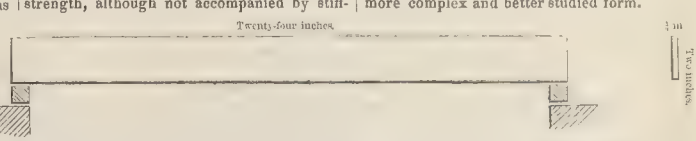
It appears a little singular that the use of the tension-bar, as a means of adding strength to the bearing purposes of cast-iron, should have so largely obtained without the same having been based upon actual experiment, and, still more strange, that it should almost invariably have been used in such a position, that its presence not only adds nothing to the security sought, but that its application has really been one of the elements of destruction to the beam to which it has been so attached (as see experiments to be given in a following paper).

That the application of a superior tensile material, as wrought-iron undeniably is, to cast-iron for structural purposes, and especially in combination with cast-iron as *its* superior to resist compression, is a proper subject for earnest research, and a desideratum to a large and extensive interest, is without doubt; and that such an investigation yet remains to be performed, is also true. Such an inquiry should, in my opinion, be pursued by actual experiment, based upon the dissimilar properties of the two materials; the one superior to the other for its tenacity, to be reserved only to that use, whilst the other, again *its* superior in the facility with which it admits of being put in preferable forms to resist compression, to be reserved to that purpose only. This, I believe, is the present question, and one of more real moment to the public, when seriously reflected upon, I scarcely know; for, when contemplating the existing lines of communication into which the combination of the two materials has entered so largely in their various structures, the consequences of failure in any of them is seen to be terrific.

In briefly noticing the accompanying experiments, the first portion relates wholly to the simplest forms in which cast-iron can be used as bearing beams, and as leading on to the perfecting our knowledge of the value of the various useful forms of which it is susceptible. The results there manifest will bear reiteration. 1st, *Experiments A* are commenced as a foundation, the beam bearing 482 times their own weight, with a deflection one-thirteenth of their depth. 2ndly, in *Experiments B*, notice the breadth and consequent quantity of material doubled, producing but 1⅔ the strength, its stiffness or deflection remaining only the same, bearing but 403 times its own weight, or a loss of 12 per cent. This is a point, in the proper disposition of materials, often of much importance, and, as a caution, needs to be prominently put forward, for the mind is but too apt to recognize without exception the product of two and two to be four. Its stiffness, also remark, remains identical with experiments A, notwithstanding the large increase of material, the length and depth being still the same.

*Experiments C* afford a further illustration of the same result, the quantity remaining similar or rather increased,—though the beam consists of separate pieces, nothing better is arrived at,—we still witness the diminution of strength: although a small gain in stiffness or lesser deflection is produced, this may be accounted for by the fact of their being in distinct castings. Each has its separate surface or skin, which is in a measure chilled or stiffened in its cooling from the melted state. It increases the value of stiffness but not of ultimate strength. It was also remarked, during the progress of each of the three experiments C, that the beam appeared to lie under disadvantage peculiar to itself. Supposing two beams in practice similar to those now under consideration, it would be practically impossible to produce the two in all parts alike as to weight, scantling, and perfection of body, surface, and quality of material. Reasoning, then, that one of the two would be the weaker, does not *that* weakest, by its yielding first to the force acting upon it according to its own strength, involve, by its such destruction, the destruction also of its fellow, and so produce but a double strength of the weakest, instead of a combined strength of the two? If so,—and it appears but reasonable so to argue,—how fully does it point to the necessity of exceeding carefulness of supervision, where, as in large structures, generally dependent one part on another, one part in its failure involves such extensive ruin!

*Experiments D.*—These three experiments entering into a comparison with either B or C, bear undoubtedly high upon the question of the best disposition of the material, recollecting, at the same time, we are not advocating a section or attempting to produce in this inquiry the best of all sections for practical purposes, but merely instituting comparisons with a determinate quantity of material. It is remarkable here to witness the great increase of strength, although not accompanied by stiffness,—the gain in strength being 25 per cent. upon experiment A: the loss in stiffness being 30 per cent. The strength arising from the accumulation of the quantity submitted to tensile action bears out an adequate result, or 580 times its own weight, instead of 400, as B and C, shewing over them an increase of strength of nearly 50 per cent. In using this section, it makes no difference whether the load be placed wholly upon the upper part of the vertical web or whether it be placed upon the *lower* flanches or webs, the result obtained in either case was the same. This form of section in this series of experiments, it will be seen, is much to be preferred to any other (even inclusive of the following, viz., those which were trussed by the addition of the wrought-iron bolt), and it, as a basis for further consideration of the best form, deserves attention, and perhaps, for practical purposes, it may, on account of its simplicity, as being more readily borne in mind, be preferred to a more complex and better studied form.




**A.**—Transverse Strain on a simple Rectangular Iron Beam, 24 in. long, 2 in. high, and ½ in. thick.
The pressure of the lever and scale in all these experiments was 220 lbs.
The pressure of the lever and weights were severally as under.

| No. 1 Experiment. Weight, 5lbs. 4 oz. | | No. 2 Experiment. Weight, 5lbs. 8½ oz. | | No. 3 Experiment. Weight, 5lbs. 8 oz. | | No. 4 Experiment. Weight, 5lbs. 8 oz. | |
|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 520 | ·06 | 520 | ·04 | 520 | ·061 | 520 | ·04 |
| 580 | ·067 | 580 | ·046 | 592 | ·068 | 580 | ·044 |
| 652 | ·074 | 652 | ·052 | 652 | ·074 | 652 | ·051 |
| 712 | ·080 | 712 | ·057 | 721 | ·082 | 724 | ·058 |
| 784 | ·087 | 784 | ·064 | 805 | ·089 | 787 | ·063 |
| 864 | ·097 | 868 | ·071 | 868 | ·097 | 856 | ·068 |
| 903 | ·104 | 937 | ·078 | 931 | ·103 | 919 | ·073 |
| 993 | ·110 | 1000 | ·083 | 991 | ·109 | 979 | ·079 |
| 1056 | ·117 | 1060 | ·089 | 1060 | ·115 | 1039 | ·084 |
| 1128 | ·123 | 1132 | ·096 | 1132 | ·122 | 1108 | ·089 |
| 1188 | ·129 | 1195 | ·103 | 1180 | ·127 | 1180 | ·095 |
| 1242 | ·135 | 1249 | ·108 | 1252 | ·133 | 1252 | ·101 |
| 1311 | ·142 | 1321 | ·115 | 1321 | ·138 | 1315 | ·109 |
| 1371 | ·148 | 1384 | ·121 | 1381 | ·144 | 1375 | ·113 |
| 1437 | ·156 | 1447 | ·128 | 1453 | ·149 | 1435 | ·117 |
| 1506 | ·162 | 1510 | ·134 | 1513 | ·154 | 1498 | ·123 |
| 1566 | ·169 | | | 1576 | ·16 | 1552 | ·128 |
| 1635 | ·179 | | | | | 1621 | ·134 |
| | | | | | | 1693 | ·138-9 |
| | | | | | | 1777 | ·148 |

Two minutes elapsed between the weightings in the whole.

**B.**—Transverse Strain on a simple Rectangular Cast-iron Beam, double the width of A. All else relating to it similar.

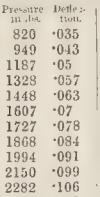
| No. 5 Experiment. Weight, 10½ oz. | | No. 6 Experiment. Weight, 10¾ oz. | | No. 7 Experiment. Weight, 10⅝ oz. | | No. 8 Experiment. Weight, 10½ oz. | |
|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 820 | ·052 | 820 | ·043 | 820 | ·037 | 820 | ·037 |
| 928 | ·057 | 961 | ·051 | 963 | ·045 | 955 | ·047 |
| 1072 | ·065 | 1099 | ·057 | 1083 | ·052 | 1099 | ·055 |
| 1195 | ·072 | 1246 | ·064 | 1215 | ·06 | 1231 | ·062 |
| 1321 | ·078 | 1390 | ·071 | 1347 | ·067 | 1363 | ·069 |
| 1465 | ·085 | 1528 | ·077 | 1488 | ·073 | 1483 | ·074 |
| 1591 | ·093 | 1660 | ·085 | 1608 | ·08 | 1651 | ·084 |
| 1735 | ·099 | 1786 | ·091 | 1785 | ·09 | 1783 | ·091 |
| 1861 | ·106 | 1930 | ·098 | 1893 | ·097 | 1942 | ·1 |
| 1981 | ·113 | 2074 | ·107 | 2001 | ·103 | 2083 | ·107 |
| 2149 | ·120 | 2206 | ·116 | 2124 | ·11 | 2206 | ·116 |
| 2287 | ·127 | 2338 | ·124 | 2250 | ·118 | 2359 | ·123 |
| 2425 | ·135 | | | 2388 | ·127 | 2503 | ·133 |
| 2573 | ·142 | | | 2520 | ·135 | 2629 | ·141-2 |
| 2705 | ·149 | | | 2664 | ·145 | 2767 | ·15 |
| 2831 | ·154 | | | 2802 | ·156 | | |
| 2969 | ·160 | | | | | | |
| 3113 | ·173 | | | | | | |

Two minutes elapsed between the weightings in the whole.

**C.**—Transverse Strain on two simple rectangular cast-iron beams, each similar to A, and placed side by side half an inch apart. All else relating, similar.

| No. 9 Experiment. Weight of 155 oz. 1 lb. 11 | | No. 10 Experiment. Weight of 155½ oz. 1 lb. 11¼ | | No. 11 Experiment. Weight of 155 oz. 1 lb. 11 | | No. 12 Experiment. Weight of 154 oz. 1 lb. 11 | |
|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 820 | ·057 | 820 | ·047 | 820 | ·044 | 820 | ·042 |
| 952 | ·062 | 943 | ·053 | 940 | ·05 | 952 | ·048 |
| 1096 | ·067 | 1075 | ·061 | 1066 | ·058 | 1081 | ·054 |
| 1222 | ·072 | 1207 | ·066 | 1222 | ·066 | 1210 | ·061* |
| 1363 | ·077 | 1339 | ·071 | 1345 | ·07 | 1345 | ·067 |
| 1471 | ·082 | 1486 | ·078 | 1474 | ·077 | 1477 | ·074 |
| 1591 | ·087 | 1618 | ·085 | 1612 | ·085* | 1606 | ·08 |
| 1735 | ·094 | 1741 | ·09 | 1732 | ·089 | 1747 | ·087 |
| 1855 | ·1 | 1883 | ·097 | 1879 | ·127† | 1876 | ·093 |
| 1999 | ·107 | 2015 | ·163 | 2017 | ·133 | 2023 | ·1 |
| 2119 | ·112 | A small air-hole | | 2155 | ·138 | 2148 | ·107 |
| 2245 | ·117 | | | 2293 | ·144 | 2280 | ·115 |
| 2371 | ·123 | | | 2425 | ·149 | 2418 | ·121 |
| 2515 | ·129 | | | 2569 | ·154 | 2556 | ·127 |
| 2647 | ·135 | | | 2689 | ·158 | 2700 | ·133 |
| 2803 | ·141 | | | 2821 | ·162 | | |

Both beams broken at once. They were cast from one runner and flowed through at the extreme end.



**D.**—Transverse Strain on a Cast-Iron Beam, the Section formed of one Rectangle placed centrally upon another and at right angles to it.—Scantlings, and all else relating thereto, similar to C.

| No. 13 Experiment. Weight, 11½ oz. | | No. 14 Experiment. Weight, 11¼ oz. | | No. 15 Experiment. Weight, 11 oz. | |
|---|---|---|---|---|---|
| Pressure in lbs. | Deflection. | Pressure in lbs. | Deflection. | Pressure in lbs. | Deflection. |
| 820 | ·035 | 820 | ·037 | 820 | ·023 |
| 949 | ·043 | 955 | ·042 | 958 | ·03 |
| 1187 | ·05 | 1102 | ·049 | 1087 | ·037 |
| 1328 | ·057 | 1246 | ·056 | 1213 | ·043 |
| 1448 | ·063 | 1369 | ·063 | 1381 | ·05 |
| 1607 | ·07 | 1501 | ·07 | 1513 | ·056 |
| 1727 | ·078 | 1636 | ·077 | 1660 | ·063 |
| 1868 | ·084 | 1771 | ·082 | 1816 | ·07 |
| 1994 | ·091 | 1915 | ·09 | 1918 | ·076 |
| 2150 | ·099 | 2011 | ·096 | 2062 | ·083 |
| 2282 | ·106 | 2143 | ·103 | 2194 | ·09 |
| 2411 | ·113 | 2281 | ·11 | 2338 | ·097 |
| 2543 | ·120 | 2422 | ·117 | 2445 | ·103 |
| 2669‡ | ·127 | 2560 | ·124-6-7 | 2587 | ·11 |
| 2801 | ·134 | 2692 | ·132 | 2719 | ·117 |
| 2933 | ·142 | 2830 | ·14 | 2851 | ·123 |
| 3065 | ·15 | 2998 | ·151 | 2995 | ·131 |
| 3200 | ·158 | 3148 | ·160-1 | 3145 | ·138-140 |
| 3344 | ·167 | 3286 | ·170-1 | 3325 | ·15-1 |
| 3524 | ·177-9 | 3412 | ·178-18 | 3457 | ·157-8 |
| 3668 | ·187 | 3550 | ·187-9-19 | 3589 | ·165 |
| 3800 | ·195 | 3682 | ·197-201 | 3733 | ·174 |
| 3938 | ·204 | 3814 | ·208-9-213 | 3865 | ·18 |
| 4076 | ·214-9 | 3952 | ·220-223 | 4003 | ·18§ |
| 4102 | ·226 | 4090 | ·232 | | |

* A crack.
† Weights relieved on account of cast-iron bearing-piece breaking. Replaced by a wrought-iron piece.
‡ A crack like grain tin.
§ Broke, a small air bubble.

Drury-lane. GEORGE B. COOPER.

## RAILWAY JOTTINGS.

The Government Railway Bill is more intelligible than such documents generally are. The chief provisions are, that companies wishing for an extension of time must make application to the Commissioners of Railways within two months from the passing of the Act. The commissioners may then, if they think fit, extend the time, but not for more than two years from the expiration of the period allowed by the original Act. The claims of parties aggrieved by the delay, if not settled by agreement with the company, shall be settled by arbitration or a jury, as by the Lands Clauses Consolidation Act. It is also enacted that no railway company which had not before November 27th, 1847, entered into any contract for the execution of works authorised by their Act, shall now enter into any contract within twelve months after the passing of the present Act, except in cases of deviation from the line originally proposed, and contracts for the construction of works which the company are authorised to proceed with by the consent of three-fourths of the whole number of shares, such consent to be signified in writing within six weeks after the passing of the Act. Contracts entered into in contravention of the Act shall be void and of no effect.——The Chancellor of the Exchequer, during the debates on the passing of this Act, and while deprecating the too rapid conversion of floating capital into fixed capital, as the chief cause of the mercantile and manufacturing distress,—a cause foreseen by Mr. Porter, at the end of 1845,—adduced several figures to show the rapid increase in the amounts annually devoted to expenditure on the construction of railways. From 1826 to 1835, Parliament authorised the raising of about 19,000,000*l.*; in 1836 and 1837, 36,000,000*l.* Distress then checked railway speculation. In 1844 and 1845, Parliament authorised the raising of 74,000,000*l.* In 1846, 800 plans for railways were submitted to the Railway Board, and Parliament authorised 132,000,000*l.* The total expenditure authorised between 1826 and 1846 was 286,000,000*l.*; by far the greater portion being sanctioned in the last three years. The Railway Commissioners state the actual expenditure to have been,—In 1841, 1,470,000*l.*; in 1842, 1843, and 1844, gradually increased to 6,105,000*l.*; in 1845, about 14,000,000*l.*; in 1846, upwards of 30,000,000*l.*; and in the first half of 1847 alone 25,770,000*l.* "If the works had gone on at the same rate," added Sir Charles, "the expenditure would have amounted in this year to 64,000,000*l.*; in 1848, to 70,000,000*l.*; in 1849, to 47,000,000*l.*; and in 1850, to 10,000,000*l.*; by which time, probably, the works already authorised would have been finished.——A number of particulars are adduced by *Herapath*, from which it appears that the receipts per mile on various lines in the present year are 'about the same—possibly on the whole a little less' than last year. The Midland have increased in every respect. The Great Western are about the same, but when the reduction in fares to the same standard as the London and North-Western comes into operation, and their parallel lines commence working, they may possibly be less, he thinks, to some extent;—possibly they may, but probably they may not. It must be recollected, in estimating the receipts per mile, on various lines, that there have been long branch lines opened, which, while they receive less per mile, have cost less in construction; so that a reduction of receipts per mile must not be taken to indicate a proportionate reduction of profit.—— A Mr. A. C. Pirani intends, it is said, to bring forward an invention for lighting railway and other carriages with gas, to be conveyed through glass pipes so contrived that they can be removed at pleasure. A cheerful and brilliant substitute for the glimmering light now in use in railway carriages, and one at one-third the cost, too, would certainly be a boon next perhaps to comfortable warmth, in the winter season, and might be made indeed to aid in also warming the carriages which it lights,—a hint which, we hope, the inventor will adopt and benefit by, as well as benefit the travelling public, who much require the suggestion of some such economical mode of killing two birds with one stone to be pertinaciously thrust by inventors on the callous notice of railway directors, who have hitherto been as cold to every melting appeal, even from the frozen lips of their favourite first-class traffic, as John Frost himself.——The latter gentleman, by the way, has already begun his winter's work as a contractor on the atmospheric lines, to which he still seems regularly to supply the place of pitch or other solder to the valves,—but rather too officiously. The question, as lately observed in the *Mining Journal*,—itself an advocate of the general principle of the atmospheric system,—is still a question of valve. Could not some modification or other of the plan for opening and sealing the valve by heated iron and pitch, as the train passes along, be applied to the frost or ice itself, so as to turn John's willing services to useful account?—— Meantime the elastic steel tube system, a working model of which was lately laid down near the Poplar station of the Blackwall Railway, is still endeavouring to make way in the place of that whose practical continuance each successive winter seems to defy. The working-model alluded to, however, at length altogether disappeared; but the *Mining Journal* assures its readers that "the tubes were taken up not from any mistrust or fear of the capability of the system, but from a determination, on the part of the proprietors and patentees, regardless of expense, to render the tube as perfect as possible, and to develop the full capabilities of the system;" and, indeed, the tubes have been relaid, after being a little further advanced towards the perfect state by the addition of new corrugated copper joints, introduced by the patentees, Messrs. Clarke and Varley, in order to "allow for any degree of expansion and contraction, and supersede the employment of every description of leather, gutta percha, or other perishable or objectionable substance." Satisfactory experiments are said to have been since tried with the new apparatus. We have not lately heard any more about Messrs. Cunningham and Carter's ingenious scheme for getting rid of the slit valve altogether, and for turning on the atmospheric or pneumatic power or vacuum through a copper main with branches. Many are still hopeful that the atmospheric system, "when carried out with well-constructed mechanism, is the only means of escape from the enormous expenses and the imminent danger of the present general system, and, in fact, which are inherent in it."——The Lambeth vestry had a meeting lately in order to adopt measures which should put a stop to the erection of a bridge, by the South-Western Company, over Church-street, right in the centre of the carriage way of which the pier would stand, dividing the road into two parts. In proposing the first resolution, Mr. Hicks adverted to the fact of the road being one of the finest in the parish, and of its being included in the Government scheme of metropolitan improvements as the approach to the contemplated bridge over the Thames. The carriage way was originally 38 feet wide, but it was now divided by a pier, on one side of which the carriage way was 16 feet, and on the other 18 feet 5 inches. By the Act of the company they were compelled to cross the road with an arch 60 feet span; and by the Railway Clauses Consolidation Act every turnpike road crossed was to be crossed at a span of not less than 35 feet. This was a turnpike road at the time of the passing of the Act. It would be very easy to cross the road by a single span arch, supported on pillars, leaving smaller arches for the footways, as at Bermondsey-street. For the board of surveyors it was stated, that they had given no definite consent to the plan, which, however, appeared to them to be the best proposed. When they spoke of crossing the road at a single span, Mr. Locke, the engineer to the company, said that he would not answer for the safety of passengers travelling over such an arch, especially after the experience they had lately had in reference to iron bridges. The company had built the piers of the bridge, and had all the cast-iron frames ready. — It was at length determined to try the effect of pacific measures at first, and a committee was appointed to act accordingly.

A Lucky Discovery.—Among a collection of paintings, the property of Mr. John Wilson, of Stratford, he has discovered "A Sleeping Venus," executed by Titian. We understand the fortunate owner has sold it within the last few days for five hundred guineas.—*Chelmsford Chronicle.*

## SLATES.

The best slates, Professor Ansted said in one of the lectures to which we have already referred, were those which were most crystalline, and which, when breathed upon, gave out the faintest argillaceous odour. When this odour was given out strongly, then the slates would readily decompose, and, consequently, these were not so well fitted for economic purposes. In many instances, the appearance of slate at the surface indicated that it had undergone a change, apparently produced by violence, as it had become broken, and in that form it was very readily decomposable, and, of course, very bad; yet, on digging down to the deeper beds, a good material would very often be found. The colour of the slate was not of much importance; it was generally either blue or green, and very excellent slates were common to both colours. The extent to which slate was quarried was considerable, though it was in the hands of a very few individual proprietors, or small companies. It might be thence supposed, that a larger quantity would be obtained, and the price consequently reduced, if there were more competition; but a little consideration would show, that competition would be any thing but easy. For instance, a landed proprietor might have on his estate a slate of the very best quality; but if it were only nine or ten miles from the sea, with no very easy means of conveyance, it might be a losing speculation to quarry it, because the most material part of the cost was the carriage, and the quarries already established possessed every advantage of that kind. Thus, in estimating the value of property of this nature, it was highly important to remember what were the means of conveyance. Another consideration arose out of the large per centage of loss in the present mode of getting slate. This was of no consequence, in one sense, as the material was enormously abundant, but it became of vital importance when there were no means of disposing of the rubbish. The large quarries at Penrhyn were worked in successive terraces, and the slate being obtained in immense masses, by blasting, the waste was enormous, but it was got rid of without much inconvenience. The Balahulish quarries, in the north of Scotland, were also very extensive, between 5,000,000 and 7,000,000 roofing slates being there quarried annually. The weight of this number would probably be about 10,000 tons, and the quantity of rubbish being generally five or six times as much as the slates, 50,000 or 60,000 tons of refuse would thus have to be disposed of. In this case, however, it was thrown directly into the sea; and the quarry, in that respect, possessed an advantage which made it far more valuable than better beds lying further inland. Property of this kind was exceedingly valuable; the quarries at Penrhyn, for instance, had been variously estimated at from 30,000*l.* to 40,000*l.* a year.

## NOTES IN THE PROVINCES.

The new church at Staplefield-common, Sussex, consecrated on Saturday week, is in the early English style. It consists of a nave, the only part for the congregation, with seats for about 350 persons, mostly free. The building cost about 2,000*l.*, principally subscriptions. ——The erection of a new chancel at Newchurch Church has been sanctioned, by the Bishop of Winchester, with a liberal donation. ——The public baths at Colchester, designed by Mr. Penrice, architect, are nearly completed.——Braintree Church appears to be going to wreck for want of repairs, the rates or rents due to the church out of parish property being withheld, in many cases, by the tenants or holders of the property.——It is intended to erect a church at Prickwillow, parish of Ely Trinity. The dissenters have already erected three chapels there,—one Baptist, one Wesleyan, and the other Primitive Methodist.——The church for the new district of St. Mark's, Wolverhampton, tenders for the erection of which were advertised in last week's Builder, is to accommodate about 1,200 persons, and to consist of chancel, 25 ft. + 20 ft.; nave, 84 ft. +27 ft.; north and south aisles, 84 ft. + 16 ft. 6 in.; height to wall plate, 31 ft.; to ridge piece, 52 ft.; tower and spire, 154 ft. high, with vestry and

north and south porches. Money has been raised by subscriptions, and grants have been promised from the Diocesan and Incorporated Church Building Societies. A parsonage-house in course of time, and also schools, ultimately are contemplated. Mr. Chas. Wyatt Orford is the architect.——The 'Gospel Elm' at Stratford-on-Avon having been cut down as a rotten stump which only 'cumbered the ground,' was found when too late to be perfectly fresh and sound at the core, and beautifully grained, particularly towards the crown, with scarcely a flaw. The whole was divided into lots, and produced 23*l.* 13s., which will no doubt be multiplied to some profit when converted into articles of furniture and other memorials of the past, as a last consolation to those who lament its untimely end.——The public baths erected at Westbromwich at the expense of the Earl of Dartmouth, consist of four private apartments, with dwelling-house for the bath-master.——A new Roman Catholic church and schools are to be erected at the north end of Liverpool, as the most fitting monument to the memory of those worthy Catholic clergymen [nine or ten, if not more in number, if we rightly remember], who have sacrificed their lives as successive victims to fever in the discharge of their duties to the poor.——A spire, we hear, is to be added to Misterton Church, Trentside, which is now undergoing extensive alterations and repairs.—— The improvements and restorations recently effected in the chancel of the parish church at Doncaster, are said to be satisfactory. Every portion of the chancel, says the local *Gazette*, is now visible at one glance; the piers shoot upward, free from the unsightly obstacles which previously stunted them; the communion table is rendered more free from incumbrance; and the eastern window assumes a more imposing and impressive character. No doubt the lovers of sacred architecture would be further gratified if the same taste, which has forcibly shewn itself with regard to the chancel, was rendered further manifest in the nave, side aisles, and transepts. This might be accomplished by cutting down the whole of the pews to a yard in height; removing, at the same time, all green baize and coloured cloth, —a custom which, with regard to lining pews, is more honoured in the breach than in the observance. The full extent of improvement, however, cannot be effected until all the unsightly galleries are cleared away.——A memorial is being signed at Gateshead, for presentation to the town council, praying that body to carry into effect the Baths and Washhouses Act, for the passing of which the inhabitants themselves petitioned. ——The iron masters, both in Lanarkshire and Ayrshire, have resolved upon further reducing the wages of their workmen.

## New Books.

*Elements of Geometry.* By J. D. London: Longman and Longmans, 1847.

Elements of Geometry, indeed! it would puzzle a *Cantab* to tell for what purpose this book has been written; does "J. D." know that the Elements of Euclid are still in existence? or does he know that there are many other elements of geometry, and some of them very unelementary? "J. D." must certainly have mistaken his object, or this emanation of his brain would never have seen the light. But what grieves us most is to see the highly respectable firm of Longman and Longmans superadded as the publishers of this, the very worst attempt that has ever been made at the composition of geometrical elements.

*Railway Locomotion and Steam Navigation, their Principles and Practice.* By John Curr, of New South Wales. London: John Williams and Co., 1847.

This is certainly one of the most impertinent and worthless books that ever was written. The author, with matchless effrontery, calls in question the qualifications of our mathematicians and engineers, and considers them nothing better than a squad of ninnyhammers; but, John Curr, do not snarl so boldly, for we can assure you that there is in England a mathematician who can tell how many cow tails will reach to the moon, and a very simple affair he makes of it, for he says that one will do it, if it be long enough! We have an engineer in England who has made a double pathway and reared a range of arches under the belly of old Father Thames; there is another, who has formed the bold scheme of suspending an aerial tunnel over the Menai Straits; there is another, who has made the cliffs of Dover topple into the sea like snow from a house side, and would think it no great achievement to place the rock of Gibraltar on the other side of the strait. We have engineers in England who have put London and Edinburgh cheek-by-jowl; there are others who propose to join the Atlantic and Pacific Oceans, and also the Red and Mediterranean Seas; and last, but not least, there are others who propose to bore a hole through the Alps. All this and much more they have done, and propose to do. And yet,—Oh, John Curr! John Curr, oh!

## Correspondence.

CAST-IRON GIRDERS.

Sir,—Your correspondent, "A Lover of Mechanics" (No. 250), states that a "girder, 18 feet long, 1 foot deep, weighing 10 cwt., and (*is*) only equal to bear a load of 10 cwt." With your leave, we may test the accuracy of this assertion. 10 cwt. is equal to 17,920 oz.; this, divided by 4·165 oz., the weight of a cubic inch of cast-iron, will give 4,302·521 cubic inches; divide this quotient by 234, the number of lineal inches in girder (18 feet = 216 inches × 18 inches for bearings), and we have 18·386 inches as the area of section. This metal for a girder, 12 inches deep, may be disposed as follows:—top flange, 2 inches; bottom flange, 6 inches; body, 10 inches; and angles, ·386 inches,—equal, 18·386 inches of section.

The formula of Mr. E. Hodgkinson will give us:—$(12^3 \times 6) - (11^3 \times 5) \div (18 \times 12)$ equal $(10368 - 6655) \div 216 = 17{\cdot}19 - \frac{3}{4}$ of this will give 11·46 tons, the ultimate strength of girder. If "A Lover of Mechanics" will, on the principle of the *balance*, reconcile this result with his "10 cwt.," I shall be glad to admit that his "suggestion may (*ultimately*) lead to some improvement in the construction of bridges."—I am, Sir, &c.,

Nov. 29, 1847. J. M. McCulloch.

## Miscellanea.

Shakspeare's House.—A magnificent audience filled Covent Garden Opera House, kindly granted by Mr. Beale, on Tuesday night, to witness such an exhibition of dramatic talent as has never before been seen in one evening. The proceeds will materially lessen the responsibility of the committee who have purchased Shakspeare's house; but 500*l.* are still needed to complete the arrangement. The prologue, written by Mr. Chas. Knight, and not recited in consequence of a slight disturbance raised by some who thought the pit had been *curtailed* too much, opens with this charming allusion:—

"The Macedonian stood within the gates
Of the devoted Thebes. Relentless hates
Ask'd to be loos'd in bloodshed and in fire:
Spare not—the conqueror cried:—Yet stay! the lyre
Of glorious Pindarus in Thebes was strung—
Search for his House these fated piles among;
Perish the city, down with every tower,
But save, from ruin save the Muses' sacred bower.

"The victor Time has stood on Avon's side
To doom the fall of many a home of pride;
Rapine o'er Evesham's gilded fame has strode,
And gorgeous Kenilworth has paved the road:
But Time has gently laid his withering hands
On one frail House—the House of Shakspeare stands;
Centuries are gone—fallen 'the cloud-capp'd towers;'
But Shakspeare's home, his boyhood's home is ours."

Large Railway Girders.—Within the last few days some interest has been excited at Witham by the arrival of some very large sized cast-iron girders, for two of the bridges on the line. These girders, which were cast at Derby, are said to be the largest single girders which have ever been cast, with one exception; they are fifty-three feet four inches and a half in length, and weigh about thirteen tons each.

Oxford Architectural Society.—At a meeting on the 17th ult. the report of the committee was read by the secretary; it alluded to the progress made in the work of restoration at Dorchester Abbey Church, and mentioned that the altar is the gift of an unknown benefactor, and that the good effect of the chancel has been much enhanced by the offering of some hangings to serve as a reredos, and that the restoration of the east window is now complete. The committee expressed a hope that the elevation of the chancel roof further to the westward would not be prevented by the want of the necessary funds. The report next directed the attention of members to the proposed restoration and the colouring in the sacrarium of Swincomb Church, Oxfordshire, and concluded by recapitulating to members the rules to be observed in the election of a president and members to serve on the committee. A communication was then read by the secretary from the Rev. C. Pearson, corresponding secretary, describing nine churches in Herefordshire, in the neighbourhood of Knebworth. The question of the best mode of warming churches was then brought before the society by the president. The Rev. W. Sewell stated some of the objections which can be urged against warming by stoves; he alluded to the irregularity of the temperature which they diffuse, and to the danger of fire which they are found to involve, and was anxious for information on the use of braziers. The president observed that the best mode of warming churches was an important practical question of some difficulty. He mentioned the disadvantages attending the use of charcoal in braziers, especially the dust which they permit to escape. The Rev. T. Chamberlain spoke favourably of the result, in St. Thomas's parish church, of the introduction of movable stoves, nearly on the Ecclesiological Society's plan. They are intended for coke. The Rev. J. L. Patterson suggested that an arched wire covering might repress a good deal of the dust, that in some churches openings might be made in the floor in a style appropriate to the encaustic tiles, and underground pipes might be introduced, but that an objection to this mode of conveying heat is, that it can only be introduced with advantage into new churches, and entails much expense. Mr. Patterson mentioned the success which had attended the introduction of braziers into two churches with which he was acquainted. Mr. F. Meyrick, of Trinity College, was anxious to learn whether it would not be possible to make chimneys ornamental. The president mentioned the introduction of an ornamental chimney into Merton College, and of a pinnacle at Abingdon pierced to admit of the escape of smoke.

Cambridge Antiquarian Society.—At a meeting of the Cambridge Antiquarian Society last week, Professor Willis made some remarks on a clock, found in an old house near Royston, but now in the museum of the society, for which it had been purchased by the private subscriptions of a few of the members. He considered it to have been made in the time of Henry VIII., but not in England. The works having an escapement and pendulum, could not be of that date, since a pendulum is believed to have been first applied to clocks in the year 1678. The case is in the form of a tower, with corner pinnacles. The parapet of the sides is ornamented with what is termed flamboyant tracery, formed of "pierced work." On each side of the face is a pile of buttresses, supporting an ogee arch, inclosing the clock-face, the space between which and the arch is filled up by a mass of most beautiful "stumped" tracery. As stumped tracery was not used in England or France, the professor supposed the clock was made in Germany, probably at Nuremburg. He dates it at about the year 1500. He remarked that this case, being ornamented with true Gothic mouldings, arches, and pinnacles, disproved Mr. Pugin's statement,—that architectural forms were not to be applied to small domestic objects.

Drawing-room Decoration.—In India the plastered walls of rooms are stamped when moist, and worked into patterns, over which is spread a varnish of powdered talc, which closely resembles the richness and hue of new and unused frosted silver plate. This might be introduced into England, as a very cheap and elegant drawing-room decoration.—*Patent Journal.*

Minutes and Reports on Education.—The Committee of Council on Education have just issued, in a printed form, a mass of valuable documents on the subject of education, comprising minutes of council and reports of inspectors and others, the most voluminous of the latter of which are the reports of Mr. Joseph Fletcher, her Majesty's Inspector of Schools, on day schools throughout England and Wales, under the British and Foreign School Society's system, and on their normal and model schools in the Borough-road. These reports contain an immense mass of condensed tabular and other detail, and together with the accompanying reports, by Mr. John Gordon, her Majesty's Inspector of Schools in Scotland, and various others, appear to be replete with general interest and practical instruction both to teachers, Government, and the public generally. The reality of various already pretty correctly anticipated results, appear to be fully established by these reports, such as that there is the greatest deficiency of schools where they are most wanted; that there is a necessity for higher education under new circumstances; since there is an augmentation of crime in spite of augmented schooling of the common order; but that there is a slow decline of ignorance under the operation of the better order of schools as even at present constituted. Some of the details on the dark side of the picture of our present state of society are certainly startling—almost incredible, indeed, as facts of the nineteenth century in the heart of England, or even any where else than amongst the less decent order of savages—in illustration of which we may just refer to Mr. Watkins's "Report on Lancashire," vol. i., p. 441. The second volume contains a ground plan of the normal schools in Borough-road, and plans of the internal arrangement of British schools in towns and villages throughout the country. There are also in Mr. Moseley's reports (vol. i.), details of the council's Battersea Training Institution for Masters, and of the cognate institution, St. Mark's College, Chelsea, the enlargement of both of which is strongly recommended to the Committee of Council on Education.

History of the Electric Telegraph.—Sir: In your review of "The Electric Telegraph," by Peter Progress, in The Builder of the 13th ult., you mention (I suppose from that work), that a Mr. Rowland had "clearly established the fact, that an electric current might be made to pass through a continuous wire of great length." That fact was established about 100 years ago. All the electric telegraphs are merely varied applications of it. The only real inventions are probably the application of it to printing at a distance, and the applying it by one wire to many stations. Heighton's application of the gold-leaf electrometer, instead of the magnetic needle, can scarcely be called an invention; and the one-wired telegraph used at Baden-Baden appears to be that of Brett and Little, at whose telegraphic exhibition in Furnival's Inn I met him in August. The fact of the transmission of the electric current to great distances, was proved by Dr. Watson and friends on the 14th of July, 1747. They conveyed the shock across the Thames at Westminster on the 14th of August; they conveyed it a circuit of four miles, two of water and two of dry ground; its velocity was so great that no time appeared to elapse during its passage. W. Chapman.

Leicester.

Cambridge Architectural Society.—At a general meeting held on the 25th ult., the Rev. G. Williams, M.A., who was in the chair, corrected a statement he had made at the previous meeting, to the effect that the revival of architectural study took its rise in Cambridge, and was subsequently received in Oxford. The real facts of the case were, that the movement appears to have been simultaneous among the members of the sister universities; but the first meeting of the Oxford Architectural Society was held in February, and the first of the Camden Society in May, 1839. Mr. Franks read a paper "On Monuments," communicated by the Rev. C. Boutell, and exhibited a drawing of a decorative pavement in the chancel of Monks' Risborough Church, Bucks, an example of value in the disposition of encaustic tiles. The secretary read some notes on the churches of St. Peter and St. Giles, Cambridge, illustrated with drawings.

Projected Works, &c.—Tenders have been called for by advertisement for maintaining the permanent way and works of the Maryport and Carlisle Railway, for three or five years; for pulling down the old county jail at Aylesbury, and assorting and stacking the materials; for executing certain works at the Bedford Lunatic Asylum; and for the erection of a new church at Colnbrook, Bucks.

Competition.—Designs have been advertised for a workhouse for the York Union, to accommodate 300 inmates on the six class system: premium for approved plan 30*l.*, or the usual commission, at the option of the guardians.

York Workhouse Competition.—Sir: I have applied for the particulars of this competition, and beg to inclose them for your consideration. To my inquiry, whether or no the guardians will employ the author of what *they* may deem the best design, on his satisfying *them* of his eligibility, I have received a flat evasion. So itis quite clear that the premium (30*l.*) is the entire stakes to contend for. Supposing that there may be thirty competitors, as I blush to say is not improbable, the actual sum offered for *each* design,—plans, elevations, sections, isometrical view, an *exact estimate*, carriage and expenses (worth at least, if anything, 60*l.*),—is exactly *twenty shillings sterling;* more, I take it, than any *bonâ-fide* architect deserves who shall condescend to compete. It is quite competent for committees to offer such terms, but it rests with *architects alone* to get up competitions on them, and consummate, if they will, their own degradation; and should you, Mr. Editor, think fit to insert this warning in The Builder, let no suicidal competitor complain of the York workhouse competition, whatever may be the decision of the guardians.—I am, Sir, &c., A. B. C. D.

French Polishing.—A correspondent complains bitterly of the effect of the Excise laws on this branch of trade, and urges, if exemption could be obtained for it, that it would be used extensively in lieu of paint, being cheaper and incomparably better. He continues,—"but it is not French polishing alone that is suffering from these laws; the cabinet trade, the spirit varnish trade, and, above all, the manufacture of paper-hangings, as the French are enabled to employ designers and use numberless blocks, producing a washable paper that is not to be equalled in this country. Our excise restricts us in every quarter." India rubber is about to be employed as a vehicle for colours, and is said to have advantageous qualities in that respect.

Ancient Church Decoration.—In the process of cleaning St. Peter's Church, Chester, some remains of what is vulgarly called "fresco work" have been discovered. They are on the surface of one of the pillars near the south door, against which is now placed the font, and on which is an ancient niche, that was appropriated probably to a figure of the Saviour, and the holy water. The paintings surrounded the niche. The grooves in the pillar are painted vermilion, and the subjects are faintly described. According to the *Chester Courant*, that on the right of the font is the Annunciation, as the shepherds, sheep, and the angel are in tolerable preservation; on the left is a city, and above an angel, the subject only conjectural. It is proposed to restore them.

Euston-square Baths and Washhouses.—A recent report states, that since the opening of the establishment in August, 1846, up to the present period, 131,568 males and 14,377 females have bathed, and that the present average of women and their families, provided with clean linen, by means of their washing, drying, and mangling, and getting up the same, is 4,000 weekly, or nearly 40,000 articles of clothing.

Decoration of Drury-lane Theatre.—Tasteful Mr. Fred. Gye has once more been to work, and in an incredibly short space of time has revived the decoration of Drury-lane Theatre, fitted up the pit, introduced a proscenium, and decorated all the lobbies and approaches. The new curtain, white and blue drapery, with a central medallion, is beautiful.

Mr. Joseph Kay, a respected member of the architectural profession, died at his house in Gower-street, Bedford-square, on the 7th inst., at the advanced age of seventy-two. Mr. Kay held the appointments of architect to Greenwich Hospital and the Foundling Hospital.

Plain Enough, one would have thought to even a Plain Understanding.—Mr. Haywood, one of the sanitary reporters on the state of Sheffield, narrates a case which may give some idea to what extent noxious matters, such as the draining of a privy into a dwelling, are regarded by many of the humbler classes.—"Do you not perceive an unpleasant smell from that place behind your house?"—"No, nowt as I know on."—"What! does not that wet which runs down your wall smell bad sometimes?"—"Sometimes: It does a bit, of a mornin', but *nowt to mean aught.*"—"Have you lived here long?" "About sixteen years."—"Pretty good health since you came?"—"Pretty middling, considering."—"What family have you had?"—"O've had fourteen childer."—"Have they had pretty good health as well as yourself?"—"Nay, *o've buried 'em all but three.*"—"Were they all born in this house?"—"No, four were born in Derbyshire—*three of these are still living, but the youngest on 'em died here!*"

## TO CORRESPONDENTS.

"*Inquirer*"—We have no information as to the Worcester Asylum competition.

"*Inquirer*."—There are no fixed rules.

"*F. H.*"—We know of no other Asphalte Company.

"*Pawnbrokers' Alms-houses' Competition.*"—We will give particulars next week.

"*P. P. P.*"—The referees give certificates of qualification at fixed periods, advertised in The Builder.

"*J. H. R.*" We might decline by replying: the shape, size, and position of the ground must be considered. Get professional assistance.

"*Eleazer.*"—Look to the Act of Parliament.

*Received.*—"C. E." "J. W." (next week). "Amateur" (shall appear). "G. B." "J. C." "C. B." (not in our province). "M. N." "A Subscriber." "H. C." "J. A." "M. and K." "Mr. T." Parliament-street. Thanks. "D." Bath. "The Tradesman's Book of Ornamental Designs," Part 7. Orr, Paternoster-row. "Tait's Magazine."

"*J. L.*" Lille.—Thanks for the sketches: we shall make some use of them. Our old friend shall hear from us soon.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


## ADVERTISEMENTS.

HEALTH OF TOWNS.

KIRRAGE'S PATENT SEWER-DRAIN AND BUILDING BLOCK.—The Patentee, observing the evils which arise from the perishable nature of the materials in general use for building Sewers, Foundations, and other Works, much exposed to the action of water, was induced to attempt the production of a material which should at the same time be impervious to and indestructible by damp, and unaffected by atmospheric influences, and combine great strength and durability with facility of moulding into any required shape. In this he has been successful; and he is now enabled to offer to the Public his Patent Blocks, which will be found to possess all the qualities of great strength, indestructibility by water, facility of working, and great cheapness, and be invaluable for all subaqueous and subterraneous structures, more especially for forming the bottom of Sewers, which, as placed, from the nature of the materials used in building them, not only permits very considerable leakage, but constantly require repair. The use of the Patentee's material is not confined to the purposes above-mentioned, but may be applied for all building purposes, especially Floorings of Barns, Granaries, Malthouses, and other places where there is a tendency to damp and dryness is essential; as also for the Formation of Baths, Cisterns, and Reservoirs.

For common Building purposes, the material of which the Patent Blocks are composed may be used as a coating for Concrete Blocks, formed of a cheaper substance.

The price at which the material can be supplied is 1*l.* 10*s.* per ton.

The material for sewerage of the shape and size herein given of the Holborn and Finsbury districts, cost at 6 inches in thickness 1*s.* per foot; if reduced to 3 inches in thickness, 5*s.* per foot, and 1*s.* 6*d.* per foot for the Barrel, or small drain of 9 inches in diameter.

Contractors, Engineers, Surveyors, Builders and Public Companies carrying on Public Works, are invited to inspect the Patent Sewer and Drainage Blocks; Drawings and Specifications of which can be seen at the offices of Messrs. DREW and SHADWELL, 22, Abingdon-street, Westminster, where also all applications for Licenses are requested to be made.

IRONFOUNDRY.

163, Drury-lane, and Charles-street, London.

JOSEPH GLOVER,

(Late HENDRY and GLOVER,)

BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain water Pipes, Heads, Shoes, &c.

PATENT COPPER WIRE ROPE LIGHTNING CONDUCTORS, for the Protection of Churches, Towers, Chimney-Shafts, &c.

SMITH and ENGLISH, Princes-street, Leicester-square, London, beg to inform Architects, Builders and others, that the above form of Lightning Conductor has been most extensively adopted, and is giving the greatest satisfaction, it proving equal in any respect, and cheaper for use, much simpler of application, and less unsightly to the building, than any other kind, and they can refer with great satisfaction to eminent architects and others, who have adopted it in preference;

As also their much improved Revolving and Panelled Iron Shutters,

PATENT DOUBLE-ACTION DOOR-SPRINGS,

PATENT CASEMENT FASTENINGS AND SILL-BARS,

Patent Copper and Iron Wire Sash Lines,

IMPROVED FLOORING-CRAMPS, &c. &c.,

which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

ESTABLISHED 1783

NOT TO BE EQUALLED IN PRICE AND QUALITY.

PATENT-IMPROVED and PANELLED IRON SAFES, DOORS, ROOMS, CHESTS, &c.—E. TANN and SONS' Patent Reliance Chemical Compound-filled Safe stood the ordeal in the late fire, with loss of life, at Water-lane, Blackfriars, and preserved its contents. The Safe may be seen at the Patent Reliance Guarded-lever Lock and Safe Manufactory, 1, Hope-street, Hackney-road. Iron Doors for Party-walls, Safes, &c., kept in stock.—N.B. The Trade supplied.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,

WITH SECRET AND SECURE FINGER.

THIS CHEAP and USEFUL ARTICLE, obviating the unsightly appearance and insecurity of the common rim Lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Wolverhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 69, St. Martin's-le-Grand, London, opposite the new Money-Order Office.

# THE BUILDER.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Ponds, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

**PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE** and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes. Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

**HOT-AIR STOVES.—Two very Large** Ornamental HOT-AIR STOVES TO BE DISPOSED OF A BARGAIN, suitable for a church or any public building. May be seen at G. H. SMITH and Co.'s, Stove Makers and Hot-Water Engineers, 25, Pavement, Finsbury-square.

**WARMING by means of the circulation** of WARM AIR.—BURBIDGE and HEALY beg respectfully to inform the public, that they are prepared to undertake the warming of churches, hot houses, &c. with a new apparatus of the most simple and durable construction, which they can warrant to keep in order any length of time, and which is capable of effectually warming buildings of any magnitude in a most economical manner.—BURBIDGE and HEALY, 136, Fleet-street.

IRON-WORK FOR BAKERS' OVENS.

**F. A. TIDDEMAN, Purfleet Wharf, Earl** Street, Blackfriars, keeps an assortment of Stocks, or Mouth-pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash-pit; Doors and Frames, Rollers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

TO ARCHITECTS, BUILDERS, &c.

**R. HENLY and Co., WHOLESALE** IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 0s. | £3. 13s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with Lock Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. | £3. 15s. | £3. 8s. | £3. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 9d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS AND CARPENTERS.

**A CONSIDERABLE SAVING** will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
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| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 15s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 13s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6d., 7d., 8d., per inch.

Self-acting Kitchen Ranges, with Oven and Back Boiler. Wrought Bars and Bright Fittings.

| 3 ft., £3. 3s. | 3 ft. 6 in., £3. 12s. 6d. | 4 ft., £4. |
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Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, kitchen range, and stove-grate Manufactory, 18, Cross-street, Walworth.

**JOHN GRICE most respectfully solicits** the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers from 8d. per inch and upwards.
Bright ditto with Black and Bright Bars, 4d. per inch and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

| 3 ft. | 3ft. 6 in. | 4 ft. |
|---|---|---|
| 3l. 3s. | 3l. 14s. | 4l. 5s. |

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

**PATENT BELLS.—Messrs. MEARS** beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal.—Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

**PATENT METALS for Bearings.—En-**gineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort, for bearings and engineering purposes generally, will be found superior in quality and cheaper than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface, and bearing a higher polish than any ordinary brass. Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

**PATENT COPPER-WIRE CORD.—** Manufactory, Gateshead-upon-Tyne.—R. S. NEWALL and Co.'s PATENT IMPROVED COPPER-WIRE CORD for Window Sash Lines, Heth-seats, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen rope has hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above. Specimens of the Wire Cord may be seen at the office of the Patentees, No. 163, Fenchurch street, London; W. T. ALLEN, Agent.

**COLLINGE'S PATENT HINGES.—Sole** Manufactory, 64, Bridge-road, Lambeth, where a great variety are always on view, for church, park, railroad, coach-house, and all other doors and gates, of large or small dimensions, a gate of a ton in weight moving with these engines as easily as a wicket; they are also admirably adapted for drawing-rooms, being highly ornamental, and folding doors fitted with them may be removed and replaced in an instant. Rising and spring hinges, with very superior fastenings, for exterior gates, at moderate prices. To be seen at CHAS. COLLINGE and Co.'s Patent Axletree, Sugar-Mill, and Spherical Hinge Manufactory, 64, Bridge-road, Lambeth. A liberal discount to the trade.

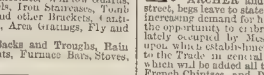
**PORTER'S CORRUGATED and PA-**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge-road (and the Grove), Southwark. As the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many late improvements in its application to Roofing Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles as usual.—The Trade supplied.

**IRON FOUNDRY, 9, Brick-lane, Old-**street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamps and other Brackets, Chandeliers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

**SMITH'S SUPERIOR GLAZED BROWN** STONE SOCKET DRAIN-PIPES, 2 feet lengths, in various bores, from 3 to 9 inches, patronised by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth.—A took of elbows, stink-traps, and various shapes always on hand.

**TUBULAR DRAINS** in GLAZED STONE WARE, MANUFACTURED BY
HENRY DOULTON AND CO., POTTERS,
HIGH-STREET, LAMBETH, LONDON.
STRAIGHT TUBES, with SOCKET JOINTS, in Two-Feet Lengths.



3-inch bore, 3d. PER FOOT. 4-inch, 6d. 6-inch, 8d. 9-inch, 1s. 1½d. 12-inch, 1s. 10d. 15-inch, 3s. 4d.

BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.

Extract from a Letter addressed to Mr. Henry Doulton, by Mr JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

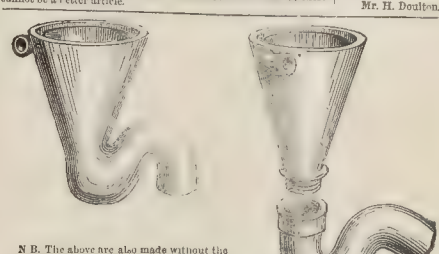
I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for the drains; as I am quite sure by so doing they will be conferring a gift at least on public health, and I feel to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not being them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

Sewers Office, Hatton garden,
August 26th, 1847.

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,
Mr. H. Doulton. JOHN ROE.



N B. The above are also made without the discharge hole being turned downwards.

**CHEAP PAN FOR**
WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,
Manufacturers of the annexed in superior
GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

Delivered in London or its vicinity free of charge.

By Her Majesty's  Royal Letters Patent.

**CROGGON'S PATENT DOUBLE BITUMINOUS WATERPROOF PAPER.**

The above is manufactured by the most accurate machinery, for depositing a DOUBLE COAT OF BITUMEN BETWEEN TWO SHEETS OF PAPER, insuring an evenness of distribution of the waterproof materials, thus rendering every minute portion of the paper utterly impervious to water. It is an EFFECTUAL PREVENTATIVE against the effects of DAMP FROM WALLS, if put under the usual paper, and DAMP FLOORS, when under Carpets; for Linen Packages, and Wrapping all Articles of Merchandize subject to rust and injury from damp, it will be found invaluable.

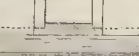
SOLD IN ROLLS, ONE YARD WIDE, AT SIX PENCE PER YARD.
THOS. JNO. CROGGON, 8, LAURENCE POUNTNEY HILL, CANNON-STREET, LONDON.

**HEAL AND SON have just completed the erection of Machinery for the purifying of** feathers on a new principle, by which the offensive properties of the quill are evaporated and carried off in steam; thereby not only are the impurities of the feather itself entirely removed, but they are rendered quite free from the unpleasant smell of the stove which all new feathers are subject to that are dressed in the ordinary way.

Old Beds re-dressed by this process are perfectly freed from all impurities, and by expanding the feathers the bulk is greatly increased and consequently the Bed is rendered much softer. The following are the prices of New Feathers:—

| | | | |
|---|---|---|---|
| Mixed Feathers | 1s. 0d. | Foreign Grey Goose | 1s. 8d. |
| Grey Goose | 1s. 4d. | Best Foreign Grey Goose | 2s. 0d. |
| Best Irish White Goose | 2s. 6d. | Best Dantzic White Goose | 3s. 0d. |

HEAL and SON'S LIST OF BEDDING, containing full particulars of Weights, Sizes, and Prices, sent free by post, on application to their Establishment, 196, opposite the Chapel, Tottenham-court-road.

By Her Majesty's  Royal Letters Patent

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N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

MIDDLESEX.—ADDITIONAL LUNATIC ASYLUM.—The Committee of Visitors have SELECTED the DESIGNS by Mr. S. W. DANKES, by Mr. G. GODWIN, and Mr. JAMES HARRIS, and to Messrs. ALLOM and CROSSE, for which the Premiums offered have been awarded.

The Committee GIVE NOTICE to the other Competitors that they may obtain their Designs on application here, between the hours of Eleven and Three; and take this opportunity to compliment them on the Talent exhibited, and to thank them for the pains they have taken.—JNO. S. SKAIFE, Clerk.

Sessions House, Clerkenwell, December 7th, 1847.


### CONTRACTS.


TO BUILDERS.

BEDFORD LUNATIC ASYLUM.—Persons desirous of CONTRACTING with the Committee of Visitors of this Asylum for the Erection of TWO NEW WINGS, &c., to communicate forthwith to the additional pauper, and for other ALTERATIONS thereat, are requested to send TENDERS for the same sealed and indorsed, addressed to the Committee of Visitors at the Asylum, by Ten o'clock on the morning of THURSDAY, the 30th of December next. The plans and specifications may be inspected at the asylum and any further particulars obtained on application to Mr. SMITH, County Surveyor, Hertford. The Visitors do not pledge themselves to accept the lowest tender. SAMUEL WING,

Clerk to the Committee of Visitors.

Bedford, December 11, 1847.


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JOHN PHILLIPS, Surveyor.

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**STRAIGHT TUBES, with SOCKET JOINTS, in Two-Feet Lengths.**



3-inch bore, 3d. PER FOOT 4-inch, 4d. 6-inch, 8d. 9-inch, 1s. 1½d. 12-inch, 1s 10d. 15 inch, 3s. 4d.

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Extract from a Letter addressed to Mr. Henry Doulton, by Mr. JOHN PHILLIPS, Surveyor to the Westminster Commission of Sewers.

I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains, and I am quite sure, by them so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

From Mr. JOHN ROE, Surveyor to the Holborn and Finsbury Commission of Sewers.

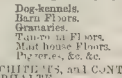
Sewers Office, Hatton garden,
August 26th, 1847

DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,

Mr. H. Doulton. JOHN ROE.

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Cow-houses and Stables.
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Seyssel Asphalte Company, Stangate, London.

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SWINTON BOULT, Secretary to the Company.
BENJ. HENDERSON, Resident Secretary, London.
December 9, 1847.

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| 40 | 1 5 0 | 1 6 9 | 2 11 10 |
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| 60 | 3 2 4 | 3 7 0 | 6 0 10 |

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The Builder.

No. CCLIV.

SATURDAY, DECEMBER 18, 1847.

IN more than one occasion we have mourned over the decay of skill amongst our operative bricklayers,—the sad result of cutting-estimates, sub-letting, and the use of "compo"—and held up to merited condemnation the work to be found in the majority of our ordinary dwelling-houses. Bricklayers are no longer animated by the right spirit; pride in their work they have none; anxiety to excel exists no longer. Exceptions, of course, there are; men desirous of being something more than mere labourers,—prompt, able, and ingenious, who know something of lines, can find enjoyment and advantage in a mechanics' institute, and will give extra time and thought to their work, solely for the gratification of seeing it to be good. We speak, however, of the general body, and the exceptions, if they were asked, would confirm what we say.

The men themselves are scarcely to blame: they have not had fair play. There are few apparent inducements for good work or superior skill; rapidity and bad work are what their masters have desired, and the result is, that men capable of executing good work are with difficulty to be found. We said there are few *apparent* inducements, because it is certain that if a workman apply himself vigorously and resolutely, and acquire superior skill, he may rely on its proving, in the end, the means of advancing him in life, and winning for him the confidence and respect of his fellows.

An able and upright artizan deserves the respect of all,—more respect, even, than is usually accorded him. To be honest and virtuous is the first requirement—far beyond the technical skill of which we are speaking; and we would earnestly and kindly exhort to both. Some efforts to advance our operatives are urgently needed: it has always been with us an anxious desire and a pressing duty, and we run the risk of offending by plain speaking, with this great end in view.

The brickwork to be found in the neighbourhood of London, east, west, north, and south, is truly disgraceful: unworkmanlike, unsubstantial, deceptive, dangerous. In some, and not a few cases, the mortar is compounded of, what is called, sand dug on the spot, rather dirt than grit, or, at the best, of so hungry a nature as to demand much more lime than is given, or is in other respects desirable; the bricks are often spongy and bad, incapable of resisting one-tenth the pressure of a really sound brick, and, still further to weaken them, with a huge hollow in the underside. The extraordinary difference in the strength of bricks we shewed by experiment not long ago, and the injurious effect of this hollowing out.

Now let us look at the execution of the work. What do we see? Mortar joints three-fourths of an inch thick, and yet a series of cavities throughout the walls unfilled; the wall in two separate leaves scarcely tied together by a header at every three or four feet, (many courses without any headers at all), instead of consisting wholly, as it should, of header and stretcher alternately. Bond in the other direction there is little or none,—you may find the upright joints running one into another for fifteen or eighteen inches. The half-brick work forming the flues and chimney breast is loosely put together, so as afterwards to allow smoke to find its way into the apartments,* coarsely rendered inside with common mortar, instead of pargetting, and the arch (to misuse the word) over the chimney opening is only kept in its place by the chimney bar which the Buildings Act calls for. The arches (?) over the window openings are little better, as is proved by the cracks in nine out of every ten houses with compo'd fronts. Where the front is not wholly compo'd, but a narrow cement architrave is to be put round the windows, a miserable imposition termed a six-inch arch is introduced, so that it may be hidden by the aforesaid architrave.

Wood bond being for the most part interdicted, walls are raised without any, and we have in our eye at this moment several flank walls, 40 feet high, to semi-detached houses, which stand without a morsel of bond from top to bottom, or any thing to steady them. The occurrence of accidents with work thus executed can excite no surprise, especially in bad weather: the wonder is that we do not hear of more. To increase the risk, too, irregular masses of brick run together in the kiln, known as "burrs," are often used for cheapness' sake, especially in the lower parts of buildings, and, having no solid bed, materially lessen the strength of the walls. This, however, as well as the absence of bond, is the fault of the builder rather than of the operatives, and so, indeed, is the bad workmanship and want of skill amongst these operatives, to which we have been alluding, and which we are most anxious to assist in remedying.

As to bond, it is of the utmost consequence that builders should resort to the use of hoop-iron and cement. Do not let them wait for an accident, fancying, because some walls stand without this precaution, that it is unnecessary; they are exposing themselves to imminent risk, and cannot even plead the increased expense as an excuse for omitting it; this being comparatively unimportant.

Professor Hosking, in a "Guide to the Proper Regulation of Buildings in Towns," published this day,† and which has come into our hands too recently to enable us to do more at present than make one or two extracts, says, as to the abandonment of timber bond,—

"One important principle which ought to be always had in view in the employment of these materials (brick and stone) in ordinary buildings is for the most part wholly lost sight of, if indeed it be at all recognised in the modern practice of building. Brick or stone, or brick and stone together, with mortar as a setting material—not only as a cement for the purpose of sticking the materials together, but as a means of rendering excessive labour upon the beds and joints of stones unnecessary, and to make up for the casual unevenness of the beds of bricks, and to adapt them to the various forms required to be produced—being capable of producing any and almost every kind of structural erection required in building, without permanent aid from any other materials, are best employed when they are employed in such manner as to be free from dependence upon other and less trustworthy materials. The most perfect erections as buildings are those in the composition of which this principle has been understood and applied, and in the execution of which it has been fairly practised. To save in the quality or quantity, or in both, of materials, and to economize labour, or to satisfy the judgment of ignorant constructors, brick and stone walls are too commonly made to depend wholly or in great part upon timber in bond and in plates; and as timber takes its place for such purposes most frequently in situations where its bad tendencies are most mischievous, and in such manner as to bring its objectionable qualities into operation almost of necessity, the brick and stone walls of most modern erected buildings, such as houses, in our English towns, are rendered highly inflammable, and are much exposed to early decay, and liable thereby to become dangerous, even if they escape becoming so from access of fire to the timber. If adventitious aid be given to brick or stone walls by foreign materials, the materials ought to be at the least harmless, and the aid superfluous. Iron in bulk is a most improper substance to incorporate with walls, because of its great susceptibility of heat; but iron used in thin laminæ, as hoop-iron laid in walls in the bed-joints of the brick or stone, cannot be productive of any bad consequences to the structure, whilst it affords the means of tying together walls which, because of recesses and voids, whether for doors and windows, or as flues, may be slighter or less solid than they ought to be.

As bricks are commonly made of the same form, and come to the hands of the builder practically of the same size; and as bricks, even where stone is principally used, are requisite, if not essential, for many of the purposes of dwelling-houses and such like buildings, the thicknesses of walls are conveniently determined to be as they can be produced in brickwork, that is to say, of so many bricks or half bricks. Practically, too, brick walls take a middle place among walls of brick and stone together, and walls wholly of stone. Some kinds of stone are harder and more durable than bricks are commonly produced, whilst some kinds are softer and less adapted to withstand the action of the weather than bricks of average quality are found to be; but bricks come to the hands of the workman regular and unvarying in form, and that form the best adapted for the arrangement in the construction of a wall which, under the designation of bond, gives such a degree of consistency to the structure that a weight placed upon the top of a well-bonded wall in any place is carried by the wall in every part throughout its whole thickness, and throughout a greater or less proportion of the length, according to the height of the wall, and so in degree as to a weight imposed upon the wall at any intermediate level.

Bond in brickwork is most conveniently and most effectively formed and maintained by disposing the bricks in their courses either endwise and lengthwise (technically, header and stretcher), alternately brick and brick, or course and course; that is to say, that the bricks in every course should be laid alternate header and stretcher, or that the courses should consist of all headers and all stretchers alternately. The former arrangement—alternate header and stretcher in the same and in every course—is known in this country as Flemish bond; and the latter — alternate courses of header and stretcher—is distinguished by the term English bond. Neat work in face can be produced more easily with Flemish bond, but English bond has the reputation of being the best bond structurally.*

The arrangement of alternate header and stretcher in the same course is that which most prevails in building walls with stone; or

* The evils of such work, which is not confined to the metropolis, are evident. A correspondent near Bradford thus writes:—A few days ago the occupants of a house in Bowling were surprised at perceiving smoke issuing from some cracks in the ceiling of the chamber. Having for several hours previously been annoyed by the smell of burning wood, they concluded that there must be something on fire in the roof. Accordingly, the plaster ceiling was broken into, and the main beam was found to be on fire. A plentiful supply of water being at hand, the fire was soon extinguished. An examination was then made as to the origin of the fire, when it was found to have been occasioned by a header in the flue, either left out by the bricklayers when building, or knocked out by the carelessness of the joiners when laying the ceiling plaster, thereby admitting of an accumulation of soot in the roof. We cannot be too careful in watching bricklayers and joiners when at work about flues. Often do we hear of the whole of the papering of a room being spoiled by smoke issuing from above skirting boards, and sometimes we hear of chimney-piece being on fire; the whole occasioned by the joiner driving half or a quarter of a brick into the flue, when plugging to fix his work.

† Murray, Albemarle-street.

* Why the two arrangements described above should be distinguished by the names they bear is a matter of uncertainty; at least it is unknown to the author, who supposes, on comparing notes with other people with whom he has conversed upon the subject, that what we call header and stretcher in the same course was the practice in Flanders, and generally in the neighbouring countries on the continent; whilst the term English bond seemed to imply that the arrangement which bears that designation is peculiar to England. A visit made a few years ago to the countries where Flemish bond ought most to abound, if the name be properly applied, enabled the author to observe what had never, to his knowledge, been mentioned to any person who had published his remarks, and what was quite unknown to every one to whom he had started, since his return, what he had observed. At Rotterdam and at the Hague, at Antwerp, at Brussels and at Liege, at Cologne, at Aix-la-Chapelle, and at Frankfort, and I mean throughout the most eastern parts of France, brick walls are built according to the arrangement distinguished in England as English bond; and Flemish bond is unknown—at least no single example of it fell under the author's observation in any of the towns and countries indicate; although his attention was called to the subject by the quay walls at Rotterdam before he set foot on shore.

rather, the bonding of stone walls is best effected by that kind of arrangement, whilst, indeed, alternate courses of headers and stretchers in a stone wall would be both unsightly and absurd."

On another point, to which we have already referred, our author has the following remarks:—

"Under ordinary circumstances the half-brick thickness of brickwork which separates the inside of a common chimney-flue from the inside of a building, does not become heated to such a degree as to justify the slightest alarm for the safety of timber in contact with the outside of the brickwork; but it is so difficult in practice to secure the complete filling-in with mortar of the various parts of brickwork, that prudence dictates the propriety of requiring the surfaces of the work, both inside and outside any chimney-flue within a building, to be plastered over, to stop imperfect joints, and so to prevent the lodgment of soot, which a spark passing up the flue will enkindle, and which, being enkindled, will endanger the safety of the building through a joist, a flooring-board, or a wooden skirting, which may abut upon, or lie against, the unstopped joint towards the inside of the building. Not only, indeed, are the joints of the brickwork often left unstopped with mortar, but wooden plugs are driven into them, and often quite through into the chimney-flues, to afford the means of fixing the wooden skirtings; and these are perhaps the most frequent means of communicating fire from the flue to the skirtings, and so to the inside of the building.

'On Saturday, the 9th October, 1847 (the newspapers relate), Broughton Old Hall, near Manchester, was partly destroyed by fire, and damage was done to the extent of nearly 1,000*l.* The fire was entirely subdued in less than two hours, after destroying a large portion of the roof and of the cupola over the south front, besides the upper part of the grand staircase. As the walls and ceilings were in course of receiving embellishments, they also suffered much injury both from fire and water. The disaster is attributed to the joiners on the previous night having left a very hot fire in one of the rooms, which had ignited some plugs, the ends of which, in one direction, communicated with the flues, and, in the other, with the skirting-boards of the room.'"

More attention to the materials and workmanship of structures in the metropolis, on the part of the district-surveyors, might usefully be called for.

A word as to the progress of the measures for obtaining an amendment of the Buildings Act.

The committee appointed by Lord Morpeth to consider the subject have held several meetings to take evidence, and are now about to report. The constitution of the offices of the Official Referees and Registrar has been the subject of some animadversion, and suggestions have been made for remodelling the same entirely, with a view to render the administration of the law more speedy and economical to the public. The subject of "special supervision" has also been considered, and, indeed, if we are rightly informed, most of the principal objections to the form and working of the Act have received attention.

We are satisfied that any attempt to improve the present Act, by another supplemental Act, will prove a failure; and we earnestly hope that the committee will not fail to recommend Lord Morpeth to bring in an entirely new Bill in preference to making such an endeavour.

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CHESTER CATHEDRAL.—At a meeting of the Archæological Institute on the 3rd inst., Mr. R. Hussey communicated a plan of remains of the Norman choir of Chester Cathedral, brought to light during recent restorations. Mr. H. remarked, that the usual proportions of the earlier Norman structures had there been observed, and that the eastern apse was semicircular. The plan also illustrated the form of the present cathedral of Chester, as first built, but subsequently modified.

## THE PRESENT STATE OF TASTE IN GOTHIC ARCHITECTURE, AND INKLINGS OF THE FUTURE.

### ARCHITECTURE IN MANCHESTER.

In a former notice of the town of Manchester, we mentioned the evidence there afforded, of greatly improved taste in architecture. Notwithstanding that there may be sufficient reason, in the present state of the art, for the charges sometimes made against its professors, it is pleasant to have it in our power to record a step forward in their capacity for artistic perception, betokening, as it does likewise, the growth of a new desire for the graces of art, on the part of the public. Architects, indeed, are much what the world makes them, though they are not on that account absolved from all care for public taste, of which they do not sufficiently feel that they are the proper guardians.

In ecclesiastical architecture, much the same change in taste is apparent, as at other places. The church at Hulme, by Goodwin, and that at Cheetham Hill, by T. W. Atkinson, were once greatly admired, and in many respects deservedly so; but they have not the orthodox length of chancel, they may possibly be a little out in some details, and they cannot be mistaken for old churches, therefore their architects, who designed when Gothic architects were few and of questionable ability, would now be sneered at as incompetent.—Individual labour in an extensive and intricate study, like that where examples of buildings and details form the matter of research, can do comparatively little, and by no other means than that assiduous and combined labour, with systematic arrangement, with which the pursuit of the study has been of late years carried on, could the present accurate knowledge of the style have been gained. In the circumstance of such a position, the architects of the present day have the advantage of their predecessors; but in proportion to those advantages, have they availed themselves of such a position? have they become better artists? The answer *should* not be doubtful.—Between many such churches as the two above mentioned, and some later works,

"——— that, shunning faults, one quiet tenor keep,"

the calm judgment of posterity may find the difference in that which should be the chief ingredient in design, namely, ART. If something more than learning in mere schools and dates, or than skill in manipulation, is requisite to form a painter or a sculptor, architecture must be included under the same category.

Of the change of character in church architecture, thus referred to, the new Catholic church in Chapel-street, already noticed in this journal, is a remarkable instance, displaying knowledge of the examples at Howden and Selby, from which it has been adapted, and great beauty of detail. It is a cross church, with centre tower, surmounted by a lofty spire which has the appearance of too great breadth at the base. The apex is terminated by a ball of copper gilt, and a cross, also of copper, with a weathercock. A turret stair on the north side, has a spire, similarly surmounted, and which is covered with slate. The walls are entirely of stone, in regular courses, hammer-dressed, and are to be plastered internally. The length of the church can hardly be less than 180 feet, having four bays, or arches, in the length of the nave, and a like number in the choir. Other dimensions, according to our measurements, were:—

Centre to centre of columns in the length of the nave, 18 feet 6 inches.
Thickness of each column in the nave, 3 feet.
Thickness of each column supporting the spire, 7 feet.
Thickness of walls of aisles, 3 feet.

In the nave there is a plain collar-beam roof, but, in the choir, springers are left for a future groining. In the nave clerestory, there is a passage in the thickness of the wall. Figures of angels will be carved in the spandril spaces in the choir. The capitals have rich foliage, but the carving is not so successful as might have been desired. The west front, adapted from that at Howden, has richly crocketed pinnacles, each having the figure of an angel as a finial. The east window, of flowing tracery, copied from the example at Selby, may be considered an instance of the misuse of old examples. Had the architects consulted the whole of Mr. Sharp's illustrations of decorated windows, instead of procuring merely one plate from his "Parallels," they might, we think, have produced something strikingly novel, and even more in accordance with the spirit of the style adopted, than is that particular example itself. The Selby window is in some parts ungraceful, and even at variance with the principle of decorated tracery. In an original work, trifling mistakes may be excused, but it reflects no credit upon an architect to copy them. Modern practice, however, teaches different, and the greatest possible use is made of old examples, whilst the least possible benefit to art results from them. By learning from examples, mistakes may be avoided; by copying them, their faults become more glaring in the transcript, than they were in the original.

From this church we passed to a smaller edifice, close by, erecting for the Free Kirk, and which we think sufficiently important to merit particular description. Messrs. Travis and Mangnall are the architects. The style upon which the design is based, is Gothic and perpendicular; but galleries being required, the architects, in place of separating the nave and aisles by the ordinary stone piers and arches, have substituted ornamental iron columns—bracketed out to support the galleries—carrying timber arches, above which is a range of wooden dormers in what may be called a low clerestory, also of wood. From the same level in the transverse section, spring the arches of the open-timbered roof, so that the interior, with great novelty of design, has a picturesque effect. Externally, the church has at the west, a central gable, a smaller gable to the side roof, and a tower and spire at the north-west angle. The ridge of the side roof continues for but a short distance from the gable (we think about 10 feet), and thence, as a "lean" to the "clerestory," containing the dormers already mentioned, continuing the line of the apex. The window tracery in the church might, perhaps, have been improved, the angles of the spire a little more *pronancé*, and the labels to one or two arches, better; but the details, generally, display great care and taste, and amongst such portions are the crockets to the label of the west window, the iron railing, the woodwork generally, and many other parts, and in the schools and attached buildings.

The principal novelty has been the subject of much condemnation. For ourselves, we notice the church, because it shews more of real design than hundreds of the structures lately erected throughout the kingdom, on what are called correct principles, and, if not altogether what might be wished, by no means justifies much of what has been said about it. It is at least that which its more elaborate neighbour is not, a foretaste of what we hope the architecture of England may become, an evidence not only of skill in drawing and arrangement, but of original thought. Indeed, difficult as we confess it is, to lay down correct principles for criticism, in reference to the future practice of ecclesiastical architecture, we are, as we have said, far from satisfied with the present state of this branch of the art. Formerly we had a version of Gothic architecture, in which were distorted outlines, and other deformities, which a slight acquaintance with the architecture of the middle ages would have taught us to avoid; but whilst we have gained by the recent improvement in architectural knowledge, we have gained little of what ought to have resulted from the increased store of our materials. For ourselves, we do not always necessarily think that church the best piece of architecture, in which there is no detail that can be found fault with, nor do we think that every church built in the present century, except during the last ten years, must necessarily be not worthy of examination. But such has become the opinion of the day, appears in every newspaper article in which a church is the subject of criticism, and infects the profession of architecture itself: it is an opinion which we lose no opportunity of eradicating, fatal as it is to the high standing of the pursuit amongst kindred arts and fields of thought, and discreditable to all who are engaged in the practice of architecture. In the discussion respecting the particular work which has called forth these remarks, we were as little pleased with the tone of defence as with that of attack; the same feeling, that of *absolute*

obedience to old forms, was apparent in both. If the architect of a church be ignorant of the mediæval styles, then, indeed, he may deprecate criticism, but if not, and he have produced a design in which original thinking is manifest, let him boldly meet his detractors, and he will have us to applaud him as one of those pioneers in taste, who, notwithstanding all may not yet say so, we believe were never more needed.

Restoration is a different matter, and we are glad to see that much has been already done in that way, in Manchester. The town possesses a very interesting church, formerly collegiate, but now a cathedral. Although of the latest period of Gothic architecture, it has many beautiful parts, in spite of the perishable nature of the stone used in its erection, and the restorations to which it has been subjected, at less favourable periods than the present. Internally, there are some remarkably fine roofs, and much old stallwork, and other woodwork in various parts of the building. We hope all this will be most carefully preserved; but we regret to see that the central portion of the double rood-screen is to be removed.—Although we have used the word "restoration," *conservation* is what we would, in a large majority of cases, make the limit of operations; for, to restoration, as carried on during late years, we owe much positive destruction of most interesting and valuable works. It can never be too often reiterated, that however carefully a restoration may have been conducted, it annihilates one of the most important attributes of the original, however much that original may have become broken or decayed. The restorations at the cathedral at Manchester seem to be on a very extensive scale, as noticed in a former number, and include not only polychromatic decoration, but a fresh arrangement of the pulpit and fittings, rendering the building more in accordance with its new purpose.—Chetham's College—a most interesting building, originally built about the time of Henry the Sixth, but which has many later additions—has also been undergoing restoration under the direction of Mr. George Shaw, architect, of Saddleworth.—Amongst new works spoken of in Manchester, we hear of considerable alterations in the market in Victoria-street, which is to be covered with a roof, supported by iron columns, at an expense of 700*l.* The ornamental part of the work is said to include pediments, enriched with ornamental accessories in terra-cotta. Recently it has been decided to excavate the ground for the purpose of storeage.

## THE PRESENT SYSTEM OF COMPETITION-TENDERS.

Sir,—It is to be hoped that your correspondent, "A Surveyor," is not a true expositor of the feelings and opinions either of the building or surveying class. From my own experience, I apprehend that both would repudiate his statements and inferences, though they might acknowledge that there are defects in the present system of competition-contracts which might be remedied with advantage to the employer and employed; but that it is a system which is "a curse to the country," and which requires "the interposition of the legislature;" that "it is a drawback to everything that is just and honourable," and "pernicious to trade;" are assertions which the facts mentioned by "A Surveyor" will not warrant, nor which the large body of the architectural, professional, or building interest in general, will maintain.

A caustic writer might be tempted to make some severe remarks on the standard by which "A Surveyor" measures the consciences of the parties in his anecdotes about young "wiseacre" architects. For my own part, I see nothing in either case but a strict and conscientious discharge of the architect's duty to his employer. But I had rather occupy your columns with a few remarks on the system of competition and mode of obtaining contracts now adopted, premising that I differ *in toto* from "A Surveyor" in considering competition of itself a bane. I regard it, on the contrary, not only in the building business but in all trades and professions, if fairly and honourably conducted, as a means of rising in the world, and a source of honour. To builders it is of the greatest advantage: it gives beginners a standing, it prevents old firms carrying away all business, and, by its result, creates work. Builders would have lost many a job if the employer had not felt a security under the system of competition contracts. But it is useless to complain with a mandlin sentimentality of the system; it is now too strongly engrafted in our business-habits to be given up, and it has been found to afford the greatest facility in arranging works, great despatch in execution, and great simplicity and rapidity in closing accounts.

In days of yore, when works and jobs were scarce—when wealth and the appreciation of art were limited to patrons—when works were entrusted to builders who acted as surveyors and architects, or were done mutually by tradesmen under the emphatic term of "bloodwork,"—when surveyors met at ten, dined at one o'clock, and saw double afterwards—the system of measuring flourished, and was perhaps adapted to the times; but those days are past: this machinery for the valuation of works was found inefficient when, about twenty-five years ago, the improvements of the metropolis and the extension of architectural knowledge, called the building interest into incessant activity. Contracts by prices were tried, and also by tenders in gross, each party making his own estimate. Both failed; the former, from the want of principle and the uncertainty in the modes of measurement; and the latter, from the enormous expense which it entailed upon the unsuccessful building competitors.

The present system of tender by quantities was then adopted, and I see no reason to mistrust its efficacy, if it is fairly and honourably acted upon by both parties. We are told that no wise man buildeth a house without first setting down and counting the cost thereof; and surely a builder is capable of doing this correctly, and guaranteeing the amount by contract.

But complaints have undoubtedly been made against the system both by architects and builders: it is liable to abuse, and there are defects which require remedy.

Perhaps the most important point connected with it is, that the quantities should be ascertained by surveyors of experience and integrity. This branch has, I fear, been often entrusted to incompetent hands. It is a trust of responsibility, and demands great industry, steady application, minute knowledge of the architectural profession, and high integrity of character. There are doubtless many gentlemen who possess these requisites, but I cannot but regret with your correspondent, that the old class of surveyors of this description is not well replaced by the rising generation. It would be a great benefit to the profession and the building interest at large, if a class of men were to educate and employ themselves solely in this pursuit. The Institute has, I fear, committed an egregious error in excluding this class from a standing in the profession; the mutual intercourse which would otherwise have ensued would have benefited both parties, and have given this class a more enlarged standard for estimating the importance of their duties. But I may, perhaps, be met with the objection, that the Institute is an Institute of Architects, and not of architecture.

Another defect in the system of taking out quantities is the uncertainty in the principle of measurement adopted for some trades. I would instance joiners' work, but especially masons' work. As regards the latter, the old system is most erroneous, particularly when applied to Gothic work. I have known instances in which a practical mason has asserted, that the quantity of labour estimated upon the quantity of stone given has been impossible. This also is a case in which the Institute might have done good service to the profession, by collecting information from experienced surveyors, and, by a thorough digest of the principles of mensuration, have enforced a system for the general guidance of the building profession.

The discrepancy in the amount of tenders is certainly sometimes astounding, and is as unsatisfactory to the architect as to the contractor; but the builders must here decide for themselves: the value of the work is a point for their sole consideration. That fictitious tenders have been delivered I know, from sad experience, to be true; but I have never met with such a swindling transaction as your correspondent relates, and must believe, from the general high character of builders, that it is an exception to the usual course of business. The architect, however, has a simple remedy against such combinations, by adopting the Chancellor of the Exchequer's system, and placing on his table his own valuation of the quantities in a sealed cover, and should the lowest tender exceed his amount, the whole should be rejected.

A question has arisen, whether the extras and omissions should be taken on the quantities? I apprehend this should never be allowed, as it alters the nature of a contract. Unintentional errors, even with the greatest precaution, will occur, especially from the short time usually allowed the surveyor; but these errors are as often in favour of the builder as against him. The quantities should be carefully examined by both architect and builder before signing the contract, and any error should then be rectified. At the conclusion of the work, the drawings and specifications should alone be the guide for settling claims for variations.

I fear I have intruded too much on your columns. My object has been to shew that the present system is, in principle, correct; and that there is no ground for reverting to the old, uncertain, and extravagant system of measure and value.

T. L.

## FEES TO ENGINEERS AND SURVEYORS.

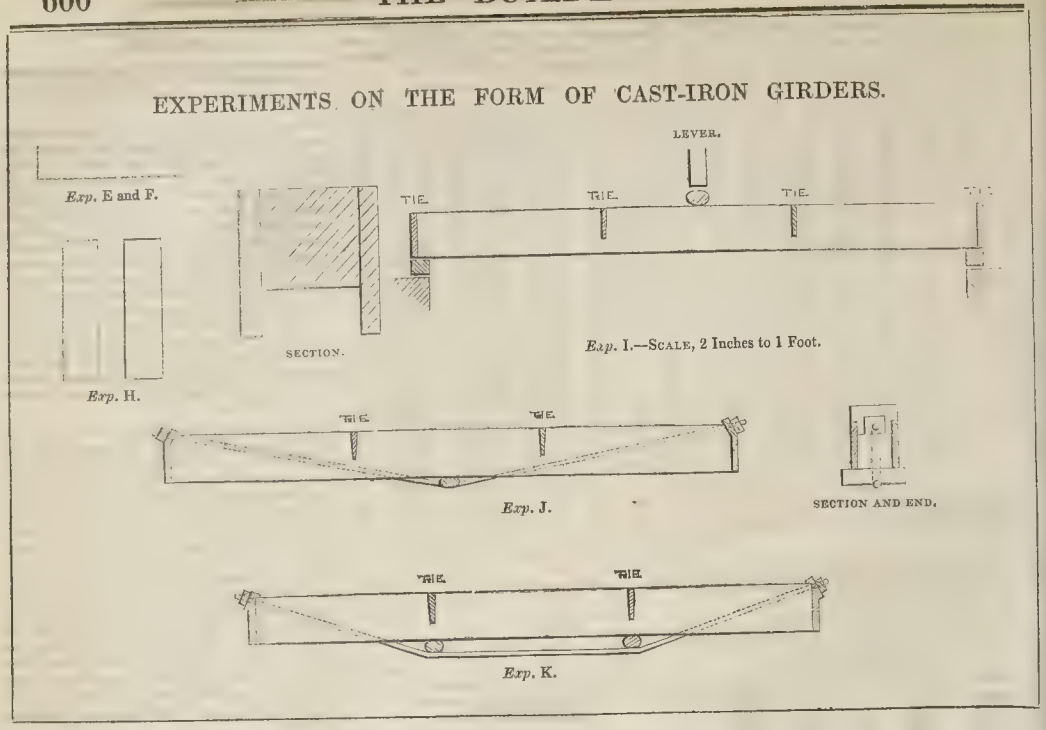
In the case of "Bushell *v.* Weiss," an assistant engineer, who had waited for twenty-two days while in London to give evidence before a Parliamentary committee, as to the accuracy of the plans he had been instrumental in preparing for a projected company which 'fell to the ground by reason of imperfection in the plans and sections,'—the plaintiff demanded payment at the rate of 10*l.* 10s. a-day for the twenty-two days' attendance, on the ground that the engineer-in-chief had refused to give his evidence, and that he, the assistant, had acted as engineer-in-chief himself, and was entitled to 10*l.* 10s. a-day whether, for giving his evidence as to the accuracy of his plans or for merely waiting to do so.

Colonel Landmann, the engineer of the London and Greenwich Railway, stated in evidence that 10*l.* 10s. a-day was most certainly not an unreasonable rate of remuneration to the plaintiff for his services as a civil engineer in 'railway days,' though at other times the remuneration would depend on the state of the market.

The defendant, a cutler, and one of the provisional committee, maintained the demand to be 'most unconscionably excessive,' and the Lord Chief Justice considered that 'nothing could be more improper, ungracious, and deserving of reprobation' than such a demand under such circumstances. The jury found for the plaintiff for 85*l.*, being at the rate of 5*l.* 5s. a-day for twenty-two days.

The following, we may here add, is an extract from the examination of Captain W. Yolland, R.E., before the Metropolitan Sanitary Commission:—"At what rate have railway engineers and surveyors obtained copies of your plans?—Copies of plans drawn upon the 6-inch scale have been supplied at the rate of 10s. per mile.—What have they charged to the companies?—We have memoranda in our office stating that the charges made to companies have varied from 30*l.* to 80*l.* per mile."

THE NECESSITY FOR COMMUNICATION BETWEEN PASSENGERS AND GUARDS by rail was perhaps more clearly proved than in the recent instance of the burning of the Countess of Zetland's carriage, about *four miles from Rugby*, while her ladyship and her waiting-maid were seated in it. A gentleman, attracted by the screams of the countess and her attendant, and by the smell of something burning, *endeavoured in vain to convey an alarm to the guard or engine-driver*. He then opened the door of his carriage and scrambled along the sides of the train to the truck on which her ladyship's carriage was placed, and found her clinging to the wheel in a terrible state of alarm. The lady's-maid had fallen off. *On the train arriving at Rugby*, an engine was sent along the line to look for her. She had fallen in a state of insensibility with her hands across the rails, and before the engine-driver discovered her, *the wheels of the engine cut off her hands!*




## EXPERIMENTS ON THE FORM OF CAST-IRON GIRDERS.*

We continue the record of important experiments on the relative value of different forms of cast-iron beams, with Mr. G. Cooper's own observations upon them.

Experiments E and F demonstrate the values of doubling and trebling the quantities of experiment A; but they are weighted reversely, viz., on the minor instead of the major depth —experiment E being similar to experiment B reversed; bearing about 25 per cent. only of the same. Experiment F, also similar to experiment C, bearing about 40 per cent. of it: the deflection being excessive, averaging from one-third to one-half of their respective depths. Thus, for any available purpose, they exclude themselves; but, in connection with the vertical web, we revert to experiment D, and it is then the accumulated material is of value. Experiment H is a continuation of experiment C, with the quantities doubled: the strength in comparison therewith is decreased and the stiffness increased, and the same observations obviously apply wholly to this experiment as to experiment C, shewing it to be a section to be received with caution, and to be used only when a connection can be made of each with the other, as more clearly seen by the following experiment I, and then not of the double breadth; the positive strength of this great addition of material, in comparison with four times experiment A, being only as 3·8 to 2·64.

Experiment I is a new experiment, inasmuch as a combination of two is made of experiment A, the two being made into one box-beam by transverse ties, the whole depth, at each end; and two intermediate ditto of three-fourths the depth. Excluding the weight of the ties, the average weight of the several beams experimented upon will not exceed the double of those of experiment A. The main advantage, it will be perceived, gained by this connection, consists of increased stiffness, and not strength, the strength being no advance upon either experiments B or C, as, when the weight of the ties is deducted, identity appears to exist with them. In looking at the simple forms, now briefly rehearsed, and interestingly made more evident by studying the accompanying papers lettered according to the preceding remarks, it will be observed that a near equality of deflection in the whole exists according to the equal weights even to the breaking points, and that in the whole of them no indication of failure is given by the beam previous to the instant of actual rupture.

Passing now to the consideration of the application of the wrought tension-rod to cast-iron beams, as a means of deriving therefrom an increase of strength, it has been the object, in these experiments, to apply it in the cheapest, readiest, and most simple way; and the box-beam experiments I, being that which presented the greatest facilities, as well as having already produced a result positive to itself and comparative with experiments A, it was thereto applied in the four different ways, as shewn in the various experiments lettered J, K, L, M.

The results of the first two experiments marked J and K, are so perfectly identical that they may be taken as one;—first proving, that, whether the beam be trussed from one or from two bearing points, neither is any advantage gained by the one, nor does any diminution of strength appertain to the other. The real value of the breaking weight appears more than that of the beam untrussed (experiment I), but, upon looking at experiments J and K, Nos. 8* and 11, it is there seen that the ratio is raised by these two experiments, the one, No. 8*, shewing a reason for such a strength by an increase of weight of ten to eleven ounces, or one-twelfth of its own weight; in the other, No. 11, the cause not being so apparent. Excluding the weight of the bolt and bearing saddles, there appears to be wanting entirely the useful strength of the bolt. No benefit arises therefrom, excepting when fracture has occurred in the beam; for when the load has been regularly and progressingly laid on, and not suffered to fall at fracturing, the bolt sustains the two halves of the fractured beam from falling. This was invariably the case, saving when, at the points of failure, the load was suffered to fall with the broken beam one-and-a-half to twice the depth of the beam; in which instances the bolt gave way at the nut, that being the weakest part, the thread being *cut out* of its substance. When the load was suffered to descend with the beam at fracturing, a distance of one-half the depth of the beam, the bolt itself remained entire. It would appear from the deflection of the beam remaining so perfectly identical with the untrussed beams (experiments I), that no stiffness, or indeed any action, arises from the bolt in connection with the beam, it remaining inert, or at most yielding to the weight with as much readiness as the weight is applied, being superior in tenacity to the material to which it is added, yet to similar weights yielding a greater deflection,—leaving the load the more, the more it is accumulated. The diameter of the wrought-iron tension-rod used in these experiments was ·25 inches, and, if brought into proper action, ought to have added at least two-thirds to the breaking weights. As before observed, the diminished deflection both of these and the untrussed beams (experiment I), over the loose beams (experiment C), appears to arise only from their being tied into one casting; the one being 350, the other about 400, or about one-thirteenth to one-fifteenth or one-sixteenth of their depth. The beams experimented upon under the letters J and K were trussed by the bolt, within the line of compression, or a horizontal line drawn through the centres of the two nuts which confined its ends, would fall within the body of the beam; and such metal above and in a line with it, if the bolt were useful, as supposed, would be to it as a thrust or compression piece, until the deflection of the beam under its load brought such upper edge below the centre of the bolt, which, in experiments J and K, was not the case, the deflection being but ·129 inches.

E and F.—Transverse Strain on a simple Rectangular Cast-iron Beam, weighted horizontally. All else relating to it, similar to last.

E.—Double Width of A.

No. 16 Experiment. Weight of Beam, 113 oz.

| Pressure in lbs. | Deflection in ins. |
|---|---|
| 220 | ·172 |
| 289 | ·222 |
| 352 | ·267 |
| 412 | ·307 |
| 472 | ·356 |
| 532 | ·433 |
| 592 | ·483 |
| 655 | ·560-·565 |
| 709 | ·620 |
| 757 | ·670* |

Breaks at the edge of the centre bearing-piece; and generally this applies to the whole of these experiments to H inclusive.

F.—Treble Width of A.

No. 17 Experiment. Weight of Beam, 170 oz.

| Pressure in lbs. | Deflection in ins. |
|---|---|
| 220 | |
| 820 | ·193 |
| 988 | ·238 |
| 1072 | ·260 |
| 1156 | ·282 |
| 1240 | ·312 |
| 1279 | ·324 |
| 1324 | ·338 |
| 1363 | ·354 |
| 1399 | ·364 |
| 1405 | ·378 |
| 1444 | ·391 |
| 1483 | ·442* |

This beam was weighted in the precise position in which it was cast. The lower face also cast in the same position as was sand casting, although the whole of the upper surface, or skin, appeared unsound or honeycombed.

* Broke.

* See p. 593, *ante*.

**G.—Transverse Strain on a simple Rectangular Cast-iron Beam, treble width of A weighted vertically.—All else relating to it, similar.**

| No. 18 Experiment. Weight, 158 oz. | | No. 19 Experiment. Weight, 159 oz. | | No. 20 Experiment. Weight, 161½ oz. | | No. 21. Experiment. Weight, 163 oz. | |
|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 820 | ·029 | 820 | ·035 | 820 | ·042 | 820 | ·040 |
| 988 | ·038 | 988 | ·041 | 988 | ·046 | 988 | ·047 |
| 1156 | ·043 | 1156 | ·046 | 1156 | ·053 | 1156 | ·053 |
| 1324 | ·052 | 1324 | ·053 | 1324 | ·059 | 1324 | ·058 |
| 1492 | ·058 | 1492 | ·061 | 1492 | ·067 | 1492 | ·063 |
| 1660 | ·066 | 1660 | ·066 | 1660 | ·072 | 1660 | ·069 |
| 1828 | ·074 | 1828 | ·072 | 1828 | ·078 | 1828 | ·076 |
| 1996 | ·081 | 1996 | ·081 | 1996 | ·084 | 1996 | ·083 |
| 2164 | ·088 | 2164 | ·086 | 2164 | ·092 | 2164 | ·09 |
| 2332 | ·094 | 2332 | ·091 | 2332 | ·097 | 2332 | ·097 |
| 2500 | ·101 | 2500 | ·097 | 2500 | ·102 | 2500 | ·104 |
| 2688 | ·109 | 2688 | ·105 | 2688 | ·108 | 2688 | ·112 |
| 2812 | ·115 | 2812 | ·109 | 2812 | ·112 | 2812 | ·118 |
| 2956 | ·12 | 2956 | ·114 | 2956 | ·117 | 2956 | ·124 |
| 3100 | ·125 | 3094 | ·119 | 3094 | ·121 | 3094 | ·132* |
| 3238 | ·13 | 3232 | ·124 | 3232 | ·126 | | |
| 3364 | ·135 | 3358 | ·129 | 3358 | ·13 | | |
| 3490 | ·139 | 3484 | ·134* | 3484 | ·134 | | |
| 3616 | ·145 | 3610 | | 3610 | ·138 | | |
| | | 3736 | | 3736 | ·141* | | |

* Broke

Exp. 18.—Very sound.
Exp. 19.—Cast on the flat: four air bubbles.
Exp. 20.—This beam sustained the weight 1½ minutes very sound.
Exp. 21.—Air bubble at the lower edge; diminishing the width 1-5th at that particular spot

**H.—Transverse Strain on Two simple Rectangular Cast-iron Beams, each double the width of A, and placed side by side, same as C.**

**All else relating to it, similar.**

No. 22 Experiment.
Weight of 1 Beam, 103½ oz.
Weight of 1 Beam, 104½ oz. } 208 oz.

| Pressure in lbs. | Deflection in ins. | Pressure in lbs. | Deflection in ins. |
|---|---|---|---|
| 976 | ·005 | 3328 | ·072 |
| 1312 | ·012 | 3496 | ·076 |
| 1648 | ·022 | 3664 | ·091 |
| 1984 | ·032 | 3832 | ·091* |
| 2320 | ·042 | 4000 | ·094 |
| 2656 | ·052 | 4168 | ·097 |
| 2992 | ·062 | 4336 | ·101† |
| 3160 | ·068 | | |

* A jar in the lever made no difference from the previous deflection.
† Broke.—Unsound casting: in one a very large air bubble

**I.—Transverse Strain on Two simple Rectangular Beams, cast in one casting; 1½ inch apart, connected by cross-tie pieces at each end, and two intermediate, dividing its length into three equal divisions.**

| No 1 Experiment. Weight, 130 oz. | | No 2 Experiment. Weight, 128 oz. | | No 3 Experiment. Weight, 128 oz. | | No 4 Experiment. Weight, 134 oz. | |
|---|---|---|---|---|---|---|---|
| Pres in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 220 | | 220 | | 220 | ·007 | 220 | |
| 310 | | 352 | ·004 | 310 | ·012 | 313 | |
| 400 | ·002 | 442 | ·0075 | 403 | ·017 | 403 | ·004 |
| 484 | ·006 | 535 | ·01 | 493 | ·023 | 493 | ·004 |
| 574 | ·011 | 613 | ·018 | 580 | ·026 | 625 | ·01 |
| 664 | ·015 | 694 | ·023 | 673 | ·032 | 703 | ·013 |
| 751 | ·02 | 787 | ·026 | 760 | ·035 | 784 | ·018 |
| 848 | ·025 | 877 | | 850 | ·039 | 870 | ·024 |
| 929 | ·03 | 982 | | 928 | ·042 | 964 | ·0275 |
| 1016 | ·033 | 1068 | ·032 | 1012 | ·046 | 1049 | ·033 |
| 1139 | ·038 | 1149 | ·033 | 1105 | ·05 | 1134 | ·036 |
| 1208 | ·042 | 1233 | | 1183 | ·053 | 1230 | ·042 |
| 1380 | ·044 | 1320 | | 1270 | ·058 | 1302 | ·046 |
| 1473 | ·05 | 1413 | | 1348 | ·061 | ‡1380 | ·054 |
| 1567 | ·055 | 1548 | | 1426 | ·065 | 1458 | ·056 |
| 1639 | ·059 | 1626 | | 1504 | ·068 | 1537 | ·061 |
| 1717 | ·063 | 1711 | | 1591 | ·071 | 1627 | ·066 |
| 1810 | ·068 | 1789 | | 1684 | ·075 | 1748 | ·073 |
| 1888 | ·073 | 1875 | | 1771 | ·078 | 1841 | ·078 |
| 1981 | ·078 | 1965 | | 1849 | ·082 | 1930 | ·083 |
| 2062 | ·084 | 2049 | | 1954 | ·087 | 2016 | ·09 |
| 2140 | ·088 | 2118 | | 2074 | ·093 | §2121 | ·093 |
| 2205 | ·094 | 2190 | | 2196 | ·099 | 2211 | ·098 |
| 2271 | ·096 | 2259 | | 2265 | ·103 | 2291 | ·103 |
| 2339 | ·1 | 2337 | | 2352 | ·107 | 2369 | ·107 |
| 2415 | ·102 | 2423 | | 2424 | ·11 | 2441 | ·111 |
| 2481 | ·106 | 2492 | | 2503 | ·113 | 2510 | ·116 |
| 2559 | ·11 | 2561 | | 2569 | ·116 | 2576 | ·118 |
| 2629 | ·115 | 2630 | | 2635 | ·12 | 2642 | ·122 |
| 2715 | ·12 | 2696 | | 2701 | † | 2705 | * |
| 2778 | ·126 | 2762 | | | | | |
| 2844 | ·128 | 2830 | | | | | |
| 2907 | ·128 | 2896 | * | | | | |
| 2970 | * | | | | | | |

The deflector did not act, the remainder of this experiment.

* Broke sound.
† Broke
‡ Weights put on carelessly.
§ Two small cracks.

**J.—Transverse Strain on Two simple Rectangular Beams cast in one casting, connected by cross ties, &c., same as Experiment I., but trussed as per sketch annexed, or the Direct Truss.**

| No. 5. Experiment Wt. 136 oz. | | No 6 Experiment Wt. 138 oz. | | No. 7 Experiment Wt. 137 oz. | | No. 8 Experiment Wt. 137 oz. | | No 8* Experiment Wt. 148 oz. | |
|---|---|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Def. in ins. | Pres. in lbs. | Def. in ins. | Pres. in lbs. | Def. in ins. | Pres. in lbs. | Def. in ins. | Pres. in lbs. | Def. in ins. |
| 220 | | 220 | ·005 | 220 | | 220 | ·01 | 220 | ·005 |
| 352 | ·005 | 310 | ·008 | 310 | ·001 | 310 | ·012 | 313 | ·007 |
| 436 | ·01 | 403 | ·012 | 403 | ·0015 | 400 | ·017 | 393 | ·012 |
| 529 | ·014 | 493 | ·013 | 484 | ·0025 | 490 | ·024 | 486 | ·016 |
| 622 | ·0175 | 583 | ·018 | 574 | ·006 | 577 | ·027 | 579 | ·021 |
| 712 | ·0225 | 676 | ·022 | 661 | ·009 | 667 | ·032 | 653 | ·025 |
| 796 | ·027 | 763 | ·026 | 748 | ·012 | 760 | ·035 | 735 | ·029 |
| 881 | ·031 | 850 | ·03 | 827 | ·016 | 847 | ·038 | 822 | ·033 |
| 987 | ·032 | 937 | ·033 | 905 | ·021 | 934 | ·042 | 909 | ·037 |
| 1055 | ·032 | 1024 | ·037 | 984 | ·024 | 1027 | ·047 | 999 | ·041 |
| 1155 | ·032 | 1108 | ·04 | 1007 | ·029 | 1117 | ·051 | 1086 | ·045 |
| 1242 | ·032 | 1186 | ·042 | 1085 | ·033 | 1207 | ·055 | 1166 | ·048 |
| 1322 | ·032 | 1262 | ·046 | 1175 | ·037 | 1285 | ·059 | 1252 | ·052 |
| 1407 | ·038 | 1345 | ·05 | 1268 | ·041 | 1363 | ·063 | 13307 | ·056 |
| 1484 | ·038 | 1417 | ·053 | 1373 | ·045 | 1441 | ·067 | 1410 | ·058 |
| 1556 | | 1513 | ·056 | 1460 | ·049 | 1529 | ·07 | 1497 | ·064 |
| 1625 | | 1600 | ·059 | 1553 | ·053 | 1615 | ·073 | 1520 | ‡·068 |
| 1705 | | 1705 | ·063 | 1640 | ·057 | 1708 | ·076 | 1604 | ·072 |
| 1792 | | 1783 | ·067 | 1718 | ·062 | 1830 | ·08 | 1690 | ·074 |
| 1882 | | 1903 | ·069 | 1796 | ·064 | 1949 | ·082 | 1777 | ·078 |
| 1960 | | 2026 | ·073 | 1861 | ·068 | 2069 | ·087 | 1867 | ·082 |
| 2041 | | 2104 | ·074 | 1952 | ·071 | 2189 | ·092 | 1957 | ·084 |
| 2127 | | 2197 | ·08 | 2042 | ·075 | 2295 | ·093 | 2020 | ·085 |
| 2220 | | 2283 | ·084 | 2165 | ·08 | 2324 | ·095 | 2086 | ·089 |
| 2325 | | 2361 | ·087 | 2244 | ·081 | 2402 | ·098 | 2109 | ·095 |
| 2403 | | 2439 | ·09 | 2304 | ·086 | 2468 | ·099 | 2181 | ·098 |
| 2469 | | 2499 | ·093 | 2373 | ·088 | 2534 | ·103 | 2259 | ·102 |
| 2538* | | 2565 | ·096 | 2449 | ·091 | 2600 | ·107 | 2329 | ·105 |
| 2604 | | 2635 | ·098 | 2515 | ·094 | 2705 | ·112 | 2405 | ·108 |
| 2673 | | 2701 | ·102 | 2581 | ·096 | 277- | ·114 | 2464 | ·111 |
| 2745 | | 2767 | ·105 | 2649 | ·099 | 2837 | ·117 | 2536 | ·116 |
| 2868 | | 2836 | ·108 | 2715 | ·102 | 2921 | ·121 | 2602 | ·118 |
| 2991 | | 2905 | ·11 | 2781 | ·104 | 2984 | ·124 | 2668 | ·121 |
| 3071 | | 2971 Broke | | 2847 Broke | | 3053 | ·127 | 2737 | ·124 |
| 3140 | | and not the | | | | 3129 | ·13 | 2806 | ·127 |
| Broke. | | bolt. | | | | 3195 | ·134 | 2872 | ·129 |
| | | | | | | 3251 Broke | | 2948 | ·133 |
| | | | | | | | | 3002 | ·136 |
| | | | | | | | | 3068 Broke | ·139 |
| | | | | | | | | When all unloaded the needle stood at ·22 | |

The deflector did not act.
Sound Casting.

* A crack one minute after loading
‡ Unloaded to springing.
† Remained a quarter of an hour.

**K.—Transverse Strain on Two simple Rectangular Beams, cast in one casting, 1½ inch apart, connected by cross ties, &c., same as Experiment I, but trussed as per sketch annexed, or from *two points*.**

**The strain taken *within* the line of compression; the pressure applied in the same way, &c.; bearings similar.**

| No. 9 Experiment. Weight, 136 oz. | | No. 10 Experiment. Weight, 132 oz. | | No. 11 Experiment. Weight, 136 oz. | |
|---|---|---|---|---|---|
| Pressure in lbs. | Deflection. | Pressure in lbs. | Deflection. | Pressure in lbs. | Deflection. |
| *220 | ·01 | 220 | ·012 | 220 | ·01 |
| 313 | ·015 | 313 | ·018 | 313 | ·013 |
| 403 | ·018 | 403 | ·024 | 403 | ·017 |
| 490 | ·021 | 493 | ·028 | 493 | ·022 |
| 567 | ·025 | 598 | ·033 | 580 | ·025 |
| 657 | ·028 | 691 | ·037 | 673 | ·028 |
| 744 | ·032 | ‡784 | ·04 | 760 | ·031 |
| †834 | ·035 | 874 | ·044 | 847 | ·035 |
| 924 | ·038 | 961 | ·048 | 934 | ·038 |
| 1014 | ·042 | §1048 | ·052 | 1054 | ·043 |
| 1119 | ·045 | 1135 | ·055 | 1174 | ·048 |
| 1197 | ·048 | 1222 | ·059 | 1267 | ·052 |
| 1317 | ·053 | 1309 | ·062 | 1372 | ·056 |
| 1437 | ·056 | 1396 | ·065 | 1450 | ·057 |
| 1509 | ·06 | 1480 | ·068 | 1522 | ·06 |
| 1602 | ·063 | 1561 | ·072 | 1594 | ·063 |
| 1677 | ·067 | 1642 | ·075 | 1684 | ·067 |
| 1764 | ·068 | 1720 | ·078 | 1771 | ·07 |
| 1842 | ·073 | 1798 | ·083 | 1858 | ·072 |
| 1926 | ·077 | 1876 | ·086 | 1942 | ·076 |
| 2004 | ·08 | 1954 | ·09 | 2023 | ·081 |
| 2082 | ·084 | 2026 | ·093 | 2101 | ·085 |
| 2166 | ·088 | 2146 | ·099 | 2179 | ·088 |
| 2247 | ·093 | 2229 | ·104 | 2257 | ·092 |
| 2325 | ·097 | 2301 | ·108 | 2338 | ·097 |
| 2394 | ·1 | 2370 | ·112 | 2409 | ·1 |
| 2472 | ·104 | 2439 | ·113 | 2497 | ·104 |
| 2538 | ·107 | 2520 | ·118 | 2563 | ·107 |
| 2604 | ·11 | 2586 | ·121 | 2629 | ·11 |
| 2670 | ·114 | 2655 | ·123 | 2695 | ·114 |
| 2736 | ·117 | 2725 | ·127 | 2761 | ·117 |
| 2802 | ·119 | 2791 Broke. | | 2827 | ·12 |
| 2868 Broke. | | | | 2893 | ·123 |
| | | | | 2959 | ·125 |
| | | | | 3025 | ·128 |
| | | | | 3091 | ·132 |
| | | | | 3154 | ·135 |
| | | | | 3217 | ·138 |
| | | | | 3283 | ·14 |
| | | | | 3319 | ·143 |
| | | | | 3415 Broke. | |

* When all released off except the lever and scale, the tension bolt holding up the broken beam, the deflection showed ·03
† When the scale was unloaded to this point, the lever was free from the prop on which it fell, after fracture of the beam, and the deflection showed ·03.
‡ Bolt carried after fracture.
§ Left for ten minutes. The lever at fracture fell only 1 inch, not breaking the bolt. When all unloaded, the bolt sustained a deflection of ·238.

Drury-lane. GEORGE B. COOPER.

## LINCOLN CATHEDRAL AND THE SHOWMAN.

"Art gives us nobler loves and nobler cares; furnishing objects by the contemplation of which we are taught and exalted, and so are ultimately led to seek beauty in its highest form, which is *Goodness*."

SIR,—It was with a mind fully cogitating on the sentiment which I have just quoted, and to which my attention was called by THE BUILDER of the 6th ult., that I approached the west front of Lincoln Minster; and, as I stood before the glorious pile, first observing the grandeur of the mass, and then attending to the exquisite finish of each shapely stone,—finish surpassed only by Nature, the "mistress of the art,"—it seemed to me more like an efflorescence of the natural rock than any embodiment of man's imagination. "Yes," I exclaimed, "art shows us man as he can be known by no other means." These words were still upon my lips, and I stood within the building, and even then the pealing anthem seemed to say the same, and with a voice well worthy such a building.

But, sir, let me call your attention from the cathedral to its officers, the verger and his sub-official, and to inform you—if, indeed you are not too well aware—what kind of reception you are to expect when you next make a pilgrimage to Lincoln Cathedral. After the morning service, and while several persons as well as myself were lingering in the nave, a large man, whose black dress and red face proclaimed his official character, inquired of me, "Do you wish to see the cathedral?"—to which I replied, "No; I have not time at present." In a few minutes he returned and told me he wished to lock the doors, and that I must go away; and, on my quietly telling him there were still many people in the cathedral, and that he could not lock them in, he said,—"You must not tell me my business, sir; I am doing my duty."

On the next day I repeated my visit, and after service the verger found a party of visitors, upon whom he forced his services as showman of the cathedral. Whilst he was thus busy I hoped quietly to enjoy the use of my sight, without the interposition of him whose very proximity seemed to destroy my pleasure; but, no sooner had I commenced a serious examination, casting off the awe and distraction of such a multiplicity of images, than a beautifully-imagined piece of foliage required my sketch-book; and, so busy was I in my occupation, that I heard not the verger's approaching footstep, till he stood suddenly before me. "Do you belong to this party, sir?" "No."—"How did you get in, sir?" "I shall not answer,"—"Have you permission to sketch, sir?" "No." "Then I cannot allow it; I must do my duty."

Truly, Mr. Editor, this *is* a rotten state of things, and the people of England are wrong in thinking that exclusive dealing has become matter of history, or that "the insolence of office" is a tale of bygone days. It may be that I feel too strongly on the subject, from the unexpectedness with which it assailed me, having been introduced to no English cathedral before, except through the pages of Britton and Pugin, and having seen nothing of the matter there; and as Sterne would have told you, "they manage these things better in France."

Are the people careless of being denuded of their birthright? Do they not know that they have but to ask and receive? Is it too much to require a free inspection for all classes of monuments left to *them* by their ancestors? I hope, Mr. Editor, that you will insert the above plain narration, and the questions which seem honestly to arise from it; for I think you will agree with me, that if reform ever was needed, it is needed here; and I should rejoice if the possessors of our high Protestant places would but emulate a tithe of the liberality which the Pope of Rome has lately exhibited; we should then have no further cause of complaint. It may be serviceable to state that before I left Lincoln I restored the verger's equanimity by permitting him to "show" the cathedral, and by purchasing of him a few plaster casts which he keeps for the accommodation of those who have not "permission to sketch," and yet who wish to preserve a memento of the cathedral.—I am, Sir, &c.

Dec. 7, 1847. AN AMATEUR.

## NEW ROMAN CATHOLIC CHURCH, SURBITON, SURREY.

MR. CHARLES PARKER, ARCHITECT.



### NEW ROMAN CATHOLIC CHURCH AT SURBITON, SURREY.

THIS church, which is situated on the banks of the river Thames, near the populous town of Kingston, is built of Bath stone; it consists of a western tower, a nave, north and south aisles, a chancel, with tribune and sacristies.

The entrance is in the tower, as shewn in the engraving. In the arch above the door, there appears the Greek form or monogram of the cross, as sculptured on sarcophaguses of the first ages of Christianity. The plan of the tower is square; it measures 16 feet at its base, and the whole height, including the cross, is 78 feet. A cast-iron screen runs across the inner part, and forms the entrance porch. On each side of the inner doorway are stoups, the bowl and shaft made of Italian marble. In one corner there is a small staircase, reaching to the organ loft, which is open to the nave, as high as the clock chamber. From this there is an easy ascent to the belfry, where, by an arrangement of the machinery, the clock strikes the angulus bell at the proper hours.

The nave consists of three compartments; the length is 45 feet, the height 43 feet, and the width, including the aisles, 44 feet. The pedestals, pillars, and entablatures supporting the arches, are of Portland stone; over each arch there are windows of three lights, forming a clerestory. The roofs, framed with beams and rafters, are open to the ceiling; each principal rests upon a moulded and enriched corbel; all the roofs are covered with tiles made from a model obtained from Florence. The eastern gable rises considerably above the chancel, and supports a belfry for the sanctus bell. The floor is laid with red and white hexagonal tiles; the benches are low and open; the walls are decorated with coloured monograms, as found in the catacombs of the first Christians. At the western end of the north aisle the font is fixed; the bowl and shaft are of Italian marble; the cover is of oak, framed in four compartments.

The chancel, raised one step above the ordinary level of the church, and separated by a wrought-iron railing, is 22 feet in length, and the same width as the nave; the height is 37

feet; the roof is open to the ceiling, as before described. On the north, east, and south sides there are windows, each composed of three lights; in these openings coloured glass will be inserted. The wall immediately over the east window is enriched by a gilt cross. The pavement, three steps, and platform, are laid with Sicilian marble; the altar and tabernacle, both free from the wall, are of the same material; the altar is enriched with festoons of flowers, sculptured in Italy; the door of the tabernacle is an ancient carved oak panel, probably of the thirteenth century; it represents the crucifixion, and is a work of great interest. The sedilia are of oak, with carvings on the backs of the seats. The pulpit adjoins the sanctuary, and is placed round the last column of the nave; it is octagonal in plan and of Sicilian marble. The tribune is separated from the chancel by an open screen. The vault for the founder is under the sanctuary.

On the north side of the church, and communicating with the sacristies, there is a residence for the priest, attached to which is a sufficient piece of ground for a garden. On the south side there are schools for boys and girls, with separate play-grounds. At the east end the cemetery is placed, in the centre of which an iron cross is erected.

The church is on the estate of Mr. Alexander Raphael, the present member for St. Albans, who has given the ground, and at his sole charge erected and endowed the whole of the buildings for the benefit of the poor. The architect is Mr. Charles Parker, and the builder Mr. John Dickson.

## VENTILATION OF DWELLING-HOUSES.

Sir,—I was glad to see, in the last number but one of The Builder, a suggestion of your correspondent "A." for the ventilation of apartments in a simple and inexpensive manner. I have often thought how easily a similar plan, and nearly as economical, might be adopted in all new-built dwelling-houses, were the necessity of proper ventilation more felt by those engaged in building occupations. The plan I would suggest is, to carry up in the brick or stonework of the chimney-breast of each room, a common earthen pipe of about 1½ or 2 inches diameter, commencing it above the fireplace, in any position, so as to be within 4½ inches of the flue of such fireplace. Into each of these pipes, on a level with the joist above the ceiling, I would introduce one made of zinc or tin, continuing the same along the joist to a funnel in the centre of the room, exactly in the same manner proposed by your correspondent "A." The earthen pipes from each room, on working up the chimney stack, might be brought together between the flues and carried to the top with them. It will be evident these will become heated sufficient to cause a current and draw off the foul air from the rooms. The additional width required to the chimney for the purpose would be but of trifling cost compared with the benefit derived. The earthen pipes also can be obtained at about one penny per foot run, as those made for agricultural purposes will answer as well as more expensive ones.—P.

## THE LATE MR. J. A. BRANDON.

On Saturday last, the 11th inst., occurred the death of Mr. J. Arthur Brandon, a young architect of much promise, at the early age of twenty-six. The zeal and ability with which he pursued his profession, in conjunction with his elder brother, Mr. Raphael Brandon, had occasioned the commencement of a practice which must have become extensive, particularly in the branch of English church architecture. The loss is felt by his professional acquaintances with increased sorrow, on account of his personal conduct as a gentleman. Those who knew him best speak the most highly of him. Most of our readers have a knowledge of the valuable works produced by the Messrs. Brandon—"The Analysis of Gothic Architecture," "Parish Churches," &c.—and will grieve with us in hearing of this loss to the profession. In the midst of life we are indeed in death. Let us each humbly strive to fit ourselves for the coming time.

## CURIOUS PEW-END AT WENDEN CHURCH, ESSEX.



## CARVED PEW-END, WENDEN CHURCH, ESSEX.

The old church at Wenden, whence the carved pulpit already engraved in No. 248 of our journal was obtained, contains the subjoined curious example of grotesque ornament, which forms the corner post of the old pews that fill the chancel. This post is a solid beam of oak, measuring six inches on each face, and the animal on the summit is cut from the solid wood. It appears to represent a hyæna, who is grinning at his face reflected in the mirror at his feet. It is an amusing instance of the taste for the ludicrous, occasionally to be met with in internal church decoration of the middle ages. The opposite corner of the pew has had a similar ornament, but that has disappeared.

## THE IRON TRADE.

How are the mighty fallen! The position of those 'great masters,' who were carrying all before them this time last year, is declared by one of their own most stanch upholders, to present 'a deplorable reverse of the activity that has prevailed during the last two years. Twelve months ago every work was in operation, workmen scarcely to be obtained, orders superabundant—specifications almost preceding them—and no suspicions crossing the mind, of difficulty to be encountered in meeting liabilities. Now, we find confidence at the lowest possible ebb, a palpable stagnation of business, and instead of orders and specifications—countermands and complaints. Quality not suitable—sizes not exact—delivery not punctual—quantity exceeded—or, where no excuse presents itself, an unblushing avowal of inability to pay—form the burthen of each succeeding post; while week after week works are partially closed or brought to an absolute stand-still. Many new works, also, and additional erections, with a vast amount of machinery, have been prepared, without the slightest prospect of their now being brought into operation.'

During the past month, says an influential broker connected with the trade, 'the iron market has undergone a further depression, chiefly owing to the stoppage of railway works, and the continued pressure in the money market. This trade, which for two or three years past has been highly prosperous, is now about to undergo a change evidently for the worse. Some large makers have already suspended payment, throwing a great number of men out of employment; and rumours are rife, that unless the trade is better supported, much mischief may take place both in Staffordshire and at Glasgow. The demand for all kinds of iron has greatly decreased, while the stocks are accumulating. In some degree to meet the case, iron masters are making arrangements to lessen the make, and reduce the wages of their workmen. A sale of 2,000 tons of rail made within the last week, is said to have realized a price equivalent to not more than 7*l.* per ton in Wales. Scotch pig-iron is gradually declining; and so low as 47*s.* 6*d.* to 48*s.* per ton, cash, for mixed numbers has been accepted by holders in Scotland.'

The iron-stone miners of South Staffordshire, says a still more recent authority, 'as well as the furnace men engaged in several large firms around Dudley, received notice on Saturday night last of a reduction of twenty per cent. in the amount of their wages. Short time is being generally adopted, and many iron-masters have determined to suspend operations altogether for the present. A meeting of iron-masters was held at Wolverhampton on Wednesday, when a resolution similar to the above was unanimously agreed to, so that the reduction of wages will become general throughout South Staffordshire.'

St. Mark's Church, Wolverhampton: Mad Builders.—We have been favoured with the amount of tenders for erecting St. Mark's Church, opened last Saturday; Mr. C. W. Orford, architect:—

| | | | |
|---|---|---|---|
| Higham and Son | £7,491 | 2 | 9 |
| Clarke | 5,290 | 1 | 8 |
| Robinson (accepted) | 4,850 | 0 | 0 |

Repeal of the Window-Tax.—The delegates appointed by all the metropolitan parishes met on Friday in last week to consider the steps necessary to be taken "for enforcing upon the Government the necessity of an immediate repeal of the window-tax, without which they have themselves declared any measure of sanitary reform an absurdity." Lord Duncan pledged himself to leave no stone unturned in the House, and the following resolution was passed:—"That it is the opinion of this meeting that no measure of sanitary reform can be effective or useful unless accompanied by a repeal of the most obnoxious and unhealthy impost of the window duties." Meetings should be called in every parish to consider this subject, and to exhibit the feeling which prevails.

## LECTURES AND MEETINGS ON THE GAS MOVEMENT.

While adverting, briefly for the present, to a recent lecture of Mr. Wright's, in the Westminster Mechanics' Institution, we may just instance the evidence which the 'Progress at Slough,' detailed in last week's Builder, affords of the power which lecturers possess of forwarding any great movement of so popular and universal an interest as the gas movement is, and more particularly will be. The hint, we are assured, will not be thrown away on so intelligent, nay, talented, and laborious a class of men as we know professional lecturers to be. We do believe that a fairer, a wider, a more fruitful subject-field than this for popular lecturing throughout England and Scotland at this moment, probably does not exist. It is a subject which, directly and sensitively, affects the pockets and the comforts of the million, and these are ever the lecturer's surest stronghold and stay. The lecture of Mr. Wright, however, did not so much relate to the economics or statistics of gas as to its history, and, indeed, the history of artificial light in general. Any portions of it for which we may find room in The Builder, will be most appropriately introduced in connection with the subject of the domestic uses of gas.

A literal multitude, it appears, of gas consumers, would-be gas consumers, and others interested, flocked to the Southwark Literary Institution, Borough-road, on Friday evening of last week, in prompt response to the advertisement announcing a public meeting on the 'gas movement.' 'The matter,' observes the *Morning Advertiser*, 'seemed to excite very lively and general interest, as, before the time appointed for taking the chair, the large theatre of the Institution was nearly filled, and in the course of the evening became inconveniently crowded, hundreds being unable to obtain admittance.'

As we were not present, we cannot say much about the evidence and arguments adduced, but we perceive from the reports in the *Times*, *Post*, *Advertiser*, &c., that they were mainly our own, and the respectability and importance of the meeting were authenticated by the presence of an M.P., Mr. Pearson, as their chairman. Mr. Thwaites is said to have 'entered [we here quote chiefly from the condensed report in the *Times*] into a long and able statement as to the cost of producing gas. He adverted to the fact of nearly all the principal towns in Yorkshire being supplied at the rate of 3s. 3½d. per 1,000 cubic feet, and to the fact that even in the very large manufacturing towns the price did not exceed 4s. to 4s. 6d. The gas companies had consented to lower their charges from 8s. to 7s. per 1,000 feet; but that was not enough, for the same gas that they were to pay 7s. for, and for which they at present paid 8s., was supplied at Greenwich by the same company at 6s., and to all the railways and other large consumers at 5s. 6d. per 1,000 feet. All the eastern end of the town was supplied at 6s., and why were they to pay more? At the Wakefield House of Correction all the gas consumed was manufactured by the prisoners, and the cost of it was only 5½d. per 1,000 feet.* These were surely facts strong enough to induce them to have their gas supplied at 6s., or to form a consumers' company themselves.' The gas movement, he added, was becoming a most important one, and it would ere long take a strong hold on the public mind, in consequence of the vast amount of the interest involved. Looking to that large meeting, he would say to the gas directors, strike while hot, and do not let the dissatisfaction go further, or the time will come when 6s. will not satisfy. He was beginning to feel discontented with it himself.

The chairman then entered into a statement as to the origin of the gas companies, and remarked, that the competition between them had only caused two or three lines of pipe to be laid down in districts where there was hardly occasion for one. [Such, indeed, as we have ourselves remarked, has hitherto been the almost sole result of that 'wasteful competition' which the monopolists have themselves 'compelled' by their own blind resistance to what they *could* have well done, but *would* not do, for the public interest,—which, as we have always maintained, will be found to be identical with their own.] These lines of pipe constituted a great part of the capital of the companies, and yet their profits upon it—upon that unnecessary outlay—were enormously high. If any gas bill appeared in the House of Commons, he should insist upon the insertion of a clause contained in the Act for the first of all chartered gas companies—passed in 1810—a clause which was afterwards repealed—to the effect that parochial authorities shall have it in their power to purchase the pipes of a company on a valuation by two surveyors, if the company fail to supply a sufficient quantity or quality of gas at a moderate price. If he understood the object of this meeting aright, it was to shew gas directors that if they take an enlarged and comprehensive view of their private interests, they will find that they are coincident with those of the public. Gentlemen interested in the companies had been invited, and would, he felt convinced, receive a fair hearing. A gas contractor, in course of the discussion which followed the chairman's opening address, assured the meeting that the whole question resolved itself into that of the price of coals. [This same question, it will be found in an ensuing number of The Builder, we had incidentally discussed in the second portion of a recent article, intended to have occupied the place of the present notice.]

Two resolutions were proposed and carried by acclamation, expressive of the determination of the meeting to effect a reduction in the price of gas, appointing a committee to act for them, and pledging themselves to support them.

* It has been publicly alleged, on the part of the companies, that in our original notice of this 'secret of the gas house,' we made 'no allowance' for salaries and wages, rent, taxes, and wear of apparatus, fuel under the retorts, capital invested, &c.; and we are flippantly asked 'why' we 'omitted to refer to them?' We did not omit to refer to them: we expressly alluded to them. 'To be sure,' we remarked, 'that is exclusive of servants' wages, and even, in all probability, of interest on outlay for apparatus and for repairs.' [Let it be remembered that the Wakefield House of Correction was not sold to the public at 5½d., the actual price charged by the Wakefield Gas Company itself, by the way! except to 'large consumers,' who are probably among the few favoured ones, even in that case, to whom the gas would would be supplied *at less cost* than the actual cost of the gas would be saddled on the public, in order to cover the items only for wages, and repairs, and interest, or any details.] As this city was to have been lighted in August last, while the mains of the gas pipes were still lying in full fig, and yet the public are told, and save the mark, that it was 'during the first months' expense of the [gas] scientific department' of that publication that we rendered to do so! We began to enlighten the public mind on this important subject, as among the first, we believe, of the daily press, when it was enveloped in its own noisomeness, and we have had the satisfaction of seeing, in the articles, above quoted or referred to, as well as in other articles, and personal conversations, as we were privileged to hold with many of the gas engineers themselves, that we have not been altogether unsuccessful in our efforts to enlighten the public mind on this subject. We are glad to find that the more especially as there is a disposition, we still think, to keep the public in a state of darkness as to the real cost of gas, and to the fact that, whereas some companies may have to take allowance of the fuel used in their retorts as an item, and that the cost of fuel costs only 2s. per ton, while the coke produced by the retorts sells for 25s. per ton,—a fact which we have twelve long years noticed as an evidence that the increase of coals is no index of the price which ought to be charged to the public for gas, and that in many cases the companies actually gain enormously, even by the very consumption of their coal.

## RAILWAY JOTTINGS.

The Bury station of the Eastern Union line is nearly finished from a design by Mr. Sancton Wood, the contracts under Mr. Brassey being taken by Mr. Ogilvie for the main buildings, and by Mr. Trevethan for the shed roof. Its style is Elizabethan, the materials being red and white brick, with stone dressings. Built on a steep acclivity, the pay office is under the rails, and is 54 feet by 36, the ceilings supported by cross iron girders, with moulded ribs and groins, carried by eight iron columns. The platform is covered by a roof in three spans, supported by two lines of twelve iron columns each, 20 feet in height, and trussed with king and queen posts, but without tie-beams, having skylights and steam-louvres along the whole extent, and finished below with carved pendants. The dimensions of the shed are 260 feet by 84, breadth of each platform nearly 15 feet, with four lines of rail between them. Two towers, seventy feet high, are erected at the eastern extremity, for a contrivance to raise and lower the luggage to and from the platform: in these the clock and bell are to be placed. The whole extent of the station is 320 feet by 120, the south façade appearing with Elizabethan gables and grotesque finials, perforated balustrade, and bay windows with ornamental lead lights.——The great Liverpool tunnel is likely to prove more expensive than was at first contemplated. The cutting of a portion to Great Howard-street has been attempted underground; but such has been the ill success, that some of the houses, not only immediately over the cuttings, but at some distance from them, have given way. It is therefore believed that the houses in the streets will have to be pulled down.——The Leeds and York is being re-laid with new rails, chairs, and sleepers. The rail is of new invention, and is considered an improvement on the old, the surface being convex, and presenting much less surface to the wheel, thereby much reducing the friction,—a great desideratum it is thought, and certainly is,—except in peril of collision, or in frost or thaw, or heavy trainage.——A party, amongst whom was Mr. Macgregor, the chairman of the South Eastern Railway, started from Paris on Sunday week, and reached London in twelve hours and fifty minutes.——A meeting of delegates of France, Prussia, and Belgium, was opened on the 7th inst. at Brussels, under the presidency of the Belgian Minister of Public Works, to arrange an international correspondence on the different lines of railway which unite these three kingdoms.

## THE SUSPENSION OF WORKS.

Thousands and tens of thousands of discharged labourers are now roaming about the country idle, and rushing into the metropolis, hesitating not a moment on the way to enter bakers' or other provision shops, and consume the property therein 'upon the premises,' some reckless of all consequences, others by design to provide themselves with board and lodging at the public expense, in prisons rather than in workhouses. The magistrates at some of the metropolitan police courts have been also applied to for assistance on behalf of the more honest or less desperate portion of them: the majority are already literally penniless. In several places, such as at Neath, where the suspension has only recently taken place, the poor fellows have been lounging about the streets and roads in crowds for a whole week, as if waiting patiently for some hopeless job. For the last three weeks one contractor alone there has discharged fifty men each week, and several others are now at a stand; as are now, also, the works on the Huddersfield and Manchester, which there does not appear to have been any intention to suspend, at least on the part of the directors,—the contractors, Messrs. Nowell and Hattersley, having themselves suspended the works, as the *Manchester Guardian* states, in consequence of a heavy balance in their favour remaining unpaid by the company, whom they are about to proceed against at law. Both at the Huddersfield and the Stalybridge end, accordingly, the workmen have been paid off during the past week.——Mr. A. Stafford, M.P., has given notice in the Commons that he feels it his duty to call the attention of the House to the present condition of the labouring classes.——A contemporary proposes something like a modification of Mr. Weale's proposal to turn navvies into armies. "As a preventive against the men becoming burdensome, he suggests that they should be at liberty to enter regiments of engineers, to be disciplined by the ensuing spring, and sent to the colonies to make roads, railroads, &c.; their rations, in the first instance, to be provided by Government. Such as consent, he adds, might afterwards be located along the lines in wooden houses, to be built in the Canadian style, and women might be sent out as emigrants, or free settlers, and married men take their wives; the expense to be repaid on settlement by a trifling rent, sufficient to pay it off in twenty years or so." 200,000 persons might thus, he thinks, be annually sent out, instead of 20,000, as at present.

Great Iron Bridge for Russia.—A contract having been entered into between the Russian Government and Mr. Vignoles, engineer, for an iron suspension-bridge, to be erected over the Dnieper, [at Kieff, the first shipment of machines and ironwork was lately made at Liverpool, in the British barque, *Flirt*, Mr. A. Dove, master. The articles shipped consist of various massive pieces of iron, of prepared forms, in packages numbered from 1 to 320, and weighing in all 274 tons. They consist of sheeting pile and foundation pile-weights, 5-inch diameter shafts and couplings, cylindrical pieces and stands, with bolted pedestals, besides fourteen cases of bolts and nuts. They have been prepared at a foundry at Bolton, and are consigned to Odessa, whence they will be drawn by bullock-carts 400 miles, to Kieff.

## NOTES IN THE PROVINCES.

While the taste for Gothic architecture, which has of late revived throughout the country, has led to the restoring and the beautifying of our magnificent cathedrals (says the *Norfolk Chronicle*), the churches of our villages have also shared in the improvement. The churches at Fincham, at Runcton, at Holme, and at several other places, have lately been entirely re-pewed with open sittings, thus doing away with invidious distinction between rich and poor. Great improvement has also been made in the church at Marham. Besides a new roof, executed by Mr. James Taylor, the Villebois family has otherwise contributed liberally to the adornment of this church. One of the windows in the aisle (which from time immemorial had been nearly blocked up), has been re-opened, new mullions added, and the whole glazed with painted glass by Mr. Warrington; and we hear, adds our authority, that it is the intention of Mr. Villebois also to give two more stained glass windows, and that Mr. Warrington is now employed in executing them. The parishioners, too, intend putting the other windows into thorough repair.——The church of Heydon, in the same county, though said to be always kept in good order, has lately undergone extensive alteration, including repairs to the roof and a new east window of five lights, in harmony with the general style of the fabric. To the latter improvement, H. M. the Queen Dowager, Mr. W. E. L. Bulwer, and others, have contributed. The seats have also been re-arranged—square pews superseded by open benches—the old pulpit restored, and the chancel, with a new oak reredos and stalls, has assumed, adds the *Chronicle*, an appearance which we should wish to see imitated in the neighbouring churches of Salle, Cawston, and Aylsham.——A general appeal has been issued for the means of restoring the ancient round tower of All Saints' Church, Belton, Suffolk, which the Rev. A. Suckling, in "Memorials of the Antiquities of the County of Suffolk," now in the course of publication, describes as comprising a nave and chancel, 'with a circular tower at the west end, long ruinated;' the edifice otherwise, whic his 'constructed of cut flints,' being in good condition. The foundations of this old tower, respecting the erection of which nothing whatever is known by tradition or otherwise, are said to be entire; enough remaining to shew that it was one of the circular towers by no means uncommon in Norfolk and Suffolk, and to determine also its circumference and thickness of the walls. The estimate of expense (including the removal of a wooden belfry over the south porch) is 360*l.* The Bishop of Norwich, Lord Boston, Magdalen College Oxford, &c., have already contributed upwards of 150*l.* towards the end in view.——The Exeter Water Company have offered to supply water gratis to the baths and washhouses about to be established at Exeter.——West Lavington Church, re-opened by the Bishop of Salisbury on Tuesday week before last, has undergone a thorough restoration. The south transept has been given up by the Churchill family for additional seats, 200 of which, made of oak and low elevation, have been gained, notwithstanding the demolition of the galleries. The whole edifice has been re-roofed, and the nave roof restored to its original pitch, after the model of Ely Cathedral roof, and in oak. The east window is described as being now 'rich with dim religious light.' The windows, too, of the north transept and western end of the church, and a small early English one in the east gable of the nave, have been filled-in by Mr. Powell. The whole expense will not amount, it is said, to more than 1,600*l.*, 1,400*l.* of which have been realized. The repair of the tower is also spoken of.——On Tuesday week, the united committees for the erection of a lunatic asylum for Hereford, Monmouth, Brecon, and Radnor, met at Abergavenny, where the building is to be erected, for the furtherance of preliminary measures, such as the appointment of Mr. Thomas Fulljames, of Gloucester, as architect for the intended asylum, the appointment of a clerk, at 50*l.* per annum, during the erection of the building, and of a sub-committee, to select a proper site, with the assistance of the architect. The proposed asylum is to be adapted for the accommodation of 200 patients, with power to increase.——The ancient church of Kinwarton, near Alcester, restored by the Rev. R. Seymour, has been re-opened. The style of restoration is simple, without much decoration. The chancel-floor has been laid with Minton's tesselated tiles, in a circular design. The rood-screens, pulpit, priests' stalls, &c., are carved in oak. The east window, made by Mr. O'Connor, of London, is of stained-glass. The ceiling is of oak, shewing principals and timbers; and the body of the church has been repewed with open and free sittings. Mr. W. Butterfield was the architect employed; and Messrs. Miles and Son, of Stratford-on-Avon, builders, executed the designs.——The sureties of the late Mr. Walthew, the contractor for the new gaol at Birmingham, have offered 3,000*l.*, with costs, in full discharge of their alleged liability of about 3,469*l.*; but one of the town-councillors, Mr. J. B. Payn, determined not to allow the sureties to outdo the council in generosity or at least in justice, proposed an amendment on the motion for approval and acceptance of the offer, to the effect, that 2,000*l.* be received in full of all demands, 'that sum, together with the amount of 1,500*l.* already retained by the committee from Mr. Walthew, being the whole amount stipulated to be paid by the bond in default of the completion of the contract.' It was observed on the other hand, however, that the corporation or the rate-payers were 'losers to the extent of 2,000*l.* by the new contract which they had to make, owing to the advance in labour and materials;' and the amendment was ultimately negatived, and the original resolution carried. The sureties, on their part, allege that they were additional and heavy losers, by advances to the contractor on the faith of insurance from loss, by a sum retained by the committee as security, and which a member of committee himself assured them would render their risk only nominal, but which the committee appear to have expended in carrying on the building themselves, when the contractor fell a victim to his inability to fulfil 'the bond,' by which the committee themselves, whether from advance in labour and materials or 'their own superintendence,' have been the less personal and more fortunate losers. They seem to consider it necessary to explain, that they were prevented from refusing to accept Mr. Walthew's bond in the outset by a regard for his business reputation.

## SOCIETY OF ARTS.

*December* 1.—Mr. Wm. Wyon, R.A., in the chair.

Five specimens of painting on glass, by M. De Ron, of Munich, were exhibited. The secretary stated that the colours used by M. De Ron are glasses of different degrees of hardness, care being taken in using them never to put a harder upon a softer metal. Also, he uses both sides of the glass: this enables him to obtain clearness and decision of colour. Mr. Hall offered some remarks on the history and manufacture of stained glass, and exhibited several specimens of modern manufacture.

Mr. S. Moulton exhibited a model of an iron truss railway bridge, the invention of Mr. Rider, of New York. Mr. Moulton stated that the directors of the New York and Harlem Railroad have erected a bridge on this principle, the span of it being 70 feet, and having a double track or roadway upon it, and the whole weight of metal used in its construction weighs only thirteen tons, while its cost was under 500*l.*

A paper was read by Mr. Archer on Engraving, with reference to monumental brasses and incised stones. The author commenced by referring to the very early period at which the art of engraving appears to have been known and practised by the lapidary and goldsmith, and the probability that those to whom the art was known were subject to a precise code of laws and connected with the priestly office, these laws having the effect of regulating the productions according to a given standard set up by the heads of their order, thus giving a singular uniformity to the numerous examples of antique art, whether in painting, sculpture, or engraving. After alluding to the Egyptian, Etruscan, Greek, and Roman specimens of engraving, and similarity, and common origin, he proceeded to point out the various purposes to which the art of engraving on brass was employed, such as the representation of geographical diagrams.

In the time of Herodotus edicts and public records were sometimes inscribed on brass tablets, a striking instance of which occurs in the preservation, down to the present time, of the will and acts of the Emperor Augustus. Having touched upon some few instances of the ancient practice of the caleographic art, the author proceeded to detail some particulars of that process as it appeared at the general revival of art during the middle ages. In the eighth century, by a law of Kenneth, king of Scotland, it was enjoined that a cross should be put on every gravestone, *i. e.*, coffin lid, and this appears to have been done in three ways,—firstly, by the use of incised lines drawn round the object; secondly, by producing the form in low relief; and thirdly, by a wholly excised figure. The use of sepulchral brasses appears to have originated with the general revival of art in the thirteenth century; one of the earliest specimens is that of Sir Roger de Trompington, who died in 1289. The brasses of the fourteenth and fifteenth centuries contain, besides the effigies of warriors, churchmen, ladies, and civilians, many examples of beautiful decoration, derived from the architectural practice of the time; different combinations of the letters I. H. S., composing the sacred monogram, appear in the brasses of the fifteenth and beginning of the sixteenth century. In the sixteenth century, at the time of the Reformation, these sacred monuments appear to have become obnoxious, and were accordingly swept out of the churches with an unsparing hand, few (comparatively) having escaped destruction. Of some of these, however, the author produced rubbings, and having traced the history down to the nineteenth century, and referred to the latest of that period (prior to those produced under his own direction), proceeded to urge the desirableness of possessing, as a nation, a complete collection of the rubbings of the brasses of this country, as illustrative of the costume and history of bygone times, and the propriety of such a collection being deposited in the British Museum.

## FIRST PROCEEDINGS OF NEW SEWERS' COMMISSIONERS.

The first general court of the Commissioners of Sewers, appointed in pursuance of the recommendation of the Metropolitan Sanitory Commissioners under the great seal, was held on Thursday, in committee-room, No. 8, House of Commons. Present—The Right Hon. Lord Morpeth, M.P., in the chair; the Right Hon. Lord Ashley, M.P., Mr. J. Walter, M.P., Hon. F. Byng, Sir E. Buxton, M.P., Mr. R. A. Slaney, M.P., Dr. Southwood Smith, Mr. Bullar, Mr. J. Leslie, Mr. E. Chadwick, Professor Owen, Mr. Hulton, Mr. R. L. Jones, Mr. J. Broderip, Rev. W. Stone, and Mr. W. Puckle.

Several commissioners were sworn in for the St. Katharine's division, and also for the divisions of Kent and Surrey, and Greenwich.

The minutes of a preliminary meeting held at Gwydyr House were read and confirmed.

Lord Morpeth then rose and said, that he wished to mention to the court, that he was of opinion that it would be desirable that a bill should be drawn up to assimilate the powers of this commission in the whole of the districts intrusted to their care. He would not, however, occupy the attention of the court further upon it, as it would be a matter for legislative consideration.

The suggestion of the right hon. chairman was unanimously agreed to.

*The proposed Survey of the entire Metropolis.*—Lord Morpeth called upon the clerk, Mr. C. Hertslet, to read the report of Mr. Chadwick and Sir H. De la Beche, appointed to consider the subject of a general survey of the metropolis, which was as follows:—

"It having been determined to apply to the Board of Ordnance for assistance in obtaining an early survey of the metropolis, and it having been specially referred to us to consider what particulars might be inserted in such survey, we have the honour to report:—

That at the request of Lord Morpeth we obtained a conference with the Master General of the Ordnance, and explained to him the general position of the several sewers' districts in the metropolis, and the need of immediate aid. The Master-General expressed to us the

desire of the department to render every assistance in their power, provided funds were supplied to enable them to act. At his suggestion we drew up the heads for an estimate of the expense of the required work.

Viewing the great importance of speed in obtaining such particulars as might enable the works for house and street drainage to be carried on with safety, and in preventing unnecessary interruptions in the public works, we directed our attention to the particulars usually inserted in the Ordnance survey of 60 inches to the mile for towns, and we endeavoured to determine which of these particulars might be omitted for immediate purposes.

Having marked on a specimen sheet the particulars which we thought it absolutely necessary to obtain in the first instance, in addition to the triangulation, with the aid of the Board of Ordnance, we drew up a paper of inquiries with a view to ascertain the expense of the survey in separate stages, some of which might be delayed until the immediate requirements of the survey are completed, and others of which it might be found an eligible course to have completed, with the aid of the officers of the commission.

These heads of estimates have been transmitted by Lord Morpeth to the Master-General of the Ordnance; and, when they are returned, we shall be prepared to report further on the subject.

(Signed) H. T. De la Beche.
E. Chadwick.

December 16, 1847."

The clerk next read several statements on the subject of the accounts, and a letter from Alderman Musgrove, as chairman of the late Tower Hamlets' Commission, setting forth that, as soon as a guarantee from responsibility was given as to the funds, and the disposal of the court-house in Great Alie-street, all accounts should be handed over to the commissioners.

A messenger from this commission attended; and, an order being made, the accounts were handed in, as were those from the Surrey and Kent, and Greenwich divisions.

It was also reported that the amount of funds at present in hand, of the combined divisions, amounted to 32,839*l*.

A report was presented from the committee of accounts, stating that considerable difficulty existed as to placing the accounts, both as regarded the Bank of England and any private bank; but a joint-stock bank company had expressed a desire to give them every facility, as soon as arrangements for the same were made.

It was then agreed that further time should be granted to the committee for the custody of the funds.

The surveyors, Messrs. Phillips and Roe, presented reports that a number of men had been employed in flushing and cleansing cesspools, particularly in Turnmill-street, and that this had been effected by the use of the ordinary fire-engines, the hose of which had been inserted in the place proposed to be discharged; and, by the use of Sir William Burnett's chloride of zinc, all odour arising therefrom had been completely destroyed.

In answer to questions by Mr. Chadwick, the surveyors stated that the relative expense of cleansing would be one-sixth of the old mode. From one cesspool alone they had removed 20 cube yards of soil, and they believed they should be enabled to expedite the work so much more, that two men would be able to cleanse an ordinary cesspool in one hour.

Mr. Slaney—Then, by this means, shall you be enabled to cleanse the drains of houses, through narrow passages, at 500 yards distance, of all offensive matter, without inconvenience to the inhabitants?

The surveyors said it would be perfectly practicable.

Mr. Chadwick—Is it your opinion that cesspools can be done away with?

The surveyors said, that in the case of Turnmill-street, where there were twenty-three houses in one small court, an efficient sewer could be formed at the cost of 2*l*. 2*s*. per house, with an annual charge of 3*s*. per house.

Mr. Slaney—Then, am I to understand that, according to your estimate, an efficient drainage and supply of water can be obtained at one-fifth that of the present system?

The surveyors said such would be the case with a constant supply of water, and not, as at present, where water was not always supplied.

Lord Morpeth said, in reference to the amount of charges, it would be advisable to embody the subject in the new bill to be laid before Parliament.

Mr. R. L. Jones was of opinion that a *pro rata* principle should be adopted, and parties not be compelled to bear the expense of improvements where, perhaps, only a short interest existed.

The subject was then ordered to be brought forward at the next court.

Mr. Hertslet, the clerk, reported that the Chelsea, Hampstead, and other water companies, had each made offers of the most liberal description to supply the commission with abundant supplies of water, at cost price.

The Hon. Frederick Byng bore testimony to the willingness of the water companies to supply water almost gratuitously.

Mr. Slaney thought an answer should be returned to the water companies, acknowledging the liberal terms offered by them.

Lord Morpeth said he had no doubt the members of the committee would collect the feelings of the court, and transmit the same to the various companies.

At this stage of the business Lord Morpeth stated that, in consequence of engagements, he was unable to remain till the *agenda* had been gone through, and hoped some other member would be appointed to the chair.

It was then proposed, and unanimously agreed to, that Lord Ashley do take the chair for the remainder of the business.

The Hon. Frederick Byng drew the attention of the court to some of the worst courts and places he had seen lately—and those within 50 yards of the Sewers' Court in Greek-street; he alluded particularly to Dudley-court and Barnett's-buildings, where, within three months, several houses had been pulled down, and small ones rebuilt, but no arrangement had been made for any drainage whatever. He therefore moved that, as no provision had been made for drainage, the clerk do serve notices on the parties, under the Act 10 & 11 Victoria, and do pursue a similar course whenever he may deem it necessary.

The surveyor said the place was in a most frightful condition, and that the premises were glebe property, belonging to the vicar of St. Giles's.

Mr. Slaney made a few remarks on the motion, which was put and carried unanimously.

The following resolutions were then unanimously adopted, as the mode of action of the new commission:—

"That the surveyors be directed to take immediate measures for the flushing and cleansing of the sewers, and, when practicable, of the cesspools, preferring, in the first instance, proceeding with the courts, alleys, and worst-conditioned streets and places chiefly occupied by the poorer classes.

That for this purpose the surveyors be authorised to obtain additional supplies of water from the water companies, and to engage any additional assistants and labourers requisite, till further orders. That they be empowered to act on the orders entered into in respect to cleansing works from the several other districts.

That a committee, consisting of the following commissioners, be authorised to aid the officers with information, and to communicate with local boards having charge of works of paving and cleansing, and invite their co-operation to proceed at the same time with works for surface-cleansing, viz.:—

| | |
|---|---|
| Hon. F. Byng, | Dr. Arnott, |
| Sir James Clark, | Mr. Bullar, |
| Mr. Chadwick, | Rev. W. Stone. |
| Mr. Leslie, | |

That the surveyors be directed to forward such works now in progress as are of immediate and pressing necessity, and as will not require to be undone, and are not inconsistent with an amended system of sewers and drains worked by regulated supplies of water, and as may be safely proceeded with before the completion of a general survey.

That, in respect to works now in progress which are inconsistent with a system of sewers and drains acting by regulated supplies of water, or which may not safely be carried on without a survey, the surveyors are ordered to give directions for having them stopped, and openings of the roadway which interfere with the public traffic immediately made good. That the surveyors now appointed be directed to make an immediate report on works for which contracts have been entered into.

That the surveyors consider forthwith as to the covering up of any open sewers or ditches which appear to be dangerous to the public health, and that they report thereon immediately.

That application be immediately made to her Majesty's Board of Ordnance to direct a survey for the district on the larger scale of the survey recently made of Liverpool, Manchester, and other towns in Lancashire and in Yorkshire.

That Sir Henry De la Beche and Mr. Chadwick be authorised to report respecting the insertion of such particulars in the survey as may best adapt it for the requirements of the public service; and that they, and Mr. Richard Lambert Jones, be deputed to invite the commissioners for the city of London to join in the application.

That Mr. Stable prepare a summary of the state of the accounts, of the contracts, liabilities, and estate of the expenditure, the outstanding rates, income, and assets, for the early information of the commissioners.

That Mr. Hertslet prepare a collection of the bye-laws and orders in force in the several districts; and, with assistance, obtain a digest of the several local and general Acts which embody the law of sewers, for the information of the commissioners.

That a committee for general purposes be appointed, to whom it be referred specially to examine and report on the duties of the several officers and servants, and the present extent of public service requiring to be performed, and on the best means of providing for it, and for the keeping of the accounts and custody of the funds. That this committee be requested to meet from time to time on the progress of the business of the commission, and summon any extraordinary meeting of the court when occasion requires it.

That this committee consist of the following commissioners:—

| | |
|---|---|
| Hon. F. Byng, | Mr. Bidwell, |
| Mr. Hume, | Mr. Broderip, |
| Mr. Chadwick, | Mr. Bullar. |
| Mr. Leslie, | |

That the Committee for General Purposes be required to report as soon as possible what steps ought to be taken for opening the accounts of the commission with the Bank of England."

A great number of letters were read from different parties complaining of want of drainage, and the court then adjourned.

## HEALTH OF TOWNS.

A numerous and influential anniversary meeting of the Health of Towns Association was held on Saturday last at the Hanover-square Rooms, the Marquis of Normanby in the chair, supported by a body of members of Parliament, and other noblemen and gentlemen. Deputations attended from Bradford, Derby, Liverpool, Sheffield, Wolverhampton, Halifax, Stafford, Preston, Plymouth, East Retford, Manchester, Newcastle-upon-Tyne, and other important towns. Apologies for absence were received from Lord John Russell, the Duke of Buccleugh, Lord Morpeth, the Earl of Shelburne, the Bishop of Norwich, and a number of M.P.s and other supporters of sanitary reform.

The chairman opened the meeting by a speech in which the sincerity of his advocacy of the same good cause was very obvious. He urged the necessity of a prompt and vigorous support, although he believed that from the knowledge of its necessity which the public was at length acquiring, it would now stand upon its own merits. He did not mean to blame either the friends of this great cause, or the Government, who had already contributed both influentially and beneficially to this reform. A report full of sound, substantial, and admirable suggestions had been as vigorously acted upon by the Executive as it was wisely designed by the Legislature. He must regret, however, that at a time when this country—and this great metropolis—were in expectation of the visitation of cholera, it was still the fact that experience had been in vain acquired, information in vain collected, and improvements in vain suggested. The

labours of the Commission, too, he admitted, might be objected to, because their report states that the improvements which were to be effected have been postponed for another year; but many useful facts had been confirmed, the result of much scientific study concentrated, and, as it were, guaranteed, and rendered indisputable, by that report; and in these advantages they must be content to waive an unavailing regret for this much complained-of delay. The association and he were resolved that the people should no longer suffer from want of pure air and the light of heaven; and surely the labouring classes were entitled to the same protection from vital injury that was given to even inanimate machinery! In the parish of St. Saviour, Southwark, the average duration among the gentry was 47, tradesmen, 25, artisans, 22, and amongst the lowest, 15. This was an enormous disproportion in the average of human life in the same district, and which must be attributed to causes within the power of man to prevent. Besides the more obvious causes of this difference, deprival of light and the operation of the window-tax must be admitted; but he hoped the public would give such a powerful and moral support to a willing Government as would overcome all opposition; and he could assure them that that opposition, when met and overcome, would be found by them to have been utterly contemptible in its nature and amount.

Lord Ashley then proposed the first of a series of resolutions in favour of immediate and general sanitary legislation, approving of her Majesty's earnest recommendation from the throne, and of the Chancellor's reformation of the sewers' commissions, recommending the combination of local with central administration, and appealing to the clergy and medical faculty to aid in the removal of ignorance and apathy on so vital a subject. The first resolution was seconded by Dr. Guy, who regretted that no preparations had been made to meet the cholera. The fever-trap, the filth-trap, and the cholera-trap were one and the same. The Legislature were now called upon to do for the honest and worthy labouring classes what they had long since done for criminals in prisons throughout the country. He was happy to find such writers as Disraeli and Dickens giving a place to sanitary reform in their popular and fashionable writings.—Mr. James Heywood recommended improved sewers of pipe-clay and widened streets.—Lord Ebrington remarked, that in all towns where want of cleanliness prevailed, there was a craving for artificial spirits, caused by the depressing influence of the very atmosphere itself, and which defied the advocates of temperance and total abstinence.—Mr. R. A. Slaney stated, that in fifty towns, the condition of which he had inquired into, no less than forty-eight were deficient in drainage and supply of water. He felt that education was useless and inept in the midst of filth, and he believed that the educated and wealthy not only suffered from such causes but were led into intemperate habits from the same depressing influences.—Thanks were voted to the chairman before the meeting separated.

The City Remembrancer has given notice of an apparently comprehensive sanitary bill for the City, to be brought before Parliament. The sanitary reform movement is also progressing in the provinces, as at Gateshead, where sewers are to be extended, baths and washhouses established, and burial-grounds closed; at Sunderland, where a sanitary committee is at work, together with the corporation and the paving and lighting commissioners; at Alnwick, where a Board of Health is about to be established, and a medical officer has been exposing the 'frightful state' of the town; at Wigton, where a sanitary committee of inspection has been chosen; and at Edinburgh, where the whitening brush and besom are in active requisition, but where summary and extensive powers are much desired, as 'there is scarcely a close (or lane) privileged to have a drain.' At Glasgow, too, a Health of Towns Association is about to be established.

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Admiralty Board of Science.—A correspondent of the *Morning Herald*, namely, "Tom Cringle," suggests the establishment of a Board of Science, to assist my Lords Commissioners of the Admiralty in all that regards marine or naval tactics, ship-building, nautical instruments, experiments on motion in fluids, &c.

## THE PROBLEM BY "J. W." REPEATED.

Suppose (P) pounds raised one foot high per minute, represented the power required to roll a certain cylinder over a certain uniform inflexible road at a given rate. Also suppose ($p$) pounds raised one foot high per minute represented the power required to crush a certain uniform substance placed equally throughout upon that road. [That is, the power required to crush just so much of that substance in any given time as the cylinder came in contact with during that time].

*Question.*—Would (however great the diameter of the cylinder, and however great its weight) as much power as $(P+p)$ pounds raised one foot high per minute, be required to roll the said cylinder on the said road over the said substance at the given rate, that substance being crushed thereby? In other words: would as much power be required to roll the cylinder at the given rate over the substance, crushing that thereby, as that required to perform both separately, namely, to crush the substance and roll the cylinder? Mathematical proof required.

If it be admitted that as little power would be wasted by this method of crushing as by any other, it necessarily follows that in any given time the power ($p$) pounds raised one foot per minute would be sufficient to roll a particular cylinder (whose weight was proportionable to the hardness, &c., of the substance to be crushed) over the required quantity of substance and thereby crush the same. But observe, by the question it is required to be determined what power would be required to roll any cylinder whatever at the given rate over the substance, that is, any cylinder sufficiently heavy to crush that substance. Now suppose the power required to roll any cylinder over a given quantity of that substance (placed as aforesaid) in a given time, be represented by $(P+x)$ pounds raised one foot per minute, where P denotes the same as before,—

*Question 2.*—Would the value of $x$ be less the greater the diameter of the cylinder (or the greater the value of P), supposing that the road, substance and rate of motion remained the same?

J. W.

Dec. 3, 1847.

## Correspondence.

### EGG-SHAPED DRAIN-TUBES.

Sir,—It appears that Mr. Doulton registered, on the 11th October, 1847, an egg-shaped earthenware tube for sewers, thereby claiming it as his invention. The invention does not belong to him, nor is he entitled to claim from the public any benefit for the use of such sewers. Whatever credit there may be for the invention, belongs to me. (?) As surveyor to the Paving and Soughing Committee of the council of this city, I invented such sewers, and they have been for some time here used under my directions.

As you are aware, from observations made in your paper, the invention has been published many months prior to the above registration, and a great number of egg-shaped tubes of various sizes have been here used for the public drains of this city. Mr. Doulton is, therefore, not entitled to any exclusive benefit from the manufacture of egg-shaped tubes from such registration,—a fact which it may be of some importance to your readers to be made acquainted with.—I am, Sir, &c.,

J. Francis.

Town Hall, Manchester, Dec. 3, 1847.

### RESTORATION OF LINGFIELD CHURCH.

Mr. Editor,—As you referred, in your last number, to the restoration of the interior of Lingfield Church, and as, from the fact of my name having been connected with the mural paintings found therein, it may naturally be inferred that such restoration was made by me, I should feel obliged by your allowing me to state, that, although the exterior, and, indeed, all the substantial work of the fabric, underwent extensive repair under my superintendence, yet, as I differed with the committee as to the arrangement of the interior, this part was not conducted by me.—I am, Sir, &c.,

Edward l'Anson, Jun.

Laurence Pountney-lane, Dec. 14, 1847.

## Miscellanea.

The Royal Academy Medals.—On Friday, the 10th inst., the following distribution of premiums took place, viz.:—To Mr. J. E. Millais, for the best historical painting, the gold medal, and the Discourses of the Presidents Reynolds and West; to Mr. G. G. Adams, for the best historical group in sculpture, the gold medal, and the Discourses of the Presidents Reynolds and West; to Mr. Edward Rumsey, for the best architectural design, the gold medal, and the Discourses of the Presidents Reynolds and West; to Mr. William Proctor, for the best copy made in the school of painting, the silver medal, and the Lectures of the Professors Fuseli and Flaxman; to Mr. T. G. Duvall, for the best drawing from the life, the silver medal, and the Lectures of the Professors Fuseli and Flaxman; to Mr. F. Pickering, for the next best drawing from the life, the silver medal; to Mr. James Chester Lansdown, for the best architectural drawings of the entrance and interior of the Temple Church, the silver medal, and the Lectures of the Professors Fuseli and Flaxman; to Mr. C. Compton, for the best drawings from the antique, the silver medal, and the Lectures of the Professor Fuseli; to Mr. E. Eagles, for the next best drawing from the antique, the silver medal; to Mr. E. J. Physick, for the best model from the antique, the silver medal. In the class of architecture, the subject was "A Design for a Cathedral." Four competitors contributed in this class. For the silver medal there was but one competitor, who sent a set of nine architectural drawings of the Temple Church, comprising plans, elevation, sections, and perspective views.

Proposed Vandalism in the Priory Church, Christchurch.—Sir: The magnificent Priory Church of Christchurch, Twynham, exhibits many features of extraordinary interest. It would, perhaps, be impossible to point out a single church in which more can be found to interest and instruct the admirers and students of ecclesiastical architecture. The choir, now used as the chancel, exists with its stall-work perfect, and almost in the same condition as when left by the monks; it is inclosed at the east end by a stone reredos, or altar-screen, decorated with sculpture representing our Lord's descent from Jesse; at its east end is another screen, formerly called the rood-screen, also of stone, consisting of a double tier of canopied niches, elaborately and beautifully carved. The work is of the time of Edward the Third, which, though much mutilated, still excites the wonder and admiration of all who have the taste to appreciate such a work of art. *The destruction of this screen has been determined on by a committee*, appointed, I presume, for the improvement of this noble church. The time is past, Sir, at which such wanton acts of mischief could be perpetrated without remonstrance; and people's taste is too much improved to allow them to pass under the pretence of beautifying the fabric. It is really astonishing that at this day a set of men can be found who can resolve upon the destruction of any of the few remains of mediæval sculpture that have come down to us. When will parish vestries, committees, and corporate bodies, who have the charge of the ecclesiastical edifices of our land, learn that they are only the depositories of a sacred trust, and that their duty is to preserve, and not to destroy; that our generation has, as it were, only a life-interest in these things, and that we are bound to hand them on to posterity, at least in no worse condition than that we have received them in? Pray, Sir, raise your powerful voice, and prevent the threatened injury, if possible.—A.

Reform your Streets' Names.—The *Cork Examiner* recommends a new street nomenclature, suggesting "O'Connell-street," "Shiel-street," "Plunkett-street," as improved titles. We should like to see something of the kind in London. It seems hopeless, however, to expect the adoption of any names but those of modern celebrities, yet with that modification we should prefer "Southey" even to "Smith" square; while, out of the multiplicity of streets, rejoicing, if we may use the word, in the sponsorial appellation of "William," some one might gracefully add the patronymic of "Wordsworth." A Thomas-street, too, always provided it be a pleasant place, might be all the better for inserting after "Thomas" the word "Moore."—*Jerrold.*

A Christmas Present.—There seems no valid reason why we should be prevented from expressing our warm admiration of a charming story called "Midsummer Eve," just now published, by Mrs. S. C. Hall, albeit somewhat out of our path.* It is full of illustrations, full to overflowing, by Maclise, Stanfield, Creswick, Ward, Goodall, Frost, Noel Paton, Hulme, Landseer, Wehnert, Topham, Kenny Meadows, and others. As most of our readers must know, it was first given in the *Art-Union Journal*, but many engravings have been added. The perils which beset a young maid, the conflict of good and evil, are charmingly pourtrayed, and the refined taste, moral worth, and good heart of its excellent and accomplished author, which shine in every page, render it one of the most fitting presents for the youth of either sex, as eminently calculated for their improvement as their pleasure.

Victoria Park.—The Commissioners of Woods and Forests make the following statement in their report printed on Saturday respecting Victoria Park:—"The appendix, No. 21, contains a schedule of property purchased during the year ended the 5th of January last, under the authority of the Act 5 Vict., sec. 2, c. 20, to extend an Act passed in the fourth and fifth years of her present Majesty, for enabling her Majesty's Commissioners of Woods, &c. to purchase certain lands for Victoria Park, the purchase money for which property amounts to 425*l.*, making, with the sum of 82,898*l.* 3s. 1d. paid for former purchases, and the further sum of 3,975*l.* still due for a purchase already agreed for, but not completed during the period of this report, the sum of 87,298*l.* 3s. 1d., being the total cost of the property required for the site of this park, with the building ground attached thereto, exclusive of the expense of constructing the lodge, bridge, sewers, and roads, planting, fencing, and other works now in progress for the formation of the park; the amount paid in respect of which works, and of all other expenses relating to the park up to the 5th of January last, was 30,521*l.*, making the whole outlay to that date 117,819*l.* 3s. 1d." Since the last report, roads and plantations have been proceeded with, and an ornamental piece of water is now in course of formation. The outlay seems prodigious.

Rating Water Companies.—Lately the officers of the Grand Junction Water-works attended at the Richmond Petty Sessions to answer a summons for the non-payment of a poor-rate to the parish of Kew, for their pipes laid down in the river Thames, in that parish. On the part of the parish it was contended, that the company were liable to be rated for their pipes, although they were not inserted in the soil; and the decision of Judge Bayley, in the case of the King *v.* the Brighton Gas Company, (5 Bramwell and Bramwell, 470,) and that of Rex *v.* Bell (7th Term Reports, 598), were cited in support of that view. The solicitor for the company, on the contrary, argued that the occupancy by the pipes was a mere easement, and not rateable, as they were liable to removal, and could only be considered as a part of the stock-in-trade of the company. The bench decided that the company were liable, whether the pipes rested on or were imbedded in the soil, only that in the latter case the rate would be higher.

Measuring Tapes. — Sir: Very simple things are not to be always despised. The following improvement in measuring tapes seems both simple and obvious, yet I have never seen it adopted, except by myself. I claim no praise for the improvement, but I wish to make it public, if you think it worth making public, merely for the benefit of measurers and tape-makers. Instead, then, of having a round ring at the end of the tape, have a small brass D, the straight side being equal to the width of the tape. The consequence is, the tape will wear much longer, and it can be more accurately adjusted to the tape than a ring. The strain of the tape on a ring is at the two edges, causing the tape to wear, and in a very short time the ring to come off. In the D form the strain of the tape is equal throughout its breadth. I dedicate this improvement to Messrs. Chesterman and Bottow, for their excellent metallic tapes, if they choose to adopt it.—I am, Sir, &c., J. Blenkarn.

Ollerton, Notts.

* Longman and Co.

A Hydrostatic Turn-table has been patented by a Mr. Allan, of Crewe. The hydrostatic pressure is employed for the purpose of supporting the weight, not of turning it. The table or platform consists of a hollow water-tight box, made of wrought-iron plates, and supported in the turn-table pit, or reservoir, by water, or other fluid, while it revolves on a central fixed pillar. The pit is filled with water, or other fluid, just sufficient to sustain the maximum weight of the locomotive engine or carriage, the height of the surface of the water being adjusted proportionably with the maximum weight, and so maintained by a ball-cock, attached to a supply-pipe, from a cistern above. On the platform are three separate lines of rails abreast, crossed by three other sets of lines, so that one turn-table is sufficient to effect the transfer by a semi-revolution. The reservoir, or pit, is formed of masonry, or bricks, laid in cement, water-tight, with a firm basis on which the centre pillar can be properly supported.

Progress of New House of Commons.—In reply to questions asked on the 8th inst., by Lord Duncan, in the Commons, Lord Morpeth stated, that he had been informed by the architect, that he had no doubt the House would be ready for members within fifteen or eighteen months after the arrangements for ventilating, lighting, and warming the House had been settled! The Government, he might add, had thought fit to desire that Dr. Reid's projects might be carried into effect. Further progress had not been made with the official residences, the sums voted having been appropriated to the completion of the shell of the building in the first instance. The library, he believed, was in a state of considerable forwardness; and the architect had informed him that the residences of the Speaker and others would not be habitable until the exterior was more advanced towards completion.

Experiments on Cast-Iron.—Some experiments made at the Crane Foundry on the relative strength of cast-iron, *chilled* and *unchilled*, shewed that the process of chilling gave a superior strength of 17 per cent. The following experiment was tried on four bars, cast in the form of a double-faced railway rail, 1¼ in. deep, ¾ in. wide at top and bottom, and ¼ in. in the centre—the length of each bar was 18 in., and 15 in. between the supports. No. 1 was cast in green sand; No. 2 in dry sand; No. 3 cast in a chill; and No. 4 in a chill, and afterwards annealed. No. 1 weighed 32·5 ozs., bore 1,232 lbs., and deflected ·130 in. No. 2 weighed 30·5 ozs., bore 1,008 lbs., and deflected ·114 in.; No. 3 weighed 34·75 ozs., bore 784 lbs., and deflected ·053 in.; and No. 4 weighed 34·5 ozs., bore 2,520 lbs., and deflected ·148 in. The advantages in favour of cast-iron, treated as No. 4, is evidently little less than 100 per cent. over No. 1, and 300 per cent. over No. 3.

Employment of the Irish Peasantry.—A greater extent of land must be brought into cultivation to enable a sufficiency of grain to be produced to feed the people. Happily this can be readily done, and the overplus labour fully employed, with great advantage to the country, by converting the bog or peat land, which spreads itself over three millions of acres, into *household fuel and charcoal;* for which unceasing demand will arise: and by cultivating the substrata of these bogs, which consist of a soil admirably fitted for agricultural purposes. It has been shown on the map published for "*the Irish Amelioration Society*," set on foot for employing the overplus labour of Ireland, that the labour of one man will clear in 250 working days from an eighth to a sixth of an acre of peat bog averaged at eight feet deep; and that at 200 stations intended to be established, above 2,500 acres may be cleared annually. This would yield about 22,000 tons of potatoes, and every ten years of operations would add to the cultivable land of Ireland from twenty to thirty thousand acres of the most valuable soil, capable of producing at least 100,000 *quarters of wheat per annum.**

Steeple-climbing.—Wright, the steeple-climber, has been replacing the vane and pointing the steeple of St. John's Church, in Perth. The kite, by means of which he endeavoured to convey a rope over the vane, failed, and the means he used to accomplish the ascent were sufficiently daring to deserve notice. He obtained five rods, each about 15 feet long, so as on being joined together they would reach from the bartisan to the summit. They were no thicker than the butt end of a common fishing-rod. The first he placed against the steeple, and with no other than the precarious footing afforded by the lapping of the lead, and with the rod as his only hold by his hands, he climbed up so far as to be enabled to nail and lash the top of it to the steeple. Getting it steadied and secured thus, he pulled up a second rod by means of a cord, lashed it to the top of the first, mounted it also, fastened its top, pulled up a third, and so on until he reached the spire. He then pulled up and secured his tackle, and was soon safely again upon the bartisan. Men may be found to ascend to any altitude by means of scaffolding; but to climb up steeples nearly perpendicular, by means of nails, little bits of twine, and tender sticks, appears altogether incomprehensible.

* From "Employment of the Irish Peasantry," by Jasper W. Rogers, C.E.: Saunders, Charing-cross.

Progress in Carlisle.—The ancient city of Carlisle, after remaining for many years with little change in its condition, has recently begun to emerge from its state of inactivity, and to assume a more lively and bustling aspect. The *Manchester Guardian* says:—The number of new buildings of all classes bear manifest proofs of the increasing commercial prosperity of the town. The large amount of railway traffic on the Lancaster and Carlisle and Caledonian railways has been chiefly instrumental in bringing about this change, the necessity for which is most apparent. Unfortunately, the sanitary condition of Carlisle still stands very low, nor do its inhabitants seem at all alive to the vital importance of a thorough alteration in this respect. The drains, generally, are very inefficient; and in those parts of the town inhabited by the lower classes, the atmosphere is most offensive,—the refuse from the slaughter-houses, cesspools, &c., being allowed to accumulate to a most injurious extent. This, during the late summer and autumn, has been the cause of much fever and sickness. Active steps have been taken as to a regular supply of water and gas; and it is to be hoped that before long a proper supply of fresh air may be provided by a sounder system of drainage and ventilation. The water-works company are now constructing a large reservoir on Gallows Hill, under the direction of Mr. Simpson, civil engineer. The gas-company have lately built new gas-works, the old ones being purchased by the Lancaster and Carlisle Railway Company. The most important building erected in the town for many years is the new Citadel Station, which is now rapidly approaching towards completion.

Projected Works, &c.—Tenders have been called for by advertisement for erecting two wings to the Bedford Lunatic Asylum, and other works; for building a new church at Penrith, or for the mason's work separately and the other works collectively; for the erection of certain buildings at the Woburn Union Workhouse; for making alterations required in providing two additional wards at the Liverpool Workhouse, Brownlow-hill; also for manufacturing 5,000,000 of bricks for the new jail about to be erected at Walton (Liverpool), at per 1,000; and for erecting a new timber bridge over the Clyde at Dalmarnock (by Glasgow).

## TO CORRESPONDENTS.

"*Inquiry.*"—Glass pipes have been made, and doubtless will be more extensively so.

"*W. W.*"—Go to a drawing-school for a time.

"*S.*" If a reader of The Builder, would have seen that what the *Times* did once we have been doing constantly these two years.

"*Fact.*"—What asylum does he speak of?

"*Currency.*"—You would obtain what you wish at less cost from an individual. Ask some person to whom you are known.

"*A Londoner.*"—Next week.

"*Duomo of Florence.*"—Professor Donaldson's reply to "Inquirer" next week.

"*Institute of British Architects.*"—We are compelled to postpone our report of the last meeting. The paper read, "On the Construction of Sewers" is likely to excite controversy.

"*Peterborough Mechanics' Institute Competition.*" We are led by representations to postpone giving particulars promised.

*Received*—"T. H." (Hackney), "Palladio," "C. L." (too late for present number), "G. S." (Bermondsey), "W. D." "W. N." (shall be inquired into), "Veritas" (write to the managers), "A. H." (Dunmow), "E. N." "F. S." (not desirable), "J. A." "Quintin Matsys," "The Furnishing and Decorating Assistant," by H. Whitaker, No. 12. "Treasure of Beauties," H. Whitaker, Part XIV. Fisher and Co., St. Martin's-le-grand.

"*Books, Prices, and Addresses.*"—We have not time to point out books or mid addresses.

*** Correspondents are requested to address all Communications to the Editor, 2, York-street, Covent Garden.

# THE BUILDER.

## ADVERTISEMENTS.

**CHEAP ORNAMENTAL GLASS.**—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

**ORNAMENTED, COLOURED AND PAINTED GLASS FOR WINDOWS.**—CLAUDET and HOUGHTON, 89, HIGH HOLBORN, execute every description of Ornamental Glass for Windows, in ancient or modern style, at the lowest prices consistent with superior workmanship, either in Plain Colour, Ornamented in White, Neatly Embossed, Engraved, or richly Painted. Patterns and specimens may be seen at their Warehouse, 89, High Holborn.

**SOHO PLATE-GLASS WAREHOUSE,** 26, SOHO-SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St Gobain and St Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

**PHŒNIX PLATE-GLASS WAREHOUSE,** 24, St. Mary Axe, City.—E. MOSS, Proprietor. Builders, Upholsterers, and Consumers of Plate Glass, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Railway Carriages, Mirrors, and other purposes. Colour, Quality, and Substance unrivalled by any other house in the Kingdom. ROUGH PLATE GLASS for Skylights supplied ¼, 3-8ths, ½, ¾, and inch thick. All Plate Glass for Shop Fronts delivered within five miles of London free of all charge, and estimates given, free of expense, in town or country.—No connection with any other house.

**UNION PLATE-GLASS COMPANY.**—Architects, Builders and the Trade generally are solicited to inspect the quality, colour and substance manufactured by this Company. To encourage the use of Plate Glass for glazing, a further reduction in price has taken place on the quality used for that purpose.
ROUGH PLATE GLASS supplied ¼, 3-8, ½, and ¾ inch thick. Particular attention is requested to the superior colour and evenness of this article.
LONDON WAREHOUSE, 99, Hatton Garden, Holborn.
H. CHRISTIE, Agent.

**PATENT PLATE GLASS, BRITISH PLATE GLASS, SHEET AND CROWN WINDOW GLASS**
SHEET GLASS FOR HORTICULTURAL PURPOSES, of every thickness manufactured.
PROPAGATING GLASSES of every size, from two inches upwards.
BEE GLASSES of every size, from two inches upwards.
CUCUMBER GLASSES of every length.
All at the very lowest prices, at CLAUDET and HOUGHTON'S Window-Glass Warehouse, 89, High Holborn.

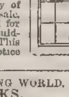
**THE BIRMINGHAM PLATE-GLASS COMPANY** beg to call the attention of the Trade to their manufacture of superior Polished and Rough Plate Glass. Having recently enlarged their works, and erected an additional 80 horse power engine, they are enabled to produce a much larger quantity. The prices will be found to compete with any establishment in the trade. A large stock of Polished and Rough Plate always on hand. LONDON WAREHOUSE, 141, Fleet-street; WORKS, Smethwick, Birmingham.

**CHAS. WM. WATERLOW,**

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of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.



TO THE BUILDING WORLD.



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By Her Majesty's Royal Letters Patent.

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VENTILATION IMPROVED, AND SMOKY CHIMNEYS CURED

**BAILLIE'S PATENT TRANSPARENT VENTILATORS** are at once efficacious, neat, and easily adapted to any sash, and, where thorough ventilation without draught is required, will be found invaluable, and especially as a cure for smoky chimneys.—Supplied Wholesale and Retail by E. and W. H. JACKSON, Window-Glass Warehouse, 315, Oxford-street.

ARCHITECTURAL ENRICHMENTS.

**BIELEFELD'S IMPROVED PAPIER MACHE,** which has been almost universally adopted for architectural decoration, has been patronized by her Majesty, by the Honourable Commissioners of Board of Works, by the highest of the nobility and gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club House, Grocers' Hall, &c., also at the British Museum and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mâché ornaments, with a tariff, price £1.—Works, 15, Wellington Street North, Strand.

TO DECORATORS, PAPERHANGERS, AND THE TRADE.

**E. T. ARCHER, of the late Firm of ARCHER and TAVERNER,** of Nos. 140 and 141, Old-street, begs leave to state to the Trade that, in consequence of the increasing demand for his DECORATIVE PAPERS, he has taken the opportunity to embrace the advantage of the above premises, lately occupied by Messrs. MERRICK, WILKINSON and Co., upon which establishment E. T. ARCHER will be happy to submit to the Trade in general all his various styles of Decorations, to which will be added all the large collection of Decorations, Figures, French Chintzes, and Decorative Borders and Papers of Messrs. Merrick, Wilkinson and Co., which E. T. A. has been successful in purchasing at the late sales of Messrs. M., W. and Co. E. T. Archer, at the same time, returns his thanks for the liberal support he has for the last eighteen years received at the hands of the Trade, and trusts that he shall continue to receive their confidence and support at the Manufactory and Show-rooms, No. 451, OXFORD-STREET, and Nos. 140 and 141, Old-street, where all orders will meet with promptitude and attention.

**DR. ARNOTT'S CHIMNEY VENTILATOR.**—F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of Rooms of every description. Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of "no cure no pay."



**WILSON and Co.'s PATENT VENTILATING CHIMNEY-POT,** for the Cure of Smoky Chimneys, has been tested extensively throughout the Kingdom for the last three years, and has proved to be an effectual remedy.
The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.
J. W. and Co. had the honour of fixing upwards of fifty of the Patent Ventilating Chimney Pots, in artificial Stone Cement, on the chimneys of Buckingham Palace; since which a number have been fixed at Windsor Castle.
The Patent Pots have proved to be the most effectual invention ever yet discovered, and are unrivalled for their ornamental appearance; they are manufactured of artificial Stone Cement, Iron, or Zinc.
The Trade supplied with them at the Manufactory,

VALE PLACE, HAMMERSMITH, MIDDLESEX.

Inquiries from the Country to be addressed to Messrs Wilson and Co., at their Manufactory, as above. Prices and prospectuses forwarded by return of post.

N.B. Licenses granted to Manufacturers.

**WILLIAMS'S PATENT SLATE RIDGES and HIPS.**—The above article is recommended as the best and most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 40 per cent. cheaper.—Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvidere-road, Lambeth, London.

**WORCESTER ENCAUSTIC TILES.**—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.
N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

**THE AINSLIE BRICK AND TILE MACHINE COMPANY** (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly.
These Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

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**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only.
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Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

**SAMUEL CUNDY, Mason and Builder,** PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and Others, that the Business now carried on at the above Works is solely his.
That ARCHITECTURAL, SCULPTURIC, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.
S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

**MOSAIC PAVEMENTS.—SINGER'S PATENT,** for Churches, Halls, Conservatories, Verandahs, Baths, &c. This most beautiful and durable of all ornamental Pavements has been lately much improved in execution and reduced in price. Specimens, adapted to every style of Architecture, may be seen at the Works of the sole Patentee, ALFRED SINGER, Vauxhall Pottery, Foot of Vauxhall-bridge, Surrey side.

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The Parcels will be carefully packed by the Company's Warehousemen, deliverable at the WORKS, SUTTON, near ST. HELEN'S. Cases allowed for when returned.
The Company not accountable for breakage.—By order of the Board,
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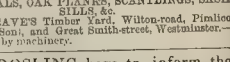
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**TO BE SOLD, by Private Contract, an** excellent TEN HORSE STEAM-ENGINE, Double Cylinder, High and Low Pressure, in good repair. Also, a Thirty-Horse Wrought-Iron STEAM BOILER, with Stand-in ther complete, 30 feet long and 7 feet 3 in. diameter; 1 Chimney, and Iron Stays. One Spur Wheel, and One intermediate Pitch; and Two Pinions to drive Rag Engines; and Two Plummer Blocks and Brasses; also Two Iron Rag Engines, with Steel Plates and Rolls complete.
One Lathe Turning Lathe, with Slide-rest.
One Ditto, with Slide-rest, Straps, and Gear-work.
One Ditto, small Foot Lathe
Also, about 2 T ns of Iron and other Rags, Rosin, Alum, Ultra-Marine Blue, Zinc Plates, &c. &c.
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TO BUILDERS.

**TO BE DISPOSED OF, most Eligible** FREEHOLD BUSINESS PREMISES, situate in a flourishing Market-place in the south of England, in which the Trade of Builder, Carpenter, and Joiner, is now, and has been successfully carried on for many years by the present proprietor, who is about to retire from the same. There is an Excellent Jobbing Connection with it, and altogether presents an opening with a handsome sell ou to be obtained. The premises are in most complete, in good repair, the principal part having been newly erected within the last twelve years, and a commodious DWELLING, replete with every convenience, at the rear of which is Foreman's House, Cottage, Garden, Extensive Yard, with Workshops, Drying House, Timber under Glazier's Shop, Stores, Deal Sheds, Sawpit, Standing, Cart and Chaise Houses. There is also an excellent spring of water running through the premises. No premium or good-will required, and part of the purchase money may remain on mortgage. For further particulars apply to A. F. LIVESAY, Esq., Architect, Portsmouth.

ST PANCRAS VESTRY-ROOMS, Gordon-street, Gordon-square, held under the Duke of Bedford for a long term, at a ground rent, with possession.

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By order of the Vestry, JOHN M'CAHEY, Vestry Clerk.
December 1, 1847

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N.B. The above has been very much reduced since March last. Orders exe uted as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICKMAKERS AND TILE MAKERS

**THE AINSLIE BRICK AND TILE** MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alpert n, and at the Company's Offices, 4, Piccadilly, from 10 to 4 o'clock, Mr. Robert Screaton, who has been appointed manager in the room of Mr John Ainslie, will show the Machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North Western Railway, and two miles of the Paddington station of the Great Western Railway also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 a, Piccadilly

The Machines may also be seen at Mr. SLIGHTS, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and PINCH, Penkridge, Staffordshire; and Messrs DRUMMOND and SON, Dublin.

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**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities at Wharfage, Frontage, or Delivery, by applying as above. A weigh bridge and drawdock.—N.B. Price for Glass Pantiles

**H. MORRELL'S FINE PREPARED** DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East India Company.
The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of every variety of black, and possess all the requisites for the most highly-finished drawings.
Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country.

The Builder.

No. CCLV.

SATURDAY, DECEMBER 25, 1847.

AT the close of our volume, for some years past, we have taken occasion, with, we hope, excusable gratulation, to point attention to the improved character of THE BUILDER, and to express our thanks for that best evidence of appreciation of our endeavours on the part of the public,—a greatly increased circulation. If we were justified on those occasions, no one, we venture to think, will question our right to use modestly the same expressions in terminating this, the fifth volume of our work. A glance through it will serve to shew that we have redeemed our pledges given at the commencement of the year, and that THE BUILDER for 1847 is, beyond question, a great advance on those which have preceded it.

The illustrations, prepared at much larger cost than heretofore, include, besides numerous examples of ancient architecture, foreign and domestic, and many details in the shape of gables, doors, windows, screens, letterns, pulpit, &c., a number of modern works, completed or commenced. Of these we may mention the new church in Wells-street, Marylebone; the Théâtre Montpensier, in Paris, with plan; our Ambassador's House at Constantinople; the Covent Garden Opera House; the Carlton Club; a series of views from the new Houses of Parliament; Homerton new Church; Miss Coutts's Church, Westminster; the new Front of Buckingham Palace; the Interior of Drury Lane Theatre; the Institution of Civil Engineers; the Army and Navy Club; the Lyceum Theatre, with plan; the London Coal Exchange, and Ware Church, restored. The examples of ancient foreign architecture include buildings in Treves, Igel, Bruges, Antwerp, Chalons-sur-Marne, Ghent, Semur, Dijon, Tours, and Cologne; and the views of ancient English structures comprise churches and residences in Tutbury, Barfreston, Kenilworth, Leicester, Gloucester, Ely, Wells, Stratford-on-Avon, Coventry, and other places.

To the literary portion of the work we refer less willingly; suffice it to say, that none of the important questions within our scope which have occupied public attention have been neglected, and that in many instances, the public have received earlier and more correct information through the pages of THE BUILDER than from any other source.

While the character of THE BUILDER has been advancing, so has its circle of readers extended, and it is now to be found on the table of the most Illustrious gentleman in the kingdom, in all the Government offices, and in the studio of the clergyman and the landed proprietor, as well as in the more humble dwelling of the operative.

The countenance which has been afforded us by his Royal Highness the Prince Albert, while we may be justified in regarding it as a high and most gratifying personal compliment, will be viewed by all as another evidence of his Royal Highness's constantly evinced desire to aid all undertakings which have for their object social improvement and the advancement of science and the arts.

It will be our object to render THE BUILDER worthy of the favour which is shewn it in all quarters, and, to be enabled to effect this, we propose in the ensuing year to make a slight alteration in the price,—that is, to raise the cost of the weekly number from 3d. to 4d. A better paper, new type, and additional illustrations of first-rate excellence, will not be considered, we trust, too dearly paid for by the proposed increase,—indeed, judging from communications we have received, which have in some degree led us to make this change, we may hope that it will meet the wishes of the great majority of our readers. That this may be the case is our anxious desire. Apart from pecuniary motives, to lose a reader is to us something like losing a friend, which we would not willingly risk. We have sought to establish kindly relations with our readers. As we said at the beginning of the year, "we desire to stand well with them; to have their confidence; we would enlist their aid and secure their esteem. To be thought honest and useful recorders of facts,—even able expounders of principles (high praise as it would be), is not the extent of our ambition. We would have it felt that we have high objects in view, and are impelled by loftier motives than pecuniary profit or desire for reputation: that we are labouring, honestly and sincerely, to advance the well-being and the happiness of our fellow men, and would find greater reward in effecting this than in personal success."

We hope, then, in the coming year, to find, with a large accession of new friends and assistants, all our old ones about us; and in the meantime, heartily offer them all those good wishes that belong to the season, and in the expression of which, though they may be in many cases but mere words of course, from the lip rather than the heart, the world will do well to continue; and better, if it act as if it meant what was said.

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A very full Table of Contents has been carefully prepared, so as to render the information contained in the volume available for reference, and, with the Title-page, will be presented *gratuitously*, with the next number. A Title-page in colours has been printed, and may be obtained also gratuitously, by those subscribers who prefer it to that which accompanies the Index.

Covers for THE BUILDER may be obtained at the Office, price 2*s.*; or the publisher will undertake to bind the numbers at 3*s.* per volume.

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## THE PRINCIPLES AND PRACTICE OF BUILDING SEWERS.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary meeting of the Institute of Architects was held on the 13th instant,—Mr. Angell, vice-president, in the chair,—when the Cavaliére Matas, of Florence, and Herr Zwirner, of Cologne, were elected corresponding members; Mr. C. Lee, fellow; and Messrs. Eddrup, Kelly, and Wadmore, associates.

Mr. Edward I'Anson read a paper on "The Principles and Practice of Building Sewers in the Metropolis." He said he proposed to confine himself to the question of construction, and not to refer to recent events in connection with the late commissioners, concerning which there might be different opinions amongst those present. In arranging sewerage, the determination of the best outlet was the most important consideration: it was sometimes necessary to take it a considerable distance to secure a good fall. Two main points should be studied: the first was to have it deep enough for the lowest basement in the lowest district; and the second, to obtain a continuous flow from end to end. To have a sewer deeper than deep enough he thought foolish. The higher the outlet was, the better it was, because it had more time to discharge itself: every foot above low-water mark was important. He had prepared some tables, marking the time occupied in the rise and fall of the tide. These shewed that while the average of the time occupied by the second and third foot was nine minutes, the last foot took fifty minutes to run down. It was possible to have too much fall. At Holborn-hill the sewer bottom was gulled out by too rapid fall. With a fall of 1 in 300 no deposit took place: greater fall than this he thought injurious. There was usually little fear of this, however; the difficulty usually was to obtain sufficient fall. Rotherhithe, for example, was eight or ten feet below low-water mark. A slighter fall was sufficient than is usually considered necessary. There had been a sewer under his control which fell but 16 inches in 5,000 feet, yet was always clean.

To obtain uniform fall was important: a hollow place received deposits, and became a nucleus of obstruction. The next inquiry was as to the best form of sewer. The egg-shaped was at this moment the fashionable form, and in two commissions had obtained absolute dominion. Opinions varied: Mr. Hosking was in favour of the egg-formed, so was Mr. Cresy. In Mr. Chadwick's report of 1842 this form was considered best. In his own opinion the cry had been carried too far,—perfection did not lie in an egg. Mr. Gwilt objected to this form, and so did the late surveyor to the city of London. The form should be adapted to the circumstances: the circular, elliptical, or egg-formed might be the best according to the situation.

Then as to the *size*: it was most important in practice that sewers should be large enough for a man to pass along them: by this the size should be regulated: the expense was not much increased by adhering to this principle. The area of enclosing for a given discharge was least with the circle and greatest with the egg-formed. It was important, however, to have means of scouring sewers, and he was disposed to admit that the egg-shape had advantages in this respect. Still he could not avoid remembering that water was discharged through a cylinder faster where friction is least, and was led therefore to think, that with the same quantity of water the velocity would be less in the egg-formed than in circular sewers, and the time occupied in discharge was important. As to the great question of how large the sectional area should be, he must urge that it should not merely be large enough for ordinary wants, but should provide for casualities. On the 1st of August in last year an unusual quantity of water fell; at Camberwell, for example, 3½ inches fell in two hours and seventeen minutes; and on that occasion, as on many others, sewers of very large size were found to be too small.

He would now speak of the construction of sewers. Much had been said of forming sewers of half-brick-work: in the Tower Hamlets' sewers 3 feet 6 inches high and 2 feet 3 inches wide had been so formed; he could not, however, assent to the wisdom of this: if sewers were to be considered public works, he thought these experiments were not proper. The reader then described the present mode of constructing sewers. In 1811 his father had used cast-iron inverts for loose ground with much success. A Mr. Kerrich had taken out a patent for concrete masses for use in this position. Some system of flushing he thought absolutely necessary. To dispose of the gases generated in sewers was a difficult question. More, perhaps, was said about their dangerous qualities than was necessary. Some experiments were now going on which he understood would establish this: the experimenter found it difficult to obtain a cube foot of poisonous gas from the sewers. To shew how easy a case might be made on either side, a female, who lived near one of the open street-gratings so much complained of, had assured a friend of his that she had never been well *till she came there!* He attached no importance to this story, but it certainly was a fact, that when London was ravaged by the cholera, no case occurred amongst the workmen employed in the sewers. The reader then spoke of house-drains, and said he thought large brick-barrelled drains were advisable. He drew attention, with praise, to the earthenware drain-pipes recently introduced. By those of larger size, however, nothing was saved in expense; the 12 inches

were as dear as a brick drain of that diameter, and the 15 inches dearer.

At the close of the paper, the Dean of Westminster demurred strongly as to the innoxious nature of the gases in sewers: from what the healthy and the strong might derive no harm the weak would suffer. Within the few last days a medical friend of his, passing over one of these gratings, had taken matter into his system which laid him on a sick bed.

Mr. C. Fowler referred to the sewerage of Hambugh laid down by Mr. W. Lindley, which passes under the river by means of a dip, which is cleansed by a great head of water. The sewer there is egg-formed.

Mr. James Fergusson maintained that the gases evolved from decomposing animal matter were not so injurious as those from vegetable matter.*

Mr. Donaldson said the form of sewers had been modified through a variety of causes. In the first instance they were merely for the passage of water, and any form sufficed. Afterwards, when solid matter was permitted to pass into them, greater attention to their arrangement became necessary. Within a few years the use of macadamized roads, from which an immense quantity of heavy grit was taken into the sewers, had rendered further alteration in form requisite. He was of opinion that more evil resulted from the badness of our house-drains than from the sewers. The gases from sewers were doubtless bad, although he himself had passed through miles of sewers, and had never suffered from them. How were these to be carried off? If the street gratings were trapped, more vapours would go into the houses. Bricklayers were so culpably careless, that drains were seldom air-tight or perfectly trapped. As to using the chimney-shafts of brewers and manufactories, it was scarcely to be expected that private individuals would suffer this; and if we had shafts and fires expressly for the purpose, the expense and inconvenience would be great. He thought precautions might be carried to extremes, and cause a dangerous frenzy. It had been long desired by late commissions to obtain perfect drainage, but the public would not then co-operate. More water was needed; without this, cesspools could not be prevented. Government should bring two or three rivers of water into London for the poor, the streets, and the sewers. By comparison with ancient Rome in this respect, London suffered materially.

Mr. Tite was unwilling that we should depart from our principle of self-reliance, and led to depend on Government. The great cost of sewers had been a bar to their extension: the opinion now entertained seemed to be that public sewers should be built at public expense. It was very desirable that sewers should be ventilated: the only practical suggestion he had heard was one by the Dean of Westminster in that room, some time ago, namely, that it should be effected in connection with the gas-lights of the metropolis.† Bad smells in our houses often proceeded from destruction of the traps by rats. As to the recent changes, it was well known that new brooms sweep clean, and he hoped this would be the case with the new commissioners.

The Dean of Westminster said he would venture to ask whether the appointment of an inspector of stench-traps would be objectionable? In reply to which, the interference was objected to by several speakers, except in the case of public lodging-houses.

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The Institute of Fine Arts.— On Saturday evening the Institute of Fine Arts held their first conversazione, at their rooms in Great Marlborough-street, and provided a rich treat for their visitors,—the walls and tables being covered with works of art. We are glad to find that unanimity has been restored here, and that the Institute bids fair to flourish.

* Not long ago we heard it gravely maintained by three medical men, at a dinner-table, that the evil supposed to result from the decomposing bodies of our heaped-up dead in crowded towns was a fancy one, and in reply to quoted cases of men struck dead as by lightning on breaking into a grave, that the fatal gases which caused this resulted from the decomposing coffin wood rather than from the body.

† Professor Hosking, in an appendix to his work on the "Regulations of Buildings," quoted last week, wherein he questions the practicability of attempting at this moment to remove the soil from the sewers, as recommended by the Sanitary Commissioners, discusses the question of ventilating the sewers.

## WHAT SHOULD A SANITARY BILL CONTAIN?

Sir,—I come now to speak of the seventh head in my list of requirements given last week, namely, the *establishment of cemeteries.* An enactment providing for this pressing want would of course be rendered absolutely necessary by the previous provision. Hitherto most of the cemeteries that have been established have been the speculations of joint-stock companies, just as railways are; but this system should at once be put an end to, and the interests of the shareholders in the existing cemeteries purchased, and others formed in suitable localities, the extent of which should of course depend on the number of the inhabitants present and reasonably prospective. It will not do any longer to depend upon voluntary exertion for the formation of public cemeteries, as joint-stock companies can only be expected to embark their capital where it is likely to pay well, whereas cemeteries are required everywhere; and it is not well for the public to commit itself on such an important and really and literally "grave" subject, to a body of *£. s. d.* speculators, however excellent their first intentions may have been. Wherever cemeteries are formed it would be well to purchase a considerable space of land all round the cemetery, which might be let for grazing or other farming purposes, and this would prevent any buildings being erected in its immediate vicinity, and also provide for its extension, if necessary. Another point to be attended to is the keeping at a sufficient distance from the city, town, or village.

*Eighth.—Establishment of Public Baths and Washhouses.*—That a compulsory provision of this sort is requisite is fully evidenced by the complete failure of the "Act" empowering and allowing public corporations and parishes to erect baths and washhouses, and also of the "Act" allowing the formation of public museums, which is, in fact, almost a dead letter. As there are now several establishments of this kind in full working, and as they have more than answered the expectations of their founders in all respects, and particularly as a profitable return is realised by them (which would of course, if they were generally adopted, very much reduce the rates), I do not think I need urge any thing more in their favour.

*Ninth.—Establishment of Public Necessaries for both Sexes.*—In this country, at least, this important subject has been almost entirely neglected by those in authority, with the exception of one body of men,—a body, or rather bodies, whom it has been very fashionable of late (and certainly in some respects with good reason) to impugn in every possible way;—I allude to the "railway directors," who, whatever their faults, certainly deserve credit, and copying too, as regards their provision of "public necessaries for both sexes" at almost every station on every well-regulated line.

I would have a provision inserted in the Act requiring the formation of public necessaries for both sexes, in suitable unobtrusive situations in the neighbourhood of every principal thoroughfare, and the appointment of male and female servants respectively to keep them in proper order.

*Tenth.—Regulation of Noxious and Dangerous Businesses.*—There are some provisions in the "Metropolitan Buildings Act" under this head which, in the next, and I hope final (for many years to come), edition of that "unsanitary statute" might be omitted, as also the provisions regulating the size of drains and flues, &c. &c.

Among much that is bad, however, I am happy to say there is some good in the "Buildings Act." I refer to what I consider a very necessary provision in a sanitary view (as well as a preservative against fire); it is the clause in the aforesaid "Act" requiring houses hereafter built to have yards of a certain size; and I have not proposed its insertion in the Sanitary Act because it is already in force in the Metropolitan Buildings Act, and because I expect that Act, when thoroughly revised, will be applied to every other large town in the kingdom.

To return to the tenth subject: it is one that requires very great judgment and delicacy in the handling, otherwise it is likely to do great injury without effecting much good. There are many businesses which must be carried on somewhere, and perhaps I may say that is the case with all; therefore it would be well to enact that a suitable locality should be selected away, but not far from, every large town, where such noxious businesses might be carried on, under certain restrictions and inspection, and so that the workmen employed might live away from the spot:—a short line of railway, for instance, might enable them to do this.

As regards the metropolis, I think the Isle of Dogs, Poplar (which already contains a great many chemical works) presents a suitable locality, which might be set apart for these noxious businesses; and a branch rail, direct to the Eastern Counties line, would enable the workmen to occupy a village, or villages, such as the "Suburban Village Society" propose to form. Dangerous businesses should not be permitted to be carried on in the metropolis or any other city, and should only be allowed at a certain distance from it.

*Eleventh.—Establishment and Management of Fire-escapes and Fire-engines, and other Means for the Extinction of Fire.*—If my memory does not deceive me, a promise was given by Sir Robert Peel, when in power, for the entire revision of the means at present available for the above objects; but nothing came of it, except, perhaps, a few inquiries into the mode adopted in Paris, which is said to be very efficient; but whether it is so or not I am not personally aware. At present, the only effective fire-escapes in the metropolis are supplied by the voluntary subscriptions of some humane individuals, and even these are very few in number. However, they have been found to answer the purpose very well, therefore I propose their general adoption: the expense, of course, to be paid out of the rates. Another very simple but useful expedient as a fire-escape is a square piece of strong canvas or tarpauling, and which, if held out by the four corners, would break the fall of any one jumping from the window of a house, and thus be the means of saving many lives. In order to render this plan available, it would simply be necessary to deposit a tarpauling in various parts of the metropolis (perhaps at the station-houses), in the custody of the policemen or of the fire-escape attendants, and it would then be ready for use at any time. I have previously stated that I would have the water from the Thames laid on by pipes, which should be always kept charged (of course under a sufficient pressure to raise the water to any required height), so that it would be merely necessary to attach the hose to the plugs in order to obtain a powerful stream or streams of water, which would, of course, entirely abolish the ordinary hand fire-engines, and it would only be necessary to have active officers stationed in all parts of the metropolis, in order to bring this plan into operation. But the warehouses and manufactories on the banks of that "great highway," the Thames, would still be unprovided for in this respect; therefore I propose stationing a number of floating fire-engines at regular distances along the Thames. These should be fitted up with powerful steam-engines, which should be applied as in the ordinary steam-boats, to the moving of the vessels to any part or parts of the river where they might be required, and also by altering the gear to the pumping of the water from the river in the required direction. It would, of course, be advisable to keep the steam always up, so that these vessels should be ready for action at the shortest notice; and they might be occasionally employed in the day time in washing the bridges, or other buildings, in the neighbourhood of the river.

It has been suggested in The Builder to bring the electric telegraph into operation for the prevention of fires; and perhaps it might be as well to have connections by means of the telegraph between appointed stations on both sides of the river, and these floating fire-engines; and each of the engines might have communications with each other in the same way.

*Twelfth.—The Obligation to Consume the Smoke produced in Manufactories and River Steamers, or, in the case of the latter, to Burn Coke.*—This is a point which I sincerely hope will not be overlooked by the framers of the next "Sanitary Act," and especially as regards the river steamers, which ought to be obliged to burn coke, like the railway locomotives. As it has now been proved that the smoke of

* See p. 587, *ante.*

furnaces may and can be consumed, there is no reason for suffering this great nuisance to exist.

*Thirteenth.—The Prevention of the Use of unhealthy underground Cellars as Living-rooms.*—This is a provision which should be transferred from the "Metropolitan Buildings Act," and applied to the whole kingdom, under the auspices of the Sanitary Commissioners, more especially so, as it has no relation whatever to the legitimate objects of the "Buildings Act." To quote an often-repeated proverb, "A place for every thing, and every thing in its place."

Passing to the fifteenth head,—

*Ventilation.*—In order to carry out this object in all its integrity, I contend that the ventilation of every dwelling-house, workshop, manufactory, printing-office, public building, or meeting-room, whether church, chapel, concert room, theatre, or otherwise; in fact, of every covered building where persons are in the habit of congregating, or meeting, or living, should be rendered strictly obligatory upon the respective owners. Perhaps the surest way of including all would be to give the exceptions, which should only consist of warehouses, which are not much frequented. This would no doubt cause great opposition, but so would many of the other provisions, but I hold that to be no argument at all, and dismiss it as such. The requiring every landlord to thoroughly ventilate his dwelling-house, workshop, &c., is simply nothing more than carrying out a provision to prevent his poisoning either himself or others, just as the law would render illegal the administering of a dose of arsenic by one man either to himself or another, the only difference being in the time which each process takes to effect its deadly object,—a dose of arsenic being rapid in its effects, while a non-ventilated house is the "slow and sure" (poison) which it is said "wins the race."

"Every Englishman's house is his castle!" many will exclaim. True,—but he is not on that account to be allowed to commit suicide, homicide, or any other *cide*, with impunity, more especially when such disastrous consequences as are entailed on unventilated rooms can be prevented at so trifling an expense.

The ventilation of dwelling-houses is of primary importance, being even more so than of theatres, *et hoc genus omne*, as we remain in our dwelling-houses for longer periods together than elsewhere: for instance, a man goes to bed, and remains in his bed-room for perhaps eight or ten hours; he goes to church and remains only two hours, and to a concert or theatre, and remains for three, four, or five hours, so that the ventilation of his sleeping-room is clearly of the chief importance. I propose, therefore, to say a few words on this subject. The mode in which I would ventilate ordinary town dwelling-houses with well-hole staircases from top to bottom, would be as follows:—In the basement at the bottom of the well-hole I would have one of Nott's patent stoves (or perhaps Cundy's patent ventilating stove might answer the purpose), and a communication should be formed between the external air and the basement by a shaft or by a grating in the wall, if the situation should not be very damp. I would also have communications between the staircase and each room of the house by means of a small opening or shaft from each ceiling of the staircase to the floor of the room above in an oblique direction, which opening should be guarded at the upper end by a piece of fine felt, so as to prevent any sudden draughts, and I would also have an air-flue formed in the party-wall from the basement to the top of the house adjoining, and following the course of the kitchen flue, and terminating at the top with a windguard. This flue should have branch flues from the upper part of each of the rooms in the house where that can be managed, the openings of which in the different rooms should be provided with an Arnott's valve. If such an arrangement of flues as I have described could not be obtained, or if the house should be already built, the Arnott's valves might be inserted in the flues from the fire-places (of course near the ceiling), or if any of the rooms should not have fire-places, an opening guarded by a valve should be made in one of the walls, to communicate with the external air, or a Baillie's or Fair's patent transparent ventilator in one of the upper squares of the window, might answer the purpose. If the well-hole is lighted by a skylight a common balance ventilator should be formed in that.

The way in which the ventilation would go on would be thus:—When the stove in the basement should be lighted, it would rarefy the air around it, which would ascend, and the cold external air would rush in by the shaft or opening to supply its place, and in turn be rarefied and ascend. The rarefied air, in its ascent up the well-hole and staircase, would pass through the openings in the ceilings and through the floors above into each of the rooms, and up the rooms and through the openings into the flues, or into the external air, as the case may be. The presence of any persons, or the combustion of firing, candles, or gas, &c., in any of the rooms, would of course facilitate the current of rarefied air into the rooms; and by this arrangement every room in the house might be brought to about the same temperature, and as the temperature of the staircase and of the rooms would assimilate pretty closely, there would not be those unpleasant draughts which are usually felt every time the door is opened, and as each room would be well supplied with fresh air (which might be admitted through the carpet, or rug, or the skirting, as found best), the chimney would not be likely to smoke; indeed, as the combustion would be much more perfect, there would be very little smoke produced, and in going from a sitting-room to a bed-room, we should not find such an unpleasant difference in the temperature as is usually the case. Where gas is burned, additional ventilation should always be provided.

*Sixteenth.—Establishment of Public Gardens and Play-grounds, &c.*—There is an old proverb which will apply very well to the case in point—"All work and no play makes Jack a dull boy." Should our legislators, then, refuse or neglect to furnish Mr. Jack Bull with the above-mentioned necessary means for his wholesome and healthy "recreation," they will assuredly lie under the imputation of conniving at, or wishing to perpetuate Jack's undoubted and inevitable dulness. But I would go further than the establishment of public play-grounds, &c., and, taking a lesson from the ancient Greeks, institute public games, with prizes for the fastest runner, the best leaper, wrestler, &c., by which means good might be effected.

A Londoner.

## ARE ARCHITECTS AND SURVEYORS TO BE EXCLUDED FROM THE SEWERS' COMMISSIONS?

Sir,—We look for your opinion as to the "ground of exception" to architects and surveyors as commissioners of sewers, in the report of the Sanitary Commission.

It is not quite clear from the report, that Lord Grosvenor and those who have subscribed it concur in the "exception," but merely state that they have had presented to them "ground of exception." It seems very important to ascertain whether there is any real ground of exception against a class whose professional pursuits would appear to qualify them, more than others, to superintend the operations of sewage—whether, in short, it is their science or their integrity which is at so low an ebb.

It is clear that the Westminster Commission incurred much obloquy from its adhering to an expensive and inflexible system of sewage, after science and experience had shewn that it was erroneous. But it may be asked, whether this was attributable to the prejudices and opinions of architects and surveyors only? I think you will find, upon referring to your reports, that men of nearly every profession attended the deliberations of that court; and that the commissioners who were members of the architectural profession were by no means united in opinion; but that there were several who, at much cost of time and thought, perseveringly promoted a new system of sewage, which was ultimately carried into practice.

I can understand that a recommendation, that the Commission of Sewers should not have in it a predominance of architects, or, indeed, of any one class of men, would be just and prudent; but I am not reconciled to the sentence which would exclude from a commission, upon whose deliberations the convenient occupation of houses and buildings in a great measure depends, the very persons who design those buildings, and whose connection with such a board might have the two-fold advantage of giving and receiving information on so important a subject.

It is to be hoped, that the Sanitary Commission do not concur in such a stigma upon a whole class of men, and that architects and surveyors of character, being entrusted with very important functions in other respects, will not be necessarily excluded from a commission of sewers, in which their acquirements enable them to be of peculiar benefit to the public.—I am, Sir, &c.

Dec. 17. A Subscriber.

## THE DUOMO OF FLORENCE.

Sir,—I cannot but recognize the courtesy with which "An Inquirer" offers his comments upon my paper respecting the cathedral at Florence, and must certainly take blame to myself if my language should have been so unguarded as to have led any of my hearers, and himself among the rest, to entertain confused notions of the opinions I intended to convey. I feel with him, that florid language is not well adapted to serious subjects; but I am sure he will agree with me that there is no reason that a bald and cold narrative should be best fitting for describing a work of the imagination. I can assure "An Inquirer" that I sought not any of the graces of language, for I was so pressed for time that I had not the opportunity of perusing even a great part of my paper before I delivered it at the Institute.

We will now consider the objection which he states to my matter. He dislikes my phrase of "lights in an age of artistic darkness," as applied to Arnolfo and Giotto. In speaking of Italians and an Italian building, I meant my terms to apply only to that country, and particularly with reference to architecture and to its artistic treatment. From the fifth to the eleventh century we find the edifices erected there without any fine principle of art, and even those which claim our admiration are due, generally, rather to foreign artists, particularly those from Byzantium, than to native talent. From the eleventh to the middle of the fourteenth century we have the Duomo, baptistry, and falling tower of Pisa; the baptistry, cathedral, and belfry of Florence; and the loggia of Orgagna, in that city, as the most striking edifices of that period. The powers of the Italian mind had become enfeebled, and scarcely was a powerful intellect ever brought to bear upon the monuments of that land during the middle ages: they were to a great degree distinct, fortuitous, unconnected productions, and many of them due to foreign talent, as the Byzantine churches in Catalonia and the south, and the Lombard edifices in the north.

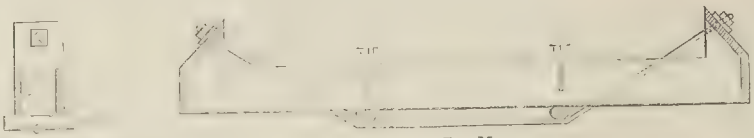
But how remarkable was the phenomenon observable on this side of the Alps, while the classic land of the arts had remained stationary since the irruption of the Goths. The Byzantine style had been modified and harmonized into a grand, and uniform, and perfect system, known by us under the term of Norman, which prevailed from the middle of the tenth to the end of the twelfth century, and was by us adopted from our conquerors. To this succeeded the pointed or lancet, owing probably its origin to the Saracenic taste of the crusaders, by them introduced into Europe, and lasting till 1300. Then came the decorated style, which prevailed about seventy years, expanded into the flamboyant of France, Germany, the Netherlands, and Spain, and developed into the perpendicular of our own country; and which flourished at the very period when Orgagna, despising the trammels of authority, designed the loggia of Florence. All this had been going on while Italy was, as it were, slumbering, satisfied with incongruously piling up together the materials of former times, which they had at hand. No longer taste, but the wants of the moment, directed the artist, or rather the artizan. Is then the phrase of "an age of artistic darkness" inapplicable to this period in Italy, and the more particularly when considered in reference to architecture?

## EXPERIMENTS ON THE FORM OF CAST-IRON GIRDERS.



TRANSVERSE SECTION AND END.

*Exp.* L.—SCALE, 2 Inches to 1 Foot.



TRANSVERSE SECTION AND END.

*Exp.* M.

I did not wish it to be inferred, nor did I state, that the grossest ignorance as to construction prevailed *all over* Europe at the time Brunelleschi designed the construction of the cupola. But I venture to say, that neither William of Wykeham nor William de Worde could or would have designed a cupola of such vast dimensions and substantial construction as that of Santa Maria del Fiori. But it is a fact, recorded by the historians of the time and other authentic writers, such as Vasari, &c., that the most distinguished men of science in Europe were invited to the competition. Upon that authority and upon my own studies of the monument, and not from the misuse of a florid style of expression, have I ventured upon the statements contained in my paper. If my friend, the "Inquirer," will ponder well the terms which I have used in regard to Arnolfo, he will find that I have not eulogised, except *relatively and comparatively*, his merits as an architect. He has designed and executed a great work; it is the expression of the artistic feeling of that period, and so far a valuable and interesting monument of art,—and I should grieve to see the completion of the design carried out in any other taste. I think the Cavaliére Matas deserves very great credit, as the first in Italy to enter into the true spirit of archæological sentiment, that of finishing a grand monument in the style of its first conception. A different principle has prevailed with almost all Italian architects hitherto. Vignola and Palladio offered designs for the completion of the west front of S. Petronio, at Bologna, but never for that of the Duomo of Florence.—I am, Sir, &c.,

THOS. L. DONALDSON.

## EXPERIMENTS ON THE FORM OF CAST-IRON GIRDERS.*

WE proceed to conclude Mr. Cooper's experiments, giving his own remarks on the results.

The experiments L are on a form which, for a want of previous experiments, I had for some years used with a great deal of confidence, and with how little propriety, is now witnessed; for although the average breaking weight is larger than either J or K, yet, from an increase of its own weight, its relative value to experiment A is the same, and its stiffness also the same, with the preceding. It has a slight advantage over them only in the facility and cheapness of its application to *single* beams, which the others have not. Indeed, to a double or box beam, cheapness would also apply if it were of any value. In reasoning upon this form of truss, the simple operation of tying the extended portions of the beam by a power superior to the strength of its own parts, subject to tensile action, would appear to be at once the object sought; but it is hereby developed, that a less elastic material must be found than wrought-iron to fulfil this condition: this must suffice upon this form of truss, and leads to the contra of this and the previous experiments, viz.:—

Experiment M, where the tension bolt is applied without an abutment or beyond the line of compression, as has lately too frequently been done, and with, in one instance at least, such lamentable effects, applied actually as an accessory to tear asunder the lower portion of such beam to which it is added; every pound from the commencement of its load exerting this influence, and only resisted by the simple strength of that to which it is an incubus. It is indeed very striking that its effect in these experiments should be in three out of four exactly alike, the breaking weights being the same, and the deflections nearly so; and if we leave out the one bearing more than the three, on account of the small excess of weight which it had, the experiments speak so determinate, that the cause passes question. Compared with the last experiments, L, it shews a deficiency of bearing weight of 20 per cent., and I have no doubt, all else being the same, such a result will invariably be borne out. In none, it must be noticed, was the bolt broken; and in No. 19 was indicated disarrangement of its particles when two-thirds of the weight only was borne.

I have thus briefly passed over these experiments, seeking rather to call attention to the laws which they exemplify and which it is futile to disregard, and to attract such attention to the same, that the subject may yet be further investigated, seeing it involves so great a responsibility upon so many; and *who*, in truth, may be excluded from an interest in it? Here, the constructor and the public are alike *one*.

I will only further remark, that it does appear to me, notwithstanding the facts here made clear, that the principle has yet to be applied, and with great advantages. I would, referring to my previous observation, suggest, as the means, abstractedly, the following:—a non-compressible piece, to be used only to withstand thrust or compression, confining or connecting together the ends of a tension bar, no one part of its figure to be liable to the action of tension for available strength; apply thereto the wrought-iron tension bar in such a form and quantity that it, and it alone, shall be that to which we look for strength to be derived from its resistance to extension; stay, or bear upwards *from* the same *to* that which resists compression, taking care that the thrust piece shall have sufficient extra elevation at its centre, that the amount of the deflection due to the load applied upon it shall not depress it without or beyond such line. This is that which occurs to me, from what has here passed before me,—a great subject for reflection, and an extensive one for experiment. With this thought I lay the foregoing before you and your numerous readers, feeling I have brought prominently before them and yourself a subject neglected, but not less of importance, hoping that it may now be taken up in such a way that that which is without doubt unexplored may be brought to light, to the mutual advantage of many of us who have hitherto taken for granted that which in reality it was our duty to have inquired into.

I here observe, that the whole of these experiments, from A to H inclusive, were made by Mr. C. Parker, of Tavistock-street, Bedford-square, and myself, and exclusively for him; and he has been kind enough to allow me to lay them before you in detail. Those following H, I have grounded upon them as a continuation of the question, with, I hope, a profitable result.

Drury-lane. GEORGE B. COOPER.

L.—Transverse Strain on Two simple Rectangular Beams, cast in one casting, connected by cross ties, &c., same as Experiment I, but trussed as per sketch annexed, or by tying the extended parts in a straight line.

The pressure applied in the same way, and bearings similar.

| No. 12. Experiment. Weight, 164 oz. | | No. 13 Experiment. Weight, 160 oz. | | No. 14 Experiment. Weight, 144 oz. | | No. 15 Experiment. Weight, 154 oz. | |
|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 220 | ·0025 | 220 | ·005 | 220 | ·006 | 220 | ·0025 |
| 340 | ·006 | 343 | ·01 | 325 | ·008 | 310 | ·005 |
| 445 | ·011 | 448 | ·014 | 445 | ·012 | 400 | ·0075 |
| 568 | ·016 | 568 | ·018 | 535 | ·014 | 493 | ·012 |
| 655 | ·018 | 658 | .023 | 628 | ·017 | 580 | ·014 |
| 745 | ·022 | 748 | ·026 | 712 | ·02 | 667 | ·017 |
| 835 | ·025 | 847 | ·03 | 790 | ·022 | 754 | ·02 |
| 925 | ·03 | 937 | ·034 | 868 | ·025 | 844 | ·023 |
| 1018 | ·032 | 1021 | ·038 | 958 | ·028 | 934 | ·027 |
| 1108 | ·035 | 1099 | ·04 | 1045 | ·031 | 1039 | ·03 |
| 1195 | ·0375 | 1177 | ·043 | 1132 | ·034 | 1159 | ·035 |
| 1285 | ·041 | 1255 | ·048 | 1210 | ·038 | 1231 | ·038 |
| 1363 | ·043 | 1345† | | 1294 | ·042 | 1451 | ·042 |
| 1450 | ·046 | 1435‡ | ·066 | 1387 | ·045 | 1529 | ·045 |
| 1528 | ·048 | 1525 | ·069 | 1468 | ·049 | 1622 | ·049 |
| 1612 | ·051 | 1612 | ·072 | 1555 | ·053 | 1706 | ·052 |
| 1690 | ·055 | 1699 | ·075 | 1675 | ·057 | 1790 | ·056 |
| 1768 | ·057 | 1780 | ·078 | 1717 | ·06 | 1868 | ·058 |
| 1846 | ·06 | 1861 | ·083 | 1825 | ·064 | 1946 | ·062 |
| 1924 | ·062 | 1942 | ·087 | 1918 | ·067 | 2030 | ·066 |
| 2005 | ·065 | 2029 | ·091 | 2608 | ·07 | 2108 | ·069 |
| 2098 | ·068 | 2119 | ·096 | 2074 | ·072 | 2186 | ·072 |
| 2185 | ·07 | 2185 | ·1 | 2140 | ·074 | 2267 | ·075 |
| 2254 | ·073 | 2263 | ·104 | 2206 | ·076 | 2351 | ·078 |
| 2323 | ·076 | 2341 | ·108 | 2294 | ·08 | 2444 | ·082 |
| 2392 | ·079 | 2420 | ·112 | 2387 | ·084 | 2510 | ·085 |
| 2461 | ·082 | 2489 | ·115 | 2477 | ·088 | 2576 | ·087 |
| 2533 | ·083 | 2555 | ·118 | 2567 | ·092 | 2642 | ·09 |
| 2605 | ·087 | 2624 | ·122 | 2666 | ·095 | 2714 | ·093 |
| 2671 | ·089 | 2690 | ·125 | 2732 | ·097 | 2781 | ·097 |
| 2737 | ·092 | 2756 | ·129 | 2798 | ·1 | 2847 | ·1 |
| 2803 | ·095 | 2822 | ·133 | 2867 | ·103 | 2913 | ·104 |
| 2872 | ·099 | 2891 | ·136 | 2933 | ·106 | 2973 | ·107 |
| 2938 | ·102 | 2957 | ·139 | 2999 | ·109 | 3039 | ·111 |
| 3004 | ·105 | 3026 Broke. | | 3065 | ·112 | 3105 | ·113 |
| 3094 | ·108 | | | 3128 | ·115 | 3171 | ·116 |
| 3160 | ·111 | | | 3197 Broke. | | 3237 | ·12 |
| 3239 | ·114* | | | | § | 3306 | ·123‖ |
| 3305 | ·118 | | | | | 3369 | ·127 |
| 3368 | ·121 | | | | | 3438 | ·13¶ |
| 3425 | ·124 | | | | | 3507 | ·133 |
| 3485 | ·127 | | | | | 3563 Broke. | |
| 3554 | ·131 | | | | | | |
| Broke. | | | | | | | |

* When this beam broke, the lever fell four inches and broke the bolt.

† Bolt broke off at nut, and deflector fell to ·064.

‡ No bolt.

§ Bolt not broken.—This casting was run deficient at the upper part of one end, but not so as to impair the strength.

‖ Bolt not broken. ¶ Fracture central.

See p. 690, *ante*.

M.—Transverse Strain on Two simple Rectangular Beams, formed in one casting, connected by Cross Ties, same as Exp. I, but trussed as per sketch annexed, or from two points. The strain taken *beyond* the line of compression.—The pressure applied in the same way, and bearings similar.

| No. 16 Experiment. Weight, 170 oz. | | No. 17 Experiment. Weight, 172 oz. | | No. 18 Experiment. Weight, 170 oz. | | No. 19 Experiment. Weight, 172 oz. | |
|---|---|---|---|---|---|---|---|
| Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. | Pres. in lbs. | Deflection. |
| 220 | ·005 | 220 | ·007 | 220 | ·002 | 220 | ·005 |
| 413 | ·007 | 413 | ·012 | 413 | ·004 | 413 | ·01 |
| 497 | ·01 | 497 | ·016 | 497 | ·006 | 497 | ·013 |
| 587 | ·016 | 587 | ·021 | 587 | ·01 | 587 | ·017 |
| 665 | ·02 | 665 | ·025 | 665 | ·015 | 665 | ·0225 |
| 743 | ·024 | 743 | ·028 | 743 | ·019 | 743 | ·026 |
| 821 | ·027 | 821 | ·032 | 821 | ·024 | 821 | ·03 |
| 911 | ·032 | 911 | ·037 | 911 | ·028 | 911 | ·033 |
| 1001 | ·036 | 1001 | ·04 | 1001 | ·033 | 1001 | ·037 |
| 1085 | ·04 | 1085 | ·044 | 1085 | ·036 | 1085 | ·041 |
| 1175 | ·044 | 1175 | ·049 | 1175 | ·041 | 1175 | ·045 |
| 1256 | ·049 | 1256 | ·053 | 1256 | ·044 | 1256 | ·05 |
| 1346 | ·053 | 1346 | ·057 | 1346 | ·049 | 1346 | ·053 |
| 1433 | ·056 | 1433 | ·061 | 1433 | ·053 | 1433 | ·057 |
| 1520 | ·059 | 1520 | ·065 | 1520 | ·057 | 1520 | ·06 |
| 1607 | ·063 | 1607 | ·07 | 1607 | ·06 | 1607 | ·063 |
| 1712 | ·067 | 1712 | ·073 | 1712 | ·065 | 1712‡ | ·068 |
| 1793 | ·071 | 1793 | ·077 | 1793 | ·067 | 1793 | ·072 |
| 1913 | ·075 | 1913 | ·085 | 1913 | ·072 | 1913 | ·08 |
| 1991 | ·078 | 1991 | ·09 | 1991 | ·074 | 1991 | ·081 |
| 2063 | ·082 | 2063 | ·095 | 2063 | ·077 | 2063 | ·084 |
| 2132 | ·086 | 2132 | ·098 | 2132 | ·081 | 2132 | ·086 |
| 2201 | ·089 | 2201 | ·101 | 2201 | ·084 | 2201 | ·09 |
| 2267 | ·093 | 2267 | ·105 | 2267 | ·086 | 2267§ | ·094 |
| 2354 | ·097 | 2354 | ·109 | 2354 | ·091 | 2354‖ | ·098 |
| 2441 | ·101 | 2441 | ·114 | 2441 | ·097 | 2441 | ·104 |
| 2510 | ·105 | 2510 | † | 2510 | † | 2510 | † |
| 2579 | ·108 | | | | | | |
| 2645 | ·112 | | | | | | |
| 2714 | ·116 | | | | | | |
| 2783 | ·119 | | | | | | |
| 2849 | ·123 | | | | | | |
| 2915 | ·126 | | | | | | |
| 2981 | ·129 | | | | | | |
| 3067 | ·134 | | | | | | |
| 3143 | ·137 | | | | | | |
| 3206 | ·141 | | | | | | |
| 3269 | * | | | | | | |

* Broke central. Loaded with great care. Lever fell 1 inch.
† Broke.
Exp. 17.—Bolt not broke.
Exp 18.—Very carefully loaded.
‡ Loud crack.
§ Ditto
‖ Loud twang. Fracture similar to No. 17; not opposite to each other. Lever fell 1½ inch. Bolt not broken.

## ABSTRACT OF EXPERIMENTS

UPON PLAIN, BOX, AND TRUSSED IRON BEAMS.

Length 24 inches: Depth and Sections as described.

| Reference to Detail Exp. | Mean Weight of Beams in oz. | Mean breaking Wt in lbs. | No. of Experiments of Each. | Mean of Deflections | Proportion of Deflection to own Depth. | Sustaining times its own Weight. | Relative Value as Weight and Breaking Weight to A. |
|---|---|---|---|---|---|---|---|
| A | 54½ | 1642 | 4 | 155 | 1-13th | 482 | 1 — 1 |
| B | 109½ | 2755 | 4 | 151 | 1-13th | 403 | 2 — 1·7 |
| C | 112½ | 2775 | 3 | 145 | 1-14th | 393 | 2·06 — 1·7 |
| D | 112 | 4065† | 3 | 212 | 1-10th | 580 | 2·06 — 2·5 |
| E | 112 | 757 | 1 | 670 | 1-3rd | 108 | 2·06 — ·46 |
| F | 156½ | 1483 | 1 | 442 | 45-100ths | 152 | 3· — ·9 |
| G | 160½ | 3482 | 4 | 139 | 1-14th | 333 | 3· — 2·12 |
| H | 208 | 4336‖ | 1 | 101 | 1-20th | 125 | 3·8 — 2·64 |
| I | 128½ | 2818 | 4 | 123 | 1-16th | 350 | 2·3 — 1·71 |
| J | 139* | 3115 | 5 | 122 | 1-16th | 359 | 2·55 — 1·9 |
| K | 134½* | 3024 | 3 | 129 | 1-15th | 359 | 2·47 — 1·84 |
| L | 155½* | 3335 | 4 | 129 | 1-15th | 343 | 2·84 — 2·01 |
| M | 173* | 2699 | 4 | 114 | 1-17th | 246 | 3·2 — 1·64 |

* Bolt included.

## FIRST COMPENSATION CASE, BATTERSEA PARK.

In consequence of the brief notice, in a recent number, of the ill-treatment which Mr. Chabot received at the hands of the jury in respect of compensation for his land at Battersea, Mr. Lee, one of the surveyors examined, addressed a letter to us last week, which he has since advertised in the daily papers. We give the material portions of it:—

"Mr. Chabot received a notice to send in his claim for the land in question, which is part of a grant from King Charles the First in 1627 to Viscount Grandison, from whom it descended by inheritance and purchase to the late Earl Spencer, by whom it was sold in the year 1835 to Mr. Chabot, the claimant, *as freehold*, and no person has before this time disputed Earl Spencer's title. The land contains rather better than three acres, two acres of which are situate between the river wall and the river. These two acres were formerly used as wet timber-docks. The remaining one acre consists of the river wall and a strip of meadow land. Since Mr. Chabot's purchase, these docks have been filled up by several thousand barge loads of dry rubbish being deposited thereon.

Shortly after Mr. Chabot purchased the property in question, he had an offer of 1,000*l.* profit on the sum which he gave, this sum being known; rather more than two years ago (before the proposed park was determined) he was offered 3,000*l.* for it; latterly, 6,000*l.* was offered, and he had also several offers to rent it; but he being well acquainted with the value of river-side property, declined these offers, knowing full well that in a few years this land would be worth much more, and it would therefore pay him well to keep it unoccupied.

As to the present value, the length of frontage towards the river is 520 feet; this, if put at only 20s. per foot lineal, and at twenty years' purchase, is 10,400*l.*; from this amount deduct the cost of 520 feet lineal of wharf-wall and road, which would be 2,750*l.*, and the sum of 7,650*l.* remains as the value of the frontage land, independent of the back ground. Now any gentleman acquainted with the value of wharf and river-side property must be aware, that 20s. per foot lineal for land on the margin of the river Thames, 200 feet in depth, is not an excessive price on the London side of Battersea-bridge, when similar frontages let for 24s. and 25s. per foot lineal above Battersea-bridge, and from 60s. to 100s. per foot lineal between Vauxhall and Westminster bridges; and in this valuation there is nothing added for forced sale and expenses."

"The Crown surveyors were prepared to give much more than the jury awarded; they were well aware that the land in question was very valuable, as Mr. Pennethorne stated, when giving evidence before the Committee for the Improvement of the Metropolis in the year 1845.

This is the first case I have heard of wherein a question of title, without previous notice being given, has been submitted to, and decided by, the jury; but on this occasion the Attorney General (as counsel for the Crown), in his speech, claimed on behalf of the Crown the whole of the land between the river-wall and the river, comprising two acres; and the Recorder of the City of London (who was present also as counsel for the Crown) confirmed the claim; and as this claim was made only in the Attorney General's speech, and as he called no witnesses, Mr. Chabot's counsel had no opportunity of refuting it and shewing a proper title.

How is this claim justified by the facts? The manor of Battersea and Wandsworth was given by William the Conqueror to Westminster Abbey in exchange for Windsor: after the dissolution of the monasteries this manor was reserved in the hands of the Crown until the year 1627, when it was granted in fee by King Charles the First to Oliver St. John Viscount Grandison, from whom it descended in the St. John family till 1763, when it was bought in trust for John Viscount Spencer. The grant, after reciting the boundaries of the manor, proceeds thus:—'With all the rights members and appurtenances thereto belonging, also all meadows, waste grounds, marshes, emoluments, and hereditaments whatsoever thereto belonging or appertaining, as part, parcel, or member of them, or either of them, at any time heretofore, taken, reputed, known, used, or enjoyed, as fully, freely, and absolutely, as our said late father, or any of our progenitors, kings or queens of England, and as fully, freely, and absolutely, and in as ample manner and form as our said late father then held the same, or could have held the premises if they or any of them had remained in his own hands.' These words are sufficient to convey all the right of the Crown; and as it is well known that land left by the tide belongs to the Crown, the land in question between the river wall and the river must have been conveyed by the Crown to Viscount Grandison, and it cannot therefore be now Crown property. Yet, notwithstanding, the assessor (Mr. Wallinger), in summing up to the jury, dwelt on this unjust claim as one that must be entertained by the jury, and in confirmation of his view he read a clause from the Battersea-park Act, which recites, that there is a dispute between the Crown and the City as to the right to the soil of the river, so far as the tide flows and reflows, &c., &c.; he commented on this recital and on the evidence that the water formerly flowed over these docks, and then, without summing up or alluding to the evidence in support of Mr. Chabot's claim, he left the question to the jury. The clause so read by Mr. Wallinger does not state that Mr. Chabot's land is part of the soil in dispute, but the jury presumed that the claim would not have been made unless it could be substantiated, and they therefore deprived Mr. Chabot of his frontage to the Thames and two acres of his most valuable land."

It seems clear that Mr. Chabot has been most unjustly treated, and it is to be hoped that the Crown, on a proper representation being made, will take his case again into consideration. His title was *instinuated* away, without giving him the opportunity of adducing proof in establishment of it. This decision affects a large amount of property, and ought not to be allowed to pass quietly.

## CORROSION OF IRON.

Mr. Thomas Spencer recently read a paper, before the Liverpool Polytechnic Society, "On iron, its active and inactive states," wherein he made some observations on rust.

Iron, he said, above all the useful metals, had the greatest affinity for oxygen: in other words, its surface became sooner subject to rust than all other metals and substances, setting aside the alkaline earths. In our climate this undesirable property was witnessed more than in other countries: in Upper Egypt instruments of polished steel might be kept in the open air without losing their brilliancy. Dry atmosphere, although it contains 20 per cent. of free oxygen, would not alone cause iron to rust. The atmosphere had always, however, in combination with it what was called aqueous vapour, but which was in reality steam. We might immerse the most brilliant polished steel in oxygen gas without a change taking place on its surface. Neither oxygen nor steam could of itself corrode iron. Let it be remembered, these bodies were the only ones to which it was exposed. Under what circumstances, then, did this general and all-pervading action take place? An answer to this was given by a simple experiment. If one end of a slip of polished iron were kept in pure water while the other end was in the atmosphere, it would seem that the part of the iron which first corroded was at the surface of the water, and this long before the ends of the iron were acted upon. It required a mixture of air and water, what was usually termed dampness, neither the one nor the other being able to produce the effect alone. Steel filings became rusty in water. Why? Because they absorbed the oxygen in the water. If a second quantity of filings were put in they would not rust, because the oxygen had been already subtracted.

The reader shewed by experiment that a coating of carbon effectually prevents iron from oxidation, and that it can protect it from a body so strong as even aqua fortis itself. If the aqua fortis were diluted with water, however, the protective power no longer exists.

We all knew, he said, that should a piece of this metal be immersed in nitric or sulphuric acid, a great action ensued, fumes were given off, whilst the iron itself was dissolved; the result was owing to the strong affinity of this metal for oxygen: if gold were immersed, no such action took place. Iron had the same action on a solution of silver or copper, so that precipitation ensued. He (Mr. S.) could well conceive how astonished the experimenter must have been when he discovered that, by a simple means, clean bright iron, without protection, might be placed in nitric acid without any decomposition taking place, and that the act of immersion, which generally destroyed, should now preserve; but more extraordinary still, its hitherto active surface had become so 'catalepsed,' if he might use the term, that it might be plunged into a strong solution of copper or silver without these metals being precipitated, or having its brilliancy diminished. He shewed by experiment, that if a piece of platinum or of gold were placed at the bottom of a vessel containing nitric acid, and a piece of iron immersed and placed in contact with it, the action which would otherwise ensue was destroyed. If there was, however, the slightest scratch or abrasion on the surface of the metal, the protecting influence was gone. A piece of solid carbon also imparts a protective property to iron, little short of that given it by platinum.

## FREEMASONS OF THE CHURCH.
ST. ANDREW'S CATHEDRAL, SYDNEY.

Dec. 14. Mr. French in the chair.—The Rev. H. T. Ellacombe, F.S.A., communicated an account and a drawing of an interesting Norman window in the hexagonal tower of Ozleworth Church, Gloucestershire. It being the anniversary of the foundation of the college, the chairman delivered an address, to which we may hereafter refer.

The following paper was read, "On the progress of the building of St. Andrew's Cathedral, Sydney, New South Wales," communicated by the architect, Mr. E. T. Blacket:—

Prior to my election as architect to the committee appointed for the purpose of effecting arrangements for the completion of the cathedral church of St. Andrew, the foundations of the tower, according to a design obtained from England, had been laid. On an examination of these foundations, with a view of ascertaining their sufficiency for the support of the superstructure intended to be raised upon them, they were found to be not only totally inadequate in point of massiveness, but also in mere dimensions much smaller than the tower itself. Various plans were suggested by which I might, to a certain extent, obviate the difficulty; but I was confident that any such temporary expedients would be eventually unsatisfactory to the public. I therefore recommended, as the only effectual means of remedying the defect, the entire removal of the foundations, which was unanimously approved. This arrangement met with the cordial approval of the Bishop of Australia; so much so, that in order to avoid any encroachment upon the *subscribed fund*, his lordship generously placed at the committee's disposal the additional sum of 250*l.* towards the liquidation of the expenses which would be incurred.

The removal of the tower foundations having been determined upon as an absolutely necessary measure, scope was thereby given for any improvement in the details of the general superstructure which might be deemed advisable. Instead, therefore, of occupying a certain portion of the lands at the western extremity, as the site of a single tower, which could not possibly be made serviceable for any important internal accommodation, but which must have stood solely as an ornamental adjunct to the main building, I proposed that the walls of the nave should be extended as far as the western boundary of the existing foundations, and that in lieu of the single tower, two smaller ones should be erected at the extremities of the aisles, after the manner of Canterbury, Westminster, and many other English cathedrals; by which arrangement not only would the whole area inclosed by the walls of the cathedral be made available for public worship, but great advantage would also be obtained, in an architectural point of view, by the addition of a *western front*, which must have been sacrificed had the original design been persisted in.

I also proposed the addition of a low lantern tower, rising from the juncture of the transepts with the nave and chancel, as a provision necessary in all buildings of the cruciform character, for the counteraction of the lateral thrust of the clerestory arches of the transept.

The committee having determined upon the plans and elevations for the building, advertized for tenders for the removal of such portions of the existing foundations as it was found necessary to take up, and for the relaying of those required for the prosecution of the new design. The main features of the contract were the removal of the existing tower foundations, and making the necessary excavations for, and laying others according to my design, containing about ten thousand feet of masonry, and for which the tender of Arthur Jones and Co. was accepted, to the amount of 418*l.* 10*s.* About four months were occupied in the performance of this contract (including a considerable delay occasioned by long-continued rains), and it is due to the contractors to observe, that the work throughout has been performed to the entire satisfaction of the committee.

For the second contract, also, the same builders were the successful competitors, in the amount of 1,125*l.* It comprises about 16,000 feet of chiselled stonework, in a girt of wall 330 feet long, and varying from ten to fifteen feet in height, extending from the north to the south transept, round the western front, and including the whole of the base course of the building within those limits; the southern and western doorways, with their panellings complete, all the half columns and buttresses to the westward of the transepts, and the sills of the windows of the nave and western front; an amount of work which, when completed, will present an effective appearance.

The dimensions of the cathedral, when finished, will be as follows:—The external length, from east to west, 178 ft.; length of the transepts from north to south, 116 ft.; internally, the length of the nave from the western door to the entrance of the choir will be 106 ft., and of the choir, from its entrance to the eastern window, 53 ft.; the breadth of the nave and side aisles will be 62 ft.; and of the choir within the screens, 27 feet. The height of the western towers will be 116 ft.; of the lantern tower, 84 ft.; and of the roof, 64 ft.

## PROPOSED RESTORATION OF WARE CHURCH.

Ware, "so named from a sort of dam anciently made there to stop the current, commonly called a *weare* or a *ware*," * is on the river Lea, at a very short distance from Hertford. The town was built at a very early period, certainly in the tenth century. There was a church here before the Conquest, for Hugh de Grentemaisnil, lord of Ware, gave it, in the Conqueror's time, to the Abbey of St. Ebrulf, in Utica, in Normandy: this was before 1081.†

In 1241, Ware was the scene of a great tournament, proclaimed by Gilbert Marshal, Earl of Pembroke, in spite of a regal prohibition of such exhibitions of skill and strength; when this noble, then the principal peer of England, was thrown from his horse and trampled to death.

The earliest account of the town is that given by John Norden, in 1593.

The "great bed of Ware" has a wide reputation, and would seem to have had it even in Shakspeare's time; for our poet, in "Twelfth Night," makes *Sir Toby Belch* say to *Sir Andrew Aguecheek*, when bidding him write a challenge, set down in it "as many lies as will lie in the sheet of paper, although the sheet were big enough for the bed of Ware in England."—(Act III, s. 2.)

King Henry VIII., in the 38th year of his reign, gave Ware Church to the master and fellows of Trinity College, Cambridge, in whose hands the living still is: they are also the lay impropriators. It is in the deanery of Braughing, and in the diocese of London.

There are no remains of the first-mentioned church. The present structure, dedicated to St. Mary, is chiefly of the perpendicular period, but has portions of the decorated period; and belongs mainly to the fourteenth and fifteenth centuries.

It consists of a western tower with small spire, a nave with north and south aisle, a south porch, transepts, a chancel, north and south chapel, and sacristy.

The dimensions may be stated as follows:—

| | FT. | IN. |
|---|---|---|
| Length of the nave inside, to the chancel arch | 81 | 0 |
| Width | 22 | 0 |
| Width of aisles | 12 | 9 |
| Whole width of church inside, including main columns (which are 3 feet in diameter) | 53 | 6 |
| Length of nave aisles to transept | 57 | 9 |
| Transept from north to south (23 feet wide) | 72 | 0 |
| Chancel, length | 40 | 6 |
| ——, width | 23 | 3 |
| The height of the tower | 78 | 0 |
| Height of the spire, about | 30 | 0 |

The nave is separated from the aisles by four lofty arches, and columns on each side, which support a clerestory. It has a king-post roof, apparently of chesnut, open to the boarding, with arched wall-pieces under each tie-beam, springing from corbels; the spandrel formed by the wall-piece on each side is filled in with open tracery. The open timber roofs of the aisles, formed into panels by the principal timbers, have been painted white and red, and ornamented with texts and scrolls. The roof of the chancel is a modern restoration.

The south chapel is separated from the chancel by a large semi-circular archway, divided into two by ribs springing from a central column of purbeck marble, and having the spandrel formed by the ribs filled with panelling. To the west it is separated from the south transept by an elegant wooden screen of the perpendicular period, which is partly destroyed. This may have been originally part of the rood-screen, and had a small gallery along the top of it. The ceiling of the chapel is formed into 24 panels, filled with elegant tracery in a star shape, and once elaborately decorated with colours and gold. In the centre of each panel is painted a sitting figure, on a grey ground, with Latin texts around it. The tracery is cut,—in red and yellow; and the carved bosses at the intersection of the panels are gilt. It is altogether a most interesting and valuable example of the style of the period, and should be carefully restored.

The westernmost window in the chapel (seen externally in the engraving) is at present blocked up, and against it is a large, sculptured monument, of Ionic columns and broken pediment, to Richard Fanshawe, Esq., of Ware Park, who died 1666, aged 59.

On the north wall of the chancel is a large monument to W. Murvell, Esq., who died 12th March, 1826, and left considerable sums to the poor of the parish. There are several incised stones in the church, from which the brasses have been removed. Two of the latter are in the vestry, one dated 1454, and the other 1470.

In the chapel on the north side of the chancel, where an entrance-door has been interpolated, the font, removed from the west end, is placed. The latter is a very curious and well-known example, and is, unfortunately, in a very bad condition. It is octagonal, 3 feet 10 inches high, and 3 feet in diameter. In each of the eight panels which form the sides is a sculptured figure—St. George, St. Christopher, St. Katherine, &c. At the foot of small angular buttresses and pinnacles, which divide the panels, are angels with musical instruments: below is a series of quatrefoil panels.

In the north transept is an ugly lumbering gallery, blocking a large and elegant "imbricated" window: it was built for the blue-coat boys of Christ's Hospital, "by a Governor," in 1687.

The west end of the church is disfigured by a similar ugly adjunct, containing the organ. The pulpit, pews, and stoves, all want revision.

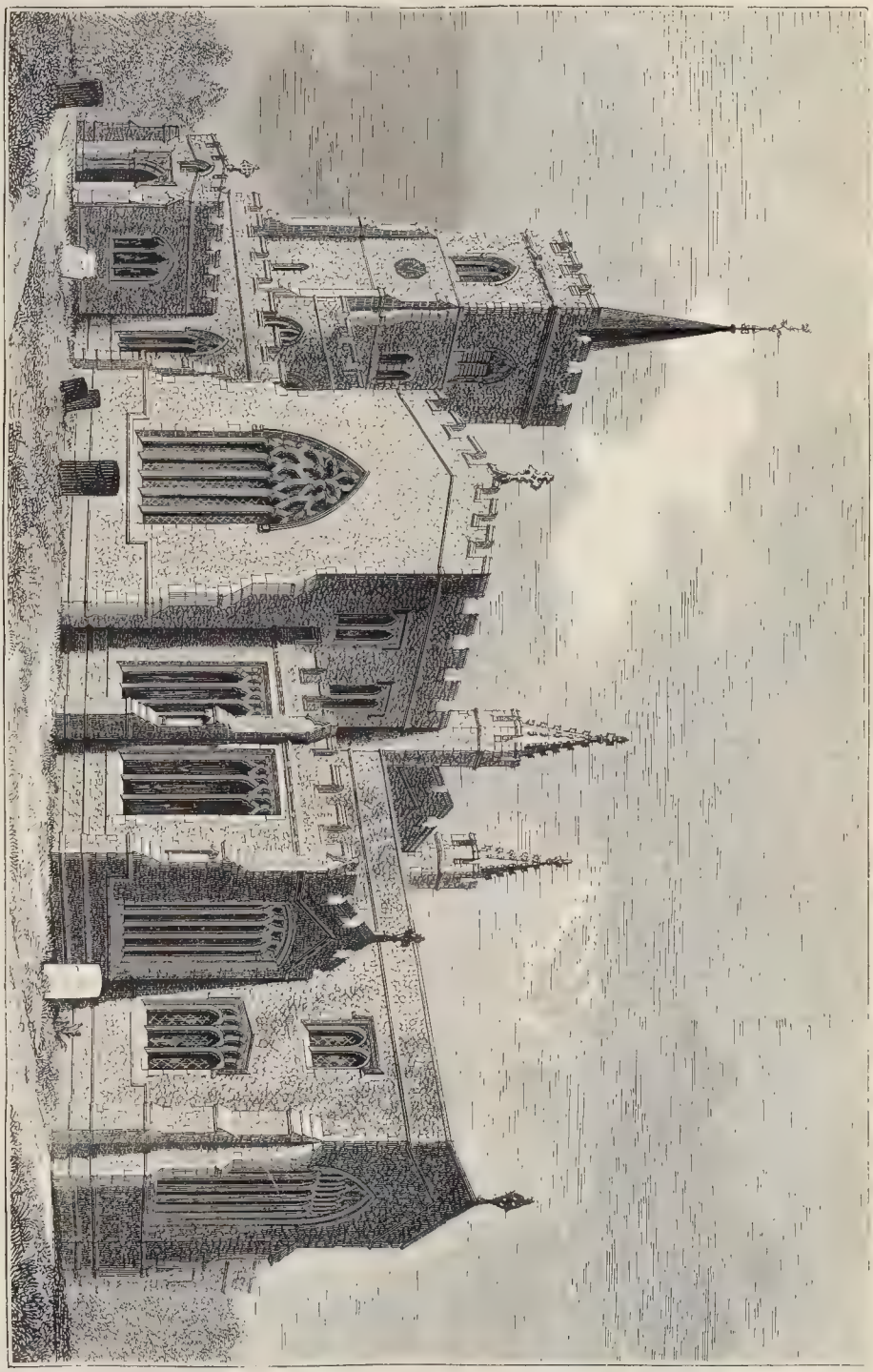
The outside of the church is in a truly deplorable, and partly a dangerous condition. It is constructed of flint work, with dressings of clunch, and the whole has been covered in modern times with rough-cast, which has separated from the walls, and is now ready to fall on the heads of passers by. The stone mullions and tracery of the windows have mostly disappeared, and have been replaced by wood and cement, and all the strings and mouldings were cut off for the convenience of rough casting. The copings are loose, and the roofs decayed.

Not before it was required, therefore, have the parish determined on the substantial repair of the building, and our engraving represents the church as proposed to be restored, under the direction of Mr. George Godwin, with the exception of the pinnacles shown on the stairs' turrets, at the junction of the nave and chancel, which are introduced simply as a suggestion. All that is to be done is absolutely necessary for the preservation of the fabric.

Our engraving shows the church as it will appear seen from the south-west; the window in the south transept, we should mention, is one that was put in a few years ago by the late vicar, and is not to be replaced.

The present vicar, the Rev. J. W. Blakesley, and the churchwardens, Messrs. Hudson, Waller, and Hitch, have exerted themselves most praiseworthily in support of the building.

* Gibson's "Camden's Britannia," p. 295.
† Clutterbuck's "Hertford."



ST. MARY'S CHURCH, WARE, HERTS.

MR. GEORGE GODWIN, Architect.

## SHALL ARCHITECTS BE ROYAL ACADEMICIANS?

SIR,—Every thing that appears in the *Art-Union Journal* is usually written in so liberal a spirit, and with such evident desire to encourage a love of arts, as to deserve praise; but I must own, that an article in the number for December appears to me to be a departure from the usual course. I refer to a notice of the election of two gentlemen to fill up vacancies in the Royal Academy, one an artist, the other an architect; the appointment of the first is cordially assented to, but to the architect objection is made in the following terms:—"Such rewards as the Academy have to bestow should not be conferred upon those who not only receive honours from societies formed by their own profession, and generally obtain very profitable employments, but who do nothing to uphold the Academy, to augment its funds, or to extend its fame. The power to admit architects at all arises out of one of the old laws of the Royal Academy that ought to be abrogated; it might have been necessary in former times so to recruit their members, as regiments do, by taking men under size, when applicants for enlistment grow scarce; but no such motive can be now assigned for so completing a corps, consisting of forty, or at best sixty members."

"*Men under size:*" the expression is not a happy one, to say the least of it. Are such men as Wren, Vanbrugh, Hawksmoor, Soane, and others, to be considered as "under size?" Their works are known and appreciated not only in England but by all Europe. Surely, then, they have a right to share in every honour which the societies of their country can bestow.

But we are told that they "do nothing to uphold the Academy, augment its funds, or extend its fame." I must confess I do not clearly understand why an architect should not do all this as well as an artist. Will not the designing of, and carrying on successfully to its completion, such a building as the Houses of Parliament, do as much towards extending the fame of the Academy (being the work of one of its body), as any painting or piece of sculpture ever produced by it. I really must still continue to think so, despite of all written in the *Art-Union Journal*, which also tells us that architects should not be admitted into the Academy, because "they not only receive honours from societies formed by their own profession, but generally obtain very profitable employment." As to the first point, I think I may safely assert that there is no society belonging exclusively to architects (I say it with all respect to the Architects' Institute), that can confer the same distinction as the Royal Academy; and as to the emolument, I am not clear that an artist of eminence does not obtain employment quite as profitable as any architect of equal standing.

My opinion, and I think I shall find many to agree with me, has always been, that architecture, painting, and sculpture, are each seen to the best advantage when they combine to produce one perfect whole. What says Sir Henry Wotton? "Painting and sculpture are two arts attending on architecture, like two of her principal gentlewomen to tire out their mistress." Let them, then, share equally in all the honours the Academy can confer.

It is hardly necessary to observe that the object of this communication is not to advance the architect at the expense of the artist, but merely to reply to an article which distinctly states, that the former should no longer occupy a position in which he was only placed, because forty artists of sufficient merit could not be found to fill the ranks of the Academy.

I am, Sir, &c. W. C.

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VENTILATION.—Sir: I have read with much satisfaction your correspondent "A.'s" observations on ventilation (p. 580 *ante*); but, in order to accomplish this effectually, it is essential that a current of air should be admitted at the level of the floor by air-gratings, covered internally with perforated zinc, in order to produce an action in the air, which would then be carried off most effectually by the inverted funnels. In public rooms it would be found of the greatest service to place the gas-lights under these funnels, which would not only assist in carrying off the foul air, but would tend materially towards the ventilation.—A SUBSCRIBER

## MOVEMENT OF CYLINDERS OVER ROADS.

AN ANSWER TO "J. W.'S" PROBLEM.

SIR,—Your correspondent supposing "P lbs raised one foot high per minute represented the power required to roll a certain cylinder over a certain uniform inflexible road at a given rate; also $p$ lbs raised one foot high per minute represented a power required to crush a certain uniform substance placed equally throughout upon that road,"—asks,—

"Would (however great the diameter of the cylinder, and however great its weight), as much power as $(P+p)$ lbs. raised one foot high per minute be required to roll the said cylinder on the said road over the said substance at the given rate, that substance being crushed thereby?"

Now, let us suppose that

$(P'')$ = power required when once the cylinder is started to keep it moving at a given rate, and at the same time crushing the substance placed as aforesaid;

$(M)$ = momentum;

$(W)$ = weight;

$(V)$ = velocity;

Then $P''$ will $= (P+p-m)$

Now we know that $(M) = (W \times V)$

$\therefore$ the $\triangle$ the size of the cylinder, the $\triangle$ will $(W)$ become, and consequently the $\triangle$ will be the value of $(M)$.

Whence, the $\triangle$ the amount of crushing power elicited from $(M)$, the $\angle$ will be the quantity required of $(p)$.

$\therefore (p-m)$ = crushing power.

Now, it is a known law of mechanics, that $(M)$ can never be made available without a proportionate *decrease* in $(V)$.

But here we have $(V)$ uniform throughout.

$\therefore (M)$ is useless as a crushing power,

and $\therefore (P'') = (P+p)$.

Hence we deduce, that $(P+p)$ will always remain the same, when V is the same throughout.

Your correspondent again supposes, "The power required to roll any cylinder over a given quantity of that substance (placed as aforesaid) in a given time be represented by $(P+x)$ lbs. raised one foot high per minute, where $(P)$ denotes the same as before,"—and asks,—

"Would the value of $(x)$ be less the greater the diameter of the cylinder (or the greater the value of $(P)$, supposing that the road substance and rate of motion remained the same."

Now, making the same suppositions as before with regard to $P''$, M, W, and V respectively, we shall have again

$$P'' = (P+x-m).$$

Now we have seen in our last, that the $\triangle$ the diameter of the cylinder the $\triangle$ does the value of $(M)$ become. And we have also seen that however great the value of $(M)$ may be, it can be of no avail without a proportionate decrease of $(V)$. But here again $(V)$ is always the same.

$$\therefore (P'') = (P+x)$$

Hence we deduce the following:—

The power required to start, and then to keep a cylinder of any size in motion, while crushing a uniform substance at the same time, is always the same when V always continues the same; or, in other words $(P'') = (P+x)$ when V is uniform. E. A.

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## THE BUILDING TRADE—COMPETITION.

SIR,—For the credit of the builders, both great and small, I am constrained to depart for once from my usual course, and notice the remarks of "A Surveyor," in your last publication, upon "the state of the building trade." I do not know that I should have done so, but that it is not the first occasion in which the builders have been charged with suicide on the one hand and dishonesty on the other, and, as silence is said to give consent, I venture to state the result of some twenty-five years' experience with reference to the general practice of competition, as demanded by the public with respect to building, and the principles by which respectable builders are influenced in proposing tenders.

In the first place, the "Surveyor" has properly condemned the all prevalent practice of competition, but I would remind him that the practice is prevalent in almost all trades, and certainly not within the power, as I humbly conceive, of the builders, to control, or they would most readily adopt any reasonable and feasible mode of avoiding so great an evil. The architects, as a body, are the only parties to whom we can look for any help in this matter, and they, I fear, like ourselves, think too much upon self-interest to act upon any general agreement with respect to the system. We must therefore, I conclude, conform with as good a grace as possible to the spirit of the times, and if the public will have competition, give it them, as little to our own inconvenience and cost as may be. As to the "Surveyor's" proposition of each builder taking out his own quantities, it can easily be shewn that, owing to the universality of competition, and the certainty that not one in ten is successful, it would not answer the builder's purpose to keep such an establishment as would enable him to enter into the details of every contract offered to his consideration,—added to which I have found in bygone days such serious practical inconvenience arising from the employment of so many cooks in one *potage*, that I am sure that all who have had practical acquaintance with the old custom in this respect, will give the preference to the prevailing practice of two respectable and *responsible* surveyors being employed to ascertain the correct quantities for all the competitors, and by which means only the competition becomes one of price and not of quantity. According to the old plan, the party who made the greatest blunder was generally the *successful* competitor. In illustration, I know of one who left out the entire finishings of a large public hall, and another who omitted the Yorkshire paving of the whole of the cells and airing-yards of a large prison! I need scarcely say both parties were *successful*. With regard to the "Surveyor's" charge of nominal amounts being given in competition by *respectable* builders, and of the plunder being divided, I submit that the statement is too preposterous to receive credit or to need refutation. I will, however, add that whenever any thing like a nominal tender has been given, if at all, it must have occurred in one of two ways,—either the party has been fearful of appearing indifferent to the notice of the architect who has requested his tender, or he has felt his chance of success so distant, from the number of parties who are sometimes called upon to enter the lists, that he has perhaps given a nominal amount to avoid a certain and useless expenditure. That either of these cases has been a fraud upon the public or breach of faith with the architect, I deny, as there are always too many to be found ready and willing to contend for the prize, and too little inclined to engage in general agreement for each other's benefit.

I should indeed be glad if it were in my power to offer any suggestion whereby the interests of the trade, to which I have the honour to belong, might be brought back to its pristine simplicity and healthfulness, but I fear we have too long lost sight of the good old-fashioned ways to return to the good old days of "live and let live."—I am, Sir, &c.,

Dec. 15, 1847. A BUILDER.

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## NEW METROPOLITAN SEWERS' COMMISSION.

COST OF SEWERS.

SIR,—I was present at the first general court of the Metropolitan Commissioners of Sewers on the 16th inst., and (bearing testimony to the faithfulness of the report in THE BUILDER of this day, of the proceedings of the court in all other respects) I beg permission to point out a typographical error, which, though very small, is of much importance. "With" is, in one place, printed for "or." In p. 606, col. 1, you have "an efficient sewer could be formed at the cost of 2*l.* 2*s.* per house, *with*" (this should be *or*) an annual charge of 3*s.* per house. I have had opportunities of ascertaining what has been *proposed* (for I do not understand that the Commissioners have yet *decided*) on the matter, and it seems that an idea is entertained that one of the greatest obstacles to an effective system of house-drainage consists in the imposing of the total expense as a single year's burden on the property. In many cases lessees of houses are bound to pay the sewers' rate. They may have only a few years' in-

terest in the property; they are, naturally enough, averse to pay the whole expense of an improvement of which they will reap only a small portion of the benefit. Now, it is evident that it is impossible, by any general regulation, so to spread any charges for the permanent improvement of house property over a series of years, as to make the burden and the advantage in every case precisely proportionate; but still a fair approach to an equalization of the burden and the advantage may be attained. In other cases, the landlord pays the sewers' rate, and the interest of his lessee may be greater than his own. For the sake of an average, it has been assumed that it would be fair (reckoning house property as worth not more than thirty years' purchase) to spread the burden over thirty years. In order to repay 2*l.* 2s., with 5 per cent. interest in thirty years, about 3*l.* 3s. must be paid in that time; and, therefore, the passage which I have cited should have been, "an efficient sewer could be formed at the cost, *if paid for at once*, of 2*l.* 2s. per house; OR, *if the payment should be spread over thirty years*, at an annual charge of about 3s. per house."—I am, Sir, &c.

Dec. 18, 1847. AN OBSERVER.

## ON THE PHILOSOPHY OF ART.

FOR the full comprehension of art (said Mr. A. G. Henderson, in a paper on this subject, read on the 1st inst., at the Royal Institution, Manchester), we require to have a complete philosophy of the human mind, not only as regards its imaginative and ideal attributes, but in its entirety. In the same manner as in the application of the laws of motion, we require a complete knowledge of the various causes that often modify and suspend them. The effect of a picture, a statue, a piece of music, or a building, will be destroyed or greatly modified, by preconceived notions, and by various feelings. The importance of having correct ideas as to the means and ends of the fine arts, will be readily acknowledged when it is considered to what an extent the various arts are employed in civilized life; for, in addition to the useful and agreeable aspect of things, almost every thing has its beautiful aspect. In reference to our churches and church services, public buildings, dwelling-houses, gardens, and domestic arrangements, we are in constant relation with things in their æsthetical aspect. Above all things, it is desirable that we should definitely settle in our minds the correct conception as to what is the *end* of the fine arts. If the end be merely the production of the agreeable or the pleasurable, then every work of art that entertains us for the moment will have fulfilled its mission, and Shakspeare and Michelangelo are reduced to the level of the merry-andrew and the puppet-show. If, on the other hand, we look upon art as having a mission from on high, as being the handmaiden of religion and philosophy, designed like them to purify and enlighten like them, to develop the spiritual and divine capacities of our nature; then art assumes a totally different aspect: it becomes invested with a sacred character; and it will be at our peril and at our cost if we refuse or neglect the aid which it is destined to give. The men who have produced the highest works of art have not been men of frivolous and superficial minds, but just the reverse—men of earnest, deep, truthful, and loving minds. When I mention the names of Shakspeare, Milton, Dante, Michelangelo, Raphael, Beethoven, and Weber, it strikes us at once that these were not the men to labour for people's amusement. No! they were men whose perceptions of truth and moral excellence were the highest and the noblest, and whose feelings of the beautiful in their respective arts were of that powerful and engrossing character as irresistibly to impel them to a realization of them; and to fix in forms of undying excellence a spiritual manifestation that should penetrate and exalt the hearts of millions of their fellow-creatures, when the souls that conceived them should be translated into realms of more surpassing beauty. Descending to the crowd of inferior artists, we shall find that their inferiority depends more upon the want of moral greatness than upon a want of power over the mechanical means of their art. Passing from the creators of art, in what class of men, let me ask, do the works of art make the greatest impression — what class of men is the most susceptible of feeling its beauties and its excellencies? It is the cultivated, the earnest, the good, the wise, the self-governed. * * The function of the beautiful in the arts is to serve as a medium for the manifestation of pure and exalted sentiment, of great and general truth, and of the lighter graces and fancies, which seem to be their attendant spirits. If I am right in this view, it follows that every artist—whether a poet, a musician, a sculptor, or a painter—who presents us mean, sensual, low, and grovelling thoughts and sentiments, let the medium be as beautiful as it may, understands not his mission as an artist,—nay, more, he incurs a fearful responsibility by investing with a beautiful form the false and the bad wishes instead of the true and good. "He who has learned what is commonly considered the whole art of painting, that is, the art of representing any natural object faithfully, has as yet only learned the language by which his thoughts are to be expressed. He has done just as much towards being that which we ought to respect as a great painter, as a man who has learned to express himself grammatically and melodiously has towards being a great poet. The language is, indeed, more difficult of acquirement in the one case than in the other, and possesses more power of delighting the sense, while it speaks to the intellect; but it is, nevertheless, nothing more than language; and all those excellencies which are peculiar to the painter as such, are merely what rhythm, melody, precision, and force, are in the words of the orator and the poet,—necessary to their greatness, but not the tests of their greatness. It is not by the *mode* of representing and saying, but by what is represented and said, that the respective greatness either of the painter or the writer is to be finally determined." I quote this passage because it expresses, in a happy manner, what I believe frequently occurs to every genuine lover of the arts, for he frequently meets with works which have never advanced one step beyond the language spoken of.

## RAILWAY JOTTINGS.

THE anti-laminating rails, invented by Mr. Thorneycroft, having been tested for five to six months at the Paddington station, are said to have been lately examined, and found to be sound as when laid down, presenting a contrast to the state of ordinary rails, which have become rugged and gone all to pieces in much less time in such a situation, where the wear and tear is very great.——The profits of the sale of newspapers and periodicals, sold at the metropolitan stations by a host of poor creatures who earned an honest livelihood thereby, for want of less readily obtained employment, appear to have so excited the acquisitive propensity of the great directors, as not only to have led them to require a heavy 'rent,' at these stations, but induced the Brighton openly to advertise for tender "the privilege of vending newspapers and periodicals at the Brighton and other stations on the lines belonging to that company." This is really altogether worse than the absorption of the 'Blue Boars' and the 'Pigs and Whistles' into the Birmingham station. We half seriously recommended the lodging-house keepers to look out, but little did we think of giving warning to the lame, the limbless, and the paralytic, whom we have so often seen, with wistful eyes and hungry countenances, plying their humble avocations at the various stations of the 'princely' companies throughout the country! While exposing such a practice to the feelings which it cannot but excite, however, let us do justice to these really at times munificent officials,—to the 'enlightened munificence' of the 'railway princes,'—as we have it, in the columns of a contemporary, who intimates that the directors of the London and North-Western have just announced their intention to build a mechanics' hall at Wolverton for their work-people, at a cost of 3,000*l.*, with lecture-room, library, and reading-room, tea and ladies' rooms, &c. We only wish that the munificent doers of so meritorious and enlightened an act of even self-interest had not their glory tarnished as a class by occasional doings of so different a description. ——The number of patents for inventions (original and improvements) connected with railway construction, which have been obtained in France, was:—in 1843, 19; in 1844, 22; in 1845, 88; in 1846, 131 — total, 260. Of these not above three or four have been carried out so as to realize any advantages to the inventors, and those which have are of English origin—one of them Mr. Stephenson's, and under which he receives a premium of 50*l.* for each machine adopting his patent improvement.

## ELECTRO-TELEGRA HIC.

MR. HYDE CLARKE suggests the application of the electric telegraph to musical purposes! He remarks, that if a sufficient number of wires were used, a set of chimes might be as easily rung as two bells—indeed, that the chimes in York Minster, if there are any, might be rung from London as well as at York. Where bells are placed in a high tower, as some *carillons* or chimes in Flanders are, he suggests that they might by telegraph be played with much more convenience from the bottom of the tower than at the top. By a proper application of wires, also, two organs or two appollonicons, he observes, might be played at any distance apart, by one performer, thus realizing by electric telegraph what Professor Wheatstone is said to contemplate by acoustic telegraph,—conveying musical sounds and compositions. We may yet, he thinks, have electrical organs in our churches as well as electrical clocks in our houses, and worked almost as cheaply,—an idea perhaps somewhat less objectionable—at least if a Haydn or a Mozart were at headquarters—than the mechanical delivery of second-hand sermons by telegraph through the (even though sanctified) mouth of the clerk of the telegraph, as lately suggested.——A Newcastle sharebroker has been summoned to the police-court under a charge of conspiring with the clerks of the telegraph to the prejudice of the Electro-Telegraphic Company, for the obtainment of the prices of shares transmitted by telegraph. The moral criminality of an unscrupulous *advantage* thus derived is very obvious; but surely the power and advantage thus confined to the Telegraphic Company and their clerks by patent is equally liable to be taken unscrupulous advantage of, even without the knowledge or connivance of sharebrokers. How are the company or their officials themselves effectually prevented from 'speculating' unfairly, to the disadvantage of others kept in ignorance of what they have thus now got the exclusive means of obtaining into their own hands? The duty of the clerks, it seems, was to transmit the exclusive intelligence of the state of consols, &c., on to Edinburgh; and they declared that as 'their written instructions on this head were not so specific as to prohibit their doing what they had done'(!), they were not aware that they were acting wrong in revealing the secrets of the telegraph, especially as their inducement to do so was strengthened by the fact that their salaries were only a guinea a week to each of them,—a limitation which, however effectually it may have prevented them from 'speculating' themselves, does not appear to have been the best mode of securing their fidelity from the bribing assaults of those whose means were not so limited. The company's solicitor, Mr. Chater, stated in reply to the recommendation of the magistrates to indict at the sessions, that 'it was not the wish of the company to adopt harsh measures, but they must be protected in the enjoyment of their patent, and not be defrauded with impunity.'

HIGHTON'S ELECTRIC TELEGRAPH.—Sir: I observe in several railway papers of last week, a letter by a Mr. Chapman, of Leicester, copied from your journal of the 11th, in which he says, "The one-wired telegraph used at Baden-Baden, appears to be that of Brett and Little." I do not know from what source Mr. Chapman derives his information, but whatever it be, he has been deceived as to the point. Your statement some weeks ago, that the Baden government had adopted Highton's gold-leaf telegraph, was quite correct; and I am sure you will agree with me, that before Mr. Chapman contradicted it, he ought to have taken more pains to ascertain the correctness of this information.

Euston Station. EDW. HIGHTON.

## NOTES IN THE PROVINCES.

The ruins of St. Mary Magdalene, Doncaster, appear to be still, or only now, in course of excavation. Several articles of minor importance—such as a chalice, a seal, and some coins—have been found, and also several human skeletons in good preservation, on the site of the ancient chancel.——The new Presbyterian church at Dudley was opened on the 24th ult. It will accommodate 600, with a small gallery for 150 children, connected with schools below for 300. The building has a tower and spire 100 feet in height. The roof is of stained carpentry. The cost was about 1,900*l.*; Mr. Hay, of Liverpool, was the architect.——Horfield Church, now enlarged, was to be consecrated on Wednesday last; and St. Simon's Church, Baptist Mills, on Tuesday, by the Bishop of Gloucester and Bristol.——A new east window, filled with stained glass, is about to be put up in Trowbridge Church, 'to commemorate the recent day of public thanksgiving.' In the aisle, too, a memorial window, also of stained glass, is about to be erected.——The means of restoring the chancel of Newchurch, Ryde, are accumulating, and, it is hoped, will eventually lead to the restoration of the whole church.——It is always a pleasing duty to record the tasteful or generous endeavours of the clergy to restore and decorate the sacred edifices with which they are more immediately connected. Such is the case at Lyddington, where the incumbent, the Rev. Mr. May, has contributed largely to the thorough repair and restoration of the parish church, the south wall and porch of which have been entirely rebuilt, two decorated windows restored, and an east window placed in the chancel, designed from a decorated one in Herne Church, Kent. The cost of this work will be about 900*l.* Such, too, according to the *Chelmsford Chronicle*, is the case at Little Canfield, the rector of which, the Rev. Charles Lesingham Smith, has of late caused a variety of restorations and renovations to be executed in and about the parish church, under the superintendence of Mr. Wm. Ollett, Jun. The south wall of the chancel, and two windows in it, have been restored, a new studded oak door added, an early Norman font recut and worked, the chancel-floor paved in diamond-work, encaustic tiling laid round the altar, an early Gothic piscina in the chancel-wall restored, and other works done or to be done, including the restoration of the large east window.——A carved oak pulpit, of octagonal form, has been executed for St. Neot's Church, from drawings by Messrs. Wing and Jackson, of Bedford, and executed by Mr. James Rattee, of Cambridge, at a cost of 130*l.*

## SANITARY PROGRESS IN THE PROVINCES.

The Health Committee at Liverpool are adopting probably the best and most effectual way to disperse foul airs from the abodes of the celebrated devotees of fair breezes, by 'raising the wind,' under a pressure of five pounds to the hundred, in sterling 'columns' of 'not less than five hundred,'—raised, of course, or to be raised, through the powerful columns of the press, and secured by an impost, based upon a sufficiently strong foundation, well able to bear it, and nailed down to it by tax.——We know not well how to account for the fact that the principal preparations against the plague which is moving so steadily from the east and south, appear to be in the north and west. Is there any truth after all in the new-fangled doctrine of electro-magnetic antagonism and progress,—certainly in that precise direction, namely, north-westward from the more south-easterly latitudes and longitudes? At all events it happens now, as on a previous occasion, that our chief materials come from the north and west, south-eastward, to their metropolitan destination,—as from Hull, for instance, where the sanitary ferment is purging the abodes of the living from the corruption of the dead; from Leeds, where it is working out 'a new sewerage bill;' from Newcastle and Gateshead, where it is still more active in the institution of associations, and in the expulsion of thousands of cart loads of putrid matter; and from the more or less near neighbourhood of Newcastle and Carlisle,—from Winlaton, Workington, Appleby, where eyes are being opened and nostrils closed, and 'putrid heaps of dung, stagnant pools, open and offensive conduits' or other 'accumulations of filth,' are being doomed to eternal abolition. Seriously, we have much greater activity and energy northwards and westwards to record than elsewhere; but it may be that 'elsewhere' the energy is past and in its wane: we hope not, now that it ought to be waxing every where and waning no where.——Lord Morpeth has given notice that, on the 10th of February, he will bring in a bill to provide for the public health.

## ARRANGEMENT OF PRISONS.

PREVENTION OF SOUND.

At a meeting of the Franklin Institute, United States, in September last, an account was given of some experiments made at the newly-erected Berks County Prison, U. S., with regard to the prevention of communication between the prisoners by means of transmitted sound. The reader referred to the importance of such prevention in establishments intended to carry out the principle of separate confinement, as well as in asylums for the insane, and other public institutions. In the Eastern Penitentiary of Pennsylvania, where the ventilating flues afforded a medium of communication, an attempt was made to prevent it by the insertion of iron plates, which, however, were found to be objectionable on account of their obstructing the ventilation. The Berks County Prison, at Reading, is said to be well designed and constructed, and has cost, in its erection, about 55,000 dol. Particular care has been taken to secure a proper ventilation and warming throughout the building. This is attained by means of a tall chimney-shaft, with which all the ventilating flues are connected; warm air being communicated to each apartment near the ceiling, and the foul air carried off by an opening into the ventilating flue near the floor. In order to prevent communication between the prisoners, by means of sound transmitted through these flues, two enlargements are made in them about ten feet apart, in each of which is inserted an earthen vessel having the form of a paraboloid. The sound, falling upon these paraboloids, is reflected in such manner as to destroy its effect. In order to test practically the effect of this improvement, the committee distributed themselves in different cells, and found that, by the utmost exertion of voice, they were unable to make themselves heard from one cell to another. A curious proof of this was afforded by the fact, that after some of them had shouted until they were hoarse, they were visited by others who came from a neighbouring cell to inquire why they had not commenced the experiment of calling to them through the flue.

Referring to other contrivances for this purpose the reader said that slates, placed in a triangular form in the flues, had been tried in the Pentonville Prison in England; but he doubts whether this would be found so effectual as the paraboloid. With regard to the expense of this arrangement in the Berks County Prison, he said that the cost of the paraboloid, which is made of common pottery, being but twenty cents, is more than compensated by the saving of masonry consequent upon the enlarged spaces left in the flues for their reception.

## ARCHITECTURE AND IMPROVEMENTS IN AMERICA.

A new opera-house in New York is exciting attention. Mr. N. P. Willis, who christens it the "excelsior opera," thus notices it in *The Home Journal*:—"An egg halved lengthwise, with the plane downwards, would represent the shape of the new house above the level of the foot-lights on the stage. If the yolk were left whole (bellying under), it would give the space occupied by the orchestra and the parterre. The stage is in the small end of the egg, and the ceiling, outwards from this, is fashioned in the shell curves, which serve both the purposes of beauty and acoustics. The fronts of the different galleries are of iron open-work (in the style and shape of a trellised balcony) and give the *ensemble* a very light and elegant appearance. The pit is long, and of a very gentle ascent from the orchestra. Immediately at its back runs round an open platform, on which stand two rows of arm-chairs. Behind these there is an open alley; and, above the alley, at very good talking height for a tall man (but at a tip-toe elevation for a short one), extends the first row of boxes. The effect of these, from their running so far back under the second gallery, is rather that of holes in the wall, and the occupants look shelved and tucked away, but they are the best boxes for convenience of seeing and not being seen. There are three or four private boxes on each side of the second gallery,—which, private though they may be called, seemed to us the least private seats in the house; and the boxes which extend from these toward the centre appeared to be very advantageous for seeing and hearing."

To facilitate traffic in New York, a suggestion has been made to have rails laid down along the whole extent of Broadway, and to have large cars, capable of holding fifty or a hundred persons, running upon them, say every five minutes. The rail might be owned or formed by the present omnibus proprietors, who could bring their passengers, as usual, up to Broadway, and then furnish them with tickets, to continue their journey.

The first stone of a reservoir for the Water-Works Company, which covers an area of 40,000 square feet, has been laid at Boston. From the speech of the mayor on the occasion we learn that,—It is to be brought in an oval brick aqueduct over six feet in height, about fifteen miles from Cochituate Lake to Brookline, where it discharges itself into a reservoir of more than twenty acres in extent.

From Brookline the water is forced by its own pressure through pipes of 30 and 36 inches in diameter, to the two reservoirs in the city, the one on Mount Washington, at South Boston, which will contain superficies of 70,000 and the one on Beacon Hill of 38,000 feet. The latter is to be raised on arches 60 feet, is to support a pond of the depth of 15 feet, and will contain, when full, three millions of gallons. The length of the brick aqueduct is a little more than fourteen miles,—of this nearly seven are finished and ready for the water, and the grading and bricks for the rest are in such a state of forwardness as to render its completion certain early in the summer. The line of pipes between Boston and Brookline and in the city, will amount to a little over 60 miles in length. The work is one-half completed. The Lake Cochituate has been bought, great part of the land damages have been paid, and the expenditure has already been 1,500,000 dollars.

## Miscellanea.

Expense of Using Hard Water.—Mr. Wrightson, after pointing out the extreme hardness of the waters used in Birmingham, has been shewing the good people of that important town how much this costs them. He says:—"Taking twelve of Professor Clark's degrees of hardness to be the average of the entire quantity of water consumed in Birmingham, and taking 100,000 gallons as the average daily consumption in washing the person alone—which must certainly be below the mark, not being four pints for each person (I believe the population is over 200,000)—as 100,000 gallons at sixteen degrees would require 32,000 gallons, 24,000 gallons of soap solution (or its equivalent in soap) would be required for the same quantity at twelve degrees, in order to remove the lime it contains before the detergent property of the soap can have any effect. Now, this soap solution contains as near as possible about 1¼ oz. of soap in each gallon, therefore 24,000 gallons = 27,000 oz., or 1,687 lbs. This for one day's waste is 615,755 lbs. for the year, which, at 4d. per pound, is 10,262*l.*, no trifling sum to be wasted among the inhabitants of a town in washing the person alone. The further waste in washing linen, &c., must of course be proportionately great, to say nothing of the extra wear and tear, for it is well known how destructive hard water is to linen, notwithstanding the copious use of soap and soda. These facts sufficiently shew how important it is for a manufacturing town like Birmingham to be abundantly supplied with *water the softest it is possible to obtain.*

Farringdon Street.—Mr. Wakley—and no wonder—has presented a petition in the Commons, complaining of the delay in completing the new street to continue Farringdon-street to Clerkenwell.

ROAD MAKING.—Speaking of the materials fitted for road-making, Professor Ansted said, in one of his Lectures:—Slate, as a road material, might be put aside altogether, as it would never be used when other material could be obtained. When, however, in slate districts, it was necessary to use the first stuff that came to hand, it might be worth while to look for veins of *quartz*, which almost invariably intersected the beds of slate, and from that a tolerable road-stuff might be formed. Though quartz might thus be useful as an auxiliary, it did not form a good road material, being generally too brittle. Road-stuffs, to be unexceptionable, must combine with hardness a certain degree of toughness. Many materials possessed the requisite hardness, but were utterly deficient in toughness; and quartz was of this number. This was also the case with common *flints*, which were often used for roads. Such materials were very soon reduced to powder, by the combined effects of pressure and exposure, and then formed either dust or paste, according to the state of the atmosphere. The other kinds of sandstone rocks which were usable were not much better. *Millstone-grit* was preferable to quartz; but, generally speaking, the sandstone series did not produce a good road material. The best road-stuffs were formed of the igneous rocks, whether of the older period, such as *granite*, or intrusive, such as *basalt*. Granite was often exceedingly hard, and thus formed an admirable material for the paving of large cities, such as London, where it was incessantly exposed to the pressure of immense weights, and the action of the hoofs of horses. Granite, for this purpose, required to be selected with care, as there were some kinds which readily decomposed under a high degree of pressure, in consequence of its felspar being crushed. The Cornish granite, used in London, was better in large than in small fragments, being then less liable to be crushed. In many cases, however, where pavements of this kind had been taken up, the stones, though worn to an amazing extent, exhibited but little appearance of crushing. Basalt was well adapted for road-stuff, as it was hard, and found in great plenty. Its use, however, was confined necessarily to macadamized roads, being scarcely ever presented in masses large enough for London paving. In macadamized roads it was necessary to pay great attention to the way in which its various materials were decomposable, so that they might not act injuriously to each other, and to see that they combined the requisites of hardness and toughness. It might be observed with advantage, whether or not stones derived from igneous rocks were spheroidal in their construction; as, if they were, they would have a tendency to split when heavy weights passed over them. Such stones were also liable to decompose, and were, in that state, very bad. There were many kinds of good road-stuffs, but they possessed chiefly a local value.

ITALIAN TILES.—Sir: Will you permit me to correct a slight inaccuracy which appeared in THE BUILDER of last week, in reference to the new Catholic church at Surbiton? It is stated, that "all the roofs are covered with tiles made from a model obtained from Florence." Now the fact is, I manufactured these tiles for the architect, Mr. Parker, and they were made according to that plan of the Italian tiles which I invented these three years since, and for which invention I received from the Society of Arts and Sciences a medal. Although the tiles in question are of the same size, and similar in appearance, when on a building, to those of Florence, yet they are made on an entirely different principle. My tiles are slightly curved, and fit easily one into the other, and have a horizontal indentation across the upper part, to prevent the wind drifting the rain over the tile-head. The tile in the museum of the Royal Institute of British Architects is, as you know, flat, and without the horizontal indentation. As I have for many years paid much attention to the manufacture of Italian tiles, you will perhaps not deem me too intrusive in observing that Italian tiles, made similar to those in the Institute, are, upon a building, extremely liable to admit rain in this stormy climate. The tiles invented by me admit of having either narrow or wide vertical rolls, and possess a perfect security against rain.—I am, Sir, &c.,

Surbiton Hill. ROBERT BROWN.

PROJECTED WORKS, &c. — Tenders have been called for by advertisement, for the erection of a new church at Penrith; the erection of an engine-shed and workshops at Bristol, for the Midland Railway Company; the excavation, construction, and completion of a portion of a line of conduit for the Leeds waterworks; designs and formation of two new stained-glass windows for the parish church of St. Dunstan in the East; making cylindrical sewers, 616 yards and 198 yards in length, at Cambridge, — separate tenders, also, for making, erecting, and fixing two sluice-gates with brickwork, at Cambridge; for paving the yards of the Martley Union Workhouse with Broseley bricks, at per yard; for paving and kerbing the footpaths of several streets in Mile-End old town, and for a supply of about 24,000 feet of new 3 inch best York paving, and 9,000 feet of new flat, and 1,000 feet of edge best Guernsey granite kerbing, 12 by 7, for same hamlet; and for a supply of 500 tons of unbroken granite for the Mendicity Society.

WESTMINSTER PALACE.—A renewal of the old and exploded charges against Mr. Barry, with a discussion on it, took place in the Commons on the 17th instant, when a select committee was moved for by Sir R. H. Inglis, and objected to by Mr. Osborne, although he had himself revived the charge which he, even then, resolved into 'a charge of a graver nature, inasmuch as in the report of the commission appointed by the House of Lords, in 1844, he found that Mr. Barry was distinctly charged with having broken his contract, and laid out sums of money without the sanction of Parliament.' Lords Morpeth and Lincoln stoutly defended Mr. Barry; the latter reminding the House of his complete exoneration by the committee appointed in 1844, including even those who had displayed the greatest suspicion towards Mr. Barry. He thought his observations called for in fairness towards an honourable gentleman,—a member of an honourable profession. —Mr. M. Milnes said that if the architect were to be bullied, and unnecessarily limited as to time and expense, it would be impossible to expect a work of art worthy of the age and country. He maintained that no work of art of the same magnitude had ever advanced more rapidly than this had done.—All further proceedings in the matter were ultimately postponed till after the recess.

THE INSANITARY STATE OF THE CITY: METROPOLITAN PROGRESS.—Deputy Peacock last week presented the City Sewers' Commission report to the Common Council, giving notice of their application to Parliament for a new Sanitary Bill, and at the same time denied that the corporation had prevailed upon Lord J. Russell to exclude the city from sanitary regulation. "Mr. Lawrance" [we quote from the *Times*, with a few slight *corrections*, such as '*in*' for 'as,' '*he*' for 'they,' '*Governors*' (or councillors) for 'Government,' '*sprinkling*' for '*spec*ulating'], "described the report of the commissioners *in* a piece of most extravagant humbug. After looking around for a motive for some time, *he* had at last hit upon the cholera. Well, said *he*, *I'll* astonish the governors with the cholera, so up *he* went, and offered to put an end to the chances of admitting it [query, the report and its benefits into the city? or the cholera and its evils into the country?]. 'Ah!' said the governors, 'very good, but how will you proceed?' 'Why, we'll hear all the *Lawrances* who have been *besprinkling* with the contents of cesspools, gully-holes, churchyards, and privies, and make commissioners of them!' Mr. Lawrance having proceeded in this style for some time, amidst the laughter of his auditors, at length concluded, when the report was agreed to, and the petition to Parliament adopted." With the exception of the few slight *corrections* in italics, we can vouch for the general accuracy of our transcript from the *Times*, which must have been imposed upon by a wilful mis-rendering of its own report, at the instigation of some printer's devil.——The consent of the Commissioners of Sewers, as required by Act of Parliament, our readers are aware, has been given to the proposed works of the Metropolitan Sewage Manure Company, which will be commenced forthwith.——The Westminster Sanitary Association held their first anniversary meeting at Dr. Aldis's, in Pimlico, on the 17th instant, Lord R. Grosvenor in the chair.

REPRODUCING ENGRAVINGS.—Mr. Calvert, in a lecture on chemistry, thus describes an easy means of reproducing printing, engravings, writing, &c., which has been very recently discovered. Take a piece of paper, dip it in a weak solution of starch, leave it to dry, and then moisten it with weak sulphuric acid. Afterwards take an engraving, put it over the vapour of iodine, and leave it there for the space of about five minutes, by which time the iodine will have fixed itself on every part that is black. Then take this engraving, apply it to the sheet of paper, press it for a minute or two, and the engraving is transferred. If this was the whole of the discovery, it would not be very important; but, if the thing can be done on paper, it can be done on steel, copper, and silver: and here is a ready means of engraving. If you want to engrave on copper or silver, put your engraving over iodine fumes, and then place it on the plate. If it is copper, put it over the fumes of hartshorn or ammonia, wash it, and the engraving is produced. If it is silver, proceed as if for daguerreotype, holding it over the vapour of mercury, and the engraving is produced. There is a more simple means still. Put the engraving over the fumes of orpiment for a few seconds, place it on a plate of copper, press it, and the engraving sinks into it.

RUBBING BRASSES.—At the Society of Arts, on the 8th instant, Mr. H. Cole made some remarks in reference to Mr. Archer's paper on "Sepulchral Brasses and Incised Stones," read at the last meeting. Mr. Cole observed, that about ten years since the study of brasses recommenced in this country, and during that period almost all that is known respecting brasses has been exhausted, and several works have been written on the subject. The most remarkable have been published by the Cambridge Camden Society, and in a book of great excellence, by Waller; others have also paid attention to the subject. The ordinary process of obtaining rubbings is as follows:—A sheet of paper is laid upon the brass, and kept in its position by weights; it is then rubbed over with a composition known as heel ball; by this means the whole of the paper where the brass is under it, not cut away, becomes blackened, while the incised lines remain the colour of the paper. In some cases a kind of bronze composition is used upon a black paper, and by this means as nearly as possible a fac-simile of the brass is obtained. The most important brasses to be found in London are in Westminster Abbey, St. Helen's, Bishopsgate, Allhallows, and St. Andrew Undershaft. Passing out of London, the nearest churches where any remarkable brasses are to be found are Willesden, Harrow, South Mims, St. Albans, Broxbourne, Cheshunt, Roystead, Chigwell, Windsor, Stoke-Pogis, Taplow, Westerham, Penshurst, and Cobham.

MARBLE QUARRY, NEAR LEGHORN.—A marble quarry has recently been opened in Maremma, about thirty-five miles from Leghorn. The quarry appears to have been worked in ancient times, possibly by the Etrurians; and some chisels and picks have been found there, which closely resemble those now in use. Mr. Powers, the American sculptor, thus speaks of it in a private letter:—"I intend to make the statue of Mr. Calhoun out of this marble, and it will, perhaps, be the first full-sized statue made of it in two thousand years. I am now making a bust of Washington from this marble somewhat larger than life, by way of an experiment. It is nearly blocked out, and I am satisfied already, that the effect will be all that could be wished. It is singular that the owner of the quarry is a Greek, who has found the marble, supposed to be peculiar to his own country, here in Tuscany. He can afford this marble for less than one-half the price of Carrara, on account of the great ease and small expense of excavating and taking it to the sea-shore. The marble has a rich warm colour, so desirable in statues and busts, and it is most beautiful in columns, mantel-pieces, and the like. The grain is coarse like the Parian, but it works smoothly and takes a high polish."

NATIONAL GALLERY FOR SCOTLAND.—A correspondence has just been brought to a close, which will probably lead to the establishment of a Scotish National Gallery in Edinburgh, the improvement of the Scotish Academy, and increased opportunities for the refinement of taste.

LIVERPOOL BATHS AND WASHHOUSES.—Applications to the Health Committee of the Liverpool council, for information as to the working of the public baths and washhouses, are so frequent, that the committee have had a pamphlet prepared, with copies of plans, &c., for transmission in reply to such requests. From this document it appears that the revenue of the first establishment has nearly trebled itself in four years, and now considerably exceeds the expenditure. 'Is not this,' says the *Gateshead Observer*, 'a sufficient answer to the cold sceptics who turn away from all projects for the improvement of the condition of the poor, and tell you that your labour is in vain—that you will have no thanks (as though you should work for thanks!) for what you do—that the poor are in love with dirt, and will not be lifted out of the mire in which they perish?' The poor flock to them daily; and in the year ending May, 1846, upwards of 23,000 baths were paid for, at prices varying from a penny to a shilling; and 24,000 dozens of clothes washed, at a penny a tub for six hours! The baths are also a benefit to the less straitened classes, and the middle-class baths are also decidedly profitable. Besides the two establishments already in existence in Liverpool, the erection of others in various parts of the town is contemplated.

ALLEGED TAX ON GAS.—A paragraph is at present circulating extensively throughout the provinces to the effect that "communications have taken place during the last few weeks between the Government and persons engaged in the manufacture of gas, relative to a proposed duty of 1s. per 1,000 cubic feet of that article, which would produce more than two millions sterling annually to Government." We hope and indeed believe that this rumour is nothing more than an erroneous inference drawn from statistical details, already given in THE BUILDER so long since as August last; and the more especially so, since we find, both in the paragraph itself, and in a more lengthened detail, of which it is an abridgment, that the calculations and sums are precisely the same as those already alluded to. The imposition of such a tax would injure,—not the companies or monopolists, but the consumers. It would be scarcely less obnoxious than the tax on daylight. It would be, in fact, a tax on the only passable substitute for the light of day,—a tax on police regulation, and on cleanliness, and a bonus to crime and filth. In short, it would be a tax inconsistent with the recorded opinions and the general leaning of our present Government itself; and the rumour is we hope an injustice done them by mistake, confirmed perhaps by the fact, that in consequence of our exposures of the secrets of the gas-house the Commons called on the gas companies established under Acts of Parliament, to give returns of capital, expenses, and dividends, which returns, as our readers know, the gas companies have accordingly given in.

PLYMOUTH ARCHITECTURAL SOCIETY.—A District Architectural Society, intended to combine architectural with archæological and statistical researches, has been established at Plymouth and Tavistock. According to the *Gloucester Chronicle*, its objects will be to assist the clergy, churchwardens, and other persons engaged in building and restoring churches, schools, parsonage-houses, &c., with information and advice; to call the public attention to the importance of church extension, by procuring and disseminating statistical information, relative to existing church accommodation, population, and the extent of the different parishes within its limits; and, lastly, to collect information, documentary or otherwise, relative to the history and antiquities of different churches, their endowments and charities, whether alienated or still existing, and other particulars.

CURVES OF GREEK VASES.—Sir: In the article on the "Forms for Domestic Utensils, obtained from Leaves," in THE BUILDER of the 11th inst., reference is made to an opinion "that the outlines of the Greek and Etruscan vases, which had caused much abstruse geometrical investigations into conic sections, had not been produced by geometry." Now the Greek vases were geometrically proportioned by squares, certainly not with conic sections, with which the early Greeks were unacquainted. In "Bayfii Annotationes in Legem 2, de Captivis et Postliminio reversis, in quibus tractatur de re Navili, per autorem recognitæ," is a diagram showing the geometrical method of forming vases by the Romans, no doubt after the Greek manner, the date of the book is 1537. Prior to my seeing this work, I had tried to proportion geometrically the celebrated Greek vase in "Stuart's Athens," by means of the square, divided into units or numbers, and succeeded.—W. P. G.

THE OLYMPIC THEATRE.—This commodious little theatre is being re-modelled and decorated by Mr. Hurwitz, and is to be lighted in a novel manner. The works are scarcely advanced enough to enable us yet to say any thing of the effect, though the house is to open on Monday. Theatrical decorators work by steam.

## TO CORRESPONDENTS.

"*W. J. D.*"—The bordering was carried all round the heads of the lights.

"*Engineer Pupil.*"—Messrs. Doulton say, in reply to letter just read, that the registrar was for egg-shaped sewers in glazed stoneware; that such sewers have not yet been made by any other parties than themselves; and that, if any one infringes their right, they are quite prepared to defend it.

"*H. C.*"—Postponed for new year.

"*Inhabitant of Newman-street*" complains that commissioners of sewers have made a sewer in that street useless by building one in Charles-street, lower.

"*Devonian.*"—We have not space for what he requires.

"*J. S.*" (Manchester.)—Particulars may be obtained by writing to the secretary at the Society of Arts, John-street, Adelphi.

"*R. W. A.*"—We are not aware that the Bishop of London has refused to consecrate any church because the altar was not at east end. We know of instances to the contrary.

"*Subscriber*" (Clifton.)—When the Act is passed, he will see.

"*H. M.*"—Ventilation. We cannot recommend any person in particular to carry it out.

"*R. R.*"—The comment on the tenders delivered for St. Mark's Church, Kennington, is wholly our own. If the lowest be right, all we can say is, that the highest is very wrong. We don't profess to judge between the two.

"*Received*"—"E. P., jun.," "J. T. I.," "P. H. W." next week, "T. L." (thanks), "Subscriber" (Lingfield), "S. H." we will try to call, "Wilcobe," "W. W." "A Mason," "E. L.," "J. R." "J. E."

"*Books Received*"—"The Analysis of Gothick Architecture." 3 vols. The Author, 11, Beaufort-buildings, Strand. "Photography," a popular treatise on the discoveries of Daguerre, Talbot, &c. By an Amateur. (Lumley, Chancery-lane). Wood's "Songs of Scotland," No. X., and Appendix. (Novello, Dean-street).

"*Books, Pamphlets, &c. Received*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent Garden.


## ADVERTISEMENTS.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUPERFICIAL for the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

SOHO PLATE-GLASS WAREHOUSE, 22, SOHO SQUARE, depôt for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 22, Soho-square.

PHŒNIX PLATE-GLASS WAREHOUSE, 24, St. Mary Axe, City.—E. MOSS, Proprietor. Builders, Upholsterers, and Consumers of Plate Glass, will find this the Cheapest House in London for Plate Glass for Shop Fronts, Railway Carriages, Mirrors, and other purposes. Colour, Quality, and Substance unrivalled by any other house in the Kingdom. ROUGH PLATE GLASS for Skylights supplied ¼, 3-8, ½, and ¼ inch thick. All Plate Glass for Shop Fronts delivered within five miles of London free of all charge, and estimates given, free of expense, in town or country.—No connection with any other house.

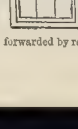
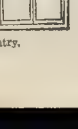
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Beg to inform the Trade, and the Public generally, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.


By Her Majesty's Royal Letters Patent.

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BAILLIE'S Patent Transparent Slide Valve VENTILATORS. To be had of EDWARD BAILLIE, Glass Painter and Stainer, 128, Cumberland Market, Regent's-park, London. Their extensive and successful application to Public Offices, Bed-rooms, and the cure of Smoky Chimneys, prove their great utility. Forty per cent. from the original Tariff.

VENTILATION IMPROVED, AND SMOKY CHIMNEYS CURED.

BAILLIE'S PATENT TRANSPARENT VENTILATORS are at once efficacious, neat, and easily adapted to any sash, and, where thorough ventilation without draught is required, will be found invaluable, and especially as a cure for smoky chimneys. Supplied Wholesale and Retail by E. and W. H. JACKSON, Window-Glass Warehouse, 315, Oxford-street.

LESLIE'S PATENTS.—GAS CONSUMERS guaranteed the following important sanitary and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light-producers, and not Smoke-producers; these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES: Upright Burners, with Corrugham Spring Glass Holders, with either fixed glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 2s. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 8s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee. One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.

Offices and Manufactory, 50, Conduit-street, London.

THE most perfect DRY GAS-METER in the World. N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 10, Hampstead-road, in connection with his old-established premises, 67, 68, Mattock-lane, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, by time, or by injurious gas. He invites attention to the fact of many of his large meters being in successful action at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club-houses, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made on the convex laths of reversed. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enable the Patentees to challenge competition with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe nor durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP-FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental; handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

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THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and lightness, being without metal hinges, cords, pulleys, cannot rust, buckle, be stunted, or get out of order, and are safer. Persons dissatisfied with the patent raising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them coming through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

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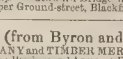
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**TIMBER of any Size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.**

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**Twenty-five years' extensive experience in all the branches of a stove manufacturer, enables F. E. to undertake the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of "no cure, no pay."**

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**The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's brush.**

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**The Patent Pots have proved to be the most effectual invention ever yet discovered, and are unrivalled for their ornamental appearance; they are manufactured of artificial Stone Cement, Iron, or Zinc.**

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**Steam-vessels leave Caen to any port.**

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**S. C. respectfully solicits a continuance of the kind favours of all the well-have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.**

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**SLATE SLABS.—The Finest Slabs produced in WALES, of amazing strength, pure in texture, and free from spots, may be had of Mr. MACNEILL at the PIMLICO SLATE WORKS, Upper Belgrave-place, planed both faces at the price that inferior Slabs in the rough self-faced are currently selling. Chemical Slabs are also supplied for extensive trade demand. Chimney Slabs, for Kitchens, and Back Ranges, Palace, Slate Tables, &c., for Royal Navy, Military, &c., &c. Deptford, the Model Prison Portland, the Penitentiaries, Baths and Washhouses, on most of the Railways, and are specified for by the most eminent architects. Whole cargoes supplied direct from Mr. Macnius's Works in Wales, planed both faces, at very low rates. Slate Tanks, Fittings for Dairies, Larders and Wine Cellars, Landings, Cantilevers, Chimney Pieces, &c. &c.**

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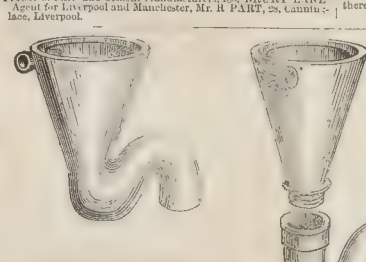
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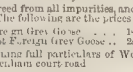
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It has obtained the confidence of the Artists generally, and been recommended universally by the Press (Foreign as well as British) as "ably and impartially conducted;" as "admirably calculated to advance the objects of Artists, and increase the growing taste for Works of Art;" and as "establishing, by the excellence of its arrangements, the variety and interest of its intelligence, and the tone of its opinions, the highest claims upon the support of all lovers of Art."

Although the monthly circulation of the ART-UNION JOURNAL, during the year 1847, has been second to that of no periodical work in the Empire, it has not been *remunerative*; a desire for its improvement has, at least, kept pace with public encouragement; and as, in the present advancing state of the Arts, to retrograde is impossible, it has been determined to meet the increased and increasing interest in the subject, by henceforward publishing the Journal at the price of Two Shillings—under the full persuasion that no one of its subscribers will complain of this augmented charge, when he is made acquainted with the GREAT AND MANIFEST IMPROVEMENTS to which it will be, in consequence, subjected.

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Among the Prints that will earliest appear are the following:—

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PUBLISHED (for the Proprietors), by CHAPMAN & HALL, 186, STRAND.

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London: Printed by CHARLES WYMAN, of 16, Castelnau Villas, in the Parish of Barnes, in the County of Surrey, Printer, at the Printing-office of J. & H. COX, Brothers, 74-5, Great Queen street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the County of Middlesex; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York street, Covent Garden, in the Parish of Saint Paul, Covent Garden, in the said County.—Saturday, December 25, 1847.

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**A PERMANENT SITUATION in the** country may be had immediately by a Steady Industrious Man, who thoroughly understands roofing; if also acquainted with plain work he would have the preference. None need apply who are not prepared with testimonials as to character.—Apply, if by letter, prepaid, to JAS BROWN, Slater, Chelmsford

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**A YOUNG MAN who has served his time,** wants Employment in a good shop where he will have an opportunity of Improvement.—Address G. C., office of "The Builder."

TO ARCHITECTS.

**A YOUNG MAN of highly respectable** connections, who has been for the last four years with an architect of eminence in one of the midland counties (chiefly employed in ecclesiastical architecture), is desirous of AN ENGAGEMENT as an Assistant in the office of a member of that profession. He will be disengaged in the first week in March next. Satisfactory testimonials as to character and qualifications can be furnished.—Address R. R., at SILVERTHORNE'S Library, 17, Walcot-buildings, Bath.

TO PARENTS AND GUARDIANS.

**IN the Office of an Architect,** where an extensive practice is conducted in all its branches, a Vacancy for a Pupil will occur in the course of the present month. The advantage of residing with the family can be afforded in a country house, situated a few minutes' walk from the town, where he will enjoy all the comforts of home.—For particulars, apply, if by letter, addressed, A. B., 20, Bernard-street, Southampton.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**A STEADY, Active, Young Man** is desirous of an Engagement, as Plumber, Painter, and Glazier; any party requiring the services of the Advertizer will find a communication prove satisfactory. Address, T. S., 46, Newman-street, Oxford street, London.

TO ARCHITECTS, SURVEYORS, AND BUILDERS.

**A PARTY** practically acquainted with the Business in all its branches, and who has filled all the above situations, wishes for an Engagement in either of the above offices, to prepare Plans, make Working Drawings, measure work, take out Quantities, keep the Books, &c. &c.—Address, A. B., Mr. Morris, 4, Child-place, Temple.


### CONTRACTS.

TO BUILDERS.

**BUILDERS willing to TENDER** for extensive repairs, additions, and alterations to several large houses in the vicinity of New Oxford-street, per cash payments, are requested to send their cards, with references as to capability and punctuality in executing such works.—Address A. B., 12, Abingdon-street.

TO BUILDERS

**PARTIES desirous of CONTRACTING** for the erection of an extensive Cotton Mill at Pleasley, near Mansfield, Nottinghamshire, may see the plans and specifications at the office of Messrs. PATTERSON and HINE, Nottingham, from December 28th to January 6th, 1847

Tenders to be delivered in, on or before January 8th, 1847. Security will be required for the due performance of the works. The lowest tender will not necessarily be accepted.

PATTERSON and HINE, Architects.

ST. BARTHOLOMEW'S HOSPITAL.

**A COMMITTEE of GOVERNORS will** meet at this hospital on TUESDAY, the 12th day of January next, at Eleven o'clock in the forenoon precisely, to receive from such persons as may be willing to take on a Building Lease or Leases, for a term of 61 years, from Lady Day, 1847, a very eligible PLOT of GROUND, situate on the south side of Kent-street, in the Borough. Immediate possession may be obtained, and the plan of the same may be seen on application at the Accounting-house, any day, between the hours of Ten and Three o'clock.

January, 1847. WILLIAM WIX, Clerk.

TO BUILDERS

**NOTICE IS HEREBY GIVEN,** that TENDERS for a CONTRACT, for such Masons, Stone-cutters, Paviors, and Bricklayers' work, and Carriage, as may be required for the Ordnance Department at Plymouth, Devonport, and their dependencies, i. e. the several outposts connected with the garrison, will be received at the Ordnance Office, Pall Mall, London, on or before the 6th January, 1847

Printed schedules, with the terms and conditions of the Contract, may be obtained, daily, between the hours of Nine and Four o'clock, at the Commanding Royal Engineer's Office, Devonport, until the 5th proximo.

Commanding Royal Engineer's Office,
Devonport, 30th December, 1846.

TURNTABLES, WATER CRANES, &c. CHESTER AND HOLYHEAD RAILWAY.

**THE Directors of this Company will meet** at the Company's office, 61, Moorgate-street, London, on WEDNESDAY, the 6th day of January next, at Two o'clock, to receive TENDERS for the SUPPLY of CROSSINGS, Switches, Turntables, and Water Cranes, according to the specification drawings and other particulars, which may be seen at the office of Mr. ROBERT STEPHENSON, 24, Great George-street, Westminster.

Tenders to be delivered in to the Secretary, at the Company's office, by One o'clock on the 6th of January, and parties tendering, or their authorized agents, to be in attendance at Two. The Directors do not bind themselves to accept the lowest tender.

By order, GEORGE KING, Secretary.
61, Moorgate street, December 14th, 1846

TO BUILDERS.

Kingsland, Dalston, and De Beauvoir Town Literary and Scientific Institution.

**THE Committee of the above Institution** HEREBY GIVE NOTICE that they are ready to receive TENDERS for the several works required in completing the carcase of the building, plans and specifications of which are now prepared, and may be seen between the hours of Ten and Four (Sundays excepted) at the office of the architect, Mr. JOHN CLARK CARLING (removed to No. 10, Middleton-road, Dalston). Sealed Tenders to be delivered at Six o'clock P.M., on Thursday, the 7th day of January, 1847. The Committee do not pledge themselves to accept the lowest, or any other tender not fully approved of. By order, ROBERT SIMONS, Secretary.

10th December, 1846.

TO ENGINEERS AND OTHERS.

**THE Directors of the Commercial Gas-light** and Coke Company will meet at the office of the Works on Wednesday, the 16th day of January, 1847, to receive Tenders for the fixing of an Eight-horse High-pressure Engine with certain Machinery to be attached thereto. The Engine is in the Company's Works at Stepney, and may be seen with the plans and specifications of machinery to be attached by application to Mr. ISAAC MERCER, the Company's Engineer, any day previous to the date above-mentioned, between the hours of Ten and Two. The Directors do not bind themselves to accept the Lowest Tender.

—By order of the Board, H. AVERY, Secretary.

Commercial Gas-light and Coke Company's Offices, Ben Jonson's Fields, Stepney, December 30th, 1846.


**A FEW Statuary Marble Chimney Pieces** FOR SALE, at the following low prices:—Three 9 ft. 6 in. Openings, 9 in. piers, 38s. each; two 9 ft. 10 in. Openings, 10 in. piers, 50s. each; several larger Openings, 11 in. and 12 in. piers, 60s. each, worth £6, and some, with carved blockings, from £8 to £7, worth £12. Approved bills, if required, at three or six months, according to the amount. Apply at 34, Chichester-place, King's-cross.

TO BANKING OR OTHER PUBLIC COMPANIES.—First Class Commercialists or Traders requiring great space, extensive premises, and first-rate situation at the West-end of London.

**TO LET on LEASE, for any Term beyond** Twenty-one years parties may desire, those extensive premises, No. 16, New Bond-street, containing on the ground floor an entrance hall, two noble parlours, most extensive corridor, leading to a magnificent banqueting-hall for upwards of 100 persons, with several minor rooms, comprehending an area of about 5000 square feet. Stabling for nine or ten horses, and standing for three or four carriages. The house is replete with conveniences, including an excellent bath-room. The drawing room and library are also well-proportioned rooms.—For cards to view, apply to Mr. LESLIE, at the offices and manufactory for his new Patent Ethereal Gas Burner, 59, Conduit-street, Hanover-square.

**MR. GRAYSON'S ARCHITECTURAL** SCHOOL of DESIGN, established above Fifty Years.—CIVIL ENGINEERS, MILLWRIGHTS, and others taught the principles of MACHINERY and PRACTICAL PERSPECTIVE. The selection of models and casts accompanying the diagrams which are introduced at this Academy will be found of great utility to the Student in elucidating the several Mechanical and Practical Sciences. Morning classes from 9 till 2; evening from 6 till 9, five nights in the week. For terms, apply at 1, Banner-street, Finsbury-square, or at the office of "The Builder," 2, York street, Covent-garden, if by letter, post-paid.

**CHIMNEY SWEEPING MACHINE,** of the best description, may be obtained by applying to the Inventor, JOSEPH GLASS, No. 2, Queen-street, Tower-hill, or at No. 2, Moor lane, Cripplegate, London

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only.

62, WATERLOO-BRIDGE-ROAD.

An Apprentice wanted, to board and lodge with his friends Premium, £30.

**SILCOCK and Co.'s PATENT PLANES** may be had at the following places:—

Archer, 45, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cook, 434, Oxford-street; Dean, 48, New William-street; Fenn, 105, Newgate-street; Holtzapffel and Co., 64, Charing-cross, and of all ironmongers and tool dealers in the United Kingdom


**ART UNION OF LONDON.**—Established 1837. Incorporated by Royal Charter, 10th Victoria, 1846.

PATRON.

HIS ROYAL HIGHNESS THE DUKE OF CAMBRIDGE.

VICE-PATRONESS.

The Most Noble the MARQUIS OF NORTHAMPTON, P.R.S.
The Right Hon the LORD PRESIDENT.
The Right Hon the Lord MONTEAGLE.

COUNCIL.

| | |
|---|---|
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The Council have much satisfaction in announcing to the public that the Charter granted under the Act passed in the last session of Parliament has received the great seal, and that the Art-Union of London is now a corporate body, with all the rights and privileges thereto belonging

The Council feel assured that, the Society being thus placed on a firm and permanent basis, a great extension of its beneficial operations will result, and that many will be induced to join who have been hitherto deterred by doubts of its legality or permanency; while the Council, feeling that the existence of the Society is no longer precarious, will be authorized to make all such prospective arrangements as may be desirable; and it will be their anxious endeavour so to apply the means at the Society's disposal as to carry out in the most effectual manner the great objects it has in view, the dissemination of a knowledge of and love of Art, the improvement of the general taste, and the consequent elevation of the fine arts and their professors.

The scheme of prizes for the present year will embrace, in addition to the usual proportion of works to be selected by the prize-holders,

CASTS IN BRONZE, from an original figure of "Iris Ascending," made expressly for the Society by Mr W. B. Kirk;

CASTS IN IRON, from a reduced copy by Mr. Dixon, of a figure of Thalia, in the British Museum;

STATUETTES IN PORCELAIN, from an original figure called "Innocence," made expressly for the Society by Mr. J. H. Foley; and

MEDALS IN SILVER, by Mr. W. Wilson, commemorative of Flaxman, in continuation of the series already commenced by the Society.

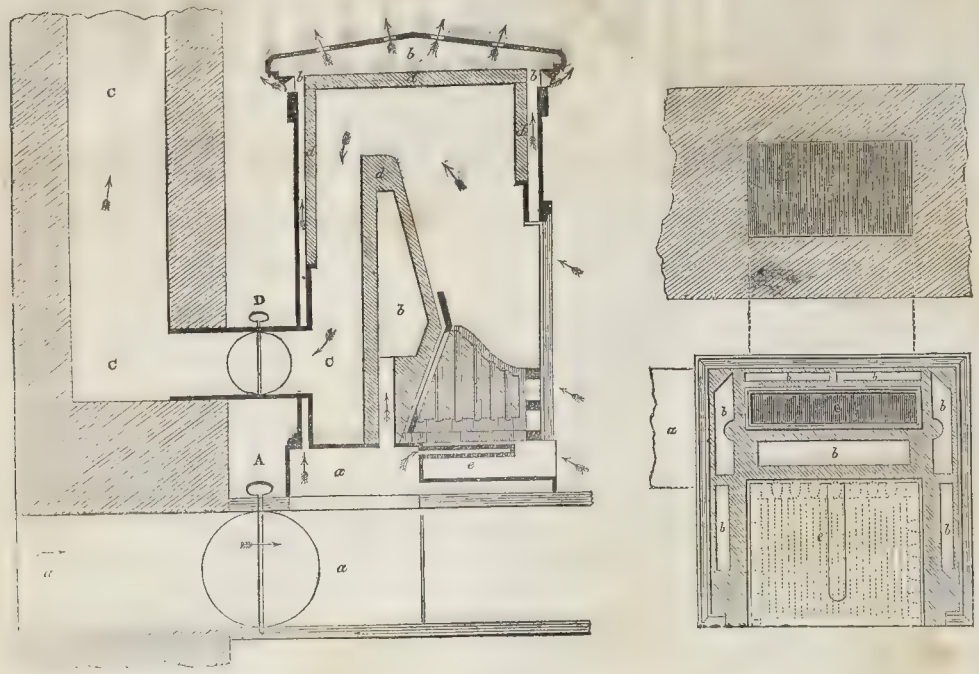
Every member will receive a pair of prints "The Last Embrace," and "The Neapolitan Wedding," engraved by Mr Charles Rolls and Mr. F. A Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of £500 offered by the Society for an historical picture

Subscriptions for the present year are now due.—By order,

GEORGE GODWIN, } Honorary
LEWIS POCOCK, } Secretaries.

4, Trafalgar square, January 1st, 1847.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.




*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and *D* are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

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This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

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## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same. Yours truly,

ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

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29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

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St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

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St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my church is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,
WILLIAM GARRATT, Minister of St. John's, Fulham.

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Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell.

MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

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Letter from Professor BRADLEY.

King's College, London, July, 1846.

Sir,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant, THOMAS BRADLEY.

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*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

# The Builder.

NUMBER 204. VOLUME FOR 1847. SATURDAY, JAN. 2.


## OUR FIFTH VOLUME.

IN accordance with custom, we would bespeak, by a few words of kindly introduction, the good will of our readers for our forthcoming volume. We are as much led to do this by feeling, as bound to it by duty. We desire to stand well with them; to have their confidence: we would enlist their aid and secure their esteem. To be thought honest and useful recorders of facts,—even able expounders of principles (high praise as it would be), is not the extent of our ambition. We would have it felt that we have high objects in view, and are impelled by loftier motives than pecuniary profit or desire for reputation: that we are labouring honestly and sincerely, to advance the well-being and the happiness of our fellow men, and would find greater reward in effecting this than in personal success. That it is so we most seriously aver: and we therefore ask all who have the same end in view, or regard it with the consideration it demands, to give us the hand of fellowship, and look upon us as fellow-labourers in a work of great and universal interest.

The spread of architectural knowledge; the improvement of dwelling-places; the science of heat, of sound, of ventilation; legislative enactments affecting constructions, and the due administration of them; facilities of communication; a dissemination of a knowledge and love of art; and the score of other objects which specially occupy our pages, are but means to an end,—and that end is, the health, well-being, happiness, GOODNESS, of the community at large.

The effect of an ill-ordered dwelling on the health of the inmates, and the connection between health and *morals*, are becoming understood. When once universally felt, improvements and ameliorations will be adopted more rapidly than they are now. Once make it the public opinion that improvements in this respect *must* be effected, and the thing is done.

The intimate connection which exists between the *good* and the *beautiful*, is not so obvious, but is none the less certain. The assertion of it has been duly scoffed at by those who could not understand it, but has now passed its probation, and is establishing itself in the public mind.

The effect produced on national character by the contemplation of works of art,—fine pictures, exalted statuary, or noble buildings,—is very great; much greater than is generally supposed; and has been too long overlooked in our country. The perfect and general recognition of it would lead to the free admission of the public to all national monuments and works of art, the adornment of cities, and the exercise of greater care in the selection of designs for public buildings.

Two years ago (in the preface to our third volume) we said, "It must be constantly remarked that architecture, as a *fine art*, is much less understood by the public than as a useful art, whence it follows that our advance in matters of taste is much slower than in matters of utility;" and the observation unfortunately is not yet out of date. On all matters of art the ignorance which prevails is excessive. It will continue to be our aim to spread abroad a knowledge of the principles of criticism, and to cultivate the taste of our readers, so far as we may be able to do se.

The coming year promises to be a busy one. A revised Buildings Act, the prevention of interments in towns, the abolition of the window-tax (a tax on cleanliness, health, and morals), the prevention of smoke, and general sanatory regulations, will probably come before the legislature, and will demand our attention. The new buildings commenced and projected are numerous. Amongst these, in the metropolis alone, we may mention the additions at Buckingham Palace, concerning which the public, up to this time, are entirely ignorant; the Carlton Club-house; Bridgewater House; new Westminster bridge, or whatever else it may be called, if the preposterous proposal to remove it be not defeated; Covent Garden theatre; the new theatre in Leicester-square; a building for the Records; improvements in the city; a score of churches of more or less pretension; and works in connection with the railways, of surprizing magnitude.

In the provinces too, much is contemplated; and we shall not fail to give the public full information of what is passing, both there and on the continent.

While we seek to render our journal valuable to architects, engineers, artists, and a large body of general readers, the building trade will find their interests watched and their requirements attended to. All new inventions likely to be of use to them, improvements in construction, new materials, and proceedings under the Buildings Act, will have our continued attention; nor shall we relax in our endeavours to induce a more careful preparation of estimates, and the maintenance of a judicious and enlightened course, as well between themselves and their workmen, as between themselves and their employers.

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EXPLOSION OF BOILERS.—The constant occurrence of accidents to steam boilers, is disgraceful to us as a nation in a mechanical point of view, and calls for inquiry. It would seem to be necessary that every boiler should be examined by a public officer before it is sent out.

## THE LIFE OF JAMES GANDON, ARCHITECT.

MESSRS. HODGES and SMITH, of Dublin, have made a very interesting addition to architectural biography, in publishing a life of Mr. Gandon.* It contains much valuable matter, and should be read, especially, by every architect who finds his spirits flag under the difficulties which attend him in his profession, even when successful.

GANDON was born on the 29th of February, 1742, in New Bond-street, London, and received his education at a boarding-school, at Kensington Gravel Pits, where he manifested a great predilection for mathematics and drawing. His father, Peter Gandon, becoming a proselyte to the science of alchemy, dissipated in fumes much of his property, and was involved to such an extent by mismanagement, that at fourteen our hero found himself recalled from school, and thrown entirely on his own resources. Having great love for the arts, he applied himself vigorously to study them, especially architecture and perspective: he read all day, and drew at Shipley's academy (then the best esteemed in London) every evening.

At this time Mr. William Chambers arrived in England from Rome, and being advised to settle here, bought a house in Poland-street. Hearing that he was in need of assistance, some of Gandon's friends advised him to call on Mr. Chambers, and shew his portfolio. The result of which was that Chambers took him into his house as a pupil, with a very moderate fee. Here he was introduced to the late Earl of Charlemont, who continued during his life one of his most attached friends. He obtained many other valuable friends, and when he left Sir William Chambers' office, and commenced practice, appears to have been introduced to good connections.

About the year 1766 (misprinted in the life 1776), he formed the intention of publishing a continuation of the "Vitruvius Britannicus," published by Colin Campbell, and in conjunction with Mr. Woolfe, of the Board of Works, issued two folio volumes before completing his 25th year.

In 1767 he exhibited, at two exhibitions arranged by the Incorporated Society of Artists, a design for a Mausoleum in memory of Handel, erected in the demesne of Sir S. Hillier, Staffordshire, and a design for a palace. About this same time he designed a park screen, which was erected in Portman-square, at the residence of the celebrated Mrs. Montague. His energy and industry were of no ordinary kind, for between 1766-1769 he had, in addition to the works we have spoken of, gained the premium for designs for the Court House of Nottingham (afterwards erected), obtained the gold medal offered by the Royal Academy, then just established (1768), and furnished designs for the Royal Exchange in Dublin. It seems that when he saw the Academy medal advertised, he was not a student, and therefore was not eligible; he however quickly removed that disability, and carried off the prize,—the subject of the design was a triumphal arch, commemorative of the seven years' war. Chambers appears to have

* "The Life of James Gandon, Esq., M.R.I.A., with original notices of contemporary artists, and fragments of Essays." From materials collected by his Son. Edited by the late Mr. T. J. Mulvany, R. H. A. Hodges and Smith, Dublin; 1846.

felt interested in his success on this occasion. Paul Sandly, the artist, was his warm friend, and introduced him to the Right Hon. John C. Beresford, who became his great patron, and ever continued so.

We should mention, that the plans for the Dublin Exchange were submitted in competition, at the suggestion of some of his friends who were on the spot. He had sixty-four competitors, and obtained the second premium. The first was given to Mr. Cooley: the third to Mr. T. Sandby.

On this occasion Malton, the author of a Treatise on Perspective, well known, published some abusive remarks on Gandon's design.*

In 1771, Gandon took a large house in Broad-street, where he remained for ten years, and married a lady to whom he had been long attached. During this period, namely, in 1776, 100 gnineas were offered by advertisement for the best designs for the new Bethlehem Hospital, and Gandon, although fully occupied, and the task was one requiring much study, was led to submit plans. He was assisted in the preparation of these by the eminent philanthropist Mr. John Howard, and was awarded the premium, without a dissentient voice. The sum so gained, however, was quite incommensurate with the labour he had bestowed upon the work, which had nearly killed him; his object was of course to carry out the design, and he was therefore deeply mortified to see it handed over for that purpose to a man of very inferior ability.

In 1779, inducements were offered him to settle in Petersburgh; but while he was deliberating upon them, Lord Carlow and Mr. Beresford invited him to Ireland, at first on general grounds, with the offer of a pension till he was established, but afterwards for the express purpose of building a new custom-house. This determined his future course, and in April 1781, having previously forwarded his sketches, he left London for Dublin. Here, however, he found himself in a position of great difficulty: the proposal was most unpopular; for several weeks he was compelled to keep himself concealed; and when it was determined to go on, meetings were held to prevent it, and great tumult ensued. The first stone was laid in August 1781, but the difficulties in the way were not overcome till long after that: he was himself constantly threatened, and never visited the works without a good cane-sword.†

During the progress of the custom-house, he was solicited by the Earl of Tyrone (afterwards Marquis of Waterford) to make designs for a court-house in Waterford; and to oblige Mr. Beresford, he complied with the request against his will. This building unfortunately proved the source of great annoyance and trouble to him: chiefly caused by conflicts between the grand juries and the corporation, relative to raising the money to pay the workmen, and he was compelled to remonstrate with the grand jury. "In my interview with these gentlemen," he says, "I found they had a very erroneous idea of the profession of an 'architect,' as it stood in England. Some of them considered me as a contractor, or, as they termed me, 'a projector and undertaker,' not one of those sable personages whose occupation it is to bury the dead, but to bury stones and mortar!‡

"Having explained to them what my profession really was, and that I only conducted works, not contracted for them, the artificers were promised a settlement."

He afterwards sought to resign the appointment, but was induced by his steady friend, Mr. Beresford, to persevere. Various other commissions were offered to him, but were mostly refused; when applied to, however, to design improvements in the Irish House of Parliament, he could not decline, and his plans were ultimately carried out. New courts of law followed, and during the execution of these he was much harassed by an opposition in the House of Commons, and other endeavours to stop the works. In his notes he says;—"I cannot but observe in this place, the injurious tendency of repeated attempts of this kind on any of the works of which I had the management. Whenever the stopping of them became in this manner subject of conversation, impediments to their future progress immediately took place; every artificer was apprehensive that the materials prepared or ordered would be thrown on his hands, and that his bills might remain long unpaid. This directly gave a check to every exertion on their parts, by withdrawing their men, and counter-ordering the materials which came from any distance; so that when the business was to recommence, the season was nearly lost by the delays, which circumstance occasioned considerable injury to the works. Indeed, the frequent opposition given to this work had so harassed and disgusted me, that I did not like to go near it; and it prevented me from constructing the inner dome with brick, which, for the sake of expedition, and to save expense, was done with carpentry."

A report which he drew up in January 1794, shewed that 44,234*l.* had been expended on the courts up to that time, and that 15,898*l.* were wanted to complete them: further, that delay would entail great expense and injuries. The result of this was a vote of 16,000*l.*, and the completion of the courts for the reception of the Judges by November 1796. The whole of the buildings, however, were not finished till 1802.

In respect of some designs made by Mr. Gandon for considerable additions to the Irish House of Commons, he considered himself ill-treated, his plans being carried out by others without compensation to him.

In 1786 he gave designs for a military college in Phœnix-park (also carried out by others), and in 1791 built Carlisle bridge. The last building which he conducted was the King's Inns, Dublin, the first stone of which was laid in 1795. During this time the works at the Custom-house were going on (interrupted for a time by the lamentable political occurences of this period), and with them constant annoyances to Gandon. At the King's Inns too, he found objectors and difficulties; and considering relaxation necessary, he resigned the appointment, and retired to his house at Lucan, about the year 1808, where he afterwards died, aged eighty-two. Amongst his last projects was one, which he forwarded to Lord Castlereagh in 1816, on the subject of a triumphal memorial to celebrate the achievements of the navy. He proposed that Westminster Bridge should be made a triumphal bridge, with a colonnade over the centre arch, and the statues of the admirals on the adjoining piers. Lord Castlereagh's secretary, in acknowledging it, said his lordship's avocations did "not permit his attending to proposals of *such a nature!*"

Our epitome of Gandon's life having already extended farther than was at first proposed, we can only say that the volume before us contains notices by himself of Captain Grose, the antiquary; Horace Hone; Sir William Chambers; Paul Sandby; Athenian Stuart, and many others; together with an essay on the progress of architecture in Ireland, and hints for erecting testimonials.

A description and review of his works, by an impartial hand, would have been a valuable addition. Some of them possess great merit.

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* At a later period of Gandon's life, he employed Malton's son in his office, at the urgent request of the father, but, after three years, was obliged to discharge him for betrayal of confidence.

† The foundation of the new building was very bad, and required the utmost care. Piling was resorted to, but had objections besides that of expense. He says, in his own notes,—"I therefore gave directions to have a grating of Memel timber prepared, the timber to be one foot square, to have the upper ones notched down three inches in the ground pieces, which were to be bedded on a layer of cut heath, the whole ground being first correctly levelled; the interstices of the grating to be filled in with hard sound stock bricks, up to the level of the timbers, swimming in mortar composed of pounded roach-lime and mortar well mixed, which answered nearly as well as tarras; over which was laid four-inch fir plank, fastened down on the grating with oak trenails, which was all completed. The foundation-walls were then set out on the 17th of September. The part directly under the cupola was laid with rough blocks of mountain-granite, in regular courses; in the first course was sunk an iron chain of flat bar, four inches wide and two and a half inches thick, into collars which were run with lead, but the bars were only covered with a cement of wax, resin, and stone dust."

‡ The following testimonial will shew to what class of persons the professional term "architect" was applied in the country parts of Ireland about fifty years ago.

"We have known Benjamin Shorter, of Bandon, architect, for the last ten years, during which period he has worked for us at different times, and in every matter executed his work in a very proper and masterly manner. We recommend him, therefore, to the public as an honest, industrious, sober, able workman, and think him very capable of executing any work he undertakes."

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WINDSOR CASTLE.—An alteration in the present arrangements, by which tickets for viewing the state apartments can be obtained only in town, is contemplated. It has not worked well lor Windsor.

## ON THE SEVEN ARCHITECTURAL HARMONIES OR PROPORTIONS,

CONSISTING OF MAXIMS AND PRACTICAL RULES FOR REGULATING THE SIZE OF ROOMS, DOORS, AND WINDOWS.

IN the construction of rooms in buildings, whether they are designed for convenience and comfort, or merely to please the eye by their elegance and beauty, there are certain rules and proportions to be observed, which, being dependent on the principles of natural harmony, cannot be violated without offending the most stolid and unpractised eye, and producing an effect precisely the reverse of that which was originally contemplated by the design.

It is not known to us, whether or not the architects of modern times are generally acquainted with the rules and proportions to which we allude; but if they are, one thing is certain, that such knowledge is to them no better than a dead letter, for it would be difficult to point out one single example amongst the most celebrated erections of our times, in which an astute and judicious observer could not detect some very glaring inconsistency; and it would be still more difficult to produce an instance, in which the proportion of parts has been rigorously adhered to, both externally and internally, in the same building, if indeed we except one or two very conspicuous and rare examples copied from Sir Christopher Wren and Inigo Jones, but which examples it is unnecessary to mention more particularly in this place.

In music, nature has established certain rules for adjusting the proportions of sounds, so as to please the ear by the production of harmony. In like manner, architecture has its rules and maxims dependent on similar proportions, or at least on such principles as are similarly adapted for pleasing the eye, by effecting such arrangements as combine to produce the harmony of order.

Beauty and proportion are inseparable between themselves, for wherever the one of them exists so must the other; there must consequently be some fixed and immutable laws by which they are produced in unison, and the more we violate those laws, the more we offend nature, and the farther do we recede from the attainment of real elegance and imposing symmetry. It is therefore indispensable in accurate practice, that just laws should be rigorously adhered to; and it is for the purpose of inculcating the application of those laws, that the subject of the present paper is humbly submitted to the perusal of the candid and intelligent architectural reader.

There are in music only seven distinct degrees of sound that are recognised by the human ear; so in architecture, which is more immediately the subject of geometrical harmony, there are only seven distinct proportions or gradations of form, which by reason of their affinity to the notes in music are rendered pleasurable to the eye, and under one or other of these proportions every species of building that has the smallest claim to regularity of arrangement or accuracy of principle may be comprehended.

Palladio has testified to the fact, although he abstains from assigning a reason, why those proportions and no other should produce such agreeable sensations on the eye and the imagination. He specifies seven distinct proportions or varieties of form which he calls *beautiful*, but beyond this point he does not attempt to proceed, and accordingly here the analogy breaks off, leaving us to assume, that no other terms in the series would be found in perfect accordance with the laws of nature as referred to this particular subject.

The proportions particularized by Palladio, are the circle, the square, the diagonal of a square, the square and its third, the square and its half, the square and two-thirds, and the square doubled. At this term the series terminates, no other additional point being assignable, from which the entire profile of a building could be distinctly encompassed at one view, without moving the eye from its original position.

These analogies are perfectly in accordance with the laws of nature, in as far as they have a direct reference to plane figures of only two dimensions; but as all buildings involve the idea of three dimensions, viz. length, breadth, and depth or height, it becomes necessary so to modify the foregoing proportions as to take

into account the three linear dimensions of the fabric, and for this purpose, we have only to apply a similar mode of reasoning, and a similar process of variation, to the cube considered as a basis, which Palladio adopted for the square, since this figure bears precisely the same analogy to solid bodies that the square does to plane surfaces, each of them being made the measuring unit of their respective species of magnitude.

Thus modified, the seven varieties of proportion which constitute the subject of the present paper become—

No. 1—1, 1, 1, corresponding to the perfect cube.
No. 2—1½, 1, 1, corresponding to the perfect cube and its half.
No. 3—2, 1, 1, corresponding to the double of the perfect cube.
No. 4—3, 2, 1, corresponding to six perfect cubes.
No. 5—4, 3, 2, corresponding to twenty-four perfect cubes.
No. 6—5, 4, 3, corresponding to sixty perfect cubes.
No. 7—6, 4, 3, corresponding to seventy-two perfect cubes.

Now, in all these varieties of proportion, it must be understood, that the first term respects the length of a room or other compartment of a building, whether considered internally or externally; the second term has reference to the breadth, and the third to the height, the terms themselves merely indicating the proportion of the parts, the actual dimensions being the same equimultiples of each variety, or the arithmetical harmonies of the respective terms. These analogies, therefore, comprehend the whole doctrine of Architectural proportion; for, whatever may be the nature of the building, the relation of its parts will always be represented by the terms of the analogy employed, according to the value of the base or radical dimension of the building given.

Thus, for example, if we suppose the length of a building to be 54 feet, and the analogy of construction to be 6, 4, and 3, corresponding to No. 7 in the foregoing tablet, then we get 54 for the length, 36 for the breadth, and 27 for the height, the breadth and height being obtained from the given length in the following manner:—

6 : 4 : : 54 : 36, the breadth.
6 : 3 : : 54 : 27, the height.

Or if 54, the given length, be divided by 6, the corresponding term in the given analogy, the quotient 9 will be the greatest common divisor of the three dimensions; and if each term of the radical proportion be multiplied by the greatest common divisor, the products will be the required dimensions of the building, considered as a whole, or of any specified compartment thereof; thus we have—

6 × 9 = 54, the length of the building.
4 × 9 = 36, the breadth of ditto.
3 × 9 = 27, the height of ditto.

And the same process applies to the consideration of the rooms, and other subdivisions of the entire fabric.

The above is the method of assigning the dimensions of a room or building corresponding to a specified proportion, and it is easy to perceive, that the same process will apply in the case of any other proportion, whatever may be the name of the given dimension assumed as the radix of calculation, provided that we employ the corresponding term of the specified analogy to determine the greatest common divisor of the required dimensions.

Thus, for instance, if we suppose the breadth of a room to be 28 feet, and the analogy of construction 5, 4, and 3, as in No. 6 of the foregoing tablet; then the length will be 35 feet and the height 21; for 28 divided by 4 quotes 7 for the greatest common divisor, from which we get

5 × 7 = 35, the length of the room.
4 × 7 = 28, the breadth of ditto.
3 × 7 = 21, the height of ditto.

Again, suppose the height of a room to be 18 feet, and the analogy of construction 4, 3 and 2, as in No. 5 of our tablet; then will the length be 36 feet and the breadth 27; for in this case the greatest common divisor is 9, from which we get

4 × 9 = 36, the length of the room.
3 × 9 = 27, the breadth of ditto.
2 × 9 = 18, the height of ditto.

It would be an excellent way of exemplifying the beauty and utility of the seven proportions given above, whether as applied to an entire building, or to some compartment of it, to exhibit a plan and elevation as deduced from each of them; this, however, would extend the present paper to too great a length, and occupy too much of the writer's time, but it would be valuable exercise to the students of architecture, inasmuch as it would fix the principles firmly in the mind, and satisfy them as to the correctness of the several analogies adopted, which probably will not be so readily admitted without some kind of graphic illustration.

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What we have hitherto done, has reference only to the proportions that ought to obtain in the dimensions of rooms, when considered independently of the general form of the building, and the proportions that ought to obtain in the dimensions of the building itself when considered as an independent whole. We have, therefore, in the next place, to inquire what ought to be the dimensions of the doors, windows, and other openings, to admit a sufficient quantity of air and light for the supply of apartments constructed on the principles of the foregoing analogies.

Since nature has established certain rules for giving to buildings the just and proper proportions, so also has theory established rules and maxims for proportioning the quantity of light to be admitted, according to the magnitude of the space to be illuminated. It is not necessary in this place to trace the steps of investigation which have led to the discovery of the rules and maxims here alluded to; this would carry us far beyond the subject of the present communication, and claim the aid of a higher calculus than would be consistent with the object we had in view, when the idea of this discussion first presented itself; we shall, therefore, waive the investigation, and content ourselves with simply propounding the practical rule by which the quantity of opening is to be obtained, for any proposed dimensions of the space to be illuminated. The practical rule for the quantity of opening is as follows:

*Multiply the three dimensions of length, breadth, and height together, and the square root of the solid thus produced will be the superficial content of the opening required for light.*

As an example of the application of the rule, we shall take the first of the preceding cases, where the length is 54 feet, breadth 36 feet, and height 27 feet; these numbers being in the proportion of 6, 4, and 3, agreeably to No. 7 of the natural scale.

The product of the three dimensions is, $54 \times 36 \times 27 = 729 \times 72 = 52488$, and the square root of this is $\sqrt{52488} = 229{\cdot}12$ square feet. Now, since the length of the room is 54 feet, we may suppose that it contains five windows in the tier; therefore, if the above root be divided by 5, we get $229{\cdot}12 \div 5 = 45{\cdot}824$ square feet for each window.

A very common and a very just proportion for doors and windows in the principal rooms of large dwelling-houses is that of two diameters, or where the height is twice the breadth; we have, therefore, to convert the square 45·824 into a rectangular parallelogram, in which the one side shall be double of the other, and for this purpose we have only to divide the given quantity by 2, and extract the square root of the quotient for the breadth or least dimension of the window, and the double of this will accordingly be the height thereof.

Thus we have $\sqrt{45{\cdot}824 \div 2} = \sqrt{22{\cdot}912} = 4{\cdot}786$ feet, the breadth of each window, and $4{\cdot}786 \times 2 = 9{\cdot}572$ feet, the corresponding height. It is not necessary to adduce more examples for the illustration of this part of the subject, for the application of the rule is so easy, that there can be little danger of even the most superficial calculator falling into error. But here, as in the foregoing department of the inquiry, we strongly recommend a graphic delineation of the room and the windows, in order the more fully to appreciate the value of the rule itself, and the correctness of the proportions employed in its production.

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The third and last part of the subject relates to the determination of the proper dimensions of fire-places and chimney-flues, so as to obtain a proper degree of heat and ventilation, according to the quantity of space proposed to be ventilated. This is indeed a very important branch of practical architecture, and has of late acquired additional interest, in consequence of the dispute that has arisen between Mr. Barry and Dr. Reid, in regard to the mode of ventilating the new houses of parliament. The whole doctrine, however, is contained in a nutshell, and the desired object can easily be effected, without having recourse to the refined artifices which modern science has brought to bear upon it. The rules which nature supplies for working out her own economy are invariably general in their principles and simple in their operation; and, if practical men could only be induced to follow those rules, many of the difficulties which operate to retard the progress of improvement would be found to disappear. T.

*** This theory was propounded and treated at considerable length by Robert Morris, in "Lectures on Architecture, consisting of rules founded upon harmonick and arithmetical proportions in Building," 1736.

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## PRESERVATION AND METALIZATION OF WOOD.

A patent for improvements in the mode of preserving wood has been taken out in France, by Mr. Banner. As in what is called Payne's process, the air is extracted from the pores of the wood, and solutions of metallic oxides, producing "by their combination another insoluble substance resulting from a double decomposition," made to take its place. The following is a portion of the patentee's specification.

"1. The chemical agents are composed by the employment of a saturated solution of sulphate of iron, in the proportion of 5 oz. 3 dwts. to 1 quart; that is to say, having a specific gravity of 1,756 to the temperature of the atmosphere.

2. The employment of a saturated solution of muriate of lime, having a density to the ordinary temperature of the atmosphere of 2,344, or 27 oz. 7 dwts. to 1 quart. I declare that my improvements consist in the following preparations, and I claim them as being my exclusive property and invention; namely—1,000 lbs. of brass filings should be placed upon a table or bench so as to form a conical heap. I moisten this mass or heap with a solution of sal-amoniac (muriate of ammonia), composed of 24 lbs. of salt upon 200 lbs. of water, when a certain chemical action commences to manifest itself, which is rendered visible by the escape of the ammonia or volatile alkali, and aqueous vapours, so as to produce a considerable development of heat. The whole of the mass must now be stirred, to expose the different layers of the heap to the action of the air. This operation finished, it is necessary to restore to the mass a conical or pyramidal form, and to add again a certain quantity of the solution of sal-amoniac. The whole mass then loses its metallic character to take that of an earthy substance of a bluish colour. Salts of zinc and copper are now produced, and the chemical decomposition is terminated.

It is now necessary to dissolve this substance in sulphuric acid, diluted with water in the proportion of 20 per cent. of acid to 80 per cent. of water. I inject with this solution (by a process mentioned) the wood upon which I operate, and I decompose the preceding substance by a muriate of barytes, composed of 2 lbs. of salt with 100 lbs. of water, in the same way as in the muriate of lime above described.

The result of this combination (says the patentee) produces a metallic salt of an intensely insoluble quality, of an extreme tenacity, and of a great weight, which gives to the wood prepared by this process a character eminently impervious to water, and which makes it resist the united attacks of animalculæ and of the most destructive vegetable matter; while the price of the raw material is much less than that of any of the salts hitherto employed for the preservation of wood when used upon a large scale."

Mr. Banner gives the credit of this invention to the late Mr. Marsh, the chemist, in behalf of whose family an application was lately made to Government. We have seen a letter from Mr. Marsh, wherein, speaking of the process patented by Mr. Payne, he claims it entirely as his own. We shall be glad if this statement should strengthen the hands of those who are interesting themselves for Mrs. Marsh.

## SAINT ANDREW'S, MARYLEBONE.

MESSRS. DAUKES AND HAMILTON, ARCHITECTS.



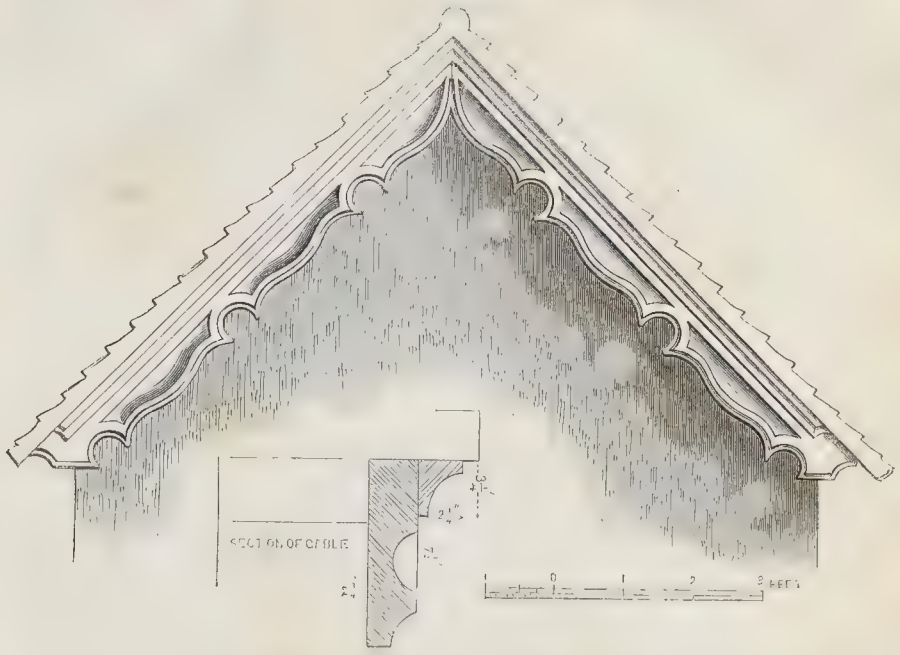
### ST. ANDREW'S, MARYLEBONE.

THE new church for the district of St. Andrew, Marylebone, represented above, stands on the east side of Wells-street. The first stone was laid on the 13th of January, 1845, and the 28th of the present January is the day fixed for the consecration.

The style is early perpendicular. The length of the church, inclusive of the chancel, is 78 feet, the breadth from north to south 65 feet, and the height of the nave 55 feet. The tower and spire, both of stone, are together 155 feet in height. The whole is built of Whitby stone with Bath stone dressings. Within, columns and arches (bearing a clerestory) separated the nave from a wide aisle on each side.* The roofs are open, stained dark oak. The pews, low and without doors, are similarly stained, and varnished. A stone pulpit is attached to the first column next the chancel, on the south side. On this same side, in the wall

* A clear fourth of the whole width, between wall and column.

## GABLE IN EARL STREET, MAIDSTONE.




of the chancel, are two handsomely sculptured sedilia. A large, five-light window occupies the east wall of the chancel, with stone screen beneath it, with panels to receive the "commandments." The chancel is paved with encaustic tiles, and the rest of the church with the black and red diamonds from the potteries.

There are galleries on three sides of the church, but being kept behind the main pillars, and carried on separate uprights, and stopping short at some distance from the east end, they do not interfere with the general design. The organ stands on the floor under a window, at the east end of the south aisle; and behind it there is a robing-room.

The font stands at the west end of the nave. It is octagon, with a bowl of the full size of ancient fonts. The sides of the octagon contain the symbols of the four evangelists; the lamb; the symbol of the holy spirit; the sacred monogram, and a cross.

Mr. Myers was the builder, and has earned credit by the manner in which the works are executed.

The contract was undertaken for 7,000*l.*, exclusive of extra foundations, the architect's commission, and clerk of the works' salary. This was for the *bare* building. The ornamental work, including the oak reredos, on each side of the chancel to separate it from the aisles, sedilia, carved chancel seats, and the font already described, were the special gift of friends, designed by Mr. Pugin and others, and will cost between 400*l.* and 500*l.*; besides which there is the cost of the warming and ventilating apparatus, the gas fittings, the bell, the organ, plate, and furnishing the vestry; which will probably amount to 900*l.* more.

For the last of these items there yet remains a sum of 500*l.* to be collected. The church will accommodate 1,200 persons; all the sittings will be free of rent charge, but for the *exclusive* use of the inhabitants of the district parish of St. Andrew, it being the wish of the incumbent, the Rev. Thomas Mount Fallow, A.M. that the inhabitants of a town parish should be similarly circumstanced, as regards seats in their parish church, with he inhabitants of a country parish. This is, we believe, the first of the new parish churches in London built on this principle.*

Towards the cost of erecting this building the Parliamentary Commissioners granted 600*l.*, and The Incorporated Society 900*l.*; the rest of the money has been raised by the voluntary contributions of the parishioners of St. Marylebone, and it is hoped there will be no difficulty in obtaining the 500*l.* still required.

The east window is to be filled with stained glass, to be designed and executed, without regard to expense, by Mr. Pugin.

We cannot hesitate to award considerable praise to Messrs. Daukes and Hamilton, the architects (now separated), for this design, difficulties having been successfully met, and indeed rendered into advantages.

Thus, in the entrance front, occurring as it does in a part of the street not running directly north and south, in order to place the church east and west, the line of the front does not range with the line of the houses, but is set back at the northern end, by which means room is obtained for the boldly projecting buttress against the tower, and a picturesque effect is produced. The door in this buttress, and the introduction of a stairs' turret at the southern angle of the tower, greatly aids the appearance. †

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New Acquisition to the British Museum.—The Right Hon. Thomas Grenville, lately deceased, has bequeathed his valuable library to the British Museum.

Free-will Offering.—Two stained windows have been presented by Mr. Fairs, of Hanover-street, to All Saints', St. John's-wood.

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* The Dean of Chichester was the original projector of the church, and to his zeal and self-denying exertions the inhabitants of St. Andrew's are principally indebted.

It should be added, that the ground-landlord, the Archdeacon Berners, gave the freehold of the site, valued at about 2,000*l.*, and the intermediate interests in the property were purchased by grants from the Metropolis Churches' Aid Fund, and the St. Marylebone Local Fund.

† Along the front of the porch, formed between the tower and a buttress at the junction of the nave with the south aisle, is sculptured "How dreadful is this place! this is none other but the house of God, and this is the gate of heaven. (Gen. xxviii.)"

### BARGE-BOARD, OR VERGE-BOARD, FROM HOUSE IN MAIDSTONE.

The barge-boards, or verge-boards, fixed to the gables of ancient houses, to hide and protect the timbers of the roof, present a great variety in design. Specimens as early as the 14th century are occasionally met with, but the greater number of them belong to the 16th century. The earlier examples are much more elegant than the later. The former are usually moulded, and finished with care; while in many later specimens, openings to form the design are simply cut out of a board, with the edges left square.

The accompanying engraving represents a plain but not inelegant example, from a house in Earl-street, Maidstone, said to be of about the time of Henry VIII.

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### AWARDS OF OFFICIAL REFEREES.

PROJECTING EAVES.

Mr. Hibberd having built four attached houses in Norfolk-road, district of Marylebone, and formed "the projecting eaves or cornices with wooden rafters, and with fascias and lath and plaster soffits;"—information was given to the referees.

The referees directed Mr. Hibberd "to amend the same, and either to cut off and remove the whole of the said cornice, or to take down the whole of the soffit and fascia thereof, formed of laths and plaster, and replace the same with iron laths and plaster—such plaster being of clean sand and grey stone, or blue lias lime, and not less than one and a quarter inch thick, including the keying; and to fill in between the wall plate and the pole plate with brickwork, and also to make a fire-proof separation between the cornices of the adjoining houses, of the full thickness of the party wall, and in the line thereof, and extending at least one inch beyond the cornice, and two inches and a half above the roof-covering, and two inches and a half at the lowest below the soffit.'

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In another case, Mr. Duncan had built a pair of detached villa residences, and construct-

ed the eaves "with the projecting rafters, having the soffit and fascia stuccoed with cement on wood laths." Other pairs were to be built, "each pair being at least 22 feet apart between flank wall and flank wall, with the addition of side entrances on the ground story, about 13 or 14 feet apart;" and Mr. Duncan was prevented by his lease from encroaching on this space.

The award was that, although the construction was not such as can be fully approved as proper and sufficient, "yet, inasmuch as it appears that the said George Duncan had endeavoured to conform to the requirements of the Metropolitan Buildings Act in this matter, and inasmuch as the two pair of houses in question are to be widely separated from each other and from all others, and inasmuch as cement is a material to which the official referees do not wholly object for the purpose of covering the soffits of cornices of overhanging roofs, we make no further award with respect to the pair of cottages, the subject of the said requisition, except that the cornices in question must be separated in the line of the party wall by a corbel of brick or stone," as described in the preceding award.

ROOF COVERINGS: ASPHALTED FELT.

Information being laid against Mr. Cameron for covering the roof of a house with asphalted felt, the referees determined "that asphalted felt is not to be deemed a cement proper to be used as a covering for the external parts of the roof of any building, and that the roof of the building in question has not been covered with any of the materials required by the first-mentioned Metropolitan Buildings Act. And we do hereby direct the said John Cameron forthwith to cover the said roof with slates, tiles, metal, glass, artificial stone, or cement, or to take off the roof of the said building so far as the same is constructed and formed of timber or other wood-work."

FIRE-PROOF ACCESSES.

The Messrs. Druce having made certain alterations in the Baker-street Bazaar, the district surveyor objected "that the said building operations form, or are intended to form, a way of ingress and regress from Baker-street to the furniture department of the said bazaar, which said way is not wholly supported, constructed, or intended to be made and finished fire-proof, the said bazaar being a building of the third or public class of building."

It was contended on the part of Messrs. Druce and Co. that not a brick had been disturbed, and that the work in question is a mere platform on trestles, and that nothing has been done to form an entrance to either of the buildings in question; and with respect to a previous award of the referees mentioned in the information, that the intention therein referred to had been abandoned for the present, the communication between the bazaar and the house being made that the rooms of the house may be used as pattern show-rooms in connection with the furniture department of the bazaar. The referees, on attending, found that the work in question consisted "of the removal of the sashes from the window of the back room on the second or ground-floor story of the house No. 68, Baker-street, and of the sashes, or whatever else may have occupied the sash-frame, of the window opposite to it in the second or ground-floor story of the bazaar; of the formation of a short flight of wooden steps in each of the two buildings, to lead up to the sills of the sash-frames; and of a wooden platform, set as a gangway from the window of the bazaar to the window of the house, and extending over the lead-flat-roof of the kitchen of the house."

The award was:—"That, by the removal of the sashes or other fittings from the opposite windows of the bazaar and of the house, and the formation of steps and of a gangway to lead to and from the bazaar and the house, such removal and formation being for the purpose of using the house in connection with the bazaar, the said house has been altered so as to bring it within the class of building to which the bazaar belongs, that is to say, to the third class; and we do hereby direct, that unless all the conditions prescribed as to buildings of the third class be complied with, and especially the rule with regard to buildings of the third class in part 6 of schedule C of the first-mentioned Metropolitan Buildings Act, the said flights of steps and the said gangway be forthwith removed, and the sashes or other fittings to the opposite windows restored, so that the said house may not be used as an entrance to, or otherwise in connection with, the said bazaar or any part thereof."

## LARGE OR SMALL AREAS FOR MONUMENTS.

THE STATUE AGAIN.

SIR,—The affair of the Wellington statue, as is observed in the last number of THE BUILDER, still requires watching. It is not to be supposed that the committee will relax one instant from their exertions to retain possession of a site, gained temporarily, at least, after long years of obstinate fight; and the difficulty of finding an appropriate position now comes in most opportunely to their aid, and will, no doubt, be taken full advantage of by these guardians of the public taste. Certainly, if once the statue is down, and provided with a suitable location, no event could possibly have occurred the better to vindicate the character of the said public taste from the aspersions of connoisseurs at home and abroad. Of apathy, during the interval between the erection of the bronze and the wooden horse, they have no doubt been guilty; but the almost unanimous condemnation and ridicule that it has met with, since the question has been generally mooted, clearly shews that our sense of artistic propriety is not yet reduced to the lowest ebb.

The question is, where is this suitable location? Now we cannot find that any one has been yet proposed more suitable than the space between the Athenæum and the United Service Club. This space is sufficiently large to allow of a full view of the statue from the most advantageous distance and position, and yet small enough to allow its colossal proportions to have their due effect. This is consistent both with authority and reason. The ancients almost invariably placed their largest monuments, whether of architecture or sculpture, in a confined space, so that the first point of view was at such a distance that their grandeur of effect was proportioned to the increased cost and labour of their execution. This cost, if, as the size of the object is increased, you increase without limit the space in which it is placed, is entirely thrown away. The monolithic column of St. Petersburgh is reduced to insignificance by its position in the centre of an extensive review-ground; while that of Trajan, on the contrary, possesses the full value of its dimensions, from the comparatively small extent of the forum in which it is situated. Still more contracted in their dimensions were the receptacles of the colossal statues of the Greeks of the greatest celebrity, viz., the cells of their temples; and the authority of the ancients, though by no means to be implicitly followed, yet, as shewing us the opinion of those who were at least capable of imagining and executing works which, mutilated as they now are, still are looked upon as the master-works of human genius, must surely be of some value.

The position indicated, too, is one of the greatest publicity, and it appears to call for some important object to fill up the vacant space; in addition to which, the statue would group well with the column beyond. The advantage of the union of several objects of art in one spot has never been sufficiently thought of in this country. We have no space in which all the greatest wonders of art are concentrated, as in the Roman forum—no *réunion* of sculpture and architecture, to attract the attention of the passer-by, and tempt him to linger, as in a costly museum. Statues by our best artists are banished to the remote and deserted squares, dropped down, one here, one there, so unassuming in the position they have taken up as hardly to attract a passing glance; whereas, by collecting some of the best of them in one or two spots, as in Trafalgar-square, or the space before alluded to, our character as a nation for taste and the appreciation of works of art, would be much more fully and deservedly vindicated than it now is.

These remarks and suggestions would not have been made, did it not appear that the question of site was again in a state of uncertainty, and that there was also reason to apprehend that the attention of the public might be withdrawn, in a great measure, from the subject, while some danger of an unfortunate result still remained—that the army would be disbanded before the enemy was completely conquered, and the rebel reduced to obedience. While the statue, and, what is even more destructive of the beauty of the arch's proportions, its pedestal, still remain, we must remember that the snake is "scotched, but not killed," and that no stone should be left unturned to ensure final triumph. We cannot hold the architect of the arch altogether free from blame, for the *apparent* indifference with which he regarded the whole affair; he was very aptly and justly satirized for his faint-heartedness in taking no public step to prevent the ruin of his work, in *Punch's* report of the examination of the "competent persons." Until his letter was dragged from its concealment by a motion of the House of Commons, his opinion was far from being generally known: had it been so, it would have done much in leading public opinion and drawing earlier attention to the subject.* J. L.

## WORKS ON THE LANCASTER AND CARLISLE RAILWAY.

THE Lancaster and Carlisle Railway was opened on the 16th ultimo, making an extension of seventy miles in the great trunk line from London to Glasgow. The new station from which the train started, is situated about one mile from the junction with the Lancaster and Preston Railway. It is a neat little structure, built of white freestone, from a design by Mr. Tite, as are all the different stations on the line. Leaving the station, we pass on to the viaduct over the River Lune, which consists of eleven arches, eight of which are 33 feet span, and three 120 feet span. The eight 33 feet arches are built of brick and stone, the large arches are of timber. The height of viaduct is 55 feet, and it contains — of stone, ashlar, 246,383 cubic feet; brickwork, 1,098 and two-thirds cubic yards; timber, 27,300 cubic feet; and ironwork, 63,984 lbs.

The tide rises twelve feet in the river Lune, and the foundation of the South River Pier had to be sunk 25 feet below low water. Leaving the Lune, we pass on to Hest Bank, and here the line passes the end of Morecombe Bay. Here also is the first station from Lancaster. Passing on from Hest Bank, we next reach Carnforth. The gradients of this portion are 1 in 471, and 1 in 300. The next work of interest is a handsome skew bridge over the Lancaster and Millthorpe turnpike-road, built very obliquely, being on an angle of 30°. The arch contains nearly 4,000 cubic feet of stone. The gradient here is 1 in 131 for about 2½ miles, which bring us nearly to Holme, the third station from Lancaster; 14 miles from Lancaster the line crosses the river Beetha, whence there is an uninterrupted rise of thirteen miles, broken into gradients, varying from 1 in 193 to 1 in 105. At 20 miles from Lancaster is the junction of the Kendal and Windermere Railway. The line now proceeds upon very heavy embankments and cuttings. One of the most formidable of these contains 150,000 cubic yards of earthwork. We now shortly cross the Sedburgh turnpike road, over which is an iron girder bridge. Then skirting the Benson Knot, one of the highest hills in Westmoreland, the line crosses the turnpike-road from Kendal to Appleby, close to which is a very heavy rock cutting, containing 90,000 cubic yards. Then follows a large embankment in the Valley of the Mint, in which are 121,000 cubic yards, succeeded by a cutting, from which 200,000 cubic yards have been taken. At the end of this cutting the Appleby turnpike-road is again crossed. 25 miles from Lancaster is Docker Gill viaduct, consisting of six arches of 50 feet span, and 75 feet high; the total length of viaduct is 370 feet; the width between the parapets 25 feet. It is built of lime stone, and contains 7,000 cubic yards. Following the

* We continue to receive numerous letters on this subject. Our correspondent, "An Inhabitant of May Fair," after scolding the government for permitting the statue still to remain up, again urges "that the site most appropriate for its reception is, on that portion of ground which one may designate 'no man's land,' in St. James's park, at such a distance within it as good taste might appoint, 'aeing the Horse Guards, and in front of the parade where the household troops relieve guard every day in the year. The parade would not be encroached on, there would be some distance from which it might be viewed, and the representation of military honour and renown would be constantly before the soldier's eye."

viaduct is a very heavy cutting of hard material, called samel, containing 152,000 cubic yards. 1 mile further is the Low Gill embankment, containing 170,000 cubic yards, being one of the highest banks in England, reaching nearly 95 feet above the level of the ravine. Next is a very great piece of excavation through blue rock, in extent about 120,000 cubic yards. Of this hard material none of the excavations for some miles northward are altogether clear. We now reach Dillacar Hills. Through one of these hills is a very large cutting, containing 70,000 cubic yards of solid blue rock. The line is here carried over the Borrow Water, near its junction with the Lune, upon a neat viaduct, 68 feet high, and composed of three arches, 45 feet span each. We next arrive at Borrow Bridge, where the gradient begins of 1 in 75, for eight miles in length. Here also is the Borrow Bridge cut, containing 69,500 cubic yards of hard blue rock; the Lune embankment is next, and contains 75,000 cubic yards. It rests on the old bed of the river, which has been diverted from its course. Thirty-four miles from Lancaster is Birbeck embankment, containing 200,000 cubic yards of earthwork, and a viaduct 45 feet in height, the arches being similar to those of Borrow viaduct. The line then passes on to Shap Wells without much difficulty, with the exception of cutting through the Crosby Ravensworth Fells, containing about 65,000 cubic yards of rock and earth. A mile and a half farther is Shap Summit, which is 888 feet above the line at Morecombe Bay, and 1,000 feet above the level of the sea; rising 60 feet overhead on each side, are rugged walls of hard rock, presenting a magnificent appearance. This was the most difficult piece of work on the line, and five hundred men were clustered upon it for many months. Upwards of twenty-three tons of gunpowder were used in blasting it. The length of the cutting is about one mile, and the quantity of material excavated 350,000 cubic yards, one-half of which was rock. The formation of it occupied two years. The line now proceeds along the east side of the town of Shap, through a heavy cutting of limestone rock, descending on a gradient of 1 in 125, and passes under a skew bridge at an angle of 45°. The line now pursues its course by Shrimsby; the ground at this point, being precipitous, has caused a succession of heavy works, viz., the Hackthope cutting, containing 140,000 cubic yards; the Clifton embankment, 200,000 cubic yards, and the Lowther embankment, 270,000 cubic yards.

At this point (Clifton), in the course of excavation, a Roman altar, in a high state of preservation, and inscribed to Jupiter, was dug up. This relic of antiquity is now in the possession of George Mould, Esq. We now cross the river Lowther on a large and handsome viaduct, consisting of six arches of sixty feet span. The piers are eight feet thick at the springing, and increase to 17 feet 6 inches at the base; its total length 500 feet. On the north side is a large cutting through clay, containing 275,000 cubic yards. A mile and a half from Lowther the line crosses on a viaduct of some beauty, consisting of five semi-circular arches, 50 feet span each. Its height is 70 feet, and its extreme length 300 feet. We now reach a large cutting, containing 180,000 cubic yards. From Penrith the line runs straight and level on the west side of the turnpike road. Crossing the road, it enters the valley of Pettrill, through which it pursues an almost direct course to Carlisle: the first inclination in this valley is 1 in 184, making a fall from Shap of 500 feet. We then enter a cutting a mile and a half long, 30 feet deep, containing 250,000 cubic yards. Then commences another incline of 1 in 169 for 2¼ miles, which makes a fall from Shap 575 feet. An average fall of 1 in 200, with gentle curves, brings us to Wreay, where much difficulty has been experienced from frequent slips. The Wreay cutting is situate on the east side of the village, a mile long, 45 feet deep, in the deepest point; the quantity of earth work amounts to 410,000 cubic yards. The line passes Upperby on the east, joining the Newcastle and Carlisle Railway at the London road station. From Upperby the gradient is 1 in 140; at Carlisle the level of the rail is 36 feet above the rail at Morecombe Bay, and 852 feet below Shap summit. Besides the principal viaducts mentioned, the works on the line comprise fifteen turnpike road bridges, sixty-four public road bridges, eighty-six occupation bridges, and sixty level crossings.

## NEW WORKS IN WOOLWICH.

The new marine barracks, forming an extensive range of substantial buildings, are now nearly completed. These are to afford accommodation for 1,000 men, and form three sides of a square in plan. Brick and stone dressings are the materials of the outside; iron girders and brick arches separate the stories; asphalte forms the floors, and the whole is fire-proof. Ventilation is effected by a revolving fan worked by weights. In front of the main building an arcade, two stories in height, is formed by square brick piers and arches, affording spacious covered walking places, with room for six abreast. Messrs. Rigby are the builders, under the government officers.

The number of new barracks now in course of construction, can scarcely fail to excite attention. Those in the Tower of London, at Bristol, at Birmingham, and elsewhere, have already been mentioned by us. The way in which the designs for these structures are obtained, and information as to the gentlemen who take the credit or discredit of them (as architectural works), may afford matter for some remarks on another occasion.

Very extensive improvements are contemplated in the lower part of Woolwich, where many houses are to be pulled down, and a spacious new street formed.

The new church (designed by Mr. F. Fowler), has been finished for some time, but is not yet opened; an objection which the official referees have thought it their duty to make, has caused the delay. The tower is left incomplete till fresh funds are provided.

In the old church, a stained glass window by Mr. G. Hoadley, from a drawing by Mr. Corbould, has been recently put up. It illustrates the line, "and he bearing his cross, went forth." The figure of our Saviour is seven feet high, and is painted in the modern style, to accord with the character of the church. The border around the window is formed of the passion flower, and a conventional scroll entwined; and in our opinion, somewhat militates against the general effect.

The Roman Catholic Church by Mr. Pugin (who, by the way, is very ill), is probably already known to our readers; as well as Mr. Donaldson's "Scotch Church," which closely adjoins it.

## RAILWAY JOTTINGS.

A "Law Reformer," a correspondent of the *Times*, on the subject of the "liability of committee-men," while adverting to the fact that without joint-stock companies we should have had neither canals nor railroads, gas-light nor supply of water, life insurances nor joint-stock banks, splendid club-houses nor any, indeed, of those magnificent results of joint-stock contributions which make England the wonder and envy of the world; with great good sense and ability points to and deplores the clear and inevitable sequence of cause and effect whereby the present state of the law, by rendering even non-acting committee-men or non-acting directors subject, by the acts of partners or agents, to liabilities, *in any case whatever, to any unknown amount*, and even to the utter ruin of themselves and families, not only discourages the establishment of joint-stock unions of fixed, limited means, in which men of capital might risk a definite sum of money and nothing more; but, by means of such discouragement, inevitably tends to throw existing establishments out of the hands of responsible and prudent capitalists altogether, into the exclusive management of either knaves with nothing to lose, or fools, with immense risk of losing all that they possess. The sooner such a state of the law as this is put an end to, of course, he thinks, the better; and surely it would be *wise* to remove these ridiculous impediments to the employment of capital *at home*. We have all a little to risk. Why should we not be allowed to judge for ourselves how much we will risk? Creditors of companies can always be safe, for they never need trust, and it is much better they should not: for companies requiring such aid must be bubble companies, which would thus at once be burst. "To encourage the employment of capital is to better the condition of the labourer and the artisan."—The labour for railways already sanctioned, but not formed, according to calculations announced on Wednesday week by Mr. Houldsworth, chairman of the Manchester and Leeds line, will require the employment of 500,000 men for ten years, supposing that this number *can* be withdrawn from the general labour market of the country. It is the maximum that *can* be withdrawn. The maximum cost of the railways now in course of formation, or for which Acts have been got, in Great Britain, he estimated at 200,000,000*l.*, of which 160,000,000*l.* will have to be expended on those in England; and of this 160,000,000*l.* the sum of 120,000,000*l.* will be spent for labour.——The *Somerset Gazette* assures us that a new engine of Mr. Stephenson's lately "did" the express train business on the London and North Western, between Birmingham and Wolverton, 60¾ miles, in 64 minutes, including stoppages—upwards of a mile a minute, in fact. The gradients are an ascending plane of some length at starting, and then ascending and descending gradients of 16 feet in the mile for the rest of the distance. The London and North Western Company, it is said, are determined to sustain this speed, and so come up to the Great Western standard.——Fears are reasonably entertained that the cutting of the tunnel on the railway from Ipswich to Woodbridge, which penetrates through the hills north of the town, may injure or withdraw the supply of water to the town.——The Cambridge station is likely to be another of those "largest ones in England" which are getting rather rife of late. The arcade is to be 410 feet long.——The Stour Valley Extension branch line from Bury to Lavenham, for which the plans are deposited, would pass over a viaduct 370 yards long, west of Sicklesmere toll-gate, cross the Ipswich road, and proceed along the vine fields to Eastgate-street, crossing it by an arch of 45 feet span and 20 feet in height, towards the Ipswich and Bury line. It will be stoutly opposed, however, by landowners.——The Cheltenham General Hospital and Dispensary has been purchased by the Cheltenham and Oxford, at cost price, for the purposes of their works, on condition that they provide an extended building on an improved site. The Grammar School, too, it appears from the deposited plans, will be required, and another, and probably also extended building, erected in its place.

## NOTES IN THE PROVINCES.

A proposal to preserve and restore the old Grammar School at Ipswich, the last relic of its ancient and numerous monastic institutions, has been rejected by the corporation, many of whom, strange to say, are nevertheless members of the Archæological Association. This interesting relic was originally the refectory of the Dominican friars, and very ornamental in character, and is still in comparatively good general preservation, with its black oak roof defaced with many a coat of whitewash certainly, but exhibiting, nevertheless, many traces of its ancient ornamental painting.——A memorial, or sea-mark, in honour of the late Earl of Yarborough, is to be erected in the Isle of Wight. The subscriptions now amount to upwards of 600*l.*——The repair and re-pewing of Trowbridge church, Wilts, is talked of.——Government is about to be applied to for permission to erect a custom-house at Birkenhead, to be forthwith commenced.——Two extensive rice-mills are in course of erection at Liverpool, where rice is being ground at a great rate, day and night, in eight other like establishments, in consequence of the failure of the potato crop. A thriving trade is at present done here in the importation of paving-stones from the Isle of Man. The council have organized a regular sanatory staff, under the new Act, which comes into operation to-morrow (1st January, 1847). The provisions of this new leaf which is to be turned along with the in-coming year, seem to be no less beneficial and excellent than stringent and peremptory. The smoke from furnaces, steam-engines, bakeries, &c., from every steamer plying on the Mersey, every steamer

entering coastwise into the Mersey, must be "used up," under heavy penalties, though probably even the pecuniary profit to the consumers themselves will at least equal the forfeit in amount—a somewhat odd and unusual ground of compulsion this, as futurity will doubtless think, independently altogether of the still more precious and substantial benefits derivable from a clear atmosphere, clean-swept lung-flues, and vigorous lungs, consuming their own pure *pabulum vitæ* instead of smoke. Many other nuisances and evils are to be simultaneously remedied. "Middens" are to be kept under, mendicants' lodging-houses licensed, and their occupants restricted in number, cellars limited in extent, or rather extended in limit, and other means enforced to open the way to a more vigorous and healthy generation of fellow men. The bakers appear to have been amongst the first to bestir themselves in this new movement, albeit one of salutary compulsion, in the meantime; and chaffer-ovens, patent smoke-consumers, and the like, discussed, and with a will, too, to the work.——The penny-a-mile omnibus system is to be started in Manchester.——Contracts for the particular branches of work connected with the erection and completion of the new Town-hall at Doncaster were to be advertized in course of the present week. The plans and specifications are said to be complete. The Old Angel is almost wholly demolished. ——A tower has been added by subscription to Maryport church, and by similar means a large and commodious sunday-school is to be founded in March next, in connection with this church.——Explosive cotton, or tow, and sawdust, have been used in the north, of late, for blasting whinstone rocks, it is said, of the most solid description, and, as the *Edinburgh Weekly Express* has it, "with splendid effect;" a bore 2¼ inches in diameter and 3 feet in length, charged with 9 oz. of tow, in the usual place of 3 lbs. of the *old* material, gunpowder, blasting to the extent of 10 tons, and indeed a charge of 11 oz. of tow and cotton mixed blowing up, or bringing down, no less than 15 tons. ——New joint-stock markets are in the way of being got up in the north, at Elgin.

## BARRY'S PICTURES AT THE SOCIETY OF ARTS.

A MEMBER of the Society of Arts, who considers himself improperly alluded to in a letter on this subject, which appeared in the last number of our journal, has taken pains to shew us that, so far from being a "disappointed contractor for the decoration of the hall," he could not conveniently have undertaken any of the work there, if it had been offered to him, and that he has no motive for the charge he has made, in respect of the injury done to the pictures, but desire to preserve for the society what every one must consider their sheet-anchor.

It appears to us of the utmost importance, as we said a fortnight ago, that all proper steps should be taken to ensure the preservation of these works. The Council owe it to themselves and to the Society, to shew that they duly regard their trust. The production of the report of the eminent artists who are said to have examined the pictures, would probably set the matter at rest.

## TO PREVENT INJURY TO BRICKWORK BY FROST.

SIR,—Having been engaged in erecting brickwork at factories and places of business where the work was required to be done regardless of the weather, my attention was drawn to the best mode to prevent the frost affecting the mortar. I have adopted the following plan for the last eight years with complete success; and as this winter is likely to be severe, I think it may be useful to make it more generally known through your valuable publication. To the proportion of six bushels of river sand mix one pound of common salt; instead of screening the sand wash it, and let it be well saturated with water. Then take the usual proportion of greystone lime, which must be ground, and make it up the same as concrete to the proper consistency. The mortar should be used while warm, and if convenient the brickwork should be covered up for one night.—I am, Sir, &c.

Stamford-hill. JOHN WORKMAN.

## New Books.

*The Railway Shareholder's Manual; or Practical Guide to all the Railways in the World.* By HENRY TUCK. 8th Edition. Effingham Wilson, Royal Exchange.

WHEN a book has passed through eight editions, recommendation would seem unnecessary: the inference may fairly be drawn that it contains matter valuable or interesting to the public. The present edition of the manual has been carefully revised, and contains much additional information, together with statistics never before given to the public. The writer has a hard "fling" at "Cato" and the *Times*, and is perfectly satisfied that all obligations incurred on account of railways will be met without in any degree affecting the money market. The preface states that out of 561 bills presented to the House of Commons in the last session, 271 only have received the royal assent. "Of these 24 were for amalgamations and purchase, 7 for new stations and enlargements, 131 for branches to be constructed by old companies, and 109 for new lines by new companies, the whole requiring a capital of about 100,000,000*l.* The total length of these lines is upwards of 4,700 miles (60 of which is tunnelling) and will require 55,000 acres of land for their site."

## Correspondence.

HIGHBURY CHURCH COMPETITION.

SIR,—Though your columns have, from time to time, teemed with letters and articles exposing the abuses of the present system of competition, the evil is not yet checked, as the following circumstances will plainly shew.

A committee was lately formed at Highbury, in the parish of Islington, with the view of erecting, if possible, a church suited to that hamlet. Amongst the several wealthy families residing there, many are dissenters, and consequently subscriptions for an episcopal church would necessarily be limited; but as the inhabitants had greatly assisted in defraying the expense of building the other district churches, it was confidently expected the parish at large would, in return, enable them to raise a sum of 4,000*l.* Accordingly, instructions were given to seven or eight architects to send in designs, the cost of carrying out of which was, on no account, to exceed the sum abovementioned.

After a time, the committee distributed amongst the subscribers to the work a circular, headed by a smart vignette, exhibiting indeed an elegant structure, which an episcopalian would rejoice in seeing erected. The engraving to which I allude is taken from the design of Mr. Allom, whose intended structure, if it can be carried out in *every particular* at the sum proposed, will entitle him to the warmest thanks, not of the committee only, but of the whole body of architects, inasmuch as they may learn from him how to build with little money. The remark of an eminent architect, on seeing the vignette, was this—"The sum named, instead of being printed 4,800*l.*, should have been 8,400*l.*, as being nearer the mark." Of course, the unsuccessful competitors, whose abilities and taste had been strictly limited to preparing designs for a church that could actually be built for the sum proposed, are not a little surprised and mortified, to find a plan accepted which must necessarily involve an expense of at least double the amount prescribed.—I am, Sir, &c.,

AN ENEMY TO UNFAIR COMPETITION.

Dec. 28, 1846.

DISCOVERY OF ROMAN MANUSCRIPTS.—The excavators on the Caledonian Railway, in the wild and solitary passes of the Avon valley, near Beattock, have just turned up, in this strange deposit, a small stone trough carefully placed on a flat block, and enclosing a bronze case with "a precious manuscript" rolled up in it, 30 feet in length by 2 feet in breadth, with the title of "Historia Romæ," in large distinct characters at the head. The perhaps too sanguine anticipation is, that here we have one of the long lost and sought for books of Livy; though it is more likely, we should think, that the care displayed in its preservation was of a paternal order, hence not Livy's, unless he had been a sojourner, in his day, at Beattock.

## Miscellanea.

ARCHITECTURAL NOMENCLATURE.—SIR,—The *Ecclesiologist* for November last contains a critique on the "Architectural Notices of the Churches of the Archdeaconry of Northampton. No. 3," in which the following sentence will be found:—"We really lament that the letter-press is deformed by the use of the absurd terms, 'early English,' 'decorated,' &c., particularly as Mr. Poole has adopted the improved nomenclature of Professor Willis for details." I think it would be a gratification to some junior ecclesiologists to know why "first," "middle," and "third pointed," are so much preferable to the terms above mentioned. I shall not offer any arguments in favour of the old system beyond this, that I believe that "first pointed" conveys nothing, expresses nothing, that is not conveyed, and equally well expressed, by "early English;" and, with reference to "perpendicular," it appears to me far superior to "third pointed," as it expresses the peculiarity of the style.—AMATEUR.

PROJECTED WORKS.—Advertisements have appeared in the current newspapers for tenders for the construction of nineteen miles of the Malton and Driffield Railway, with a tunnel, bridges, stations, &c.; for the erection of an extensive cotton-mill, near Mansfield; for materials for metropolitan roads, and for making roads at Aigburth on the Mersey, and cutting and masonry work in altering and improving roads near Glasgow; for the construction of a wooden wharf at the latter place, promptly; for 20,000 flue bricks to be shipped to Banffshire; for water cranes, turn-tables, switchings, &c. for the Chester and Holyhead Railway; for cast-iron work for the city of London Sewers Commissioners; for the construction of the Rugby and Leamington Railway, and of various branches connected with other lines; and for widening the Leicester and Swannington branch, &c.

THE SANATORY ACT AT CROYDON.—The proprietor of a piece of land with an open drain or cesspool, into which all the filth and impurities of the higher ground accumulates, was summoned, on Saturday last, to the police-court, where evidence was called to the effect that fever prevailed around it, that noxious effluvia issued from it, and that, in all probability, it was the cause of much injury to health, and therefore ought to be covered in. The magistrate declared, that he should have ordered this at once to be done, but as the proprietor, Mr. Bridge, had met the case very fairly, in not only proposing to aid in the removal of the nuisance, but in having previously endeavoured, though hitherto unavailingly, to obtain the co-operation of the parish authorities, who were as much responsible as himself, in such a case, the matter was allowed to lie over for a fortnight, in order that some amicable arrangement might be come to.

PUBLIC WORKS IN IRELAND.—On the 3rd of October last, 26,193 persons were employed on the relief works in Ireland, and on the 28th of November the number had increased to 273,023 persons!—able-bodied men—the individual representatives of at least a million of people—all dependant on the Government, not only for present but for future support—all irresistibly attracted, and still followed by more and more, from their only permanent source of support, the agricultural labour of the land, by the surety of money wages, in the place of that land-truck remuneration which the failure of the potato-crop, and the prejudice, and other difficulties, in the way of the substitution of new and even superior produce, has, in the meantime, rendered altogether valueless, in their possession. Government have recently issued fresh orders on the subject, with the view of turning the labour into its former channel.

THE PAVEMENTS OF PARIS.—From official returns lately published, on the paving and maintenance of the pavements of Paris, it appears that the paved surface of the streets of that capital is 3,321,000 square yards, of which the state maintains 1,083,090 square yards, and the corporation of Paris 2,238,000 yards. The charge of keeping up this pavement is fixed at 53,000*l.*

COMPETITION.—The Scarborough parish church restoration plans will be received till 1st March, 1847.

# THE BUILDER.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Watterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

**SAMUEL CUNDY begs to inform Archi**tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Bath Chimney pieces from 8s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

**PORTLAND CEMENT does not vegetate** in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, and the public are thereby enabled to avail themselves of these distinct advantages.

Manufactured by J. B. WHITE and SONS, of Millbank street, Westminster; and sold at their warehouses—Earl-street, Blackfriars; Druce's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; 85 Seel-street, Liverpool; and Salmon and Co.'s Dublin.

**KEENE'S PATENT MARBLECEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application, for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition, and manufactured from every other, as it forms a neutral compound, is not only free from a chemical energy upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface, which may be made equal to that of the finest marble NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, panels, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being at the same time much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Cumming-place, Liverpool.

**SHEET and CROWN GLASS for HOR**TICULTURAL PURPOSES, at the most moderate prices, may be obtained in any quantity, and at the shortest notice, at CLAUDET and HOUGHTON'S Wholesale and Retail Glass Warehouses, 89, High Holborn.

**GLASS SHADES for the Preservation of** Clocks, Alabaster Ornaments, Wax Flowers, &c. &c. CLAUDET and HOUGHTON having, since the repeal of the duty on glass, reduced their prices of glass shades by nearly one-half, they are now so extremely moderate as to be considered available for the protection of all articles which may be injured by exposure.

Wholesale and Retail Glass Shade-warehouse, 89, High Holborn.

COLOURED AND PAINTED GLASS FOR WINDOWS.

**CLAUDET and HOUGHTON have always** on hand the largest variety of Colours which can be obtained in Glass, and which, the two sell at such greatly reduced prices as to make it available in many cases from which it has been hitherto excluded on account of its expense. Painted Glass in Coats of Arms, Scriptural and other Devices, Matted, Embossed, and Machine Etched Glass at extremely moderate prices. Window Glass Warehouse, 89, High Holborn.

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLESLONG begs to inform his Friends** and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot and upwards, from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square.—Terms, Cash only.

SASHES PRIMED, GLAZED, and sent to any part of London, at 7d. per foot.

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET BRITISH SHEET
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES

Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.

VARNISHES and GRINDING WHITE LEAD; MILLED LEAD IN SHEETS, 22s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

For complete Lists, priced Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

**WINDOW GLASS, Crown Squares, in**

100 feet Boxes, per foot:—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 by 3 | and under | 5 by 3 | ..... | 1d. | | | |
| 5 .. 3 | „ | 6 .. 3 | ..... | 1½ | | | |
| 6 .. 4 | „ | 7 .. 4 | ..... | 1½ | | | |
| 7 .. 5 | „ | 9 .. 7 | ..... | 2 | | | |
| 9 .. 7 | „ | 10 .. 8 | ..... | 2½ | | | |
| 10 .. 8 | „ | 14 .. 10 | ..... | 2½ | | | |
| 14 .. 10 | „ | 26 ct | ..... | 4 | | | |

Crates averaging 50 inches:

| | | | |
|---|---|---|---|
| 000 ..... | 18 table ..... | each 40s. | |
| 00 ..... | 18 „ ..... | 47 | |
| Fourths ..... | 18 „ ..... | 63 | |
| Thirds ..... | 18 „ ..... | 73 | |

Fine 20 Sheet Glass, 3rds, superior to English, in 200 feet boxes, about 16 oz. 3d. per foot; best quality, Sheet Glass, about 16 to 18 oz., in 100 feet cases, 8d. per foot; this is a most superior article, nearly approaching to plate glass.

Water-closets, Pumps, and all kinds of brass work. Sash-glazing 4½d. per foot.—Address THOMAS MILLINGTON, 87, Bishopsgate-street without, London.

**PATENT PLATE GLASS,** Sheet and Crown Window Glass, Coloured and Painted Glass, wholesale and retail, at CLAUDET and HOUGHTON'S, Window Glass Warehouse, 89, High Holborn.—Lists of the reduced prices forwarded free on application.

PAINTED GLASS.

**THE Subscribers, who have been appointed** to furnish the PAINTED GLASS for the WINDOWS of the HOUSE OF LORDS, are ready to prepare Designs adapted to every style of Ecclesiastical or Domestic Architecture, and to execute Work, to any extent, within the shortest possible period.

BALLANTINE and ALLAN, 52, George street, Edinburgh.

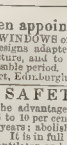
**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sunblind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRINGS Patent Steam Bed-Feather Factory, 14, Kings-gate street, London.

**CHAS. WM. WATERLOW,**



MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 121, Bunhill row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



**HENDRY and GLOVER, Iron Founders,** beg to inform their customers that they have removed their Foundry (from Smart's-buildings) to CHARLES-STREET and 108, DRURY-LANE, where they have adopted every improvement to enable them to compete successfully in quality, price, and punctuality. They have also an extensive and well-arranged stock of patterns for every description of Castings.

**HOT WATER APPARATUS.—The** attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and ingathmer, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dean-street, Fleet-street.

ORNAMENTAL STOVES.

**JEREMIAH EVANS and Company re**spectfully invite the attention of Noblemen and Gentlemen furnishing, or refitting their mansions, to the most extensive and various Stock of DRAWING ROOM and other STOVES in the kingdom, which exhibit many recent improvements, producing great heat with small consumption of fuel, and are manufactured of every description of pattern, including the Gothic, Grecian, French, and Elizabethan; also fenders and fire-irons en suite. Improved Kitchen Ranges, with or without steam apparatus. Hot and Cold Baths of all descriptions, and every requisite in furnishing ironmongery at wholesale prices. Improved Hot-water Apparatus for warming buildings, conservatories, &c. Manufactory and Show-rooms, 33, King William-street, London-bridge. Established in 1815.

KITCHEN RANGES, STOVES, &c.

**J. JONES, STOVE MANUFACTURER,** formerly of Castle-street, Long-acre, begs to inform his friends that he has REMOVED from the old-established Warehouse, 9, CHARLES-STREET, LONG-ACRE, and continues to supply Stoves and every description of Smith's Work at prices lower than any house in the trade.

Elliptic Stoves, 3id. per inch.

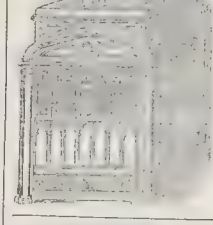
Register do., 7½d. „

Cottage Ranges, with ovens and boilers:—

| 2 ft. 8 in. | 2 ft. 10 in. | 3 ft. | 3 ft. 2 in. | 3 ft. 4 in. |
|---|---|---|---|---|
| 32s. | 38s. | 34s. | 36s. | 30s. |

Self-acting Ranges, with ovens, hook boilers, winding checks, &c.

| 3 ft. | 3 ft. 2 in. | 3 ft. 4 in. | 3 ft. 6 in. | 3 ft. 8 in. | 3 ft. 10 in. | 4 ft. |
|---|---|---|---|---|---|---|
| 62s. 6d. | 64s. | 65s. | 66s. 6d. | 68s. | 70s. | 74s. |



**NOTT'S PATENT STOVE,**

FOR

CHURCHES, HALLS, WAREHOUSES, &c.

**THE PATENT** having expired, the present Proprietors are enabled to offer these excellent Stoves at

THREE-FOURTHS OF THE PRICES HITHERTO CHARGED.

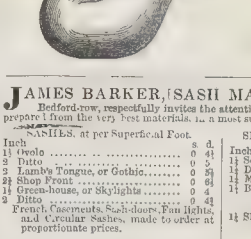
Engravings of the Patterns, with

THE REDUCED PRICES,

will be forwarded on application to the Warehouse,

80, GREAT QUEEN STREET, LINCOLN'S INN FIELDS

N.B. Hot-water Pipes can be attached to the Stoves for warming distant apartments Conservatories, &c.



CHEAP PAN FOR

WATER-CLOSETS.

With Trap, in One Piece.

**DOULTON AND WATTS,**

LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the above and superior

GLAZED STONE WARE,

Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, on account of their cleanliness and cheapness

If preferred, they can be had in two parts, the Pan at 4s. 6d. and the Trap at 3s.

N.B. Manufacturers of RAIN-WATER PIPING for houses.

**JAMES BARKER,** SASH MAKER and JOINER to the TRADE, 83, Theobald's-road, Bedford-row, respectfully invites the attention of Builders and gentlemen building, to the subjoined list of prices for joiners' work, prepared from the very best materials, in a most superior manner, for ready money.

SASHES, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 11 Ovolo | 0 | 4½ |
| 2 Ditto | 0 | 5 |
| 2 Lamb's Tongue, or Gothic | 0 | 5½ |
| 2½ Shop Front | 0 | 6½ |
| 1¼ Green-house, or Skylights | 0 | 6 |
| 2 Ditto | 0 | 4½ |

French Casements, Sash-doors, Fan lights, and Circular Sashes, made to order at proportionate prices.

SASHES WITH FRAMES, per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 11 Ovolo, sashes and frames | 0 | 6 |
| 1¼ Ditto, both sashes to hang | 0 | 10 |
| 2 Ovolo sashes and frames | 0 | 11 |
| 2 Ditto, both sashes to hang | 1 | 0 |
| 2 Lamb's Tongue, or Gothic, ditto | 1 | 0½ |

Cloth Frames and Sashes, Mullion Windows, Wainscot and Mahogany Sashes: Prices for Architraves, Base Mouldings, &c.; and all kinds of Joiners' Work in Wainscot or Mahogany, TO BE HAD ON APPLICATION

SHUTTERS, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Square Sliding Shutters | 0 | 6½ |
| 1¼ Ditto, moulded one side | 0 | 7½ |
| 1¼ Moulded, head and butt back | 0 | 8½ |
| 1¼ Boxing Shutters, with front moulded, and back, with 1 inch beech flaps, hung and latched | 0 | 8 |
| 1¼ Shutters and back flaps, moulded front and head, and butt back | 0 | 9 |

DOORS, at per Superficial Foot.

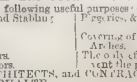
| Inch | s. | d. |
|---|---|---|
| 1¼ Dwarf square | 0 | 6½ |
| 1¼ Ditto, moulded front | 0 | 7½ |
| 1¼ Four panel square | 0 | 7 |
| 1¼ Ditto, moulded front | 0 | 8 |
| 1¼ Ditto, square | 0 | 8 |
| 1¼ Moulded one side | 0 | 9 |
| 1¼ Ditto, both sides | 0 | 11 |
| 1¼ Ditto, bead, butt, and square back | 0 | 11 |

DOORS, at per Superficial Foot. continued.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ditto, bead, flush, and ditto | 0 | 11 |
| 1¼ Ditto, ditto, and moulded back | 1 | 0 |
| 1¼ Six panel square | 0 | 9 |
| 1¼ Ditto, moulded one side | 0 | 10½ |
| 1¼ Ditto, ditto, both sides | 1 | 0 |
| 2 Four panel square | 1 | 1½ |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto ditto, both sides | 1 | 6½ |
| 2 Ditto, bead, butt, and square | 0 | 11½ |
| 2 Ditto, bead, flush, and square | 1 | 0½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2 |
| 2 Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
| 2 Ditto, ditto, both sides | 1 | 2 |
| 2 Ditto, bead, butt, and square | 1 | 1 |
| 2 Ditto, bead, flush, and square | 1 | 2 |

Front, jib, and covered doors, to any design.

SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster bridge, London

**THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the** following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Coach-houses and Stables; | Pig-sties, &c. &c. | which also renders it very |
| Kitchen Floors (particularly where it is essential to keep damps from rising). | Dog-kennels. | Covering of Railroad and other Arches. | appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Garden Walks and Terraces. | Barn Floors. | The only effectual mode to prevent the perpetual ingress of water, | |
| Carriage Drives. | Granaries. | | |
| | Tan-room Floors. | | |
| | Malt-house Floors. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

I. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

**WANTED, a few powerful Travelling** CRANES, either new or second hand.—Address, giving full particulars and lowest cash price, to B. H, care of Mr. Gould, stationer, Ireland row, Mile end road.

HYDE PARK.

**WANTED, anywhere in the neighbourhood** of Hyde Park, a Plot of Ground, measuring about 40,000 square feet.—Apply, by letter, to H. J., at the office of "The Builder," York street, Covent-garden.

**PREMISES Wanted by the Union Plate** Glass Company at the back of any of the following thoroughfares: Fleet-street, Strand, Holborn, or Oxford-street, with a front entrance from the same, and with a ground area of about 200 square yards. Apply to H. CHRISTIE, 13, Nassau street, Middlesex Hospital.

A RESPECTABLE CARPENTERS BUSINESS

**TO BE DISPOSED OF, a short distance** from Town, coming in for good-will, &c., under 150 pounds.—For particulars, apply to Mr. A. WALKER, Builder, High-street, Putney.

**FOR SALE, —Several Cast-iron Tanks,** capable of holding 5,000 and 10,000 gallons each.—For particulars apply to Mr FRANCIS FORD, No. 1, Crooked-lane, King William Street, City.

WEIGH-BRIDGE FOR CART AND WAGGON LOADS.

**TO BE SOLD a BARGAIN, a Capital** MACHINE, made by Bramah and Co., of Pimlico, to weigh accurately from 1 cwt to 10 tons, and nearly new. Cost upwards of £90—price £30. Three Months' trial allowed.—Apply to A. B., No. 4, Palace New road, Lambeth.

IRONMONGERY BUSINESS

**A GENUINE CONCERN in the Ironmon**gery, Smith, and Bell hanging Business, to be disposed of, with established connexion and good jobbing trade. Apply to Mr. KERSLAKE, 31, Tottenham-court-road, Tottenham-court-road.

TO HOP FACTORS AND WAREHOUSEMEN.

**EXTENSIVE WAREHOUSES TO BE** LET, in Coffin's yard, Counter street, Borough, either to a Yearly Tenant or on Lease. They are in the centre of the Hop Market, and have been recently used in that trade.—For particulars, apply at Messrs. WIGG and POWNALL'S Offices, 7, Bedford-row, Holborn.

**TO BE LET, Business Premises in White**chapel, at a moderate rent, consisting of a good Dwelling House, large Yard, good Stabling, Warehouses, and Sheds, all substantially built and fit for a Manufactory.—Address, S. B., 203, Upper Thames-street.

TO DAIRYMEN, COWKEEPERS, AND OTHERS.

**TO BE LET on LEASE, for Twenty-one** Years, excellent BUSINESS PREMISES, with rec-dence attached, chiefly situate, 4, Albion-place, in the high road, Holloway, near the Chapel of Ease. Rent £70 per annum.—Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Jewry; and of Mr. LLOYD, on the premises.

TO BRICKMAKERS, CONTRACTORS, &c.

**TO BE LET or SOLD, a Seven Acre field** of superior brick earth at Bell Green, Sydenham, about an equal mile from the Forest Hill and Sydenham Stations on the Croydon Railway, and close upon the intended New Branch from Lewisham to Bromley.—For view, apply to Mr. DALE, Bell Green, by letter, to 64 Mr. Mr. Picott, 4, Charles-street, Gravenor-square.

TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situated in streets leading from the Caledonian-road, Islington, to Lansdowne-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS.

**TO LET, a Compact and Convenient Wharf,** between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament. It will be let if required in Five Lots, having excellent water and land carriage ways.—For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Lower-road, Lambeth.

ST JOHN'S WOOD PARK.—IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation, commanding metropolis and the surrounding beautiful neighbourhood, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburb an district near the metropolis, and protected by restrictions of unusually all the fashionable resorts and promenades of the West End and the City. For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

**TO BUILDERS and OTHERS, who wish** to DISPOSE of their PROPERTY quickly and to advantage, the system we pursue is admirably adapted to carry out their views. Property is surveyed by us, published in our MONTHLY REGISTER (which has a most extensive circulation), and when necessary advertised, and otherwise made known, with out any charge until sold, and then all the various expenses are included in our trifling commission. The above applies to property intended for public auction.—BECKWITH and SALMON, Auctioneers and Land Agents, 32, Bucklersbury.

WESTMINSTER IMPROVEMENTS

**MESSRS. EVERSFIELD and HORNE** have received instructions from the Westminster Improvement Commissioners, to SELL by AUCTION, on the Premises, on THURSDAY, Jan. 27th, the Materials of Ten Houses, being Nos 1 to 10, Dukes-court, Little Dean-street, Westminster; to be taken down and cleared away by the purchasers. May be viewed one day prior to the sale, and catalogues had, upon application to Mr. H. R. ABRAHAM, Westminster Improvement Office, 1, Broad Sanctuary; on the Premises; and of the Auctioneers, Coal Exchange, 47, Little Smith-street, Westminster.

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**MESSRS. DAVIS and VIGERS are di**rected by the Assignees of WOOD and SON, Bankrupts, to SELL by AUCTION, at the Mart, on THURSDAY, January 21st, at 2 o'Clock for one Lot, in two Lots, Freehold-ate LEASEHOLD MESSUAGES, viz.—Lot 1. Four well built residences, Nos. 8, 9, 10, and 11, Pace's walk, Bermondsey, let at rentals amounting to net £56 per annum. Lot 2. Seventeen brick-built tenements in Webb-street, Bermondsey New-road, producing a rental of £156 per annum, after deducting ground-rent. To be viewed. Particulars and plans of sale to be had of Messrs. PEACE and JONES, Solicitors, Tooley-street; JNO. VAIZEY, Esq., No. 2, South-square, Gray's-inn; G. J. GRAHAM, Esq., official assignee, Coleman-street; at the Mart and Auctioneer's Offices, 3, Frederick's-place, Old Jewry.

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FIRE BRICKS.—STOURBRIDGE (Rufford's and others) best made BRICKS, at WARD'S, Henduras Wharf, Bankside, London, to be SOLD for arrival. This is a great advantage to the purchasers, saving all the expenses of unshipping, lighterage, landing, reloading, &c. An immense stock of all the best made Stourbridge, Welch, and Newcastle fire goods at summer prices, although freights and other expenses have considerably advanced. Shippers, gas companies, engineers, builders, and large buyers supplied at lower prices than they can import, besides the advantage of having an immediate supply without waiting the uncertainty of slaps arriving at this season of the year.

METROPOLITAN BUILDINGS ACT.—NOTICE TO CANDIDATES FOR DISTRICT SURVEYORSHIPS.
Office of Metropolitan Buildings, 6, Adelphi-terrace, 6th January, 1847.

NOTICE IS HEREBY GIVEN, that the Examiners appointed by and in pursuance of the Metropolitan Buildings Act will hold their next Examination of Persons desirous to obtain a certificate of qualification for the office of District Surveyor on FRIDAY, the 29th day of January, instant.

Persons desirous to be examined must apply on or before the 26th instant; and their applications must be accompanied by a preliminary statement, according to the course of examination prescribed in the rules for that purpose; copies of which, and any other information on the subject, may be had at this Office, or at Mr. WEALE'S, Architectural Bookseller, 59, High Holborn.

Subsequent Examinations will be held in the months of April, July, and October, or at such other periods as shall be appointed, of which due notice will be given.

ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.


### PUBLICATIONS.


THE HIGH PRESSURE STEAM ENGINE, INVESTIGATED by Dr. ALBAN, Translated from the German with notes by Professor FOLE, in 8vo., with Engravings, 18s now published, price 7s. 6d.—JOHN WEALE, 59, High Holborn.

Published this day, 12mo price 2s cloth,

ALGEBRA made EASY. Chiefly intended for the use of Schools By T. TATE, Mathematical Master of the National Society's Training College, Battersea.
By the same Author,
EXERCISES on MECHANICS and NATURAL PHILOSOPHY. 12mo 2s
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London: LONGMAN, BROWN, GREEN, and LONGMANS

Just published, a new edition, for 1847, price 4s.,

LAXTON'S BUILDERS' PRICES, containing nearly 11,000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Buildings Act and the modification of the Act. To be had at the office of the "Civil Engineer and Architects' Journal," 10, Finsbury-street, Whitehall; WEALE, High Holborn; SIMPKIN, MARSHALL, and Co., Paternoster-row; and at the office of "The Builder," 2, York-street, Covent-garden.

BRANDON'S ANALYSIS of GOTHIC ARCHITECTURE.—The Subscribers to this Work are respectfully informed, that the remaining numbers are unavoidably delayed, in consequence of the enormous wood-cuts and other illustrations that the authors are preparing, in order to render the publication as perfect as possible. The concluding numbers 29 and 30, with the letter-press, will appear early in March, and at the same time the work will be published complete in Two Volumes

DOUGLAS JERROLD'S WEEKLY NEWSPAPER. Enlargement of one-third on the Meeting of Parliament. In order to give ampler space for all the News of the Week, including the Debates in Parliament—The Miscellaneous Occurrences—Law and Police Reports—Public Meetings—Foreign Intelligence—Literature—Correspondence—as well as for Original and various New Serial Articles, the Proprietor has determined to enlarge the Paper to the utmost limit allowed by the Stamp Laws, and to Add One-third, or Twenty-four Columns, making in the whole Thirty-two Pages, or Ninety-six Columns, rendering it equal to the Fullest and Largest Newspaper in the existence with variety of its News of the Week, and still retaining the large space heretofore devoted to Original Articles by the Editor, and his Eminent Literary Colleagues. Price (as heretofore) Sixpence. Order of all Newsmen, Town or Country, from whom detailed Prospectuses can be had.

Just published, the Third Edition, 8vo., with Plans and Diagrams 18s.,

THE PRINCIPLES and PRACTICE of ENGINEERING and other SURVEYING. By CHARLES BOURNS, M.I.C.E.
"This is a truly useful book; in the second part of it we have good and sound practical instruction on engineering and other surveying * * * We have no hesitation in saying that this work will be a complete guide in the hands of the student."—The Builder
"On engineering surveying there is much valuable information, which subject has hitherto been strangely neglected." Dublin Evening Packet.
"From the very explicit yet concise manner in which the author has carried out the various subjects, it is evident they are founded on good theoretical data and sound practical knowledge. His practice on field-work and engineering surveying generally, is of itself a volume of instruction to the young practitioner, and, without so entering into abstruse formulæ and mathematical calculations as to make the work puzzling, it contains all that is required to render it, not only a source of instruction, but also a most excellent work of reference."—Mining Journal.
London: JOHN OLLIVIER, 59, Pall Mall.

DECORATIVE ART SOCIETY, 20, Great Marlborough-street.—On Wednesday next, the 13th instant, a Paper will be read by Mr. E. COOPER, on "Stained-Glass Windows, chronologically considered."—noticing such as were constructed before the end of the sixteenth century.—Visitors admitted on application to E. C. LAUGHER, Hon. Sec., 17, Sussex-place, Kensington.

ARCHITECTURAL SUBJECTS (Outlines) coloured for competition or exhibition, and embellished with landscape, &c. Buildings, Portraits, and Views of every description, lithographed in a superior manner, by GEORGE CHILDS, 13, Anwell-street, Pentonville.

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MR. R. H. ESSEX, formerly Associate of the Society of Painters in Water Colours, and illustrator of the restoration of the Temple Church, London, having fulfilled an engagement in Manchester, and returned to the metropolis, is now ready to undertake Perspectives, or other Drawings, for Architects, &c., at his residence, 13, York-buildings, New Road, or to enter into a suitable permanent engagement as Draughtsman in an Office.

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TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars.

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**J**EREMIAH EVANS and Company respectfully invite the attention of Noblemen and Gentlemen furnishing, or refitting their mansions, to the most extensive and varied Stock of DRAWING ROOM and other STOVES in the kingdom, which combine many recent improvements producing great heat with small consumption of fuel, and are manufactured of every description of pattern, including the Gothic, Grecian, French, and Elizabethan; also fenders and fire-irons en suite. Improved Kitchen Ranges, with or without steam apparatus. Hot and Cold Baths of all [illegible] ... [illegible] furnishing ironmongery at wholesale prices. Improved Hot-water Apparatus for warming buildings, conservatories, &c. Manufactory and Show-rooms, 33, King William-street, London-bridge. Established in 1815.

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The most effectual and most ornamental Chimney-pot yet invented, entirely obviating the objection to which all others are open, namely, that of soon becoming choked with soot, and, consequently, useless.

A large quantity have been made in various parts of the kingdom, which answer with the greatest satisfaction.

Price, Strong Painted Iron ........ 32s.
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They are now manufactured of artificial stone Cement.

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**W**ALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. G. and T. Wallis have the satisfaction of introducing [illegible] ... [illegible] knots in Wood, however [illegible] ...

Many substances have been [illegible] and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and so anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

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**T**ODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water pipes; Hot-houses, Forcing-houses and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white lead, its property of concealing is as 75 to 40, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

**J**ENNINGS'S SHUTTER FASTENER. Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when [illegible] ... JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes this destructive Bar, [illegible] ... [illegible] ... in lamps [illegible] ... [illegible] of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate. To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

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**T**HE Patentee having fixed a great number of his shutters in London, and given universal satisfaction, can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, or stretch, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

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**A.** SMITH'S PATENT COPPER WIRE ROPE is being daily employed for the protection of CHURCHES and other buildings from the effects of thunder storms; it possesses important advantages over other forms of conductors. References can be given where it has been applied for some time past to CHURCHES, PUBLIC and PRIVATE BUILDINGS, &c. &c. Its general adoption in the Naval and Mercantile Marine of this and other countries is the strongest possible EVIDENCE of its EFFICIENCY, &c.

A. SMITH begs the attention of those engaged in building to his IMPROVED PATENT PANELLED AND REVOLVING IRON SHUTTERS. Also, the Patent Weather-tight Fastening and Sill Bar, for French Casements, which are so much admired for their security, simplicity, cheapness, and efficiency. Of the merits of his Patent Double and Single Action Door Springs, Improved Flooring Cramps, Patent Wire Sash Lines, &c. &c., Little need be said, as they are pretty generally known and appreciated.

Manufactory for Iron Suspension, Sliding, and other Doors, Strong Rooms, Plain and Ornamental Palisading, Gates and Columns. Also, Metal Sashes, Shop fronts, Stall-board Plates, Brass Butt, and other Hinges. Buildings heated upon a new, safe, and superior plan.

Estimates given for every description of Metal-work.
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INJUNCTION.

**B**UNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, and the worm and wheel motion for raising and lowering revolving iron shutters as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to [illegible] ... [illegible] Shutters put up [illegible] ... any within the convex laths.

B and C also [illegible] ... REVOLVING WOOD SHUTTERS the Patent for which has expired, at the same prices as other makers, but greatly superior [illegible] ... patent raising gear and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

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TO ARCHITECTS AND BUILDERS.

**T**HE attention of Architects and Builders is directed to the Patent Architectural Works for CARVING IN WOOD (of any kind), STONE, and MARBLE. The advantages over every other description of carving are very obvious on comparison, whether in the execution of the work, or saving in price. A Show-room is fitted up on the premises, containing a variety of specimens, and the public are invited to inspect their merits. Communications should be addressed, "Architectural Carving Works, Eccleston-place, Pimlico," having no connection with any other establishment.

**W**ORCESTER ENCAUSTIC TILES. Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. GRIEVE and GRELLIER, Marble-wharf, Belvidere-road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

**E**NCAUSTIC, VENETIAN, and other PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON and Co.'s warehouse, 9, Albion place, Surrey side of Blackfriars-bridge.—J. M. BLASHFIELD, Agent. The above tiles have lately been considerably reduced in price.

N.B. An assortment of plain and ornamental door furniture, slabs, and tiles for fire-places, &c.

TO BRICK AND TILE MAKERS.

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PATENT ARCHITECTURAL ROOFING TILES.





**A**RCHITECTS, Builders and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and effect, surpass every other kind of roofing, whilst their cost but little exceeds the covering with common pantiles, and their superiority over slating is at once apparent.

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By Her Majesty's Royal Letters Patent

**W**ILKINS'S "SILENT" WATER-CLOSET.—To Architects, Surveyors, and Builders.

Gentlemen.—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water closet more suitable for the present mode of [illegible] the [illegible] internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

This Closet is simple in its construction, the whole of the apparatus, including the trap, being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any Closet and fix the "Silent" one in its place, without interfering with the trap which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

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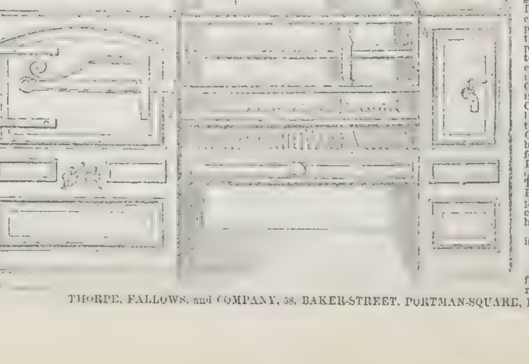
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And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat. [illegible] ... The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions [illegible] and the method of applying it, with TESTIMONIALS, some of them of seven years experience, from Architects, Builders, Noblemen and Gentlemen who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt for covering Boilers &c. is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully [illegible] send their orders DIRECT to the FACTORY, as the best means of being supplied with the genuine article and in lengths [illegible] to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as the ONLY works in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

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**A**RCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of STOVE-GRATES, FENDERS, and FIRE IRONS, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive stock of FURNISHING IRONMONGERY, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Epergnes, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermio Stove is in daily operation. Also, CUNDY'S IMPROVED HOT AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

The Builder.

No. CCV.

SATURDAY, JANUARY 9, 1846.

ALTHOUGH two years have elapsed since the Metropolitan Buildings Act came into operation, doubts as to the precise meaning of many of its provisions still exist. In some, the district-surveyors are not agreed even amongst themselves, but act differently in similar cases; and considerable unpleasantness is the unavoidable result. The means given by the Act to resolve these doubts and prevent this diversity of practice, namely, an appeal to the official referees, will of course gradually have that effect; but unless the district-surveyors and the public will look to the awards made by the referees, and conform their opinions and mould their course in similar cases accordingly, irritation will still be kept up, and certainty never be arrived at.

At the Buildings Office it is possible a different opinion may prevail. It may be considered there, that every case ought to be decided on its own merits, and that the surveyor ought not to be guided or influenced by any previous award, however fully it may seem to bear on the case before him. We do not know that this is so: we should suppose otherwise indeed, if it were not for statements made by some of the district surveyors. But if it be so, we must respectfully dissent from it. There will necessarily be cases of difference arising, on which appeal must be made; but these ought to become fewer every day, to which end it is of the greatest consequence that district surveyors should make themselves acquainted with all the awards, and read the Act with these before them.

We are not to be understood as arguing for implicit adoption, without question, of all the decisions arrived at by the referees. They are able and conscientious men, and doubtless give full consideration to every question submitted to them, and decide it according to their best judgment. But all men are fallible, and the referees are men. Still the awards open to sound objection are exceptions,—we are speaking of a general rule.

Amongst the doubts (it ought to be a doubt no longer), is one concerning flues which has been submitted to us several times, in one case a twelvemonth ago, and now as lately as the present week.

The question is stated thus by an operative builder:—

"Sir,—I should feel much obliged if you would give us some information on the following point, namely,—whether an opening can be made in a flue to admit of the insertion or the connection of a wash-house flue?

In fact, whether any coppers are to be used at all, except by those persons who already possess them. For if the making of a distinct chimney for a copper be insisted on, it will in fact, entirely prohibit the setting of coppers. Surely this cannot be the intention of the Buildings Act; as it expressly allows the cutting of flues for the insertion of stove-pipes.

The case in which this question has been particularly raised is this:—I have a contract to set fifty or more coppers in three new streets in the Greenwich district, comprising sixty fourth-rate houses, belonging principally to working men. In most of the houses, an opening has been left for the purpose of inserting the copper flue; but in some of them the opening has not been left, and in several others has been left on the wrong side for the copper.

The district surveyor's assistant tells me that where the opening has not been left, no copper shall be fixed unless I carry a distinct chimney up through the roof, which as a matter of course, will not and hardly can be done even at a great expense.

I am bound by my contract to fix the coppers on a York stone 2½-inches thick on solid earth, and to do the same in a sound, workmanlike manner. You will greatly oblige me and many others by stating your views on this subject, as it is a most important question to the working classes especially. If insisted on, it will almost prevent the use of an indispensable article to cleanliness, and therefore health.

The houses are not yet finished or inhabited, and the fees have been paid."

In reply to previous inquiries to the same effect, we expressed our decided opinion that nothing in the Act was intended to prevent such a connection being made. The clause supposed to prohibit it, headed "*Cuttings into Chimneys*" (schedule F), says:—

"And as to every chimney-shaft, jamb, breast, or flue, already built, or which shall be hereafter built, in reference to cutting the same, no such erection shall be cut into for any other purpose than the repair thereof, or for the formation of soot doors, or *for letting in, removing, or altering stove pipes* or smoke jacks, except as directed for building an external wall against an old sound party-wall."

And we pointed out that it was simply necessary to make the connection by means of a small piece of pipe, to overcome the objection which, through a verbal omission, might be raised, though only by one who was willing to create a difficulty.

We are glad to be able to confirm this opinion by an award dated the 21st of last month, and which will, we hope, set the question at rest.

In the case of building a new angle chimney in a bath room, on the ground or entrance floor of 35, Hill-street, in the district of St. George, Hanover-square, the flue from which is taken, by a short pipe wholly inclosed with brickwork, into the flue of the kitchen chimney, the district surveyor contended, "that it must have a separate and distinct flue, and that it is contrary to the Act for two fire-places to be connected with the same flue, and that such cutting into the flue, to form the connection, is prohibited by the clause in schedule F, "cuttings into chimneys." The owner's surveyor, on the other hand, contended, that such clause admitted of what had been done, as the cutting away for letting in stove pipes is clearly laid down, and that in no part of the Act is the carrying the smoke from two fire-places into one flue prohibited.

The referees awarded:—"That inasmuch as it is not provided in the said Act that every chimney must have a 'separate and distinct flue,' if the flue in question be properly inclosed with brickwork, at least four inches thick, or if being a smoke-pipe, and not so inclosed, it be placed at the required distance from any timber or other combustible materials, the same will not be contrary to the said Act."

The last circular from the registrar, relative to projections from walls of buildings over public ways,* gives a less objectionable view of the question than the first, but, nevertheless, still puts a construction on Schedule E certain to produce an injurious effect on street architecture, and which, moreover, we venture to think it was not intended to bear.

The modification of their first opinion must be regarded as an admission that they saw the mischief that would be caused by the rule, if carried out as was at first thought necessary; for in truth, the ground for the modification is absolutely *nil*. If Schedule F declares that no decorative projections,—window dressings, cornices, or shop-fronts,—from the wall of a house erected since the new Act came into operation, shall be permitted to overhang a public way, it also unquestionably extends to buildings erected *before* that event upon their being rebuilt. We will not, however, find fault with this; but we call upon the referees to go still farther, and revoke their first instructions altogether, although they may feel able to prove them correct.

We have attentively considered the whole of the schedule again and again, and are more perfectly than ever satisfied, that the constructors of the Act never intended that the owner of a house abutting on the public way should give up a portion of his ground (without any advantage to the public, too), or forego all attempt at architectural decoration. There is an evident distinction made between decorative projections and those which form essential parts of a building, as was pointed out in the able letter on the subject, by T. L., in our last volume;* notwithstanding this distinction is not recognized in the clause which sets forth, that no projections shall overhang the ground of another owner.

"Though we are accustomed to strange anomalies in Acts of Parliament," says T. L., "yet in this case one can scarcely suppose that the legislature had enacted that a thing might be legally done by one clause, and that it could not be done by almost a successive clause. There would surely have been some exception or proviso made in the first, to meet the contingency in the second; but there is, however, none. The Act expressly enacts that cornices may project beyond the line of houses, a case that occurs most frequently in the city, but the official referees say no; the subsequent clause nullifies the first.

It appears to me that there is an ambiguity in the word projections, which I submit is used in three different senses in the three clauses; in the *first*, it is applied to architectural decorations, which are allowed; in the *second*, to projections which do not form a portion of the building, such as balconies, verandahs, &c., and which are also allowed, with a proviso; and in the *third*, to projections which do form essential parts in a building, such as projections on plan (a wing and centre for instance), or projections in elevation, such as bay windows or corbelled rooms. These are prohibited unless the house is set back."

In respect of shop-fronts, an amount of projection is stipulated for, to be the same "*whether there be an area or not*,"—in other words, as we take it, whether it be over the owner's own ground or *not*.

If the rule be insisted on even in respect of new buildings, the result will be the entire abandonment of all architectural decoration. Houses set back to admit of window dressings or cornice would of course lose, in appearance of extent, the thickness of the two half party-walls,—a sufficient reason of itself to prevent the majority of owners from adopting that course.

We have stated our opinion that the referees are not bound to insist on this rule. Let that opinion go for what it may be worth. But if the referees still think otherwise, we trust they will forthwith endeavour to obtain such a modification of the Act in this respect, as may be considered necessary.

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COMPETITION.—Designs have been called for, by advertisement, for a tower of medieval character, to be erected near St. Peter's Port, Guernsey.—A premium will be given for the approved design.

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* Vol. IV., p. 617.

* See Vol. IV., p. 555.

## CONTEMPORARY ARCHITECTURAL CRITICISM.

It has become an established opinion with writers of the day, that there is but one field which the human intellect leaves uncultivated. That this *dictum* has been applied to architecture, not without reason, we are not quite prepared to deny, but rather to assert, as we have already done, that the present state of architecture is a reproach to the age, and matter for deep regret to its professors. But when it is also put forth as an axiom, in the common criticism of newspapers, that architecture has no reproductive power,—that here is an art which will admit of no alteration, much less improvement, to which the ordinary revivifying influence of new matter is denied,—then we deem it necessary, however little so extreme an opinion may have taken hold of those who have really studied the art and the history of architecture, to protest against the frequent publication of erroneous views, with the sanction which the world at large will generally allow to what is confidently stated in print.—Probably, in no profession are the merits of a production more freely canvassed than in that of architecture; whilst seldom can we find professors so indifferent to the expression of their opinions in the form of publication. Were architectural criticism, generally, in the hands of architects, such writers would estimate conflicting views, and consider the merits of a work ere they would condemn it; with the pen, they would pause to examine what the ready tongue is too prone to say, often with little consideration for propriety of phrase. Instead of a mere repetition of crude or exploded notions, gleaned by the gentlemen who "do the fine arts," from encyclopædias and periodicals, real principles would be ascertained, and enunciated, and the people would have laid before them correct views in art, for those now substituted. Popular opinions upon architecture seem to us matter for the serious attention of architects; influencing, as they do, through the channels we have alluded to, the opinions of the educated, and often supplanting the result of mature reflection in the minds of architects themselves.

A careful examination into the actual state of architecture, considered as a reproductive art, compared with those other arts and sciences which occupy the attention of the world, would, we think, show,—first, a too highly rated estimate of the present exercise of invention in general, and, secondly, a misconception of the position of architecture in the present day, as compared with its state at former epochs. Now we might succeed in proving, that invention, strictly speaking, has never had any existence since the time of the creation. The most happy efforts of ingenuity, called inventions, have never been any thing more than the re-arrangement of matter, or knowledge, previously existing; and discoveries in nature and science, which are not originative, are merely existing facts, made patent, through a careful balance of accompanying circumstances and causes.—It will be recollected, that we are only contending against popular fallacies; there may be some who know better.

But, by those who most of all lament the present state of architecture, a position is expected for it, in which *it* has never been placed, and which has never attached to any science, or to any other branch of art. By these writers it is assumed that architecture—which, let it also be recollected, deals with forms which can strongly impress themselves upon the recollection—should in all its works employ outlines and details, which had not before been met with—forgetting that such would be an exercise of invention, to which humanity is not equal.

By some of these critics it is supposed that the whole matter of architectural design is fully expressed in previously existing styles, and that the merits of any composition under notice, are to be estimated solely by its likeness to the architecture of a former period; whilst the stereotyped phrases of "slavish adherence to precedent," "want of originality," and the like, are used by others, who are unable to judge of the propriety of such condemnation. Were these writers architects, or had they examined the past history of art, they would know, that not architecture only, but every other department of art, has had slow progress; that in changes of style, and in what passes for originality of design, little, comparatively, is due to individuals; and that, in any particular era, had only one inventive mind been exercised, future ages would have found it hard to separate the modifications introduced, from the general style of the date. It is true that architects, and other professors of art, are often able, as in the architecture of Italy during "the revival," to distinguish the style of each master, and to ascribe, where due, the authorship of an invention. But the very circumstance, that the world in general is unable to do this, shews that the stages by which alterations in design are made, are too minute to constitute what the vulgar deem originality, and freedom from the "shackles of precedent." It does not follow because, for example, the capital and order from the Temple of Jupiter Stator are used in a modern building, that the whole design is not as creditable to its architect, and as fine in conception as any building by Palladio, or Vignola, or by an architect of any other period equally lamented as superior to this. In truth, the painter and the sculptor, as well as the architect, if they would produce works which may really be creditable to themselves and to the age, must draw largely for materials and ideas upon the works of predecessors, and because they do this, it does not follow that they render themselves less worthy of the admiration of their contemporaries, or less entitled to their place in the Walhalla of artistic fame. There may be many who repeat, rather than re-combine, and in whose works it is impossible to find the expression of an idea, the origin of which is not at once discernable; but it is our complaint, that ordinary critics do not separate these from the really intellectual and refined, and deny therefore the reproductive power of architecture, or suggest impossible theories for its renovation. What may be called originality in design has really the claim, only because the source of the idea is not, or at least not readily, apparent; for it is the ingenuity in seeking out unexamined and secret sources of ideas, rather than the originating of the ideas themselves, which makes the true artist.

We believe, that amongst the world, it is much easier to recollect the general character of a building, or the design of a capital, or other detail, than the treatment of the composition in a painting or a statue. Consequently the debt which is due to precedent in two of the arts, escapes the eye, whilst it is apparent in architecture; and as those who ordinarily write upon art, know little of its history and principles, it is assumed that architecture is in a position to which it has never before fallen, which is unparalleled in any other branch, and from which it can never recover. Now, indeed, we find, the more we examine into the past history as compared with the present state of art, that there is not quite that reason to doubt the occurrence of a future brilliant era, which many writers would have us suppose. We look back to the age of Grecian art, and find the style then proceeding by stages, scarcely discoverable by the eye, even of an artist; in the early Roman period, and in the Revival, we find a respect for "precedent" which may not unfairly be compared to that, for which we are said to be remarkable; and during the same age of "the revival" we find the Italian and the Gothic styles co-existent, and even practised by the same architects, which is the chief stigma upon architecture now. Even in Gothic architecture, we doubt whether the changes of style appeared as great and important whilst in progress, as they do to us, or whether posterity will not see in our efforts something of general progress, which they will be able to comprehend and classify, somewhat as we are able to do similar periods of co-existant styles, which the history of art, if at all minutely examined, discloses.—That the monuments of art of all ages and styles, can be made to minister to invention and good architecture, we should not find it necessary to state, were not the contrary asserted, in effect, in the writings of critics of the order we have referred to. Such writers, in their hostility to copyism, would deny us even the legitimate and proper use of ancient models, forgetting that even "precedent" may have its value, and, further, afford that which one mind alone could not by nature supply.

There is yet one circumstance in the present state of architecture, which is not wholly without cause for congratulation, and yet may have some immediate effects. It cannot be denied, that the very advantages which architecture has, through the accurate manner in which it is illustrated, are not applied in the way most conducive to excellence in style. But, were it asserted, that in this there could be any thing opposed to the interests of the art, it would in effect be to deny the value of ancient models, which, it is our object to urge, contain the chief matter out of which future excellence in style must be created. Architecture has within it a reproductive power, which can parallel the style of any age; but that power is impeded, whilst the ordinary channels of criticism are made to disseminate views, not founded upon a deep insight into a subject of much difficulty, one which can only be grappled with by those who are perfectly familiar with every branch of the inquiry.

## MURAL DECORATIONS: ST. GERMAIN L'AUXERROIS, PARIS.

For four years M. Mottez, a French artist, has been engaged in the decoration of the porch of St. Germain l'Auxerrois, an addition to the main building attributed to the middle of the fifteenth century. He has now finished his work, and produced a series of pictures in fresco, illustrative of the establishment of the Christian religion, conceived in the Gothic spirit, and made to accord in character with the church.

The principal picture is in the tympanum of the great doorway, and represents the Saviour on the cross, supported on the knees of the Father, who sits behind the head of it. Around, at his feet, are clustered the persons who have thrown lustre on the church of France,—all saints but one, and that is Joan of Arc! On the right and left of this are two long upright pictures, with pointed heads, filled with super-posed groups. One, Christ preaching on the mountain, with groups of figures below, illustrating certain commandments; and the other our Saviour on the Mount of Olives, with the Virgin Mary, surrounded by a group of women, at the foot.

Some of the French journals object to the external decoration of a Gothic building with painting; and, secondly, to a return to a style of art long since abrogated.

One of these, *L'Illustration*, offers many objections to such works, and to that now under consideration in particular. "If we candidly examine," says that journal, "this specimen of monumental ornament, the return to polychromatic architecture which has been attempted in the porch of the church of St. Germain l'Auxerrois, leaving out of consideration the work of the painter, of which we will not yet speak, we must frankly own our opinion, that these works which have received so much praise, are neither correct, useful, nor agreeable. Are they legitimate—do they belong to the art of the middle age? is a question that qualified archæologists must decide. They found, under the white-wash, traces of painting at the cathedral of Saint Denis, also at the Sainte-Chapelle of Paris, upon a bas-relief on the outside wall of the choir of Notre Dame, in the cathedrals of Rheims, Chartres, Soissons, &c., but these remains of painting are mostly seen in the interior, and we should, perhaps, commend a zeal which has there restored these works to general favour. There these fanciful ornaments, of a thousand colours, blend well with the play of light produced by the stained glass; and their rich details form in the chapels a natural transition to the rich decorations of the altars." But outside, continues the writer, it is another matter, and he gives reasons for objecting to it. "No architect of taste," he goes on to say, "would think of making a vestibule as costly as a reception-room; and then what place have they chosen for this architectural miniature? We would accept it in some dark place away from the city. But here, in front of the largest and the most beautiful monument in Paris,—in front of the noble architecture of the colonnade of the Louvre, the folly of the toy is made more apparent by contrast. Moreover, is it a wise thing that these works should be under an open portico, open in every direction to the west wind, that is to say, to the rainy quarter which rules in our Parisian climate three parts of the year. When one sees the damps which, in the interior of the church, have greatly spoilt

the paintings recently completed, one must fear that the exterior dampness will cause a more rapid destruction."

The frescoes themselves, the writer thinks, have undoubted merit; they agree with the structure which contains them.

Executed in a plain tone, they harmonise well together, with the exception of some blues, which are rather too bright. In such a work the artist has hardly fair play:—"He was not free to inscribe on those walls his independent fancy;—a figure graceful and young, by the side of a form stiff and gothic; a conception of our time by the side of the traditions of the middle age. He has also sacrificed in his works form to symbolism: and this sacrifice has been in some parts carried very far, as in the tympanum, representing Christ on the cross. The Eternal Father holding between his knees, and sustaining with his extended arms the instrument of punishment, forms, with the body of the victim, an ugly and ungraceful whole. Further, if the Holy Spirit, the Father and the Son, are here only as symbols, it is perhaps wrong to have given to the two angels, at the right and left of the Eternal, too animated gestures of human affliction. The skies of gold, on which are cut the lines of the horizon; the discs of gold, on which the heads are inlaid; the want of ethereal perspective; the sacrifice of geometrical perspective; all in this great composition shew the shackles of conventional art. And is it not a hard necessity that condemns the artist to suppress inspiration, to sadden form and colour, to stifle life and sentiment, for the gain of a useless concordance with an old form, once a lively work of the faith, now a dead letter, and not understood by the crowd? Nevertheless, whatever we may say of the system, let us do justice to the persevering courage, the long and difficult researches, of the artist, who, during four seasons, has devoted himself to this great work, has lived as a man of the middle ages, and has brought to completion, with a great character of unity, this immense monumental decoration."

## VICTORIA PARK AND THE "WOODS AND FORESTS."

### SIR JOHN CASS'S CHARITY LANDS.

CORRESPONDENTS have drawn our attention to the eastern Park, complaining of the tardy pace at which the Commissioners of Woods and Forests have proceeded in all the arrangements relating to this improvement. The Act for its formation was obtained some years ago, and it is only *now* partially laid out and planted. The respectable community on the eastern side of the metropolis have really ground for complaint in this hope long deferred. *When* completed, it is said, that, in some respects, it will outvie Regent's or Hyde Park. A lake, 8 acres in area, with a fountain to throw fifty feet high, is promised; and the size and costliness of the lodge and bridge (near where old Conner's Hall stood) bears out the assertion. The lodge, designed by Mr. Pennythorne, may be called Elizabethan in character, and is built of red brick with stone dressings. It is lofty, and has a tower, the lower part of which is open on three sides to form a porch. At the time of the formation of this park, there was much discussion as to the site. The landowners of Stepney, Limehouse, and its vicinity, urged on the Commissioners that the south side of the Mile-end-road would form a more desirable position for a public park; but it seems clear that the site chosen was really better for the public weal,—the districts of Bow, Stratford, Hackney, Dalston, Clapton, Kingsland, and Stoke Newington, will all, more or less, derive benefit, when the park is finished and the approaches made; and the projected line of road from Limehouse will open a suitable avenue from that quarter. The Commissioners of Woods have given notice of application to Parliament in the ensuing session, with reference to this approach, and also for powers to form an approach from Hackney-bridge-heath gate, and another from Bethnal-green-road. Surely, this was a *fause* step on the part of the authorities to omit provision for the approaches till now; another two or three years will be absorbed, which might have been saved if the approaches had at least been formed simultaneously with the park. Where is Victoria Park? is not at all an unfrequent question, even within a hundred yards of the gate, so obscured and hidden is it in its position; the block of houses on the eastern side of Bethnal-green-road, and thence northward to Cambridge-heath, form a perfect *curtain* to the park from the London side. It might seem hypercritical to carry these remarks further, but really it is too true; at the present moment, there is not one direct and accessible road by which a visitor could drive to the park. No person standing at the Cambridge-heath gate could imagine that he was within two minutes' walk of the park, and might see the lodge if he knew where to look for it. Surely, as a mere piece of worldly policy, this is unwise.

The land in Victoria-park will *not let* for building purposes until the public know and can see the way to it. It was the natural hope of all who were interested in the improvement of the eastern side of the metropolis, that the park would excite to a better class of buildings than had been formerly erected. In this respect some few have honourably emulated, and have gone forward with energy to the work. There is an important charity estate, known as Sir John Cass's Charity, lying north of the park, and forming the entire northern boundary; and the trustees of this property seem resolved to do their part for the improvement of the neighbourhood. They have swept away a wretched village of houses (or hovels, more properly), formerly known as Botany Bay; and this peculiar cognomen arose out of the circumstance of so many of its inhabitants being sent to the *real place*, not for their good deeds, it may well be believed.*

The estate of Sir J. Cass's Charity bids fair to become a most important one in this district; and when the contemplated approach is made from Cambridge-heath to Gun-street, and the other roads in course of formation are carried out, it cannot fail to become popular as building property: new roads and sewers are being formed. The Governors of St. Thomas's Hospital have also an estate at the north-west corner of the park; but they do not seem yet to be in the field for building purposes. It is satisfactory to find, that large owners of property are making a resolute effort to improve the eastern side of the metropolis. There is much to be done in the neighbourhood of Hackney, as any one who has had occasion to travel in a vehicle, in any direction but the one main line to London (and that is any thing but a direct one) will verify.

If those who are interested would unite and obtain a local Act, they might at comparatively small cost improve their own property and benefit the public greatly. An immense number of small houses have been built in Hackney and Homerton within a few years, and unless some general plan for improvement be determined on quickly, it may be too late. In the neighbourhood of the park an enormous church (St. John of Jerusalem) is being erected, under Mr. Hakewill, which promises well. It is a cross church, early English in style, and has a most capacious chancel. The roofs are now being put on.

## THE NEW HOUSES OF PARLIAMENT,

### AND THE PROGRESSIVE RISE OF THE RIVER.

I have noticed, for nearly half a century, the gradual and regular rise of the waters of the river Thames. My attention was first drawn to it by finding that extreme high tides were not preceded, nor succeeded by, similar tides.

These were recorded by the watermen of the Westminster Horseferry, by notches cut by them on a post there, ere the post was removed when the street was raised.

This subject led me to conjecture as to the origin of the Marsh Walls.

I now observe, that professional men in reporting on some localities, such as Westminster, say that the sewers there were originally too low. But it appears from what I shall relate, that the said sewers were high enough when they were first made; but are not so now, owing to the rise of the river.

It appears that I am the first person who has noticed a circumstance so universally continuously evident. The architects of modern, as well as ancient buildings, were not aware of it, as will be too plainly seen by referring to the floor of Westminster Hall, the upper line of the starlings of old London-bridge, the gate of Lambeth Palace, the York Water-gate, Adelphi, the level of the wharfs there, &c.

A paper by me, going more fully into the subject, was printed in the *Morning Herald* of April 4th, 1843.

In 1844, the Commissioners for improving the metropolis published their first report, comprising the evidence as to the proposed embankment of the Thames, by Mr. Walker, Mr. Page, Mr. Cubitt, and other scientific men, *up to August*, 1843, with numerous plans, sections, &c. of the river.

Not one of these gentlemen alluded to the rise of the river; but, on the contrary, they all refer to a *fixed standard level of high water, called Trinity datum* (made, it appears, in 1800). And in referring to the Marsh Walls, they attribute the formation of them to the Romans, *vide* pages 66, 212, 230.

My theory has hitherto been met at every step by contradiction, although it is supported by the science of physical geography, combined with geology.

It appears that the ground line or plinth of the palatial Houses of Parliament is already below the level of extreme high tides. The difference of the rise of the highest tide before the Parliament Houses were burnt down, to the last highest tide, viz. in December, 1845, is but ten inches. The preceding highest tide was in October, 1841. These two tides were very carefully noticed at the "Fox under the Hill," Adelphi, the people there being up at the late hours both these tides occurred at; the difference was exactly one inch; the lines of elevation are painted in the tap-room there.

The gate-towers of Lambeth Palace were built by Cardinal Morton, about 1490. It is evident, by the height of the door-way there, that the ground was elevated two feet, when the hall was rebuilt at the restoration; the last highest tide was 18 inches above the line of the said present raised ground or road.

There is a house in Upper Fore-street, Lambeth, with large chesnut beams and uprights; this appears of about the time of King Edward the First; the first floor is now only 3 feet 1 inch above the street, which is close to the river; therefore, when this house was built, the lowest marsh, viz. that opposite to Greenwich, was above the level of the highest tide, and might then be entitled to its name of "The *Isle* of Dogs."

The said ancient house in Fore-street is now in a most neglected and decayed state. There is a tradition there that it was part of a bishop's house, and had steps in front, with trees before it. I cannot find any account of it in topographical works, but Mr. Green, the proprietor, says it adjoined the remains of a larger building of similar materials.

*The River Locks.*—In 1803 there was no lock between London and Windsor. The locks since made must in a slight degree increase the height of some tides at London.

*The Old London-bridge* was taken down before the commencement of the palatial Houses of Parliament. The removal of the old bridge has very much altered the *ebbs*, but can only to a slight degree affect the height of the flood tides, because there was no fall when the tide was running up, but only a strong current. The fall was greatest about half an hour before low water (above the bridge), when it has been as much as five or six feet,—then keeping the water above the bridge, at that time of so much superior elevation—of course, the higher portion of water kept running down, until the water below bridge rose to a common level.

T. HIGGS.

* Sir John Cass was a worthy alderman of London, who died in 1718. His father, Thomas Cass, was carpenter to the Royal Ordnance, and acquired a large fortune, which descended to Sir John. The latter built two schools near the church of St. Botolph, Aldgate (opened 1710), besides some other buildings contiguous to these; and provided salaries for the master and mistress. He willed, that after the death of his wife the whole of his estate should be held by certain trustees, to provide the charity-children of his schools with a dinner every day, and for other purposes; but died with the pen in his hand without fully completing the instrument; which led to much litigation and difficulty, not settled till thirty years after Cass's death. The estate is managed by twenty-one trustees. Sir James Flower is the treasurer. It is proposed to build schools at Hackney in a short time.

FALL OF A WALL.—A wall 10 feet high, at Blackwall Point, was thrown down last week, by piling sand against it, and a person who was passing at the moment was killed.

## RAILWAYS IN THE PAPAL STATES.

In a notification lately issued by Cardinal Gizzi, secretary of state, the Pope authorizes the execution of the lines of railway undermentioned:—1. That from Rome through the *Valle del Sacco*, to the Neapolitan confine near Ceprano. 2. That joining Rome with the port of Anzio. 3. One from Rome to Civita Vecchia. 4. That from Rome to Bologna, by way of Ancona, which passes through the most populous parts of Umbria, as Foligno and the valley of the river Potenza, and follows in part the traces of the Via Flaminia Emilia. —The conditions on which these lines shall be assigned to the companies, represented by pontifical subjects, after approval, are, the presentation of:—1st. The description of the lines contemplated. 2. "Artistic and economic information" which they may be able to give in regard to these lines. 3. The statement of the time in which they propose to complete the studies, and the works, if approved of, and of the time for which they demand the enjoyment of the concession after the completion of the works. 4. The security they propose to give in favour of the proprietors of the lands, and the security to the Government, before the works are undertaken, that they shall be completed. 5th. The exposition of the means by which they propose to conduct the undertaking. The interests of the pontifical subjects being considered, both as regards capital and work.—Three months are granted for presenting the projects, with these conditions, which time may be extended on proper representation.—The Government also notifies that the construction of these lines being secured, it will take into consideration the line from Foligno to Perugia, and Citta di Castello, through the *Valle del Tevere*, and others, whose utility may be perceived; and it further offers a gold medal of the value of 1,000 scudi, to whomsoever may indicate the best mode of passage between Umbria and the *Marche*.—This resolution of the Papal Government, holding out, as it does, the prospect of many other "judicial reforms, and economic ameliorations," in the words of the notification—will have a most important and invigorating influence upon the prosperity of the Roman states, and the effects of the enlightened policy of the present Pope will reach, through the still active agency of the Roman Catholic Church, far beyond the mere confines of Italy. —We trust, that a hint, given in the programme of conditions, may warrant us in assuming that some arrangements will be made for the careful preservation of all works of art which the works will approach, or which may be discovered during their execution.—The *Roman Advertiser*, the English newspaper published in Rome, still continues to give much interesting information to residents, and those who have visited "the eternal city," and may, we perceive, now be seen in London.

## RAILWAY JOTTINGS.

The invention of a railway speed-register, or regulator, has been already cursorily noticed in *The Builder*, but no account of its mechanism has appeared till now that it has been called for and constructed for use on the East-Indian Railway, for the guidance of the servants, chiefly native, on that line; a circumstance likely to lead to its general adoption at home as well as abroad, as it provides for a want continually experienced, and hitherto inadequately supplied by tabular forms. It consists of a dial of about five feet in diameter, upon the upper half of which is a series of numbers, showing the distances of each station along the line, the number of hours occupied by every train in both directions between each station, and the several stations and stopping-places between the extreme termini. In the centre is a clock dial, by which the departure and arrival of every description of train can be ascertained at a glance. The several trains are indicated by elongated hands, which are worked by a movement constructed according to the speeds required, and attached to the works of the clock. In the railway regulator the goods' train travels at the rate of 12½, the passenger train at 25, and the express train at 50 miles an hour. The trunk line movements are all indicated upon the outer circle; and the branches are provided for by a similar division of the dial, nearer the centre, by which means additional branches can at any time be introduced, and put in motion when required, without inconvenience, expense, or derangement of the original machine.——The saving of expense in the transit, by railway, of the yearly supply of 150,000 head of cattle, and 1,500,000 sheep, to the metropolitan market, is estimated at no less than 675,000*l.*; and considering that the trouble and expense of conveying live cattle and sheep are much greater than those of the mere dead-weight, from which, moreover, a heavy surplus of waste, garbage, &c., would be further deducted; the saving might be greatly increased by the transmission of the so far ready-prepared article instead of the live, as well as raw, material, with all its intolerable annoyances, both metropolitan and provincial.——The rate-payers and residents of Regent's-park and its vicinity have memorialized the Marylebone vestry against the Regent's Canal Railway scheme, as likely to deteriorate the property and destroy the retirement of the neighbourhood, as well as to stop the equestrian, and take away the security of the pedestrian, exercise in the park.——A brisk trade in coals, to be unshipped at Blackwall in order to avoid the heavy London port dues, and transmitted along the Blackwall and Stratford lines to Stamford, Cambridge, &c., is anticipated since the announcement of the Eastern Counties Company's intention to carry coals along their line. From Lynn, too, by way of Ely, an additional supply is looked for. Yorkshire coals are thus expected to be had at Cambridge for 17s. to 18s. a ton, and even Newcastle for 21s. to 22s,—less, in fact, than in the metropolis, though to be thus further carried through the Eastern Counties to their ultimate market.——The South-Eastern Company design to form an immense locomotive establishment at Ashford, where the following and other buildings comprise but one-half of the works intended to be carried out simultaneously with their new lines. The works alluded to consist of a large engine shed, a repairing shop, smiths' and boiler shops, and tender shed. The engine shed, which is for sixteen locomotives, with tenders, is 208 feet 9 inches, by 63 feet. Four lines of rail extend the whole length of the building. The repairing shop has room for fifteen engines and tenders, length 395 feet by 45. Attached is to be a stationary engine of twenty-five horse power, for driving the works. A transverse crane, to move on rails, along this shop, will lift twenty tons at its centre. The smithy, which will contain twenty fires, is 176 feet long by 45 wide, and 28 high.——A bridge at Timsbury, over the Salisbury and Bishopstoke branch line has just fallen in.——The Shiffnall contract on the Shrewsbury and Birmingham line has been let to Mr. M'Leod of Gloucester.——Arrangements are in progress for the erection of the central station at Chester on an extensive scale, and at an estimated cost of 80,000*l.* A new and improved approach to the city is also projected.——In a late newspaper paragraph, it was announced, that a contract for works between Peterborough and London, on the London and York line, had been let to Mr. Brassey at 120,000*l.*, whereas Mr. Brassy's tender, which was for 75 miles, or the whole distance from Peterborough to London, was, in fact, 120,000*l.* below the next lowest bidder.——Contracts for 35,000 tons of rails for the London and York have been taken by the two firms of Bailey Brothers and the Colebrook Dale Company, but chiefly the former, at or about 10*l.* delivered; the rails to be only 72lb. ones. Sir John Guest and others declined, it is said; not liking the conditions, one of which, as reported, is, that if, within twelve months after the rails are laid down, the engineer disapprove of them, he may order the contractor to take them back, without any appeal from his decision. ——At Middlesborough, an extensive market-house and new town-hall were lately opened. We have already repeatedly noticed this striking manifestation of the creative power of railways (*inter alia*, see vol. iv., pp. 137, 316). The thriving town which has here so rapidly sprung up, besides its spacious docks and coal drops, and its excellent port, accessible at all times, its custom-house and ship-building yards, its church and chapels, has now several schools, a mechanics' institution, news' room, branch bank, various manufactories, three iron-foundries, and extensive rolling mill for bar-iron, &c. &c., and has for some years been lighted with gas. In business it now so far outvies the port of Stockton, of which it may be said to be an off-shoot, that while in 1844 and 1845 the shipments of coals at Stockton were respectively 22,644 and 21,170 chaldrons, those at Middlesborough were 137,885, and 195,796 chaldrons. By one establishment at Middlesborough, it is said that 70,000 chaldrons of Brancepeth coke were shipped to Railway and Iron-foundry Companies and others, throughout the three Kingdoms.——The North British Line is said to be on the eve of passing into Mr. Hudson's hands on a guarantee of 8 per cent. with half profits.——On the Dublin and Kingstown Line, second class carriages are henceforth to be lighted at night, along with the first class. ——The Board of Control and the Directors of the East-India Company have at length decided upon giving their sanction to the introduction of railway communication into British India on the following conditions:—The Direct Trunk, or East-India Line, is to be adopted; the Government guaranteeing four per cent. to the shareholders. The amount guaranteed is fixed at 3,000,000*l.* to commence with: the guarantee to extend over fifteen years: Government to have the privilege of purchasing the railway after thirty years from the date of its completion, at the then fair market value of the property: the company to be incorporated by an act of the Legislative Council as well as by charter.——The preparatory works for the railway from Rome to the frontier of Naples and Civita-Vecchia have already commenced.——The French Minister of Public Works has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.——The Dieppe Railway Tunnel has been bored (length 2,400 metres), and the mason-work begun; the engineer, Mr. Newton, having placed the first bricks in presence of Mr. Smith, the Company's agent, and the workmen.——The virtual power of levelling the hills with the filled-up valleys, by piercing through the bowels of them, as in tunnelling operations, is likely, it appears, to receive a mighty accession of force from the operative aid of machinery, experiments with which, according to the *Moniteur Belge*, have been already made, in order to test the power of penetrating the Alps through the great projected tunnel about to be commenced on one of the Italian lines. "The machine was placed in front of the web, and effected a bore to the depth of eighteen centimetres in thirty-five minutes. At this rate the new invention will complete upwards of five metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success."

## ELECTRO-TELEGRAPHIC PROGRESS.

The electric telegraph on the Midland Railway was opened for public use on Friday week, so that communication may now be made between Leeds, Normanton, Masborough, Sheffield, Chesterfield, Derby, Leicester, Rugby, Burton, Tamworth, Birmingham, Nottingham, Newark, and Lincoln, at the following rates per mile, namely:—Under ten words, 1d.; above ten, and under twenty, 1½d.; above twenty, and under thirty, 3d.; and for every additional ten words, one halfpenny per mile. A messenger, if required, may be dispatched from any of the above stations, on foot, at 1s. per mile; or if by postchaise, on a reasonable remuneration. In case of any message failing through the defect of the instrument, or neglect of the company's servants, the money will be returned. Messages relating to luggage lost or mislaid by the company's servants, are to be sent free of charge. ——By the way, the electric telegraph, like every good thing, is occasionally turned to evil account, as well as to good. We do not at present allude to the merely business qualifications of this winged Mercury, or swift-flying messenger—and to be, ere long, enthroned divinity—o

commerce, enabling the speculating devotee, who may be first in consulting the oracle, to steal a march on his less ardent or sagacious fellow, thereby "netting 50*l.* in a quarter of an hour," by outrunning, at least, if not by overreaching, his friend. What we have more particularly in our eye at present is, the alleged existence of certain malpractices of those devotees of the commercial god—the Americans—of a kindred order, though of a slightly darker shade; more akin, indeed, to the dark than to the bright side of the two-faced patron of commerce, trickery, and thieving. The malpractices complained of are said to have occurred at New York, where speculators "have managed to get the business news from England in advance of the press, and in this way have 'made great operations.' One or two more such instances of abuse," adds our authority, the *New York Correspondence*, "will effect a very good object,—forcing the telegraph, like the mail-post, into the exclusive hands of the government."

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Sir,—In the new edition of Templeton's "Engineers and Contractors' Pocket Book," a mistake occurs, to which I beg to allude through your most practical columns, because it is in an article of considerable interest, on the electric telegraph, and the passage in question is likely to mislead, with regard to one of the fundamental laws of electro-magnetism.

It is stated, that "if we imagine a man to have the (electric) current transmitted through his body, the positive wire being applied to his feet, and the negative to his head, so that the current flows from his feet upwards, then a magnetic needle suspended freely before him, will place itself at right angles to his body, the north pole being to his left, and the south to his right. *If he turn half round, so as to present his back to the needle,* or if the wires be reversed, *the needle will place itself in an opposite position.*"

The first part of this latter statement (in italics) is surely incorrect. When once a needle has been deflected by an electric current in a particular direction, it will not alter its position while the currentexists, unless either—1st, The direction of the current, or 2nd, The situation of the wire with respect to the needle, or 3rd, The situation of the needle with respect to the wire, be altered. Either one of these alterations would produce a variation in the needle; but the turning half round of a man, or the twisting half round of a portion of the connecting wires on its own axis, if it were made capable of such a motion, would have no effect on the needle. The man's right hand would be where his left had been, and that would be the only change.

I am, Sir, &c., A. D.

## SUBJECTS FOR PRIZE ESSAYS.

Among the subjects on which the council of the Institution of Civil Engineers invite communications, for premiums, are the following:—

1. The best mode of combining materials, by arranging or cementing them together, so as to insure uniformity of action from change of temperature.

2. On the construction of retaining and wharf walls, with examples of failure and the causes.

3. The construction of piers and moles, whether solid or on arches, in a tideway.

4. The conveyance of fluids in pipes, under pressure, and the circumstances which usually affect the velocity of their currents; with accounts of water-works and gas-works.

5. The construction of girder bridges, whether of iron or timber.

6. The construction of wrought-iron roofs, for covering considerable areas.

7. The internal arrangements of the termini, and intermediate stations of railways, whether for passengers or merchandize; and whether independent of, or connected with, inland navigation.

8. The various modes of boring artesian wells, and the geological formations which have been found most productive of water.

The communications must be forwarded by the 31st of May next.

## THE ANCIENT CHURCH RUINS AT DONCASTER,

DISCLOSED IN RAZING THE OLD TOWN-HALL.

The ruins of the very ancient church or chapel of St. Mary Magdalene have appeared like a shadow, and so they are likely to depart; for the very necessity under which they have come to be disentombed from the less ancient buildings in which they were embodied, in a manner compels their final demolition, in order to make way for the new buildings to be erected in their place.

The attention and interest of the Archæological Institute, however, have been engaged on behalf of their preservation; and it is to be hoped that "one of the most unique and valuable specimens of middle age architecture which this country can produce," as this has been already confidently characterized, will, by some means, or under some form or arrangement, be preserved; since, though there are abundant examples of the more decorated Anglo-Norman style to be met with, there are extant very few such specimens of the earlier character which the remains of this venerable pile appear to exhibit. The whole character of the building, indeed, as observed by a writer in the *Doncaster Chronicle*, to which, and to the *Gazette*, we are indebted for our knowledge of this interesting discovery, "is of that rude, plain, and heavy sort, relieved only by the simplest efforts to lighten and adorn, that we may with much safety conclude this sacred edifice was erected about the period when the Saxon merged into the Norman, and before the decorative work found in the arches and other parts of almost every other Norman building in this country, had come into vogue."

There have been from time to time many and divers speculations as to what portion of the ancient church of St. Mary Magdalene was contained within the site of the late municipal building; but very few suspected that in the walls themselves was entombed nearly the whole columnar arrangement of the ancient church. Such, however, is the fact; and the remains which are now disencumbered of their more modern additions, shew pretty clearly the character of the church of St. Mary Magdalene. It appears to have originally occupied a considerable area, its length outside, from east to west, being 124 feet 7 inches; the nave, 78 feet 9 inches in length, and 23 feet 4 inches in width between the columns; the length of the chancel 37 feet, but it may have extended further eastward.

There are no traces whatever of grooves or any other contrivance for the insertion of glass in the small round-headed apertures, or clerestory windows, if they may be so called, in the north wall, which, with its pillars and arches, constitutes the most entire portion of the remains. Neither, indeed, are there any such traces in other and larger openings of the same character in this, and in the north wall of the chancel, nor were there any in the demolished south wall.

Among the indications of past customs brought to light in this long-buried pile, are several patches of painted plaster work on the wall of the chancel. These show that the interior of this part of the building was covered with a thin coating of white plaster, and this afterwards marked out with black lines into a sort of ashler work. On the centre of every alternate stone in this is a sort of cinque-foil, rudely painted in red, with a curved line or stalk of the same colour, coiling round the flower. On the other stones there have been some red and black characters, but these are quite defaced. Over the arch separating the nave from the chancel, and on the west side, are also some characters, or scroll work, painted in shades of dirty red and white.

It is now quite evident that there has been no tower or steeple attached to this building, unless, as is very probable, the west end wall of the chancel supported a small bell turret. The north and south walls of the nave are 3 feet thick; the west end wall 3 feet 3 in.

It is a somewhat singular circumstance, that there is not the slightest trace of a foundation having been laid for this massive structure. The huge walls and massive columns have been built upon the bare surface of the ground; and the level of the original floor of the church would correspond very nearly with that of the depressed portion of the Magdalene's, near the south-west corner of the Town Hall.

From the decayed state of the columns and other parts of the nave, it is clearly evident that the church or chapel of St. Mary Magdalene stood for many years, perhaps centuries, a ruin. It would also seem, from the traces of fire left on much of the stone-work in the lower part of the building, and especially the chancel, that the edifice was destroyed by fire. To this cause, probably, may be attributed its abandonment as a place of public worship, and its subsequent gradual decay, until converted into a grammar-school and town-hall.

## THE ANTIQUITIES OF TREVES.

Railways and steam-boats have made travelling on the continent so very easy, expeditious, and inexpensive, that the sight-loving English may be seen every where, rivalling, in their erratic courses, the almost equally celebrated ramblers, the German students. There is one track where all go alike to enjoy the picturesque and romantic, and this "up the Rhine." For the many thousands who visit this far-famed river, how many tens of our countrymen have made a tour up the Moselle? It is comparatively unknown even among artists; and it is surprising that the majority of the world thus follow each other in the beaten track, like a flock of sheep, turning neither right nor left, and admiring by rote all they are told to admire, totally regardless of the beauty that lies beside them unvisited, and which would more than repay the compliment of inspection. The beauty of this river, which joins the Rhine at Coblentz, has been acknowledged by all men of taste; and the Latin poet Ausonius has sung its praises at a time when Roman princes rowed on its waters; praises which have been echoed by many other "disciples of the tuneful Nine" of more modern date. Upon these banks stood the Belgian Rome, the parent of modern Treves; and here resided some of the later emperors of this all conquering people; while the immense number of Roman coins still existing, which were struck at this city, as well as the magnificent remains of buildings erected by this people, shew the great importance of the place during their dynasty. The situation of the city is most lovely, in a plain surrounded by vine covered hills, the river washing its walls; and the opposite banks, grand in an assemblage of wood and rock of the most picturesque and varied beauty. The hills on either side were dedicated by the Romans to Apollo and Mars. "Thus unto a situation peculiarly lovely they associated the most powerful influence their religion could afford; and we need not wonder if, so placed, so founded, and so protected, the rising city should soon attain to a very unusual prosperity. The importance of Treves, as long as the Roman empire flourished, is abundantly testified by numerous facts; by none more decisively than that she was repeatedly honoured with the presence of the master of the world. Many also, and high sounding, are the epithets bestowed upon her by the writers of that nation. She is designated in their works as the richest, the most distinguished, the most glorious, and the greatest, of the towns on that side of the Alps."

Thus writes Professor Wyttenbach, as translated in Dawson Turner's "Guide to the Roman Antiquities of Treves." After lamenting "how the rude hand of the spoiler, and mouldering touch of time, have destroyed what care, and art, and industry, had reared," he adds, "gone, utterly gone, are the Capitol of ancient Treves, and that senate-house, which, still venerable and massy in its ruins, excited the wonder of Venantius Fortunatus in the 6th century. No traces are to be found of our circus, said to have vied with that of Rome, nor of our imperial palaces. The triumphal arches of Valentinian and Gratian, the Forum, the Thermæ, and the Aqueducts, as likewise the temples and basilicæ, rich in statues and frescoes, have equally disappeared; and it is by tradition alone that we are assured of the existence of that splendid entrance near the Moselle, entitled the *Porta inclyta*, which, studded with golden stars, served likewise as a lighthouse. Neither do these, considerable though they be, constitute the total of our losses; many other noble works of art have

## ROMAN GATEWAY AT TREVES.



likewise vanished, but still all is not taken from us. To adorn our valley, and to attract the attention of the inquisitive and cultivated traveller, there yet remain, albeit in a more or less injured state, so many objects curious in art and pregnant with historical recollections, that Treves is secure of always exciting the most lively interest, and indeed may, in this respect, safely claim a superiority over every other city in Germany."

It is to these existing remains of past greatness we must now direct the attention of our readers; and among them all, there is none more important and interesting than the ancient gate, perhaps the most perfect Roman work of that kind at present in existence, and which is known as the Porta Martis or Porta Nigra. It is engraved here from a sketch made but three months since, and is a faithful transcript of its present state. There are few buildings more commanding than this grand old structure, and which is represented upon some of the coins of Constantine struck in this city. It is of colossal dimensions, and magnificent proportion; its breadth is 115 feet, and the highest tower from the basement to the summit measures 70 feet. The construction throughout is equally colossal. It is built of enormous blocks of sandstone, averaging from 4 and 5 feet in length; but some measure 8 or 9 feet, while their depth varies from 2 to 3 feet. "So skilfully are they joined together without mortar or cement of any kind, that they appear to be supported by their own weight alone."—*Wyttenbach.* The barbaric conquerors of the Romans when they obtained possession of Treves, imagined a different construction was adopted, and believing that metal clamps rivetted each stone, they proceeded to obtain them if possible, to convert into other uses, and in every direction have they bored in the interstices of the stones for this much desired end. The Colosseum, at Rome, exhibits similar ravages, which have a most injurious effect on these buildings, and give a very shattered and ruinous look to them in many parts.*

Two arched gates, each 14 feet wide, formed the entrance through the Porta Martis to the Belgian Rome in its palmy days. The height of the arch is at present little more than 12 feet; but the soil has so accumulated here, that it is conjectured they were originally "at least 5 foot higher." The voussoirs of the arch continue through the string course above. At the sides, the grooved channels would lead to the supposition that some contrivance similar to a portcullis was used to fasten these entrances on the side next the country, where extra protection became requisite.

"In every direction, and as well on the ground-floor as on the upper stories, the face of the building is ornamented with rows of Tuscan columns. These in the two fronts stand out from the wall full two-thirds of their diameter: on the sides they are no more than pilasters; and their projection does not exceed 3 inches. Their form is plain and simple, and thus the better adapted to harmonize with the dimensions and solidity of the whole."—*Wyttenback.* The centre of the gate is composed of two uniform stories, the side towers of three; the third story of one, is, however, ruined. Towards the town these wings exhibit a flat line, and project about 4 feet; on the country side, the principal front, and which is represented in our engraving, they come forward in semicircles just 15 feet in advance of the centre.

Wyttenbach considers this colossal structure the Propylæum, or more probably the Pretorian, gate of the fortifications wherewith Constantine the Great environed Treves, and that it shows marks of the work of different eras; for even at the close of the western empire, when it was brought to its present state, it was not regarded as altogether complete. Some additions were still considered necessary to give the last touch to its size, its strength, or its beauty. The fall of the Roman empire stayed the progress of this work; the barbarians spoiled it, in the hope of finding metal; and later barbarians converted it into a church, disfiguring it in many parts. It has indeed seen strange vicissitudes since its erection as a gate, and its modern return to its old uses; for it was not always sacred to its original destination. A certain St. Simeon, sometimes called *Stylites*, from his great propensity to living abstracted from the world, on the summit of columns, chose this gate for his residence, and resided on its highest tower during the last seven years of his life, from 1028 to 1035. His history may be seen in the early part of Hone's Every Day Book, and is a frightful instance of what passed for religious devotion in the middle ages. After voluntary tortures

* "The characters that are to be seen in great variety upon the stones, may possibly be *masonic marks.* They resemble those frequently found on grave-stones of the 4th century, in which the letters have the appearance of belonging to the earliest period of the Romans. Specimens of these are given in the work of the Benedictine Monk, Joseph Fuchs (see his *Alte Geschichte von Mainz* ii., p. 169), and in that of Quednow (*Beschreifung der Alterthümer in Trier*, p. 54)."—Turner's translation of Wyttenbach, to which excellent *guide*, we must acknowledge once for all our obligations for facts and dates connected with the interesting objects it descants on.

## OLD HOUSE IN GLOUCESTER.



of a repulsive kind, he died, and was canonized by Pope Benedict IX., and the Roman gate on which he last appeared became converted into a Christian church, in which he was buried. To effect this, earth was piled up before either gate, to a level with the first stage of the building, over which was constructed a flight of steps leading to this story; the interior of the gate thus formed the body of the church, which was dedicated to St. Simeon, the lower part or gateway forming a crypt. An apse was built on one side, and incorporated with the Roman building; and this venerable and ornamental relic of the 12th century still remains, as will be seen in the engraving: it was found unsafe to remove it, as it aided in strengthening the more ancient building. Thus the Pagan gate became a Christian church until the first French revolution, when the gateway, having lain for nearly 800 years blocked up, was again restored to its original use, as a gate to the town, which the erection beside it, also seen in the sketch, had usurped, and which was placed there in the 17th century. The traces of church decoration still remain on its interior walls, and it is devoted to a collection of Roman ruins, found in the city and neighbourhood.*

METAL BOATS.—It is proposed to cast vessels in one mass, and a composition has been invented, combining the advantages of copper and iron.

* We venture to direct attention to our engraving, the drawing for which was made on the spot by Mr. Fairholt expressly for us.

### OLD HOUSE IN GLOUCESTER.

The accompanying engraving represents a curious specimen of wooden construction, in the ancient city of Gloucester, and will aid in completing the series illustrative of domestic architecture, already carried to a considerable extent in previous numbers of our journal.

### STAINED GLASS AT HAMPTON COURT.

WOLSEY'S HALL is adorned with thirteen new stained-glass windows, and is now open to the public. Each of the windows is 20 feet high and of considerable width. They contain the armorial pedigrees of the six wives of the monster King Henry VIII. Curiously enough they all trace their descent from Edward I. of England. Good subjects as the arms may be for stained glass, we should have hesitated before emblazoning crimes which disgrace the pages of our history. We shall pay an early visit to the hall, and have no doubt we shall find the windows worthy of the established reputation of Mr. Willement, by whom they are executed.

A morning contemporary, after describing these windows, says:—

"We have been thus far minute in our description of the new embellishments at Hampton-court Palace, from a desire to see the highest artistic talent in the country finding honourable and lucrative employment in the pursuit of a long-neglected branch of the fine arts. When we remember the cold and cheerless aspect of most of our cathedrals and ecclesiastical edifices, from the absence of those stained-glass windows, which at once ministered to the religious sentiment, and infused a sense of bodily warmth and comfort, we shall perceive how wide a field is open to men of science, and painters of genius, who may endeavour to perfectionate this branch of high and devotional art. The Government are making a wise and enlightened exercise of their patronage, in doing what they can to stimulate and encourage the art of staining in glass; and as the English school of painters is acknowledged to excel all other existing schools in colouring, there seems no reason why our church and cathedral stained-glass windows should not, if possible, excel the *chefs d'œuvres* of the modern Munich artists."

### COMPETITION DESIGNS FOR DALSTON LITERARY INSTITUTION.

SIR,—Some few months since designs for the above-named institution were advertised for in THE BUILDER; I obtained the particulars (which I inclose you), wherein you will see that *one of the instructions to architects, limits the amount to be expended to* 1,500*l.* I submitted a design, keeping as near as possible to that sum, and was one of the unsuccessful competitors. A design by Mr. Catlin was chosen, and in your last publication is an advertisement to builders for estimates for *the carcass* only. I called at Mr. Catlin's office to make an estimate for a builder, when I was told the quantities were being made out, and that in all probability there would be about 90 rods of brickwork, and 90 loads of timber. Putting the brickwork at 11*l.* per rod, and the

timber at 7*l.* per load, including sawing, these two items alone would amount to 1,620*l.*, being 120*l.* more than was intended to be expended upon the whole building. Is this fair or honourable on the part of the committee, naming a certain sum, and then selecting a design which will cost at least 3,000*l.*? It is another lesson to architects, not to waste their time and talents in competing for self-appointed committees, when in most cases, as in the present, the instructions have not been taken the least notice of, but the prettiest picture chosen. Ought not the names of the committee to be made known to the architects in all cases, to prove that they are honourable men?

I am, Sir, &c.,

5th Jan. 1847. ALPHA.

## THE FOUNDER OF THE RAILWAY SYSTEM.

SIR,—In the 188th number of your journal you allude to Thomas Gray, whom you designate the founder of the railway system; but being very much disposed to question the justice of your remarks, I have been at some trouble to investigate the matter, and believe the merit of its introduction is due to another party.

On perusing Thomas Gray's "Observations on a General Iron Railway, or Land Steam Conveyance," published in 1825, I find that in 1822 he sent petitions to the then ministers of state, in which an allusion is made to a former petition he had sent to Lord Sidmouth in 1821, while, as you will observe by the annexed letter, an act of Parliament was actually obtained for the first iron railway for general purposes in 1820.*

Thomas Gray sent similar petitions to his Majesty's ministers and to the Board of Agriculture in 1823, and also to the corporation of the city of London in 1824.

In the year 1822 the Liverpool and Manchester Railway was first projected, the survey of which was made by Mr. Wm. James (an intimate friend of the Mr. Baylis alluded to in the subjoined letter). In the autumn of that year he witnessed the success attending the Stratford-on-Avon and Moreton-in-the-Marsh Railway, which induced him to project the Liverpool and Manchester. But the scheme was abandoned for a time, in consequence of the opposition shewn to it by the projectors of the inland navigation throughout the kingdom; and in 1824 Mr. Stephenson was employed to re-survey the country, and, as the sequel proved, with better success.

I am, Sir, &c.

Chester, Dec. 21. B. B.

*** This does not interfere with the claim made for Mr. Gray. It is not assumed that he first projected a railway. Railways of wood have been used to facilitate the transport of coals and metals from a very early period, and even an iron railway was employed for that purpose at Coalbrookdale as early as 1767. Moreover, *steam power* was applied on the Stockton and Darlington Railway in 1805. Nevertheless, it was left for Thomas Gray to foresee the general applicability of railway travelling, arrange a system, and urge resolutely the importance of adopting it, long before the public were prepared to admit the truth of his views.

FIRE-ENGINES KEPT ON THE PREMISES.—A correspondent of the *Daily News* suggests, that in premises where steam-engines are used, an excellent provision might be made against fire by making screw joints to the water-pipes which convey water to the boiler, so as to fit the hose of a fire-engine. By this means a body of water might be readily thrown into the building, and in great quantities.

* To the Editor of *The Birmingham Journal*.

THE ORIGINATOR OF RAILWAYS.—Sir,—I beg to put your correspondent "E. B." right upon this much disputed point. The late Mr. James was *not* the "originator of railways:" he was *not* the projector of the Stratford and Moreton Railway; neither was he a Birmingham man. By reference to the act obtained in 1820 for the construction of the above railway, the first designed for general purposes, it will appear that Messrs. Hunt, Bellamy, and Bannister were solicitors to the bill, and the late Mr. Baylis was the engineer, who *was* a native of Birmingham. Mr. James was at that time deeply interested in mineral and *canal* property; and *opposed* to the introduction of railways; but several years subsequent to that period he certainly projected the Liverpool and Manchester Railway, but it is ridiculous to claim for Mr. James the priority.

Stourbridge, G. F. B.

## BERLIN ACADEMY OF FINE ARTS EXHIBITION.

PORTRAIT OF HUMBOLDT.

THE late exhibition in the Prussian capital comprised nearly nineteen hundred works of living artists, which were placed in *twenty-five saloons*, some larger, others smaller. And, strange to say, the men of first order chanced not to have contributed to this numerous art-show; neither Cornelius, nor Overbeck, Kaulbach, Lessing, etc. We perceive, however, that for the sake of a legitimate emulation, works of *foreign* (not Prussian) artists are also received within the walls of the Berlin Academy, amongst which those of Schorn, of Munich, H. Vernet, and Rahl of Vienna, are most conspicuous.

But besides the many art-lamentations and complaints uttered in this country, those of the Germans also, which became audible on the present occasion, will be interesting and instructive. It is said there, that "*art has in Germany only patrons or opponents—but no public.*" A consequence of these untoward circumstances is the fading away of entire art-schools; like, for instance, that of Düsseldorff, where Lessing alone shines as a remaining light. A *healthy* vigour seems wanting everywhere, and whether we look at King Saul or Lear, Canute or Gottfried, they are always the same smooth countenances, content-void (*inhaltsleer*). It appears from all these pictures, that the painters had never perceived either true monarchs or true saints, be it in reality or with their fancy's eyes. There they are—figures without either bone or muscle, *doughy* flesh, sweet-mellow features without marrow. These German critics praise *French* painters, and amongst the pictures exhibited at Berlin, Vernet's "Editha recognizing Harold after the Battle of Hastings," is placed in the first rank.

The admired picture of *all*, however, was the portrait of Mr. Humboldt, by Bezas. Who that has ever seen the great German *savant*, will know that to paint him is any thing but easy. But Mr. Bezas has succeeded in rendering the deep searcher, philosopher, diplomatist, and man of the world, and to impart to his portrait that penetrativeness, vast intellect, benevolence, eloquence, and versatility, which Humboldt possesses combined.

## METROPOLITAN ASSOCIATION FOR IMPROVING THE DWELLINGS OF THE POOR.

At the first annual meeting of this association, held on the 24th ult., a report was read, which, after mentioning that a royal charter had been granted to the association, went on to state that an agreement for a lease for ninety-nine years, at a rental of 90*l.* per annum, had been entered into with the Brewers' Company, for a piece of ground opposite to the church in the Old Pancras-road, leading from King's-cross to Camden Town, which was considered well suited to the purpose, being situate in the immediate neighbourhood of a crowded district, and on a healthy and well-drained site. The object of the erections was to ensure to each family the greatest amount of accommodation at the lowest practicable expense. The rooms were to be so contrived that an ample quantity of light would be secured to each, while every set would be perfect and independent of others. Each dwelling was to be supplied with water at the rate of forty gallons per day, and with a sink, and the means of carrying off refuse and ashes through a shaft accessible from the scullery. The first building which the association purposed to erect, would consist of twenty-one sets of two rooms, and ninety sets of three rooms, of various sizes, each having the above conveniences attached; thus furnishing dwellings proportioned to the requirements of different families, and to their means of payment. In cases where there were two bed-rooms, each would have a separate entrance from the sitting-room, and the larger bed-rooms a fire-place. Under the slate sink in each scullery would be a galvanized coal-box; there would also be a meat-safe fixed against the external wall. The living rooms would be furnished with a range, boiler, and oven, and the shutters in the ground-floor rooms, so contrived as to form a table during the day. The committee of works had carefully examined all the systems and plans that had been suggested for ventilation, but they regretted to state that no plan had come under their consideration which appeared to them sufficiently secure from the danger of failure to warrant their adoption of it! According to the present mode of assessment, each set of rooms having four windows was liable to 7½d. per week window duty, while a similar set of rooms in the Albany, or in the inns of court, or in either of the universities, was liable to a tax of only 1½d. per set—a special exemption in favour of the wealthier classes. The directors confidently hoped that an alteration in the mode of rating would shortly be effected. The plans for the new buildings were now complete, and only awaited the official seal of the authorities under the Metropolitan Buildings Act for the commencement of the works. Since September, 1841, 1,155 shares had been allotted, almost entirely among the wealthy and aristocratic classes. By the financial statement it appeared that 7,963*l.* 10s. had been received, and 2,094*l.* 3s. 7d. expended. A contract for the execution of the proposed works, for the sum of 12,345*l.*, has been entered into.

## TO GLAZE AND ENAMEL THE SURFACES OF CAST IRON.

THE specification of a patent for coating and glazing cast iron, recently granted to Mr. Kenrick, of West Bromwich, gives the following particulars, which may interest our readers:—

"After the article of cast iron has been thoroughly cleaned, it will be ready to receive the coatings of the compositions, the first of which consists of 100 lbs. of calcined flints, ground to a fine powder, mixed with 75 lbs. of borax, ground fine. This mixture is then fused, and, when cooled, take 40 lbs. thereof, and add to it 5lbs. of potters' clay; then grind them well in water, till of such a consistency that when the article to be glazed is dipped into it, it will retain a coating of about 1-16th of an inch in thickness. This is then allowed to set, and, while yet moist, the neat composition to produce the glaze is carefully sifted over the surface; this consists of 100 lbs. of Cornish stone, ground to a fine powder, 117 lbs. of borax, ground fine, 35 lbs. of soda ash, 35 lbs. of saltpetre, 35 lbs. of sifted slaked lime, 13 lbs. of white sand, and 50 lbs. of white glass, well pounded. The whole of these materials are then mixed and well vitrified; when cool, they are ground to a fine powder, which is washed and dried. Then take 45 lbs. thereof, to which add 1 lb. of soda ash, and mix the same in hot water; this is to be well stirred, and allowed to dry in a stove, when a fine powder will be produced, which, being evenly sifted over the surface of the yet moist former coating, the article is placed in a stove, and kept at a temperature of 212 deg. Fahr., for the purpose of drying the composition; it is then fired by being placed in a kiln or muffle, raised to a heat sufficient to fuze the glaze, which may then be removed and examined; and should it be found that the glazing is not perfect, the mixture is sifted over it, and it is again subjected to the action of the kiln or muffle."

In coating the interior of iron pipes, the composition is shaken through them, and the powder afterwards passed through in the same way. The patentee proposes to apply it to the surfaces of cast-iron ornaments also.

## TO SET OUT A SQUARE ANGLE WITH THE TAPE ALONE.

A Country Carpenter asks "if he has a tape measure in his pocket, but no set square with him, what is the simplest method of setting out a square angle, which can be proved mathematically true, and be easily remembered."

Make a triangle with the tape, the sides of which are either 3, 4, and 5 feet each, or any other numbers in the same proportion, as 6, 8, and 10, or 15, 20, and 25. The angle between the 2 lesser sides is a square angle. So that, if the end of the ring and the 12 feet mark are held together, and two pegs stuck in, one at the 3 and the other at the 7 feet mark, straining the tape tight, the angle at the 3 feet mark is a true square.

Proof: $(3\,a)^2 + (4\,a)^2 = (5\,a)^2$, whatever $a$ may be. ∴ by 47th Euclid I. the angle between 3 and 4, its multiples, must be a right angle.

## NOTES IN LONDON STREETS.*

*Park-lane* was formerly called Tyburn-lane. The large house at the south-west corner, now inhabited by her royal highness the Duchess of Gloucester, was formerly in the occupation of the Earl of Elgin. Here were first exhibited the famous marbles which will ever bear his lordship's name. Byron, in his "English Bards and Scotch Reviewers," written at a time when he felt inclined to sneer and carp at every thing, calls this house "a stone shop," and

> "General mart
> For all the mutilated works of art."

In the year 1816, Parliament voted the sum of 35,000*l.* for the purchase of the marbles, and they were removed from their former place of exhibition to the British Museum, where they remain fine studies, accessible to English artists; but enduring mementos of a very unworthy cupidity (?)

*Piccadilly.*—The house No. 133 was built by the late Duke of Queensberry for the celebrated Kitty Frederick. The first house on the right hand was, it is said, designed by George III., to whom are also attributed the designs for the Trinity House on Tower-hill, and the Office of Ordnance, which formerly stood in Margaret-street, at the east end of St. Margaret's Church, but which was demolished during the alterations completed in that part of Westminster about the year 1822. The ground behind the opposite houses, between the back of Lord Coventry's, No. 106, and the south side wall of the Earl of Chesterfield's garden, in Curzon-street, was, in 1772, an irregular space; "Mayfair-row" and "Hayhill-row" being at that time the only regular buildings. The ground upon which Hertford-street, Curzon-street, Shepherd's Market, &c., stand, was annually for many years covered with booths during the period of May Fair.

* * * * *

*Shepherd's Market*, still in use, was named after the ground landlord, who built and resided in that long white mansion on the north side of Curzon-street, for many years inhabited by Lady Fane, and afterwards by Lady Reade, who died in it. The surrounding ground, now so completely covered by the houses of the noble and the wealthy, was in 1750 so little esteemed, that Mr. Shepherd offered his freehold mansion, just alluded to, and gardens for the small sum of 500*l.* However, after the death of Lady Reade, this house and gardens were purchased by Lord Carhampton for about 500*l.*; and his lordship, after making considerable improvements, sold it to the present Lord Wharncliffe, then Mr. Stuart Wortley, the member for the county of York, for the sum of 12,000*l.*

The house on the left in Piccadilly was built by Novosischí for the late Earl of Barrymore, but was unfinished at his death, and remained so for many years, until it was taken as a hotel. It has been rendered memorable ever since the royal visitors, the Emperor of Russia and the late Queen of Wirtemburg, then Duchess of Oldenburg, resided in it during their stay in London. It was then kept by Escudier, and is now styled, "The Pulteney and Russian Imperial Hotel."

*Half Moon-street* was built in 1730, as appears by that date on the south-west corner house. Its name was taken from the Half Moon public-house, which stood at the corner. Clarges-street, originally called "Clarges-street, in Hayhill-row," was built by Sir Walter Clarges.

Few persons, from the appearance of Piccadilly front, could have been aware of the extensive premises of Bath House, standing, until the year 1821, at the south-west corner of Bolton-row. It contained upwards of fifty excellent rooms, besides numerous servants' offices and capacious cellars. The ceiling of the library was richly carved with foilage, and most splendidly gilt; its chimneypiece could not have cost less than between 600*l.* and 700*l.*; it was of the finest Carrara marble, and was profusely decorated with fruit and flowers. The foliated panels of the staircase were adorned with busts of Homer, Cicero, Seneca, &c. The mansion was taken down in 1821, and a most substantial house erected upon its site for the present Lord Ashburton, then Mr. Baring.

* Condensed from "An Antiquarian Ramble in the Streets of London." By the late John Thos. Smith. Bentley.

*Whitehall.*—With the male line of the Stuarts ended the glories of Whitehall. On the 10th of April, 1691, a fire broke out in the apartments formerly occupied by the Duchess of Portsmouth, which burned down all that range of buildings to the waterside, and all those over the large stone gallery. They were never rebuilt; and another conflagration, more extensive, which broke out about seven years afterwards, completed the ruin the first had began. Sir Christopher Wren had apartments in the palace in right of his office of Surveyor-General, which were burnt with the rest. Sir Christopher was very anxious in his endeavours to save the palace, and when that became hopeless, the valuable pictures and works of art which it contained.

*The Horse Guards* is the work of Nardy, the same architect to whom we owe the front of Earl Spencer's mansion in the Green-park.

*Melbourne House*, adjoining the Horse Guards, was built by Payne, the architect, for Sir Matthew Featherstonehaugh. It was for many years inhabited by General Amherst, and afterwards by Frederick, Duke of York, who exchanged it with the late Lord Melbourne for his house in Piccadilly. The Duke of York made considerable improvements in it under the superintendence of Holland, the architect, who built a new front to it, and the dome portico across the street. It is now inhabited by Lady Dover. A few yards south of it, anciently stood the gate said to have been designed by Hans Holbein for Henry VIII. (engraved by G. Vertue, and published by the Society of Antiquaries).

The offices of the Treasury are contiguous. The old grey remnant of a building which forms part of the suite is supposed to be the only remaining portion of Wolsey's original mansion of York-place. The park front that reaches to the extremity of Downing-street, with which there is communication leading to the park by a low arched passage, was built from the design of Kent, and consists of three stories of the Tuscan, Doric, and Ionic styles of architecture.

## NOTES IN THE PROVINCES.

The Government works at Harwich harbour, notwithstanding the advent of winter, have been progressing uninterruptedly, both as regards the erection of the stone breakwater from the cliff, and the deepening of the channels by means of steam dredging. Mr. Williams, the contractor, has lately added a steam tug, to assist still further in forwarding the work.——Contracts for a fever hospital are to be entered into at Bedford, when the whole amount of the cost, about 2,000*l.*, has been subscribed; meantime plans and estimates are to be prepared.——At Liverpool, on Monday week, Mr. Cunningham, the architect, lectured to the Literary and Philosophical Society, on the geological conformation of the vicinity of Liverpool as regards the supply of water; from which it appears that artesian, or other subterranean borings for water, would be there a hopeless labour. The collection of surface water, over an area of 70 to 80 square miles, from the valley opposite Runcorn, was recommended, as a full supply from the Liverpool district itself was deemed impossible. The Rivington pike scheme was unfavourably regarded, on account of the adulteration of the water by dye-works, smoke, peat, &c.——The new bridge to connect Birkenhead and Seacombe has been commenced. Its gates are upwards of 70 feet wide. In the Bridge-end dock wall, 14 or 15 sluices, adjoining the great float to the river side, have been already erected. These will give a scouring power equal to that of 9,000 men, when in operation by the agency of steam. The completion of this bridge is required by the Woods and Forests previous to the docks being opened, and as part payment for the grant of land for graving docks. The opening will thus be delayed till March or April next. One of the gates to the new Bridge-end dock was lately put up.——A Cambrian Archæological Association has been established.——The inhabitants of Oldham are taking steps for the formation of parks and places of recreation, to which Government have already contributed 1,000*l.*——A correspondent of the *Manchester Courier* urges his fellow-townsmen to the good work of building a cathedral for their expectant bishop. "They have wealth, they have power, they have talents," says he, and "why not devote them to the glory of God?"——It has been determined to complete the Doncaster new town-hall by next Michaelmas sessions. Estimates have already been called for.——Of 9,000*l.*, the cost of five or six national school-houses erected at Bradford, churchmen have contributed only 639*l.*; and of 6,000*l.*, the cost of three Lancasterian school-houses also erected there, 5,000*l.* and upwards were contributed by dissenters. A contemporary suggests that the churchmen must be asleep at Bradford; but is it not far more likely that there are few churchmen there, either asleep or awake, compared with the number of dissenters? Perhaps it is the clergy of the establishment that are asleep.——At Kendal, Mr. John Wakefield is said to have offered 500*l.* towards the erection of a vicarage-house, on condition that a like sum is added by Trinity College.——The interesting old walls of Berwick are gradually wearing away by means of frost, rain, and mischievous dilapidation. The Board of Ordnance will surely at length awake to the propriety of redeeming these distinguished relics of the olden times from ruin; a few pounds at present would suffice.——The Lord Lieutenant of Ireland has intimated to the National Art-Union of Ireland, that steps have been taken by the Government towards the establishment of schools of design in Ireland.

## SOME RESULTS OF GAS LIGHTING.

In one of a course of lectures on coal gas, by Mr. Headley, before alluded to by us, the lecturer drew attention to some of the benefits which have resulted to the world from gas-lighting. He said:—The celebrated and well-known article, Mackintosh's waterproof cloth, is one. The product of the distillation or manufacture of coal into gas is naptha or coal oil; this was found by Mr. Mackintosh to possess the invaluable property of dissolving India-rubber (caoutchouc)—a desideratum that scientific men had been seeking for ages, from its great importance in the arts and manufactures; and the knowledge and use of this property has given rise not only to the rendering cloths waterproof, but to the innumerable uses to which India-rubber, in a solvent state, is now applied; and amongst other elastic contrivances to which it is applicable, we have rather a curious one, superseding the lawyer's red tape—and it may now truly be said, he ties up his papers by a "gas tape."

We have next the application of gas to lace-making. Messrs. G. F. Urling and Company took out a patent for this invention, and which has been wonderfully successful and productive. The operation is this,—instead of running the lace over a red-hot iron roller, as heretofore, it is drawn over or through a gas flame; and the superior effect desired, of entirely freeing it from the flew or flough of the thread, is attained, as the flame of the gas actually passes into the meshes of the lace, and most perfectly accomplishes the object, and in an extremelly beautiful and effective manner.

Hot-blast, too, for smelting iron, may be said to be another attribute of the knowledge of gas; for its inventor, the talented J. B. Neilson, was the engineer and manager of the Glasgow Gas-works; and, in that capacity, made, in conjunction with the late Mr. Mackintosh, a great number of experiments—not only with reference to his water-proofing, but also to carbonising iron, by means of gas tar, and thus converting it into steel; and there can be little doubt, that during some of these experiments, the idea was created of applying heated air to the making and smelting of iron, now of such vast importance and consequence to the country. There are other applications, too, of gas—such as motive power to a steam-engine, patented by Mr. Brown—and the practical acquaintance with it has led even to the introduction of the atmospheric railway—Pinkus and Clegg, the originators of this principle, being both gas engineers. Thus, we may exclaim with the poet, "What mighty ends from minor causes spring."

The Adelphi Theatre is about to be rebuilt on a larger scale; adjoining properties have been purchased for that purpose.

## SIR ROBERT PEEL'S NEW GALLERY AT DRAYTON MANOR.

The new picture gallery, of which we gave a view some time ago,* is now finished. It is attached to the south-east angle of the mansion, and forms a wing 100 feet long in extension of the north front. The exterior is built of stone from Hollington. The style of architecture is that which prevailed during the latter part of Queen Elizabeth's reign, and that of James I. An arcade extends along all three sides, surmounted by an entablature, with an attic, upon which are small carved pinnacles breaking the outline of the building. The exterior is further decorated by four stone statues, somewhat larger than life; the two towards the south, or garden front, representing Rubens and Vandyke, and the two towards the north representing Reynolds and Lawrence. There are no windows, but a glazed sash door at the south-western extremity, which leads on to a new terrace, about 160 feet long and 19 feet wide, decorated with a stone balustrade, vases, pedestals, &c. This terrace joins on to other terraces surrounding three sides of the mansion, embellished with a profusion of marble and stone vases. Within, the ceiling is of various shades of oak and walnut-tree wood. The walls are painted of a strong greenish neutral colour; the skirtings are of wainscot. The floor is bordered with an inlaid band of a scroll pattern, consisting of oak, walnut-tree, and ebony woods. The columns and pilasters, seen in our engraving, are of marble. The capitals and bases are of white veined Italian marble; the shafts are each of a single block of Belgian marble, of variegated colours, chiefly of reddish hues, intermixed with white. The pedestals on which they stand are panelled, and composed of the same marbles.

## QUESTION AS TO THE STRENGTH OF CAST-IRON.

Sir,—If any of your correspondents, whose experience qualifies them for the task, would favour your readers with their opinions upon the following questions, probably the information would be felt of value by others, as well as by your obedient servant,

Islington. G. M.

Suppose I wish to settle the scantlings of some iron castings, such as girders, pillars, &c.; and suppose that, with the intention of resting my case upon the best and soundest authority, I consult Tredgold's well-known Essay on Cast-iron, in which I find some beautiful theories of the action of forces upon materials, joined to what the author seems to have considered sufficiently sound data for the strength of the particular material, cast-iron. But, suppose my copy of the book is one of the fourth edition (edited by Mr. E. Hodgkinson, 1842), in which I find, in the editor's notes, some slur cast upon Tredgold's accuracy, principally as regards the varying strength of iron of different manufactures, of which many sorts are said to be very much below the author's assumed average:—

Now I wish to ascertain whether, if my girders, &c., are procured from manufacturers of established credit and respectability, in London or elsewhere, they may not be calculated to possess the degree of strength, at elastic limits, which is assumed in Tredgold's formulæ? If not, what may be expected to happen to the numerous buildings in which cast-iron supports have been used, but which have been erected previously to the recent researches of Mr. Hodgkinson and Mr. Fairbairn? I have not yet procured a detailed copy of these: when I do, shall I have to unlearn Tredgold's beautiful system of calculating pillars and struts, or shall I only be obliged to modify his constants, to suit another scale of strength?

Club Competition.—We understand that the members of the Army and Navy Club have purchased a large space of ground adjoining their old house of meeting in St. James's-square, with the view of erecting a building which shall take rank among the architectural ornaments of the metropolis. For this purpose, according to the *Athenæum*, it is their intention to offer two prizes, of 200*l.* and 100*l.* each, for the first and second best plans of such a building, and to open the competition to the members of the architectural profession at large.

* See Vol. III., p. 242.

## CHINESE ARCHITECTURE.

Mr. Montgomery Martin, in his recent work on China, says—"The northern division of *Peking* consists of three inclosures, one within another, each surrounded by its own wall. The first inclosure ('forbidden city') is the most splendid and important part of Peking. It is situated nearly in the centre of the northern division of the city. It is an oblong parallelogram about two miles in circumference, and inclosed by a wall nearly 30 feet high. This wall is built of polished red brick, surrounded by a ditch lined with hewn stone, and covered with varnished tiles of a brilliant yellow, which give it the appearance, when seen under the rays of the sun, of being covered with a roof of gold. The interior of this inclosure is occupied by a suite of courtyards and apartments, which, it is said, for beauty and splendour, cannot be surpassed. It is divided into three parts—the eastern, middle, and western. The Gate of Peace has five avenues, and is a superb building of white marble. The height of the basement is 20 feet, and the whole edifice 110. The ascent to it is by five flights of forty steps each, and it is highly ornamented with tripods and other figures in bronze.

*Suchaw*, two days distant from the sea, accessible only by inland water communication, has a high reputation in every part of China for its splendid marble buildings, the elegance of its tombs, the number of its granite bridges, and artificial canals, gardens, streets, and quays. Indeed, there are several towns included in one, comprising what is called Suchaw. The city proper is inclosed with high walls, which are about ten miles in circumference: the suburbs are four distinct towns, about ten miles in length, and nearly the same in breadth.

## PROTECTION OF BUILDINGS FROM LIGHTNING.

### SOCIETY OF ARTS.

In a paper by Mr. Highton on the effects of heavy discharges of atmospheric electricity, as exemplified in the storms of 1846 (including an account of the destruction of St. George's Church at Leicester on the 1st of August), with remarks on the use and application of lightning conductors, read at the last meeting of the Society of Arts, the author proceeded to compare the power developed in the discharge of the lightning which destroyed this church, with some known mechanical force. He stated that 100 tons of stone were blown down a distance of 30 feet in three seconds; and, consequently, a 12,220 horse-power engine would have been required to resist the efforts of this single flash. He exhibited the effects of a new battery constructed by himself, and which was less than the $\frac{1}{70}$ of a cubic inch in size. This battery he had found would, for a month together, ring a telegraphic bell ten miles off. He also exhibited a second battery, which, although so small that it would pass through the eye of a needle, is of power sufficient to work a telegraph. Having detailed the course of several discharges of atmospheric electricity, he proceeded to shew the effects produced on the electric telegraphs, and the means which have since been adopted to prevent injury to them in future. He stated that, since the occurrence of the above storms, he had examined the Cathedral of St. Paul, in London, to ascertain how far this noble pile of building is protected from the effects of lightning. He found that the two small turrets have lightning conductors erected, but the central dome has none. The position of the spouts and other metallic connections is, however, such, that he considers, if the same are preserved as they now are, the building will for years to come be free from damage by lightning; but should they be removed at any time, and glass or porcelain employed in their stead, the main part of the building would be in constant danger from every storm that passes over the city. He concluded by urging the importance of a correct and systematic principle being acted on in the new Houses of Parliament, with a view to securing them from the disastrous effects of lightning.

A pier half a mile long is to be built at St. Helier's, Jersey, with other works, for all of which contracts have been advertised for.

## New Books.

*Turning and Mechanical Manipulation. Intended as a Work of Practical Instruction on the Lathe, and the Various Mechanical Pursuits followed by Amateurs.* By Chas. Holtzapffel, Associate of Institution of Civil Engineers (64, Charing-cross). 1846.

This is the second volume of eight contemplated by Mr. Holtzapffel, and is entitled to the strongest recommendation we can give it, as a sound and sterling work,—the result of personal experience, careful calculation, and great ingenuity. The first volume treated of materials, their differences and preparation, and the various modes of working them, generally without cutting tools. The volume before us treats of the principles of construction, action, and application; of cutting tools used by hand, and also of the machines derived from the hand tools, and embraces chisels and planes, turning tools, boring tools, screw-cutting tools, saws, files, shears,—and has a number of valuable notes in the shape of an appendix. The author says:—"The chisel was selected as the subject of the first chapter, as, from the simplicity of its form and action, it may be viewed as a keen wedge—sometimes employed with quiet pressure, at other times used with percussion, as in tools of the character of axes and adzes; and the straight chisel, mounted in a stock for its guidance, becomes a plane. Further, the chisel may be used as a turning tool; and many tools of this kind (the second in classification) follow the conditions of chisels and planes, if we imagine the tool to be held at rest, and the work to revolve against it on a fixed axis; the practice of turning is naturally associated with that of boring holes, although, in most cases, the boring tool revolves, whilst the work remains at rest. Turning and boring, each circulatory processes, led to the selection of the screw as the subject of the next chapter—for revolution, combined with rectilinear advance, are exhibited in all the numerous modes of producing screws. Saws were ideally compared with some of the scraping chisels, but with a multiplication of points, and these sometimes arranged in continuous order, as in the circular saw. The file, from its vast assemblage of scraping teeth, was likened to a multiplication of the saw. Shears and punches are next considered, in great measure, as parallel chisels, and the rectilinear edges of shears, although mostly duplicated, bear some resemblance to simple chisels—although, from their duplication, they act on both sides of the material; and, lastly, the ordinary punch is comparable with the rectilinear edges of the shears and chisels, if we do but consider these to be bent into the circular form."

All are treated in the clearest and most philosophical manner.

As a specimen of the style in which the work is written, we quote the following remarks on

### METAL TURNING.

"The softest of the metals, such as lead, tin, and soft pewter, may be turned with the ordinary tools for soft wood; but for the harder metals, such as zinc, and hard alloys containing much antimony, the tools resemble those used for the hard woods, and they are mostly employed dry.

Copper, which is much harder and tougher, is turned with tools similar to those for wrought-iron, but in general they are sharpened a little more keenly, and water is allowed to drop upon the work, to lessen the risk of *dragging* or tearing up the face of the copper, a metal that neither admits of being turned or filed with the ordinary facility of most others. Silver and gold, having the tenacious character of copper, require similar turning tools, and they are generally lubricated with milk.

In the above, and nearly all the metals except iron and those of equal or superior hardness, there seems a disposition to adhere, when, by accident, the recently removed shaving gets forcibly pressed against a recently exposed surface (the metals at the time being chemically clean). This disposition to unite is nearly prevented when water or other fluid is used.

Water is occasionally resorted to in turning wrought-iron and steel; this causes the work to be left somewhat smoother, but it is not generally used, as it is apt to rust the machinery; oil fulfils the same end, but is too expensive for general purposes.

Cast-iron having a crystalline structure, the shavings soon break, without causing so much friction as the hard ductile metals; cast-iron is therefore always worked dry, even when the acute edges of 60 degrees are thickened to those of 80 or 90, either from necessity, as in some of the small boring tools, or from choice on the score of durability, as in the largest boring tools and others. Brass and gun-metal are also worked dry, although the turning tools are nearly rectangular, as the copper becomes so far modified by the zinc or tin, that the alloys, although much less crystalline than cast-iron, and less ductile than copper, yield to the turning tools very cleanly without water."

The volume is beautifully printed; is illustrated by more than 700 wood cuts; and must become a text book.

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*Algebra Made Easy.*—By T. Tate, Mathematical Master of the Training College, Battersea. Longman and Co.

"Algebra, which is peculiarly called the analytic art," says Mr. Tate, "exercises, in a way which no other subject can, those powers of analysis and abstraction, which would otherwise lie dormant and enfeebled. The philosopher, embracing within the comprehensive grasp of his intellect the known laws of the universe, was once a feeble-minded child; and in order that such a child may become a philosopher, its powers of analysis and induction should be cultivated, in a manner corresponding to its capabilities, at an early period of its intellectual development. While moral training, of a specific kind, should not be lost sight of, at the same time it is important to bear in mind, that the patient and reflective spirit which analysis engenders, gives a healthful tone to the character, and renders us more capable of appreciating and enjoying whatever is morally sublime or beautiful in nature or revelation."

We have not seen a book better calculated to lead to the study of this most important branch of education than Mr. Tate's unpretending volume. It is clear and simple, and, withal, small and inexpensive. We advise all who would gain some knowledge of the principles of algebra to purchase it forthwith.

## Correspondence.

WANTED: A THOROUGHFARE.

Sir,—As the whole of the articles in your excellent publication tend to convenience, comfort, and health, will you allow me to call your attention to the want of a thoroughfare from the Strand to Holborn, say by continuing Pickett-place, talked of some twenty or thirty years since, to Serle-street, by Lincoln's-inn Hall to Great Turnstile. What a place for a great thoroughfare!

Having to go from Essex-street to Red-lion-square several times in the course of the day, the loss of time is most serious. It is really disgraceful to suffer the few dilapidated houses at the top of Pickett-place to block up what, but for them, would be a good thoroughfare. I know of no improvement that could be made at so small a cost. The press is the moral goad, which you, Mr. Editor, apply sometimes with right good will.—I am, &c.,

A SUBSCRIBER FROM THE COMMENCEMENT.
Strand.

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COMMITTEE OF WORKS FOR LONDON.

Sir,—Your valuable little work is doing much good, and I am emboldened on that account to say a few words to you now, on one subject which has engaged much of my attention when perambulating this great metropolis,—it is to express my regret that there is not any Board (and I do not except the one lately formed for Metropolitan Improvements), taking a comprehensive view and checking an outlay of money on public buildings for *particular* purposes, and without any regard to the general effect.

I shall only allude at present to the expense incurred, a year or two ago, on the external front of the Admiralty, next to St. James's Park; had that building been *stuccoed*, and also one or two houses west of the Horse-guards (on the park side), what a good effect it would have had when viewed from the esplanade on which the Guards occasionally form. They *pointed* the brickwork, and coloured it, in such a way as to make as great a contrast as possible with the stonework of the Horse Guards. That esplanade would also be much improved by being extended to the margin of the water in the park. Do look at the fronts mentioned, from the park gate, when you are passing that way.

By M. Angelo Taylor's Act, all the *urinals* have been taken away, not only from the public thoroughfares, but even in the private corners of *back* streets, and no public ones are erected in other places. In consequence, poor men coming from the country, and without money to enter a public house, must walk miles before they can get relieved; it has aggravated disease previously existing, and been the origin of many complaints. It has shewn a want of feeling for the poor man, and cannot be too much reprobated and exposed; this duty may not be altogether within your province, but I think it is that of every considerate man, and I have therefore stated it to you in addition to the suggestion about the esplanade.

An Old Architect.

Dec. 28, 1846.

*** We need not tell our old readers, that we have long ago pointed out the want of these last-mentioned conveniences.

## Miscellanea.

Character of Classic Art.—The most prominent character of classic art — nay of classic life and literature, is their perfect and thorough *seriousness*. For one Aristophanes or Plautus, we find a host of authors, only intent on elevating and instructing the people, point blank, without any circumflexes or inuendos whatever; authors—dreamy, rambling, soaring in quite other spheres than those of ephemeral and absurd amusement. The same it was with their art. They pictured and sculptured Silenus and satyrs and the like—but how rarely; and not knowing the modes of modern multiplication of art-products, whatever they did, they knew they did—for *eternity;* a very serious and ticklish admonitor indeed. An artist—a man, who *knows* that he stands before futurity, even only hopes so, will act quite differently from the penny or pound *catcher*. But it requires some brass to think so, to act so, at least. The *will*, however, is the first condition of the deed. The artist—the man who has staked his whole life on one idea, keeps this idea enshrined in a framework of adoration, love, reverence. And what would, we say, even any beauteous, intelligent woman think of a lover, who would speak of her or to her in a stream of jests, puns, and the like buffoonery? What we reverence, we joke not on—what we want the people to reverence, we will not let others make a laughing-stock of. Goethe was right (but not *understood*) when he said, "Times are worse than we imagine." Frantics often antecede idiocy and derangement; therefore, it may be, why some believe the age incurable.—[*Isis of Oken.*]

New Planing Machine.—Mr. Job Shelden, of New Haven County, has invented a machine for planing boards, in which is combined more originality of mechanical movement, with judicious proportion and application, than has been combined in any new invention within the past year. In this machine, the inventor has boldly struck out on entirely new principles of operation, and there appears nothing about the machine which bears any resemblance to those in use. It carries a series of planing cutters, which work with a reciprocating motion, cutting transversely, but with oblique edges, in each opposite direction.—*Patent Journal.*

Science in Art.—A machine has been invented by Mr. Kingston, called the Carsoetype. Its purpose is to give certainty in drawing the lines of the human face. By means of this, the exact size of the several features and of the head is obtained. The portrait, in its shadowings, is afterwards completed by art on a ground of marble.

Silcock's Patent Planes.—Mr. Silcock has given much attention to the manufacture of planes, and has produced a very superior tool. He has invented three patent metallic planes to do the work of forty-nine planes made on the old plan, which seem worthy of examination.

Llandaff Cathedral Restorations.—The dean has issued a statement of the expenditure of the funds put into the hands of the chapter for the restoration of the cathedral, from which it appears, that though the work is progressing somewhat slowly, like the original construction, the eastern chapel has been completely restored at an expense of 165*l.* 12*s.*; the eastern extremity of the south aisle, with its windows and open-work parapets, is in progress, and is estimated at the cost of under 300*l.* The next proposed alteration is the restoration of the choir. The present winter is dedicated to this in-door work, and the funds in their present state are considered inadequate to the completion of the lower story so high as the *Italian* cornice. The balance remaining in the banker's hands is stated at 225*l.*, and of the sums subscribed, 1,000*l.* still remain to be called in. Since this was printed, works have been actively commenced in the choir at its eastern end. A Norman arch of Bishop Urban's work has been opened out, commanding a perspective into the eastern chapel. The mouldings of this arch are in good preservation. Beneath this, a screen, of Bishop Marshall's work, A.D. 1480, has since been exposed. A sepulchral recess, in which the capitals of the side-shafts are executed in the style of 1200, is likewise now again disclosed to view in the south-east wall of the choir. Tradition assigns this as the tomb of St. Teilo, or rather of one of his three miraculously multiplied corpses. The Archbishop of Canterbury, Bishop of Bangor, and Bishop of St. Asaph have each subscribed 50*l.* towards the work.

Important to Iron Merchants.—In the High Court of Justiciary, Edinburgh, a case, in which Messrs. Vincent, Higgins, and Sons, iron merchants in Liverpool, were pursuers, and Messrs. Dunlop, Wilson, and Co., iron merchants in Glasgow, were defenders, came before the Lord Justice-General and a jury. The question in dispute arose out of an offer made by the defenders to the pursuers of 2,000 tons of pig-iron, at 65*s.* per ton; but, as the pursuers did not answer the letter containing the offer by return of post, the defenders held they were freed from it. The issue was couched as follows:—Whether, about the end of January, 1845, the pursuers purchased from the defenders 2,000 tons of pig-iron at the price of 65*s.* per ton? and whether the defenders wrongfully failed to deliver the same, to the loss, damage, and injury of the pursuers? Damages laid at 6,000*l.* The pursuers produced six witnesses to prove that, according to the practice in mercantile matters, they were not bound to answer in course of post, while the defenders brought forward an equal number to prove that the contrary was the practice, to render the transaction obligatory. The jury, after a short deliberation, returned a verdict for the pursuers—damages, 1,500*l.*

Lead Ores at Cape of Good Hope.—In the division of Albany, on the eastern coast of the Cape, near Algoa Bay, is found in the original formation a rather extensive bed of lead ore, which has only lately been mined. An experienced mineralogist, who had heard in England of these ores, purchased lands in the vicinity of Van Staden's River, and commenced to work them with practical men, after satisfying himself as to the productiveness of these ores. On an analysis lately by a competent person, 3,269 grains of ore produced 4·070 grains of sulphate of lead, 0·015 grains of sulphuret of antimony, 0·126 grains oxide of zinc (with traces of iron), and 0·383 grains sulphate of barium. If, from this the quantity of lead, antimony, zinc, and sulphur be calculated, it shews that—

| 3,269 grains of lead ore contain, in 100 parts, | | |
|---|---|---|
| Lead ..... | 2,781 .. | 85·07 |
| Antimony ..... | 0,011 .. | 00·34 |
| Zinc, with traces of iron | 0,021 .. | 00·64 |
| Sulphur ..... | 0,447 .. | 13·67 |
| | 3,260 | 99·72 |

Buckingham Palace.—Sir,—It must have occurred to you, as it has to others, that the wings of Buckingham-palace are too *narrow*. Now, I would suggest (if not too late), that by making them double on each side, with an *open* colonnade between each wing and the addition, a handsome building would be the result, and would offer all the accommodation required.

C. F. A.

PROJECTED WORKS.—Advertisements have appeared in the current newspapers for contract-tenders for the various works to be done in the erection of the new town hall at Doncaster; in the erection of two villas near Southampton; and in the construction of a stone pier half a mile long, and other works of a new harbour, at St. Helier's, Jersey; also for the whole of the works on 10½ miles of the Wakefield and Goole, 11 miles of the North British, 19 miles of the Malton and Driffield, 16 miles of the Belfast and county Down, and 10 miles of the Stirling and Dunfermline, lines of railway; and for earthwork and masonry of two contracts on the North Western; larch sleepers for same line; and hackmatack, pine, or hemlock sleepers to be shipped abroad; also for repair of roads in Staffordshire: for lighting Writtesley with gas; and for 60 cast iron lamp-posts, and as many lanterns, for Wavertree, Liverpool.

RUTTER'S LIGHT.—The *Art-Union Journal*, of the present month, in describing Mr. Rutter's "Ventilating Light" says, "through the body of this, the whole of the heated air, vapour, and other products of combustion ascend to the ceiling, and are thence conveyed by a suitable pipe, laid between the ceiling and floor, to a chimney *or the open air*, as may be most convenient." Now, some months ago we caused one of these lights to be fitted up by the patentee's manufacturer, in a position where the pipe could not be taken into a flue, but came into the air under a verandah; and notwithstanding the end of the pipe was protected by a cowl, and that other expedients were resorted to, to prevent down draft, the result was a failure. We think it right therefore to caution our readers against committing a similar mistake.

CELLARS UNDER NEW BUILDINGS ACT.—At Bow-street, the first case of the sort under 7 & 8 Vict., cap. 84, sec. 53, occurred in course of last week, when a lodging-house keeper was brought before the court on a summons charging him with unlawfully suffering a certain cellar in his house, the same being a dwelling-house, to be occupied as a dwelling, to which he pleaded guilty, but that he received no rent. The case was discharged on payment of costs, as the authorities had interfered in his favour. The apartment in question was a stone cellar without any window to admit light or air. Another cellar of a like order was also discovered with a family dwelling in it. The inhabitants were removed to the workhouse. It ought to be generally known that in such cases householders render themselves liable to a penalty of 20s. a day, which the authorities are determined to enforce.

DWELLINGS FOR THE LABOURING CLASSES IN AUSTRIA.—[*Audiatur et altera pars*]. A society having been formed at *Prague* for the providing the above with cheap and salubrious dwellings, the police have kept the petition for the formation of the society eighteen months, without replying to it. Still, the necessity for such houses increases every day, as the Embellishing Commission (*Verschonerungs Comission*) is only intent on pulling down indifferent parts of the city, and replacing them by fine or elegant, and consequently expensive buildings; so much so, that while the spaces and accommodation for the higher and middle classes are constantly increasing, the labouring population is completely out-elbowed of their very existence and habitations.

LIBERAL ACT OF A MANUFACTURER OF IRONIN FRANCE.—The condition of the working classes is attracting the attention of masters in France — amongst whom the plan of Mr. Talabat, *maitre des forges* at Sant-du-Labat (Tarn), is worthy of remark. Mr. T. has resolved on *idealizing* the hitherto truck system of masters, and to furnish his workmen with meat, bread, wine, and all other necessaries, at *cost prices*. By so doing, Mr. Talabat loses every year 4,000 francs (160*l.*), but says, in his *compte-rendú*, that this loss has been *largely balanced* "by the material and *moral* amelioration of his workmen."

PUBLIC OVENS.—It is said that a company is about to be formed for the erection of public ovens on the same principle as the baths and washhouses. The labouring poor will then be enabled to make their own bread, of whatever quality their means will permit; as pans and other requisites will be provided, and the baking performed at a very trifling expense.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, Jan. 11th.—Royal Institute of British Architects, 16, Grosvenor-square, 8 P.M.

TUESDAY, 12th.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.; Syro-Egyptian Society, 71, Mortimer-street, Cavendish-square, 7½ P.M.; Freemasons of the Church, 3, Great Newport-street, 8 P.M.

WEDNESDAY, 13th.—Society of Arts, Adelphi, 8 P.M.; Graphic Society, Thatched House Tavern, 8 P.M.

THURSDAY, 14th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*G. H.*"—We will not fail to return free the drawings if sent.

"*J. H.*"—A license is necessary for valuing artificers' work. A builder does not need one for his own bills.

"*W. H. H.*"—The early volumes, we are sorry to say, are out of print. Immediate application would be necessary for that of last year.

"*Cane-Work.*"—A correspondent wishes to know how best to clean the cane-work of old furniture. He says, "I have tried strong solutions of vitriol and water, and the antipodes—soda and water, but without avail, the said cane-work pertinaciously persisting in its nasty, dirty, yellow aspect."

*Received.*—"T. G.," "Observer," "S. S. W.," "G. T.," (Bath) "J. B.," "M. I." (Brixton), "J. K."

*Books Received.*—"Memoirs of Benvenuto Cellini," translated by Thomas Roscoe. (H. G. Bohn, York-street.) "The High Pressure Steam Engine Investigated:" by Dr. E. Alban, translated by W. Pole, F.R.A. (Weale, Holborn. Parts I. & II.) "The Man in the Moon," No. 1, edited by Albert Smith and Angus Reach. (All thanks to those who make us laugh without bad feelings.) People's edition of Part I. of Hadyn's "Messiah" and "Creation."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

## ADVERTISEMENTS.


FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Defourville's system of filtration, the only one known by which large quantities of liquids are easily filtered, begs to announce that he continues to supply these apparatus, which are easily applied to cisterns and water-butts, and when fixed require no care or attention from servants, and never get out of order. The prices are from Two to Four Guineas, producing from 100 to 300 gallons daily; for breweries, distillers, paper makers, hospitals, and large establishments, to any inhabited quantity, the prices varying accordingly.
40, Love-lane Platform, Rotherhithe; Office, 33, Conduit-street, Bond-street.

H. MORRELL'S FINE PREPARED DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East-India Company.
The attention of Engineers and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.
Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail of all the principal Booksellers and Stationers in Town and Country

TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS
THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive Licence from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.

DECORATIONS in WOOD.—The unrivalled perfection at length attained by the patent process of carving, enables its proprietors to offer to the public, at an exceedingly low price, specimens of every variety of carved wood for external and internal enrichment, thus substituting the genuine material for those numerous imitations which have invariably been found brittle or unsatisfactory. Mouldings and beadings of all kinds are thus supplied, adapted for church or library fittings, altar chairs, picture frames, chimney-pieces, and every description of Gothic or Elizabethan furniture. Specimens may be seen, and drawings obtained, at the Patent Wood Carving Offices, 444, West Strand; or at the Works, Ranelagh-road, Thames-bank.

ARCHITECTURAL ENRICHMENTS. BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decorations, has been patronised by her Majesty, by the Hon. Commissioners of the Board of Works, by the Highest of the Nobility and Gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club-house, at Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff, price 2*l.*—Works, 15, Wellington street, North, Strand.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 14, WHARF ROAD, CITY-ROAD, N.B. County Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

TO ENGINEERS AND ARCHITECTS,
And as an Elegant Present to a Lady, as well as a most Convenient Pocket Appendage.
TO all those who find a Difficulty in the Use of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS'S PERPETUAL PEN, made of Gold, with Points which never wear or alter, offers a most convenient substitute, as Ink, which oxydises and thickens in the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 15s. It may be used with a common holder. With an everpointed Silver Pencil Case, with Leads, 27s.
Sold by the proprietor, HENRY STEPHENS, 54, Stamford-street, Blackfriars road, London. On application, by letter, this Pen will be sent, per post, to any part of the kingdom.

CAEN SUFFERANCE WHARF, ROTHERHITHE.
LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE CATES, 18, South-walk, Square, Bow, London.
Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Laven ler-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.
SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.
BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.
Fire Chimney-pieces from 12s. upwards.
THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.
Estimates given for building generally.

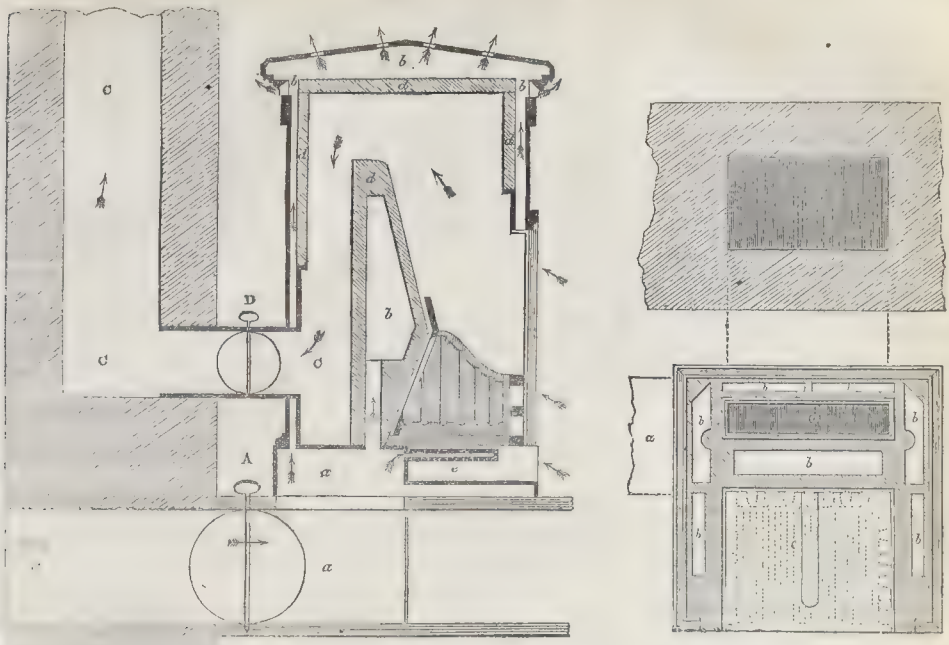
PORTLAND CEMENT does not vegetate in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, and the public are thereby enabled to avail themselves of these distinct advantages.
Manufactured by J. B. WHITE and SONS, of Millbank-street, Westminster; and sold at their warehouses—Earl-street, Blackfriars; Grace's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; at Seel-street, Liverpool; and Salmon and Co.'s Dublin.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster, and Seel street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.
CAUTION.—Messrs. STEVENS and SON, of Patentees, forget on occasion their friends and the trade generally against combining, or in any manner connecting themselves with MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—
1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr Thomas Cubitt, on the Grosvenor estate, &c.
For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.
For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Martin's Cement Manufacturing, 86, DRURY LANE Agent for Liverpool and Manchester, Mr R. PART, 28, Cumming-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.
JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every cement hitherto introduced.
It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will be repaired, and coat on the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sanitary Act. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wet Deal or Glass. It will carry a larger Proportion of Sand than any other Cement. In all ways, and it seems perfect when other Cements begin to perish. It may be worked through the Winter as frost has no effect upon it. It may be used on the Inner Walls of Houses, on which it may be papered over or painted directly. Roofs laid or painted with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this materially does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.
Architects who have used this Cement have declared that it requires only to be known to be universally preferred.
Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 7, Maiden-lane, Queen-street, Cheapside, London; of whom also may be had,
JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT having an affinity for stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

## CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.



*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

### TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same. Yours truly,

ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.
WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my churc is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,
WILLIAM GARRATT, Minister of St. John's, Fulham.

Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.
Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell. MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

Letter from Professor BRADLEY.
King's College, London, July, 1846.

Sir,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant, THOMAS BRADLEY.

*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

# THE BUILDER.

TIMBER SAWING FRAME FOR SALE.

**WELL Manufactured, and in complete** working order, and only sold in consequence of the room being required for other purposes.—Apply to W. G. WARDLE, Stangate Saw Mills, Palace-road, Lambeth.

NOTTING-HILL, WILLIAM STREET.—TO CARPENTERS AND OTHERS.

**TWO Carcases of Small Houses TO BE** SOLD, singly or together, for half their cost, viz. £80 per house. The neighbourhood is becoming very populous, and they would let well, as all do as soon they are finished. The lease, for 90 years, direct from the freeholder, may be had immediately on completion of the purchase. Building societies will advance fully the amount. Apply to Mr. MALLCOTT, Surveyor, at the Stone Houses, corner of Addison-road North, and St. James's-square, opposite the Church.

**MORTAR-MAKING MACHINE,** Gypsum, or Drug Mill, with pair of granite-edge runners, iron trough, wheels, &c., similar to those used to construct Ramsgate Harbour, FOR SALE, price £20. A nearly new Eight horse portable condensing STEAM ENGINE. Metallic Piston, as table for Saw, Drug, or Corn Mills, pumping, draining, or mining. Price £130; being less than one-third its cost.—A new SIPYON BOILER, sixteen-horse power, at less than half price, now within two months, and never fired, with all the fittings and furnace work. All may be seen at 19, White Lion street, Norton Folgate. Also, several large new Coppers, at ten-pence per pound.

TO BUILDERS, PACKING-CASE MAKERS, AND OTHERS.

**A BUSINESS Established many Years in** the Neighbourhood of Oxford-street. TO BE DISPOSED OF. Apply by letter only, to HENRY SOUTHAM, Sawing and Planing Mills, Gillingham-street, Pimlico.

TO STATUARIES AND MARBLE MASONS.

**BUSINESS TO BE DISPOSED OF,** immediately.—A first-rate opportunity for a person wishing to embark in the above business in a county town in the west of England is now offered. Stock and fixtures about £200. Address to R. L. care of Messrs. Leonard, Warren, and Co., Bridge-street, Bristol.

TO BRICKMAKERS, BUILDERS, AND OTHERS.

**TO LET, with immediate possession and at a** moderate royalty, several Closes of Land, containing excellent Brick-earth, and situate on the Uxbridge Road, within Three Miles of Oxford-street. For further particulars, inquire of Mr. TURNER, Solicitor, 8, Chancery-lane, or of Mr. PRICKETT, Surveyor, 12, Southampton-buildings, Chancery-lane.

TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's-road, Dalston, to Lansdown-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria-park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

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**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City. For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

**PREMISES for a SOCIETY.—A Society** having a library and a collection of casts, is in want of Premises where the effects may be safely deposited, and the meetings of the society held. The meeting room must accommodate from fifty to sixty persons, and the depository for the collection, if not in the meeting room, must immediately adjoin it. The Society wishes to receive proposals from persons having premises of the kind to let, or from others willing to share in the occupation of premises, which must be within one mile of Golden-square.—For further particulars apply by letter, pre-paid, to Mr. J. RUSSELL, 11, Savile-street, Fitzroy square.

OLD KENT ROAD—CAPITAL PREMISES.—The South London Steam Sawing and Planing Mills. A very excellent property for this or any other extensive manufacturing business requiring spacious premises and desirable building ground.

**MESSRS. COCKERELL and HOARD** have received instructions to SELL by AUCTION at Garraways, Cornhill, on WEDNESDAY, the 20th January, all that capital and well built premises, the South London Sawing and Planing Mills, well situate for business in Sloan-street, Old Kent-road, near the terminus of the South Eastern and Dover Railway; comprising an extensive timber-yard, substantial brick-built engine and boiler-houses, with a twenty-five horse capital steam-engine; large brick-built mill; two saw frames and saws; two circular benches and saws; superior planing machine; smithy, counting-house, and other offices. May be viewed three days prior to the Sale, and particulars had on the premises: Bricklayers Arms, Old Kent Road; of Messrs. DREW, Solicitors, Bernondsey-street; of the Auctioneers, 28, Conduit-street, Bond-street; and of Mr. COCKERELL, 47, Blackman-street, Borough.

TO ARCHITECTS AND BUILDERS.

**DOOR SPRINGS AND HINGES.—** GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES (Brass Inside Ivory Joint) to open on one or both ways, and Rising Hinges for the convenience of Doors opening at uneven Floors. Likewise Swing Centres, which consist of a combination of power unrivalled by any made at present. Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

**JOSEPH FENN, 105, Newgate Street,** London, Manufacturer of Turning Lathes, Planting Mills, Stocks and Dies, Circular and other Saws, Fine Tools, Materials for Engineers, Millwrights, Die Sinkers, Coach Makers, Locksmiths, Lamp Makers, Pattern Makers, Plumbers, Wood and Metal Turners, Gun Makers, Engravers, Print-cutters, Watch and Clock Makers, Lapidaries, Jewellers, Gold and Silversmiths, Saddlers, Curriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c. &c.

Amateur Mechanics and others can be supplied with every description of Mechanical Apparatus, viz.:—Wheels and Pinions, Racks, &c. &c. Sets of Mahogany Tree Sets of Tools, and prepared Wood for Wood Engraving. TOOL CHESTS FITTED UP COMPLETE. Cutlery of the finest quality. Horticultural Tools, Ironmongery of every description. Brass, copper, steel, zinc, &c., in sheet, bar, and wire. Wholesale, Retail, and for Exportation. Railways supplied on the best terms.

**LEADBEATER, many years manufacturer** for Chubbs, of St. Paul's Churchyard, PERFECT SECURITY is afforded to PROPERTY of every description by LEADBEATER'S strong Wrought-Iron Chemical-compound filled FIRE-PROOF SAFES, CHESTS, and BOXES. Doors for Strong



Rooms and Party Walls, &c., all secured by his Improved Detector Locks, in any from 3 to 20 bolts, which defy the skill of the most experienced burglars. A large Assortment of Fireproof Safes, &c., on Sale. Made to order at the shortest notice, at prices 25 per cent. under any other house in London, at his Manufactory, 135, Aldersgate-street.



A large FIRE-PROOF REPOSITORY, well adapted for Solicitors, to be SOLD a BARGAIN. Improved Detector Locks and Latches, affording PERFECT SECURITY, for Street and other Doors.

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG begs to inform his Friends** and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square Terms, Cash only.

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**CROWN GLASS, cut to size, 4d. per foot.**

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| 13 oz. Sheet | 3½d. ditto. |
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Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.

Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, wholesale.

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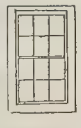
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**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent to all houses having it; repay the cost every two years; abolish all danger to life and limb in cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sunblind; all simple, cheap, and effective.—Apply for licenses and to inspect its full merits, to HERRINGS Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

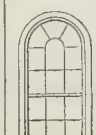
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By Her Majesty's — Royal Letters Patent.

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It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contracting and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead, which latter, when run down, is freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes above named, and almost impartially so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, cutters, spouting, and out-door work generally, possessing the strength of iron without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

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N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

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Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

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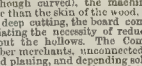
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**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle, Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

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W. J. REYNOLDS, Secretary.

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Agents wanted in every part of Great Britain.

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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 206. | JANUARY 16, 1847. | *Price* ..... 3*d.* *Stamped* ..... 4*d.*


### ILLUSTRATIONS.


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NOTICE IS HEREBY GIVEN, that a General Annual Meeting of Members of the INSTITUTION OF BUILDERS' FOREMEN will take place on Wednesday Evening, January 20th, at the Salisbury Arms Tavern, Durham-street, Strand, for the purpose of receiving the Annual Report, and other general business.

W. ALLARD, Secretary.

MASONS' Provident INSTITUTION.—The First Annual General Meeting of the Donors and Subscribers to the above Institution will be held on Monday Evening, January 25, 1847, at the City of Westminster Literary and Scientific Institution, Great Smith-street, Westminster, for the purpose of receiving the Report of the Auditors and General Committee, and for the transaction of other important business connected with the Institution.

JOSEPH T. WHITEHEAD, Hon. Sec.
Chair taken at Half past Seven.


### CONTRACTS.

NOTICE TO BUILDERS.
Office of Ordnance, Pall Mall.
11th January, 1847.

TENDERS will be received at the ORDNANCE OFFICE, Pall Mall, London, on or before THURSDAY, the 4th day of February next, from persons desirous of CONTRACTING with the Honourable Board of Ordnance, for constructing a Coffer-Dam and taking down and rebuilding 250 feet in length of the Gun Wharf River Wall and other works connected therewith, at Chatham, agreeably to drawings and specification, which may be seen at the Royal Engineers' Office, Chatham Lines.

The person whose tender may be accepted will be required to enter into a bond with two eligible sureties, jointly and separately, to be bound under a penalty of £2,000, for the due performance of the contract.

Further particulars and forms of tender may be obtained on application at the Royal Engineers' Office, Chatham Lines, and the tender can be admitted after the said 4th day of February next, at Twelve o'clock at noon. By order of the Board,

R. BYHAM, Secretary.

Sewers' Office, Guildhall, Dec. 19, 1846.

TO IRONFOUNDERS AND OTHERS.

THE Commissioners of Sewers of the City of London and the Liberties thereof, HEREBY GIVE NOTICE, that they will meet in the Guildhall of the said city on TUESDAY, the 19th day of January next, at Two o'clock in the forenoon, to receive TENDERS for the supply of Cast-iron Work, for the term of three years from the 31st December, 1846, as regards particulars as detailed in a specification which may be seen at this office. Security will be required for the due performance of the contract, and no tender will be received after eleven o'clock on the day of treaty. The Commissioners do not pledge themselves to accept the lowest tender.

JOS. DAW, Principal Clerk.

TO BUILDERS.

PERSONS desirous of Tendering for the Execution of any, or all of the Works required in the rebuilding of Nine Hall, near Chester, can see the Plans and Specification at the Hall, where they will be for inspection from Thursday, the 21st of January, to Wednesday, the 14th of February, inclusive. The Tenders to be sent in to Messrs. SHARPE and PALEY, Architects, Lancaster, on or before Wednesday, Feb. 17th.

TO BUILDERS.—SAINT ANNE, WESTMINSTER.

PERSONS desirous of TENDERING for various works required to be done at the Parochial School, in Rose-street, for the purpose of forming an Infant School, are requested to apply at the Office of Mr. WARD, No. 41, Lisle-street, Leicester square, where the plan and particulars may be seen, any day between the hours of Twelve and Three o'clock. The tenders, sealed up and addressed to the "Building Committee," are to be delivered before Five o'clock on Thursday, January 21st, at the office of Mr. WARD. The committee do not bind themselves to accept the lowest tender.

TOWN OF BRIGHTON.—Notice is hereby given, that the Commissioners acting under the Act of Parliament for the regulating, paving, improving, and managing the said town, are about to appoint a person properly qualified to perform the duties of a Surveyor and Engineer, in the carrying out the public works authorised and required by the said Act, at a salary of Two Hundred Pounds per annum.—All persons who are desirous of becoming candidates may obtain every particular, with a statement of the defined duties, by application at my office, at which place testimonials must be left on or before Saturday, the 6th day of February next.—By order of the Commissioners.

LEWIS SLIGHT, Clerk.
Clerk's Office, Town Hall, 12th January, 1847.


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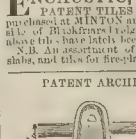
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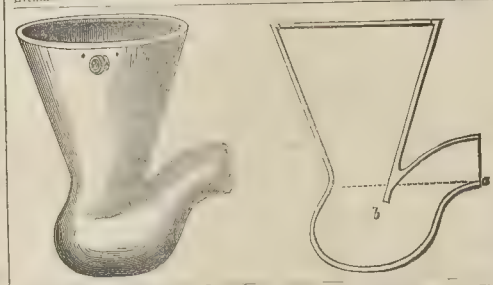
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| 2½ Shop Front | 0 | 8 |
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| 1¾ Ditto, both sashes to hang | 0 | 5½ |
| Ovolo sashes and frame | 1 | 0 |
| 2 Ditto, both sashes to hang | 1 | 0 |
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|---|---|---|
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| 1¼ Ditto, moulded one side | 0 | 7½ |
| 1¼ Moulded, bead and butt back | 0 | 8½ |
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| 1¼ Shutters and back flaps, moulded front and bead, and butt back | 0 | 9 |

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| Inch | s. | d. |
|---|---|---|
| 1¼ Dwarf square | 0 | 6½ |
| 1¼ Ditto, moulded front | 0 | 7½ |
| 1¼ Ditto, bead square | 0 | 8 |
| 1 Ditto, bead, butt | 0 | 8 |
| 1 Ditto, ditto | 0 | 8 |
| 1¼ Middle panels | 0 | 11 |
| 1¼ Ditto, both sides | 0 | 11 |
| 1¼ Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ditto, bead, flush, and ditto | 0 | 11 |
| 1¼ Ditto, ditto, and moulded back | 1 | 0 |
| 1¼ Six panel square | 0 | 9 |
| 1¼ Ditto, moulded one side | 0 | 10½ |
| 1¼ Ditto, ditto, both sides | 1 | 0 |
| 2 Four panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0 |
| 2 Ditto ditto, both sides | 1 | 0½ |
| 2 Ditto, bead, butt, and square | 1 | 1 |
| 2 Ditto, bead, flush, and square | 1 | 0½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2 |
| 2 Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
| 2 Ditto, ditto, both sides | 1 | 2 |
| 2 Ditto, bead, butt, and square | 1 | 1 |
| 2 Ditto, bead, flush, and square | 1 | 2 |

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Prices for Architraves, Base Mouldings, &c., and all kinds of Joiners' Work in Wainscot or Mahogany, TO BE HAD ON APPLICATION.

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Established March, 1838, for working the Mineral Asphalte Rock of Pyrmont Seyssel, a Bituminous Rock, situate on the Eastern side of the Rhone

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**THE ASPHALTE of SEYSSEL** has been extensively used since March, 1838, for the following useful purposes.

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| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| Kitchen Floors particularly where it is essential to keep damp from rising. | Dockyards. | Coverings of Railroad and other Arches. | |
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| Carriage Drives. | Tan-house Floors. | Malt-house Floors. | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.

The reasonableness of the SEYSSEL ASPHALTE COMPANY, CLARIDGES PATENT, enable it to execute Works of any kind with the best possible dispatch.

In order to secure the genuine materials, it is important that all applications for Works to be executed, be made direct to the Company, or to one of their authorized Agents, and Contractors should require a CERTIFICATE from the Company, that the Asphalte they propose using is of the genuine quality.

Estimates may be obtained on application at the Company's Offices, and Contracts entered into for the execution of Works.

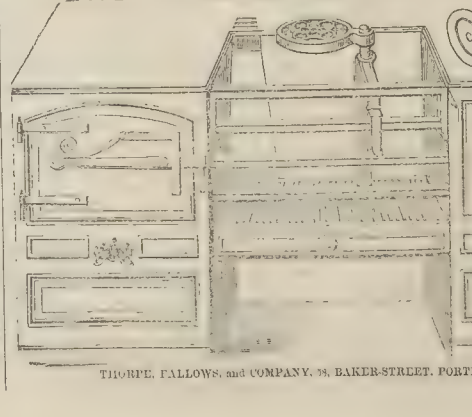
Letters Patent have been obtained, and all Works which have been executed by the Company since its establishment in 1838, which will fully establish the value of many Works pretended to have been done with the genuine Asphalte, but which, on examination, have proved to be spurious.

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PYROPOLID HOT-AIR STOVES, for heating and ventilating rooms.

THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

The Builder.

No. CCVI.

SATURDAY, JANUARY 16, 1847.

THE social reforms needed for the preservation of the public health, and the advancement of the general welfare, appear to have taken a considerable hold upon the public mind. Various societies are working sedulously to advance them; deputations go to prime ministers; and reports of committees fly about in all directions.

We have the Health of Towns Association; the Health of London Association; the Metropolitan Working Classes Association for Improving the Public Health; the Society for the Abolition of Burials in Towns,* and others; and if some important result be not speedily effected, our faith in the strength of public opinion will be lessened considerably.

The report of the Health of Towns Association on Lord Lincoln's drainage bill, while reviewing this bill and pointing out forcibly its inadequacy in many respects, gives a general and most important view of all the matters affecting the sanatory condition of the metropolis; and, if extensively circulated, must effect much good. The intensity and mortality of disease have increased, and are increasing, through neglect of efficient drainage, well arranged streets and houses, proper cleansing, a due supply of water, want of ventilation and other sanatory arrangements, all obtainable for the whole population. It is proclaimed in language not to be misunderstood, that *every day's delay in the adoption of these measures costs the lives of* 136 *persons in England alone!*†

The report dwells with great severity on the mischief which has been done by the Westminster Court of Sewers, and on the enormous sums of money which have been spent by the commission uselessly. The reduction recently made by this commission in the cost of sewers, will prove of great advantage to the public. Their duty unquestionably is to afford every facility for drainage, to induce by all means in their power the construction of sewers; and we have a strong conviction that great changes are even yet necessary in the constitution of the commission, and its motives of action. We hope before long to test the value of our opinion by an examination of the powers under which the court acts.

The construction of drains, and the means of efficiently trapping them, to keep back noxious gases, require early attention. It is an error to suppose that the interposition of water is a sufficient protection against the escape of noxious gases from sinks and cesspools; such is not the fact; as soon as the water is saturated with the gas, it escapes into the house or street, to the injury of the health of the inhabitants; yet builders rely wholly on the efficacy of water in preventing these emanations.

One of the prominent objects of Lord Lincoln's bill is, to remedy the present extremely defective supply of water for domestic uses; and the committee in their examination of the bill go fully into this question. Evidence is adduced to shew the great superiority of a constant over an *intermittent* supply of water as now furnished.

"The present daily consumption of water in the metropolis is equal to the contents of a lake fifty acres in extent, of a mean depth of three feet. The intermittent mode of supply having been universally adopted, there arises the necessity of receptacles to receive this mass of water, at the times when it is pumped out, and to retain it until it is wanted. Let the mind dwell for a moment on what the expense of these vessels must be. The actual cost for butts, tanks, and cisterns, is estimated at two millions of money; and those who have attentively considered the subject believe that this estimate is too low. It has been shewn that these receptacles are at once unnecessary and pernicious. On these grounds her Majesty's commissioners protest against the continuance of the intermittent system, and declare their opinion, that 'the system of constant supply offers advantages for the introduction of water into all houses which are unobtainable by any other mode.' It cannot but be useful to direct attention to the evidence on which the soundness of this conclusion is established; and the following may be taken as examples of the statements and opinions of the chief authorities on the subject.

First, by the mode of constant supply at high pressure, the water is preserved in a state of purity. 'All the evils arising from the want of proper receptacles for water,' says Mr. Hawksley, 'from neglect in cleaning the tanks and water butts, and from the accumulation of soot, dust, and other impurities in them, are completely removed by keeping the pipes constantly full. The effect of this arrangement is to substitute one large reservoir or tank well constructed, well situated, and under effectual care, for the many thousand ill-constructed, ill-placed butts and tanks, requisite to afford a copious supply on the common arrangement. It also prevents the impregnation of water with gas, which often takes place when the water is supplied on the intermittent system.'

'A never-failing and uninterrupted flow direct from the main,' says Dr. Playfair, 'is not liable, as in the case of collected water, to acquire a temperature unpleasantly high, and is secured from the absorption of vitiated air and unpleasant effluvia, to hasten the decomposition of the small amount of organic matter generally existing in water.'"

Many evils result from the want of water. "The obstacles to the maintenance of domestic or personal cleanliness soon produce habits of personal carelessness, which rapidly lower both the moral and physical condition of a whole population."*

Improvement too, is needed in the mode of laying gas-pipes. The water is injured, says Mr. Mylne, by the gas which escapes, and the sewers are rendered dangerous.

Amongst the errors and defects of the Bill, the committee name:—

"Neglecting to make it compulsory on water companies to give the public a constant instead of an intermittent supply, and to deliver it in all cases at as high a pressure as is practicable.

Neglecting to make it compulsory on water companies either to filter the water or to provide a sufficient area of depositing bed.

The omission absolutely to forbid the construction of cesspools in all new dwellings, and to provide for the compulsory removal of all existing cesspools as soon as the general introduction of sewers and drains, combined with an adequate supply of water, shall have rendered the universal adoption of the water-closet apparatus practicable.

Neglecting the entire subject of ventilation, one of fundamental importance in a sanatory measure.

It is not necessary to point out the great value of the constant supply for the prevention of fires. It is stated, that under this system at high pressure, even the smallest street might be supplied with a three-inch main, affording at least one 40-feet jet, which is equivalent to keeping the power of one engine and twenty men at every door, to act at one minute's notice after the first alarm of fire. In fact, no town ought to be considered fully supplied with water unless the pipes are kept constantly full, and arrangements are made by which a powerful force of water can be taken from them, at a minute's notice, to extinguish fire at any part of the town, high or low.

The mode of intermittent supply ought to be immediately abandoned, and the constant supply introduced, as the most effective, and, moreover, the most economical.

The importance of ventilation, to which reference is omitted in the bill, is forcibly dwelt on by the Committee, and at considerable length.

"The general introduction of an efficient mode of ventilation in dwelling-houses, and especially in the abodes of the poor, would be attended with beneficial results far beyond what it is possible to estimate; still, however, the adoption of compulsory provisions for this purpose may not be expedient, on account of the interference with the privacy of domestic life, which the enforcement of any such legislative enactments must involve. But this objection does not apply to buildings intended for public resort, such as churches, courts of justice, concert and assembly rooms, theatres, houses and rooms for the public use of which a license is required, factories already under government regulation and inspection, workshops, in which great numbers of work-people habitually assemble, lodging-houses, and schools. The introduction, in a general sanatory measure, of compulsory provisions for the purpose of securing proper ventilation in all places of this description, appears to be justified by the absolute necessity of the case, and to be free from any objection in principle."

The repeal of the window-tax is another part of the same great question, and should be loudly called for from every quarter. As was said at a meeting of delegates from various metropolitan parishes held last week, it should be repealed if it were only for its inequality and injustice, pressing, as it does, upon those who are the least capable of paying it. In a sanatory point of view, however, repeal of this abominable tax is imperatively necessary, operating, as it does, most injuriously on the comfort, health, and morality of the people. It positively offers a premium for the defective and vicious construction of houses, and tends to create those abodes of filth and disease which disgrace our land. The necessity of ventilation, and the advantages of light, are not felt sufficiently to induce the payment of even so many shillings a year; and cellars, privies, and staircases are left to be magazines of deleterious air, even in the houses of the middle classes.

Houses having less than eight windows are exempt from the duty; "but the window-tax," says Mr. Hickson, "is not therefore inoperative as it regards the working classes of towns. In London the poor do not live in cottages, but several families occupy lodgings in the same house, and that perhaps a house built

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* The address of this society, just now issued, says:—"The sanatory condition of the people, so long neglected, has at length excited some degree of attention. Yet one of the most important subjects connected with the health of the inhabitants of large towns, has been unaccountably overlooked. No one presumes to deny the poisonous effects of decaying *animal* substances; more powerful, more dangerous, more deadly, than *vegetable* exhalations, they manifest their agency in the production of sudden death—in the development of disease which too often baffles medical skill—and in the slow but certain destruction of those who are more constantly exposed to their influence. It is necessary to state that the overcharged grave-yards which exist in the midst of this crowded metropolis, and in all large towns throughout the empire, are a chief source of these animal exhalations? Is it necessary to re-affirm that the *moral* and *physical* evils connected with the practice of intra-mural sepulture must *inevitably* continue so long as we continue to inter *unlimited numbers of dead bodies* in *limited* spaces of ground? It may be demonstrated that an acre of earth is capable of affording decent interment every year to 136 bodies, or thereabouts. In many of the parochial and other burial grounds, *each acre* of land is compelled to receive *annually* more than *one thousand* bodies, some even *two or three thousand, every year!*"

† "This high mortality has been traced to crowded lodgings, dirty dwellings, personal uncleanliness, and the concentration of unhealthy emanations from narrow streets, without fresh air, water, or sewers: the rapidity of decomposition, and the facility with which all kinds of animal matter become tainted and run into putrefaction, enable us to understand how, in a summer like the past, in which the temperature was unusually high, the diseases referable to an impure atmosphere should be so prevalent and fatal."—*Report of the Registrar-General.*

* Report of Poor Law Commissioners.

with the maximum of untaxed windows allowed by the law. One more window would possibly let a little sunshine into a sick room; but the landlord says No, the house would then have eight windows, and I should be liable to a tax of 16s. 6d. per annum. If the commissioners would examine personally the houses in which the poor live, in the close courts and alleys of the metropolis, they would be surprised at the number of dark staircases and filthy holes which, although in upper floors, are quite as ill ventilated and unfavourable to health as the cellars of Liverpool. And the permanent cause of this state of things is the option given to builders of saving money in taxation, by shutting out air and light."

Supposing it were shewn that Government could not give up the revenue produced by the window tax, or supply it in a far better manner, the present mode of assessment should at all events be altered, as operating most injuriously without advantage to any,—and a suggestion by Mr. Hickson would be worth consideration.

"I would submit," he said, to the Health of Towns Commission, "that all new houses should be assessed upon the principle, that every house built requires for light and air a certain number of openings in proportion to its cubic contents, and that these openings should be paid for whether they exist or not. This would at once remove every temptation to defective construction; and I think that after a house had been once assessed, the proprietor should be at liberty to make as many additional openings as he pleased; in fact, to turn the whole of the walls into glass if he thought proper. I most sincerely hope that the serious and earnest attention of the Commission will be given to this part of their inquiry. A great practical improvement can be effected without any loss to the revenue, and by a few very simple clauses. The majority of houses of the second and third class, will never be so constructed as to be healthful habitations while assessed to the window-tax as at present. I would pass a law to the effect, that if a house contained twelve squares on a floor, it should be liable for, say six windows on that floor; but that the owner might make six more windows on that floor if he pleased without any additional charge."

We are not disposed, however, to listen to any modification of this tax; it should be repealed altogether, at once and for ever.*

Amongst other documents on sanatory requirements now before us, is the memorial to the common council of the City of London adopted at a meeting of the inhabitants of the ward of Farringdon-without, presided over by Sir James Duke, M.P., in opposition to the proposed appropriation of a large sum of money to the making of a new street from King William-street to Queen-street. Opposed as we are to the course adopted by the corporation, we cannot agree with the able memorial in question, that this particular sum should be expended in making sewers and cleansing highways, rather than in widening streets, or forming new ones for the purposes of traffic. Still the memorial has considerable interest in our eyes, as shewing that at least one influential ward fully appreciates the importance of those sanatory reforms we are advocating. The memorial very properly reminds the common council, that "in addition to all the other and pressing obligations which rest upon that honourable court to promote the sanatory condition of the city, there is one arising out of the fact, that it was the corporation of the city that opposed Sir Christopher Wren's plan for the rebuilding of London, which was approved by the king, and which would have excluded all grave-yards, as well as all narrow, dark alleys without thoroughfares, and courts; as also all trades that use great fires, or yield noisome smells; while it would have secured perfect ventilation, and arteries of communication throughout the city, sufficient even for its present enormous traffic."

With corporation revenues exceeding 150,000*l.* per annum, it seems disgraceful that so little has been done in the city to reduce the amount of disease and mortality, and consequent poverty and wretchedness, which exists, and spreads from class to class until it touches the highest.

As to the cost of all the improvements most wanted,—good supply of water, clean streets, efficient sewerage and house drains, water-closets and good ventilation, according to the Health of Towns' Association, may be carried into every street and house of the metropolis for the small weekly sum of threepence halfpenny. "The work may be thoroughly done, and all immediate and contingent expenses provided for, by less than *a groat a week for each family*. Nay, it is confidently affirmed by those who have given most attention to the subject, that the refuse of our towns, properly applied, would alone defray all the expenses."

For this latter purpose one company has obtained an Act, and others are about to apply to Parliament.

In a letter to Lord John Russell by Mr. Morewood, on this subject, recently published, it is said,—

"The lowest estimated value of the sewage manure of the metropolis is 600,000*l.* per annum; the loss, consequently, since the last general war, is eighteen million pounds worth of fertilizing substance. No wonder we have had to exhaust the deposit of centuries in the Atlantic, and that hundreds of ships are now searching for Guano in the Pacific, whilst the Sperm Fishery there is left to other nations. 25,000 miles are traversed to fetch manure by ships, which cost the country at least three millions, whilst for less than half that amount, a Guano field, more valuable than Ichaboe, may be permanently secured to our agriculturists. Looking, therefore, at the proposed work merely in respect to the supply of manure, the existing and the prospective circumstances of the country may be said to demand the adoption of a plan at once so simple and so comprehensive for its preservation.

By the diversion of the contents of all the sewers of the metropolis, an immediate improvement will be afforded in the Thames, and in the course of a few years, good water would be within reach of the inhabitants.

Without instituting any comparisons between the modes by which it is proposed to effect the desired end, we must express an earnest hope that no long time will elapse before it is achieved. The gradual rise in the bed of the Thames, pointed out in our last number, is an additional argument against a continuance in our present most injudicious and wasteful practice.

The present moment is favourable to efforts to procure the reforms we desire; do not let it be neglected. The government are well disposed towards them; indeed, we may venture to say, some general measure is actually in contemplation. The vestry of Kensington recently appointed a committee to prepare a bill for the improvement of that parish, with the view of submitting it to Parliament; before proceeding, however, it was thought expedient to inquire officially of the government, if they contemplated bringing in any bill which might render this step on the part of Kensington unnecessary, and the reply was in the affirmative. We would suggest, nevertheless, that a committee be immediately appointed by every parish in England, to co-operate in effecting perfect sanatory reforms, and the adornment of the country. We assert, without fear of contradiction, that this is the interest of every man, woman, and child, in the kingdom.

* By a Parliamentary paper, printed in the session of 1845, it appears, according to *The Times*, that the total amount of window duty in the year ending the 5th of April, 1840, was, 1,486,023*l.* In the year following it was 1,774,638*l.*; in 1842, 1,775,151*l.*; in 1843, 1,776,789*l.*; and in 1844, it was 1,786,514*l.* In the last session Viscount Duncan obtained the following return:—"Accounts of the total number of houses charged with the window duty in Great Britain on the 5th day of April, 1840, 1841, 1842, 1843, and 1844, and of the net amount of window duty received on the 5th day of April, 1840, 1841, 1842, 1843, and 1844." In the year ending the 5th of April, 1841, the number of houses charged was 450,913, and the net amount of duty received was 1,545,106*l.* 8s. 11d. In 1842, the houses numbered 447,420, and the amount was 1,830,457*l.* 16s. 11d. In 1843, houses 446,108, and amount 1,726,278*l.* 3s. 9d. In 1844, houses 447,983, and amount 1,699,809*l.* 2s. 11d.; and in 1845, the houses numbered 453,738, and the net amount of duty received was 1,743,401*l.* 3s. 2d. In the year 1844, Bath paid 21,551*l.* in window duty; Birmingham, 11,249*l.*; Brighton, 15,912*l.*; Bristol, 14,683*l.*; Cheltenham, 7,122*l.*; Clifton, 8,169*l.*; Leeds, 7,175*l.*; Liverpool, 29,830*l.*; Manchester, 19,907*l.*; Newcastle-upon-Tyne, 6,010*l.*; Norwich, 6,674*l.*; and Plymouth, 11,196*l.*

## THE OBJECTS AND RESOURCES OF ART IN INTERIOR DECORATION.

The few leading principles of art, which now seem so far unquestionable, that all are surprised there should ever have been any hesitation in admitting them, mainly are those which it had been the most difficult to ascertain. The doctrines, which meanwhile usurp the place of such admitted truths, are numerous and conflicting; asserted, whilst often incapable of being supported by reason, it requires many years to escape from the errors they originate. The history of architecture during the present century, and of the many dogmas and theories in style, which are now unsanctioned or debated, might indeed deter us from the attempt to discover and enunciate any of the fundamental principles of an art, where the search seems so often to deviate. But, feeling that no principles in interior decoration had then been published, which had received general sanction, or of which the form of expression was not more that of a fashion, soon to be succeeded by another, we endeavoured in a former volume,* to convey the explanation of such, as we deemed were so far able to be substantiated, as to be worthy of being acted upon. We had last to consider the general principles of form and colour, applicable to the decoration of walls, ceilings, and floors; and had also to notice the injury to the art of interior decoration, through so many of its works being designed by men who were not artists, instances of which are the tasteless ceilings, constantly put up in ordinary houses. We now think it necessary to refer to certain other principles, connected with the choice of a particular character of decoration, according to the purpose of each apartment, and to consider, what materials may be deemed the fitting resources of the art.

The principal object of an apartment being its actual *use*, whether on occasions of festivity, or for ordinary occupation, it does appear a mistaken practice, now too much sought after, to embellish it in such a manner, as may overpower the more important adjuncts of the occasion, or may interfere with the serenity of mind, which one might desiderate in a home. A far more satisfactory result will follow from a system of decoration, in which every feature does not at once strike the eye, but in which much beautiful detail is left for examination, rather than when the sole effect is one of dazzling colour, overpowering accessories, and much of the beauty of form, in the decorations themselves. The mistake in the Princess's Theatre, where the decorations are such as interfere with the main object, namely the effect of the stage, is perhaps worth mentioning as a parallel case. In the domestic circle, or in the library, many would delight in being surrounded with elegant outlines and combinations of colour, and these would reflect upon the spirits, and accord with the kindred current of thought; but most men would rather avoid the constant companionship of splendour. The labour or expense of production is assumed to be the same in each case. A chimney piece in deal, enriched as we have seen inferior examples in many old London houses, might be far preferable to one of Cararra marble, or any other

* Vide Vol. IV.—"Colour in internal decoration: Questions affecting its treatment;" "On the adaptation to furniture and interior decoration of woods not generally employed;" and "Principles of Art, considered in reference to the decoration of rooms."

dazzling material or colour. It is, of course, outline and colour, that are the implements, by the judicious use of which, elegance is attained, and the different materials available, are of course mainly valuable, in the degree in which they contribute to these elements. Intrinsic, or mercantile value, has hardly any concern with the effect of a work of art, as such, and it would rather betoken a want of skill in the designer, should the main attraction be the price, or the scarcity of the material. And, the use of the richest treasures of the quarry, or the mine, will never entirely supply the want of beauty of form and happy arrangement of colour, unless they have also and chiefly, evidence of the application of design.

The decorations, therefore, though they may court examination, and afford an increasing fund of delight, should never be in opposition to the purpose of an apartment. And, in all other particulars, they must be equally accordant, not only as regards the time of day at which the room will be occupied, but also, so that the decorations may not be inexpressive of the use. Thus an entrance, which is little more than a passage, is hardly the place for great enrichment, as any thing intended to detain the eye, would there inevitably fail in its effect. Nothing more than a passing effect of magnificence, such as may be a fitting preparation, and a medium between the plainness—speaking comparatively—of the exterior, and the ornamental character of the principal rooms, should be attempted. The quantity of light admitted would also be for similar reasons, a point for judicious management. Still, the decoration may appropriately convey some intimation, in a dwelling, of the tastes of the owner, and in a public building, of the purpose which it serves. The doorways to the different rooms, also, instead of being quite uniform, as they frequently are, might be judiciously varied in details, so as to bespeak the nature of the apartment, to which they open.—The principle, generally pertaining to entrances, may be considered likewise applicable to a large hall of entrance, with the exception, that the size may give it an appearance of purpose, in some measure to be associated with that of an ante-room, where it may be necessary to pause, or wait, and where consequently, some occupation for the eye may be pleasing and desirable. And, where space for the disposal of works of art, is not otherwise adequate, this part of the house becomes of too great value, to allow of the rigid application of our principle. Mr. Eastlake approves of the common practice of placing sculpture in the principal hall; for, a statue having an advantage which a painting generally has not, that of being seen from any point of view, may command attention where an oil painting would not. If paintings be placed there, they should be in fresco, since these do not require the best light, and can be examined from several stations.—Ante-rooms are better adapted for decoration which courts examination, than halls, because of their obvious purpose, and they may therefore claim a different treatment to either libraries or dining rooms, where the attention is supposed to be otherwise engaged. But, in general amount of embellishment, they should be strictly subordinate to the rooms, of which they are the entrances.—Staircases may be classed with halls, and here the objections, urged against large historical or allegorical subjects in ceilings, may be considered. The decorations, here and in all cases, should "appear to grow out of, and complete the architecture.—In a dining room, it may be questioned, whether the time at which it is used, and the purpose to which it is almost confined in many houses, will render much use of painting desirable. Mr. Eastlake thinks that portraits of celebrated individuals, and landscapes, though they are not likely to be duly examined, at the time during which the principal purpose of the room is fulfilled, may convey associations, to which the spectator is supposed to be alive at all times. But he allows, that a dining room, used for nothing else, is not the place where fine works of art should be bestowed, and he recommends small frescos and arabesques, having an air of elegance and festive splendour, in great variety, calculated to please the eye and the imagination, merely.—In libraries, it seems to have been much the custom, to banish every thing that might interfere with the supposed only purpose of the, apartment. But in the library of a man of taste, or of an artist, paintings and sculpture cannot be deemed always obtrusive; but coloured decoration should be used sparingly, and with judgment, being perhaps almost confined to the books themselves, or their cases. Still, the introduction of stained glass carries with it so many beautiful associations, that we might be disposed to retain it, where the mode of decoration would seem rather to aid, than to be opposed to the character of this place of study and meditation.—In most of the particular principles, to be considered in the decoration of drawing rooms, there would appear to be less danger of mistake than in other cases, since this being the apartment always devoted to hours of leisure and enjoyment; the decoration is governed only by such principles as we have before mentioned. The highest efforts of the pencil or the chisel, will obviously find here their most appropriate locality.

In the choice of materials, we seem to have a larger number for the exercise of art, than have hitherto been available, yet it is remarkable that few of them are employed to any extent. Plastering, paper-hanging, painting, and gilding, to which are added, festoons of drapery, are not the only means at hand; and yet it is by very slow degrees, that other resources are brought into use. We have native marbles, which may be obtained at a moderate expense, and which almost equal those of Italy; porcelain slabs and tiles can be prepared and enriched with paintings; and the beauty of the natural appearance of foreign and English woods is, as we have said, quite unappreciated. The resources of glass and enamel, whether used colourless, stained, or in the form of mosaic, are scarcely examined. Glass and porcelain might be employed more frequently than at present, not only for enrichments on walls, for panels of shutters and doors, and for handles, but for many other purposes, as the shafts of columns, in which, it has been suggested, a very beautiful effect would be produced by making them with a gilt metal core in the centre of a glass tube. Marble cement, scagliola, parquetried floors, wrought and cast iron, and stamped leather are all materials, with which every body is acquainted, but which it is remarkable, are very sparingly used in interior decoration. The discovery of the electro-type and electro-gilding, which might afford the means of most delicate enrichment, has hardly been turned to any account. Indeed, it is curious, that whilst these and similar inventions might be constantly enlisted, there should seem to be so little anxiety, to produce novelty of effect by such obvious and legitimate means. It ought not to be necessary to repeat now, that, in the words of M. de Chateauneuf, "the most durable materials are the most economical, and they carry with them a nobleness of appearance, not attainable by even lavish ornaments, costly at first, yet of a perishable nature. Consider what large sums are expended in the course of a few years, in keeping up houses that have to be repaired or refitted up, from time to time, as regards all but their bare walls, in consequence either of the materials getting soiled and shabby, or of the changes of fashion which, having been the only guidance in matters of taste at first, must continue to be consulted or conformed to, otherwise the whole looks out of date; whereas, that which is originally beautiful, independently of any particular fashion of the day, will so remain, let the caprice of fashion change as it will. I do really believe, there are many rooms that would have cost their owners less, had they been entirely lined with marble, and otherwise ornamented with fresco painting and mosaic, than they have done, in consequence of being furbished up every now and then by decorators and paper-hangers; and often in very questionable taste, while after all, the effect at the time, is at the best of an inferior kind." Architects cannot too strongly impress these considerations, evident to themselves, upon the public.

Some novelty would be gained in interior decoration by following the principle of Gothic architecture, which makes all construction apparent. Thus the hinges of doors could be shown, and in some apartments the beams and joists could be chamfered, and moulded, so as to produce an effect, superior to that of a flat, unbroken surface of plaster. Of course, in all such modifications, it is necessary to consider whether the previous method has really any recommendation; for if, as in the prevention of the passage of sound, in the case of the ceiling, the object could not be as well attained in the altered method of construction, it would not be desirable to make any change. Plaster work, not being adapted to represent any other material, should be treated precisely as what it is. Therefore, it appears a very useless and unsatisfactory attempt to show the joints, in imitation of masonry. A more appropriate enrichment would be by stamping a pattern upon it, whilst wet, being somewhat similar to the ornament of the Alhambra. Colour might, perhaps, be given to the surface, or the hollows, by the same process; and should this be accomplished, several colours might be printed at once, as in one method of block calico printing.

## ROYAL INSTITUTE OF ARCHITECTS.

An ordinary meeting of the Institute was held on Monday evening last, Mr. Tite, V.P., in the chair. Amongst the donations announced was Mr. David Roberts's fine work on the Holy Land, presented by Mr. S. Angell, V.P., which the chairman justly eulogized as honourable to English art. The first copy of a new edition of the catalogue of works in the library was laid on the table.

A communication having been received from Mr. J. B. Papworth, stating that he had retired from the practice of the profession, the meeting, with expressions of considerable respect, unanimously elected Mr. Papworth an honorary member. By a coincidence, Mr. J. W. Papworth was admitted a fellow at the same meeting. We were glad to hear that a number of Mr. Papworth's friends in the profession have subscribed to present to him some slight testimonial of esteem.

Mr. Donaldson read a letter from M. Girault de Prangey, of Paris, acknowledging the honour of his election as corresponding member.

Mr. Angell then read a paper descriptive of the ancient city of Syracuse, which we shall give at length next week.

Mr. Scoles, honorary secretary, exhibited a drawing of an ancient bath in Syracuse (he considered it Roman), the vault of which was formed by series of earthen cylindrical tubes, each something like a wine-bottle with the bottom out, the smaller end of which entered the larger end of the tube next it, and so without involving the principle of the arch, formed a vault, in this case seven feet in span. The tubes were filled with cement, and covered on the top with a layer of tiles.

Mr. Donaldson communicated a paper by Mr. Browning, architect, on a mode of measuring and valuing carpenters' and joiners' work, with the view of obtaining greater correctness than by the mode now pursued.

The Chairman said, architects had been told recently, in a work which had attracted some notice, that this was a matter with which they should have nothing to do. But the fact was, they couldn't help it, and moreover would not do their duty towards their employers if they neglected attention to it. He had himself no liking for measuring and valuing, but nevertheless he was obliged to do it. As to any change in the mode of measuring, he thought it would have to come from the operatives rather than from the profession. (?) That it was much needed there could be no doubt. The mode of measuring stone was especially empirical. Measuring first the cube stone, then "face," "bed," and "joint," as plain work; then the sunk work; then the moulded work; led to a false result. Sir Robert Smirke, at the Post Office, had struck a blow at the system when he refused to allow the bed and joint to be measured, and gave an increased price for the cube stone. The engineers had cut the knot which the other attempted to untie, by measuring the cube stone, and nothing else, including all labour in the price. This, however, was manifestly an unsatisfactory mode. Returning to the general question, architects were bound to see that their employers were fairly dealt with. It was easy to certify an amount, but no man should do so unless satisfied as to its correctness. The art could not be separated from the business. Measuring might be delegated to others, but even then

the architect was justly held responsible. It was so also in Greece, where, if an architect's estimates were exceeded in the execution of the works, his own fortune was liable for the difference.

## INSTITUTION OF CIVIL ENGINEERS.

### IRON DOCK-GATES.

Sir John Rennie, president, in the chair. The first meeting of the session was held on Tuesday evening, January 12th, when a paper by Mr. Shears was read, descriptive of the iron dock gates constructed by Messrs. Rennie for the Russian Government, and erected at Sevastopol, on the Black Sea.

Sevastopol is very peculiarly situated amidst rocky ground, rising so abruptly from the shore, that there was not space for the buildings necessary for a dockyard. On account of the depth of water close in shore, and other natural advantages, the emperor determined to make it the site of an extensive establishment, and as there is not any rise of tide in the Black Sea, and the construction of cofferdams would have been very expensive and difficult, in such a rocky position, it was decided to build three locks, each having a rise of ten feet, and at this level of thirty feet above the sea to place a main dock, with lateral docks, into which vessels of war could be introduced, and the gates being closed, the water could be discharged by subterranean conduits to the sea, and the vessel being left dry, could be examined and repaired even beneath the keel. A stream was conducted from a distance of twelve miles, to supply the locks, and to keep the docks full; this, however, has been found insufficient, and a pumping engine has since been erected by Messrs. Maudslay and Field, for assisting. The original intention was, to have made the gates for the docks of timber, but on account of the ravages of a worm, which it appears does not, as in the case of the *teredo navalis*, or the *terebrans*, confine itself to the salt water, it was resolved to make them with cast-iron frames covered with wrought-iron plates.

There are nine pair of gates, whose openings vary from 64 feet in width, and 34 feet 4 inches in height, for ships of 120 guns, to 46 feet 7 inches in width, and 21 feet in height, for frigates.

The manifestation of such masses of metal as composed these gates demanded peculiar machines; accordingly, Messrs. Rennie fitted up a building expressly with machines constructed by Mr. Whitworth, by which all the bearing surfaces could be planed and the holes bored in the ribs, and all the other parts, whether their surfaces were curved or plain. The planing was effected by tools which travelled over the surfaces backward and forward, cutting each way; the piece of metal being either held in blocks, if the surface was plain, or turned on centres, if the surface was curved. The drilling was performed by machines so fixed, that the pieces could be brought beneath or against the drills in the required direction, and guided so as to insure perfect uniformity and accordance between them. Travelling cranes were so arranged as to take the largest pieces from the wharf and place them in the various machines, by the agency of a very few men, notwithstanding their formidable dimensions; the heelposts in some cases being upwards of 34 feet long. Each endless screw, for giving progressive motion to the cutting tools, was 45 feet long. Some idea may be formed of the manual labour avoided by the machines, when it is stated, that the surface planed or turned in the nine pairs of gates equals 717,464 square inches; and in some cases a thickness of three quarters of an inch was cut off. The surface in the drilled bolt holes equals 120,000 square inches.

The paper gave all the details of the construction of the gates, and the machines for making them, and was illustrated by a series of detailed drawings.

An interesting discussion followed, chiefly on the peculiarity of the site selected for the docks, and the supposed ravages of the worm in fresh water, as it was of unusual occurrence.

It seemed to be the opinion, that temperature of climate influenced the ravages of these insects. The meeting was held in the library, as the new theatre was yet too damp to be used with safety. It was announced the meetings would be held there in February.

## GREAT BURSTEAD CHURCH, ESSEX.

Although Great Burstead is but a village, it gives name to the parish, including Billericay, a market town, from which it is situated about one mile. The church is an interesting one, and rather larger than the parish churches in the neighbourhood. It consists of western tower, with spire; nave and south aisle; chancel and south chapel; and north and south timber porches.

The south aisle and chapel are under a continuous roof; but the separation of nave from chancel is marked externally in the usual manner: the whole being roofed with tiles.

One of the best features of the church is the stone, embattled, perpendicular tower. It is divided into three stages by string courses, which have almost crumbled away. In the highest stage are four windows, all alike; viz., of two lights, cinque-foiled, square-headed, with dripstones. The middle stage contains, on the west side, a two-light, pointed, perpendicular window, with tracery (internally well splayed); and on the north side a cinque-foiled window.

On each side of the tower are about forty very small square holes, arranged in two lines. It is supported by buttresses, placed at right angles (at the north and south-west corners); these are of two stages, with plain slopes, and commence a little less than half way up the tower. On the western side is a pointed doorway, with bold mouldings continued down the jambs. The spire is apparently of shingles; it is rather high, but the base of it is not large enough for the tower.

The nave has on the north side (beginning at the west end), a three-light square-headed Tudor window, with dripstone; a small lancet, on the east side of, and close to, the north porch (the internal splaying of this window is very wide); and a three-light, early perpendicular window, with tracery and dripstone,—a very good window. In the south side of the south aisle are two two-light, pointed, early perpendicular windows, with tracery, but without dripstones; one on each side of the porch. At the west end of this aisle is a three-light Tudor window, under a four-centred arch, with dripstone.

The porches are opposite each other, and are placed in the second bay from the west end. They are fine, with good, high pitched, timber roofs; that on the south has the best roof; and that on the north a fine barge board. The latter is foliated, and on each side, between the eaves and the featherings, or cusps, a line may be traced, with a representation of crockets upon it. It is not cut deeply, and cannot be seen at any distance. The roof of this porch has but two principals, each being composed of a tie-beam with pierced spandrils, wall-plates, and king-post with struts. The north door is four-centered perpendicular, under a square dripstone, with notch heads; having angels in the spandrils, bearing scrolls. On the right hand of this door is a very perfect "benatura." It is recessed, square-headed, with dripstone, and were it in the interior, might easily be mistaken for a piscina.

The south porch has at the entrance a piece of framework, consisting of boarding up to the eaves (a four-centered doorway being cut through it); and from this springs a king-post, with a collar, supporting the gable end of the roof. The roof is simply a row of principal rafters on either side, with a collar some distance below the ridge piece, connecting each with that opposite; the beams are thick, and the effect very good.

The south doorway is plain pointed; and on the door is a good escutcheon: it is circular and pierced.

The chancel contains, on the north, one three-light window, under a four-centred arch, with dripstone; and a three-light square-headed Tudor window, without foliations, high up in the wall, and very short.

The east end is bricked up, and plastered over; and where the east window stood (perhaps still stands), a monumental tablet has been stuck up.

The chapel has at the east end a three-light window, under a four-centered arch, exactly similar to that in the north wall of the chancel, and that at the west end of the south aisle: and the two windows on the south are of the same design.

*Interior.*—The nave and chancel are separated from the south aisle and chapel by a row of arches resting on octagonal pillars, with moulded capitals and bases.

The pavement of the church has been lowered and made level; the ground exteriorly being much higher; there are no chancel or altar steps, and the pillars are uncovered below the bases, to the depth of about two feet.

Five principals of the nave and chancel roofs remain, each consisting of horizontal tie-beam, with king post and four struts or braces, two to support the ridge piece, and two the rafters.

Through the pillar against which the chancel screen must have rested, a small doorway is cut (consequently this pillar is much thicker than the others), which opens into the south aisle; probably it was formerly connected with the rood loft. In the south-east corner of the chancel is a perpendicular piscina; it closely resembles the benatura in the north porch, with the exception that it has no dripstone.

Here has been erected a large altar-piece, of which it cannot be said (to use the words of a last century topographical writer) "that the style is in accordance with the edifice in which it is placed."*

The south chapel has a groined oak ceiling, with bosses. In the south aisle are several original low open seats, the ends having carved panels; the design is good, and they are all alike. In the windows of this aisle are some fragments of stained glass; one contains a coat of arms. At the west end of the nave is a large gallery, and under it is the "old oak chest," covered with bands of iron, and secured by three padlocks. Close to this stands the font; it is octagonal, with moulded stem and base. There are no monuments of interest.

### HISTORICAL NOTICE.

In the reign of Edward the Confessor, the lordship of Great Burstead (then known as Burghesfedam), consisted of one manor and ten hides, and belonged to Ingar, a Saxon theyn.

William the Conqueror having confiscated it, gave it to his brother, Odo, Bishop of Bayeux. The latter was deprived of his immense possessions, for his participation in a plot against Rufus in 1088, and this manor remained in the crown for many years.

The first mention of it after this event is in 1263. "The Abbot of Stratford held of the donor of the Mareschall," Mareschalls, Earls of Pembroke, "half a fee in Bordestedd."—*Inq.* 47, H. 3.

Thomas, Earl Stafford, who died in 1393, had half a fee in Great Burstead, which the same abbot held.—*Inq.* 16, Ric. 2.

And Edmund Stafford (died 1403), and Humphrey Stafford, Duke of Buckingham (died 1459), possessed each half a fee.

John Mowbray, in 1433, possessed two fees and a half. These show the lords paramount of the lands in this parish.

It contains three manors; viz. Great Burstead, otherwise known as Burstead Grange, West House, and Blunt's Walls. The first belonged to the Cistercian abbey of Stratford Langthorne, which possessed most of the lands in this parish; but only some of the donors of them are known.

In 1262, they held a fee of Earl Mareschall's donor unknown. Henry III., in 1253, and Edward I., in 1285, granted the abbot and monks a market and fair in Great Burstead. Their greatest benefactor was William Langdich, who in 1358, granted them one messuage and 345 acres of arable and pasture land, and 44s. rent in Great Burstead; held of the Earl of Gloucester. In 1388, John Henny, and Rohesia, his wife, gave them 60 acres of arable land, and 1 acre of wood in this parish. In 1476, Edward IV. granted a market and two fairs in Billericay.

In 1515, this manor was let for thirty years for 31*l.* 7*s.* 4*d.* It was granted by Henry VIII., in 1539, to Sir Rd. Riche; and remained in this family till 1600, when Sir Edwin Riche sold it to Sir John Petre, knt., in whose family it still remains.

The manor of West House belonged to the same abbey, and at the dissolution it was granted to the same Sir R. Riche. He sold it; and, passing through various hands, it came, during the last century, into the possession of Guy's Hospital.

* This is stated of a "large and commodious pew," erected by one of the Bishops of Hereford in the choir of his cathedral, during the last century.

The manor of Blunt's Walls was so called from an ancient family of the name of Blunt, and Walls was added (on account of some earth works here), to distinguish it from the manor adjoining, in the parishes of Butsbury and Stock, held by them. This estate belonged to the priory of Mountnessing. In 1525, it was granted, among many others, for the endowment of Wolsey's colleges; but on his disgrace, falling to the Crown, it was granted to Sir Richard Page, knt., in 1530, for the term of his life, without any account. At his death, in 1554, Henry sold it for 191*l.* 19*s.* 5*d.* to Sir Wm. Petre; it still belongs to that family.

The hamlet of Billericay is first mentioned in 1843, as the hamlet of Belenca. There is a chapel here; the founders are unknown, but supposed to have been the Sulyards, of Flemyngs, in the parish of Runwell.

It was a chantry chapel, but mass was sung and sacraments administered; which last was not the office of a mere chantry priest, so that it appears to have been partly built for the accommodation of the inhabitants of Billericay, as, in the winter, inundation prevented them from attending the parish church.

In the book of Chantries, after other information, is this entry:—

| | |
|---|---|
| The value of all the goods, jewels, &c. | |
| One small bell praised at ..... | 1*s.* |
| One hutch ..... | 1*s.* |
| Two vestments, one surplice and other implements ..... | 2*s.* 6*d.* |

King Edward VI. sold this chapel and the chantry lands to Mr. Tyrell, who retained the lands, but sold the chapel to the inhabitants of Billericay. It was re-consecrated in 1693, by the Bishop of London, and dedicated to the Virgin Mary. Mr. Bayly, circa 1654, left 20*l.* for the education of ten poor children.

The great tithes of this parish belonged to the abbey of Stratford Langthorne, being appropriated to them; and they had the advowson of the vicarage, to which they presented till the dissolution. Then they both passed through the family of Riche, into that of Petre.

Abridged from "Morant's Essex."

AMATEUR.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*"Effossion" of Roman Baths in a high state of Preservation at Baden.*—In the middle of last year, the remains of a fine Roman bath dressed with marble—the internal round space inclosed by a square of walls and flanked by semicircular chambers in the four angles, were discovered; but have been since *demolished*, for the sake, as it would seem, of testing the durability of these ancient fabrics. Luckily, however, another discovery has taken place very lately, near the church of the Holy Sepulchre, at the foot of the *Spring-hill*, which shews, how extensively these thermal waters had been used by the Romans and the inhabitants of Southern Italy. The first traces even, at some inconsiderable depth, bespoke the existence of a Roman bath. The angle of the building, first discovered, exhibited two walls, which were internally covered with oblong, somewhat rounded, perpendicular tubes of burnt clay (in the clear 4 in. by 2 in. and 1 foot high)—which formed a row of connected air-tubes open *below*, whose destination for heating the bath could not be mistaken. The floor, supported by small pillars, contained a hollow space, also for the sake of heating. The earthen flags of the floor, burnt with that perfection peculiar to the Romans, measure 2 feet square each, and are 2 in. thick. They are placed on a stratum of lime, mixed with fragments of bricks, under which again, a floor, formed like that above, is situated. This whole flooring (3 in. thick), is supported by small round pillars of brick, measuring 7 in. in diameter—which, surmounted by an abacus, are placed at a distance of 12 in. from each other, in rows parallel to the walls, and thus form a hollow space 3 feet 2 inches high. The extent of this bath-chamber has not been yet ascertained, but seems considerable. The analogy with the thermæ of Pompeii, and the account of Vitruvius, leave no room for doubting that a vapour-bath was here contemplated. The difference between the Pompeian and Baden building is merely, that in the former the supporting pillars are *square*, and that there the walls of that *Calcidarium* are not covered with tubes, but square brick plates, fixed with iron to the walls. Whatever further excavations may yet bring forth—still, it is certain, that in no other ancient building the hollowings of the floor (*suspensura*) have been so well preserved and demonstrated, in none the lathing of walls with earthen tubes. It is also important to observe, that Roman houses effossed at Sinzheim and Pforzheim, possess also hollow floors, although there no use for hot baths was anywise to be supposed.

"*Freemasonry in its true Signification.*"—Under this title Dr. G. Kloss has published a work, dedicated (by permission) to the great Orient of Frankfort. Dr. G. denies all mystic and mythic origin of the fraternity, and puts its date at *scarcely two hundred years*, having then sprung up from the guilds of the great masons (*Grossmannes?*) or stone-masons in England; and says, that the ideas of primordial Christianity, Templarism, Rosecrucianism, and secret knowledge, had never entered the heads of the founders, either in London, or York, and Edinburgh.

*Cornelius's Opinion on the lately discovered Fresco Painting of Raffaelle, at St. Onofrio, Florence.*—This splendid art-relic, which, moreover, had the good luck to remain unscathed by the hands of *cobbling restorators*,—has given rise to much dispute, being first ascribed to Raffaelle, but subsequently to the Florentine painter, Neri de Bicci, who died twenty-two years before Raffaelle was born. As, however, the celebrated engraver, Mr. Jesi, has undertaken to publish it in a large-sized plate, the public will have ample means of judging by themselves. The following is the drift of a letter addressed by *Cornelius* to Messrs. de la Porta and Zotti, at Florence. According to his opinion, this picture (representing the Last Supper) is to be placed beside the finest of the above capital—conjointly with those del Carmine and de la Annunciata. "I recognize,"—continues Mr. C.—"in this wall-painting a depth of sentiment and a characteristic execution, as neither the master of Raffaelle, nor any contemporaneous painter, could impart to their works.—Everywhere that enlivened genius and divine purity are manifest, by which Raffaelle overtops all other painters. In the *ensemble* of composition, that same architectural style is to be recognized, which the Urbinate had so fortunately introduced in the pictures of the Vatican. And what concerns those beauteous, infantile figures, to be seen in the skies—they at once bespeak the hand of him who alone could depict images so true and lovely."

## FREEMASONS OF THE CHURCH.

ANTIQUITIES OF CAMBRIDGE.—DISCOVERIES IN WESTMINSTER ABBEY.

JAN. 12.—The first meeting for the present year was held in the Society's new rooms, No. 10, Carlisle-street, Soho-square, Mr. French in the chair. Among the persons present, was the Right Rev. Lord Bishop of Tasmania.

The Rev. David James, M.A., rector of Kirkdale, was elected an honorary fellow, and one of the chaplains. Mr. George Godwin, F.R.S., was also unanimously elected an honorary fellow.

Mr. W. P. Griffith, secretary, moved,—"That a petition be presented to both Houses of Parliament, praying that the immediate attention of the Legislature may be directed towards an improved drainage and ventilation of the present wretched courts, alleys, yards, &c., throughout London; and further, that the window tax, or *tax upon light, health, and morality*, may be repealed forthwith." (We shall be glad to see this example extensively imitated.)

Mr. W. Harry Rogers was then called upon to read some observations upon the antiquities of the University of Cambridge. He commenced by saying, that it must be evident to those who are acquainted with the many treasures yet existing in this ancient seat of learning that to do justice even to a portion of them would require far more than the limited space of time now allotted to him, since a volume alone might be devoted to the Royal Chapel of Our Lady and St. Nicholas, to the church of the Holy Sepulchre, or to the Early English architecture of Jesus College. That a portion of ground situated on the banks of the Cam was at a very remote period occupied by some kind of university, is easily proved, and it is nearly as certain that Saint Felix in the early part of the 7th century forwarded within its walls the study of theology. Some, indeed, placing perhaps too much reliance upon the truth of legendary lore, have endeavoured to represent that many hundred years before the birth of Our Saviour, a modest species of learning was cultivated in Cambridge, and have revived from mouldering chronicles the names of its first philosophers. They have considered themselves borne out in their supposition by the remains of British art, which have been discovered in the neighbourhood, added to the now universal belief that the extensive mound known as the Castle Hill, situated at the north-western extremity of the town, is entitled to an earlier date than that of the Roman invasion. But to leave theory for fact, we know that the eleventh and twelfth centuries combined to strike the centre of that circle of celebrity of which Bacon, Milton, Porson, and Newton have since formed illustrious radii. At the period the university became suddenly rich, and made the wisest use of its liberal resources, Europe was fast merging from the darkness and ignorance of ages. Throughout her colleges and ecclesiastical schools, was added to the old routine of divinity, the germ of a more refined education. The trivium and quadrivium of learning, which comprised grammar, logic, rhetoric, poetry, arithmetic, geometry, and astronomy, were now considered necessary to the dignity of the clergy. These seven important studies are curiously enumerated in the old monastic distich:

Gramm: loquitur, Dia: vera docet, Rhet: verba colorat,
Mus: canit, Ar: numerat, Geo: ponderat, Ast: colit astra.

The next step was the interference of royalty in the affairs of the University, when in the first instance, Henry III. took into consideration the proper means for establishing its permanency, and granted to its members an express charter of privilege in 1230. Mr. Rogers then described the various memorable endowments since lavished on the University, and called the attention of the Society, particularly, to the architectural improvements at present in hand in various colleges; and alluded to many of the smaller works of antiquity which some of them contain. With regard to King's College Chapel, he considered that the carved stalls were for the most part coeval with the organ screen of Anne Boleyn, and that the tabernacles only were the gift of Thomas Weaver in 1695. Some extracts were then given from original documents in connection with the erection of the Chapel-roof by the Society of Freemasons. At the close of the subject, Mr. Rogers presented a metallic rubbing of the brass of Sir Roger de Trumpington, from the village of Trumpington, near Cambridge, and said to be the most ancient in existence.

This elicited some valuable remarks from Mr. Wyckham Archer, who suggested, that if the Rev. the Dean of Westminster would permit the stones in the floor of the Abbey to be taken up, there would be found under them many beautiful brasses, which had been turned over during the Civil Wars, for protection. The Bishop of Tasmania undertook to solicit the Dean's permission, observing, that the turning of stones would not be new to him.

CHALK FOR FUEL.—A paragraph on this subject, which was quoted from our pages by all our contemporaries, has led to a letter to *The Times*, stating that, in consequence of the suggestion, in Dunstable, where chalk abounds, the hint has been taken advantage of by Mr. Clarke, chemist, who, after a few experiments, has succeeded in greatly improving the raw material, by drying it in a kiln till the whole of its own watery property is evaporated, after which it is thrown into a vat containing some chemical compound, and, after remaining until it is thoroughly saturated with the preparation, it is redried, and is fit for use, giving an intense heat.

## ANTIQUITIES OF TREVES.

HOUSE NEAR THE PORTA NIGRA.



### ANTIQUITIES OF TREVES.*

Having spoken so fully on the principal, or at least the most perfect, Roman antiquity in Treves, in our previous paper, we shall now take a more rapid view of the other erections of the same period, with which this ancient city abounds.

The palace of Constantine is the popular name bestowed on one of the most interesting of these remains. It is built entirely of the ordinary flat Roman tiles, which have a singular effect when used in the construction of so large a building. The mortar between them is of great hardness, composed in the ordinary Roman method, with pounded tile scattered through it, and which renders their buildings all but indestructible. It measures 97 feet in height, and 225 feet in length. It had originally a tower at each angle, but one of them is now down. When perfect, the front was pierced from end to end, with two rows of open, round-headed arches, one above the other; those of the lower tier encircled with two concentric ranges of brick voussoirs, the upper with three. In the tower were likewise similar apertures, disposed in the same manner; but all of them, in later times, have been filled up, and small square windows inserted in them, of the fashion adopted at the end of the 17th century, when the building was converted into an electoral palace. At that time the greater part was destroyed, leaving only now standing the western side of the building, with the north-eastern semi-circular tower, it having originally been a quadrangular erection with similar towers at the angles.

* See p. 14, *ante*.

Since the occupation of Treves by the French, it has been used as barracks, into which they had converted it. It is now, however, undergoing renovation, and restoration to something like its original purity. Workmen are busily engaged in clearing away the modern additions, and we were agreeably surprised at finding bricklayers employed in pounding tiles, to work in the mortar necessary for the restorations in the style of the older work. It is now said to be the intention of the King of Prussia to convert the buiding into a church for Protestants.

The Thermæ are close to this building, and it has been doubted whether they may not have been originally all one; indeed the palace just described has been called by some writers a mere covered entrance to them, the large open arches all round being a shelter for promenade. Others call it a hippodrome, a basilica, a hall of justice, and a hall of commerce. The thermæ themselves are doubted, and by some called a theatre. It is not easy to describe them in their present ruinous condition, except as a grand mass of building, imposing in decay, and offering much to reflect upon and study.

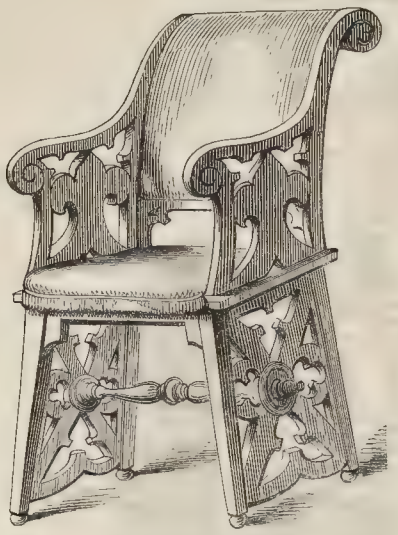
The Amphitheatre, about which there can be no conflicting opinion, is constructed on the side of a hill, so that the slope on one side forms one-half of the embankment upon which the seats were placed. The seats are now gone, and the building a mere wreck, but the wall is perfect round the lower area, and the trench dug beneath it in the slaty rock, which forms its floor. The entrances are still perfect enough to comprehend those devoted to carriages and horsemen, and those used by foot passengers. The length of the amphitheatre is 219½ feet, its breadth in the centre 155 ft. The whole of the neighbourhood contains traces of Roman work, and is worth exploration.

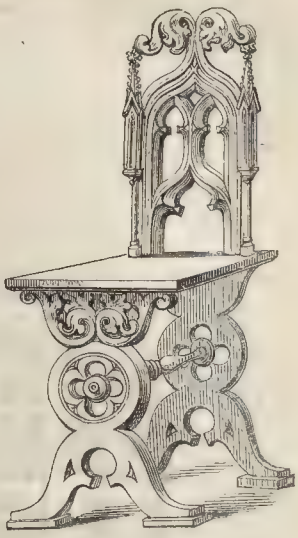
Besides the bridge, the foundation of which is Roman, there is also in Treves two great square towers, said to be the work of that people, one in Diedrich Strasse, the other in *La Cour de la Regence*. The small windows in them are separated by a pillar. They have been believed to be towers of the original Roman wall, but it is now doubted whether they are older than the ninth or tenth century.

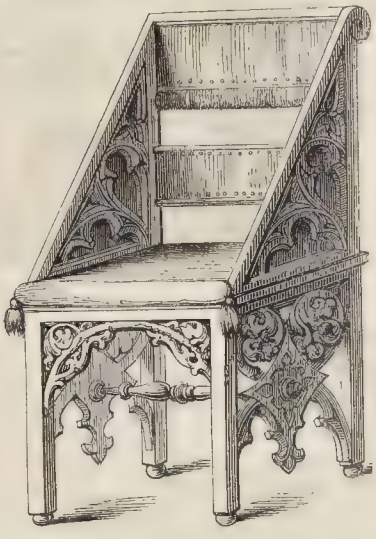
The substructure of the cathedral is Roman, and a careful observer may detect much that is of that age in its walls, as well as some capitals evidently of the same period, imbedded in the more modern masonry of the choir. In the screen at the sides, some interesting discoveries have been made of capitals, ornamental arches, and figures of saints, the work of the twelfth century. All these are particularly curious, as they show the use of *colour* at this time; for the various ornamental enrichments of the arches and capitals are painted in various tints.

It is not in our plan to give a detail of the other churches within this interesting city or in its immediate neighbourhood. We may say, that the artist, architect, and antiquary will all find abundance to occupy their attention. The ancient cross in the market-place is, however, a conspicuous object, and which tells you in good Latin, "Henricus Archiepiscopus me erexit," in the year 958. Opposite this cross, in the street leading to the cathedral, is the old Hotel de Ville, now an inn, and known as

## GERMAN GOTHIC CHAIRS.







the Red House. It is an interesting building of the 16th century, with many a quaint figure and motto on it, not the least boastful of which is that which tells you, that Treves existed 300 years before Rome; piously adding, "May it exist for ever, amen."

Of domestic architecture at various periods Treves possesses some curious specimens. The most ancient and interesting is the one we have engraved. It is now a wine shop, and is known by the sign of the Three Kings. It is situated in the street of St. Simeon, very near the Porta Nigra—it is of stone. The lower story has been much modernized by an alteration in its windows. The upper story is in its original condition, and in the Byzantine style, and believed by some to be as old as the 12th century.(?) The detail of this upper part is very interesting; but its simplicity speaks to the eye so forcibly as to render a detailed description unnecessary here. As an example of early domestic architecture it is valuable, and adds another variety to the many specimens given in this journal. F. W. F.

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Mr. Editor,—Everybody must be pleased with the clever representation of the gateway at Treves in your last number.

But it has a few inadvertencies as to detail, which I am sure that its talented author will not be offended at my pointing out; and more especially, since some of them affect the character which this gateway has lately acquired of being a monument of Etrurian architecture.

The first of these relates to the diameter of the columns, which generally is too great; and the second, to the proportions and form of the several members of the capitals in the lower stage, and which M. Schmidt, the city architect of Treves, has demonstrated to be each of the same height, viz., 10 inches, and all of *rectilinear* profile.

I may likewise state, that the small arcade under the apsidal gallery of the 12th century portion should consist of *semi-circular* and not trefoliated pointed arches; and that the St. Simeon of Treves was not the St. Simeon Stylites, who died at Antioch, A.D. 460.

I am, Sir, &c., W. Bromet.

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Damage to Buildings at Bordeaux.—The local journals of the 24th ult. announce that the cathedral, custom-house, and exchange, have been greatly damaged, many other buildings stripped of slates, chimneys, &c., and the suspension bridge over the Reole entirely swept away by tempests.

### GERMAN GOTHIC CHAIRS.

Herr Heideloff, a German architect, who has devoted much attention to Byzantine and Gothic decorations, and has a good reputation in his own country, has contributed to the current number of the *Art-Union Journal* a series of designs for chairs, founded on originals still remaining in the old castles of Germany. We are indebted to the proprietors of that journal for permission to place three of these before our readers.* They all display a trace of Byzantine feeling, and will not altogether satisfy a fastidious critic; still they are valuable, and supply good hints.

The object of the article which accompanies them is to advocate the employment of artistical talent in decorating and furnishing our houses.

"When Louis, the reigning sovereign of Bavaria," says the writer, "commanded the construction of a new palace, he said to his architect: 'I desire to build a palace which shall be "All Art;" from the architecture to the commonest articles, every thing shall be designed by my best artists; nothing shall be copied; I will have no "upholstery."' This project, worthy of a high and enlightened mind, has been fully carried out; and the new palace, externally and internally, is literally a monument of artistic invention. A grand idea is completed! From the saloon of entrance into the throne room, a gradation of decoration is observed; beginning by simple forms and modest colours, up to the luxuriance of gilding, ornament, and vivid hues.

'I will have no looking-glasses to usurp the places I can occupy with pictures,' was another of the sovereign's commands in the furnishing of his Palace of Art. Thus, every thing is in perfect harmony of style; whatever the style

* The present number of the *Art-Union Journal* deserves the highest praise. The illustrations alone are worth double the cost of the whole. As a specimen of printing and "getting up" it stands quite alone.

may be—it is strictly adopted; not an object violates the unity of thought.

In the most magnificent mansions of England this completeness has scarcely ever been attained; there is always some incongruous piece of furniture, some ill-patterned carpet, badly designed curtain cornice, or ugly gilt frame. We are so much accustomed to these 'upholsteries,' that we become blinded to their anomalies, by valuing them only at the great sums they have cost.

Even in the architectural composition of the interior of the principal rooms of such mansions, what 'monstrosities' of proportion, jumblings of character, and violations of forms, are displayed. Lanky pilasters and column patchwork cornices, and clumsily massive chimney-pieces of the purest Carrara marble, carved into repulsive forms, without an atom of skill, much less of design!

It is true, a brighter dawn gently opens upon us, and the interiors of our houses are gradually becoming covered with DESIGNED ornament. Hope is, however, chilled by the certainty, that much of good intention will be wasted by its being consigned to incapable hands. It is not here our province, nor does it suit our present purpose, to investigate all the bearings wherefore—or the under-current of influences which makes attempts sickly and feeble; all comment on the subject may be condensed into a sentence, 'EMPLOY AN ARTIST TO DESIGN, AND AN UPHOLSTERER TO EXECUTE.' You cannot go into a shop and order works of art as you would a portmanteau. Study, cultivation, learning, and talent, are wanting; they form no part of the stock in trade of the stone-mason, the carpenter, or the upholsterer. If, therefore, we would make our houses palaces of art, let us impress upon our minds the noble 'order' of the monarch of Bavaria: 'I will have ALL Art—I will have no upholstery.'"

## THE MASONS' PROVIDENT INSTITUTION.

THIS institution has been formed for the purpose of granting pensions to aged and necessitous members of the trade, their widows, or orphans, and the erection and maintenance of an asylum. In order to raise a fund to carry these objects into effect, subscribers of 10s. per annum, or donors of 5*l.* 5s., are entitled to one vote at all elections, and so on for every additional annual subscription of 10s., or donation of 5*l.* 5s.

The persons eligible to be elected to the benefits of this institution are—masons and sculptors who have been engaged at the business for ten years, and who are fifty-five years of age, their widows, or orphans, and who do not receive 10s. per week from any source, independent of this institution (sick or superannuation allowance from a benefit society excepted, which shall not be considered as a part of their income), and have been members for four successive years by annual subscription, and who shall be recommended by a donor or subscriber.—In the event of any member being totally disabled, either by accident or bodily infirmity, he is eligible to stand as a candidate for the benefit of this institution, although not of the age above specified.

Until funds are available for the erection of an asylum, the sum of 7s. per week is to be allowed to the successful candidates.

The committee have just now issued the rules of the society, and while they properly say, "It is a duty we owe not only to ourselves, but to our wives and families, to make that provision which individually we cannot, but collectively, in this institution, is at our command;" they appeal for assistance to their employers and to architects, as their natural protectors.* In the list of donors already published are the names of Mr. Wakley, M.P., Messrs. Freeman, Piper, Nowell, Jackson, Baker, W. Cubitt, T. Cubitt, Seth Smith, W. Harrison, and other well-known builders.

* "In appealing to those who have been justly termed our natural protectors, the 'Architectural Profession,' whose skilful and elaborate designs shed a lustre over and adorn our country, the promoters of this Institution trust they may not be thought too presumptuous in seeking their support, considering the masons' trade closely allied to that eminent profession. When we contemplate those noble edifices which have been erected, and the public works in progress, made prolific by the aid of masonry, we venture to indulge the hope that the industrious mason has some claim upon their patronage and support, and that those charitable and kindly feelings which have ever actuated the profession, will be extended to watch over and protect our Institution."

## SOME REMARKS ON BRIDGES.*

WESTMINSTER BRIDGE, by Labelye, in 1740-47, may be considered the first example of extensive structures of this kind. It consists of 13 semicircular arches (the centre of which is 75 feet span), 1164 feet long. It was originally intended for a wooden bridge, and was partly commenced on this principle. It was a great work at the time, but, as might have been expected, contained defects, particularly in the foundations, which at that time were but imperfectly understood, and have suffered much by the scour of the current. It will probably be rebuilt in a short time. Caissons, or water-tight chests, were first introduced there for the purpose of founding the piers below the level of low-water. Previous to this, the principal existing bridges consisted of a number of small Gothic, or of circular arches, with rough piers of masonry built either upon a foundation of loose rubble stones thrown promiscuously into the river until sufficiently high and solid, or upon timber platforms resting upon piles surrounded by large bulwarks of timber, filled with loose stones, called starlings, which materially contracted the water-way where they were placed, and, by causing increased rapidity in the current, created great obstacles to the navigation, as well as to the drainage of the adjacent country. Of this, the well-known examples of Old London Bridge, those at Newcastle-upon-Tyne, Rochester, and Belfast, may be mentioned. All these, with the exception of Rochester Bridge, are now removed, and are replaced with others, constructed upon the modern improved principles. Westminster Bridge was followed by that of Blackfriars, by Mylne (1760-71), consisting of 9 semi-elliptical arches, the largest of which is 100 feet span, and 41 feet 6 inches rise. The total length of the bridge is 995 feet, and 45 feet wide. Here the elliptical arch was introduced about the first time in this country. Smeaton's bridges of Coldstream, across the Tweed, in 1763, composed of 5 circular arches, the largest of which is 61 feet span; that over the Tay, at Perth, in 1766, of 9 circular arches, the largest of which is 75 feet span; at Hexham, over the Tyne, in 1767, of nine circular arches, the largest of which is 52 feet span, and others, for that period, were works of considerable magnitude. These were followed by numerous smaller works all over the kingdom, more remarkable for convenience and utility than for any peculiarity in their construction worthy of notice, until in 1809-1817, when Waterloo Bridge, across the Thames, consisting of 9 equal semi-elliptical arches, 120 feet span each, and 35 feet rise, was built of granite, in a style of solidity and magnificence hitherto unknown. There, the elliptical arch, with inverted arches between them, to counteract the lateral pressure, was carried to a greater extent than in former bridges; and isolated coffer-dams upon a great scale in a tidal river, with steam-engines for pumping out the water, were, it is believed for the first time, employed in this country. The level line of roadway, which adds so much to the beauty as well as the convenience of the structure, was there adopted. The bridge across the Severn at Gloucester, in 1828, by Telford, is worthy of remark, as being the first with one arch, of 150 feet span, like those of the bridge across the Seine at Neuilly, near Paris, by Perronet, where the interior of the arch is elliptical and the exterior circular.

New London Bridge (1825-31), consisting of five semi-elliptical arches, viz., two of 130 feet, two of 140 feet, and the centre 152 feet 6 in. span, and 37 feet 6 in. rise, is perhaps the largest elliptical arch ever attempted. The roadway is 52 feet wide. This bridge deserves remark on account of the difficult situation in which it was built, being immediately above the old bridge, in a depth from 25 feet to 30 feet at low water, on a soft alluvial bottom, covered with large loose stones, scoured away by the force of the current from the foundation of the old bridge, the whole of which had to be removed by dredging, before the coffer-dams for the piers and abutments could be commenced, otherwise it would have been extremely difficult, if not impracticable, to have made them water-tight; the difficulty was further increased by the old bridge being left standing, to accommodate the traffic, whilst the new bridge was building, and the restricted water-way of the old bridge occasioned such an increased velocity of the current, as materially to retard the operations of the new bridge, and at times the tide threatened to carry away all before it. The great magnitude and extreme flatness of the arches demanded unusual care in the selection of the materials, which were of the finest blue and white granite from Scotland and Devonshire. Great accuracy in the workmanship was also indispensable. The piers and abutments stand upon platforms of timber resting upon piles about 20 feet long. The masonry is from 8 feet to 10 feet below the bed of the river.

* From Sir John Rennie's address to the Engineers.

I will conclude this division of the subject with the celebrated bridge across the Dee at Chester. It consists of a single arch, the segment of a circle 200 feet span, with a versed sine or rise of 42 feet, which is the largest stone arch upon record. The arch stones at the crown are 4 feet 6 inches deep, and 7 feet at the springing, and the abutments on both sides of the river are founded on the new red sandstone. The centre for building the arch was remarkable for its simplicity, strength, and rigidity, by which means the greatest effect was produced by the smallest quantity of timber, and any change of form, so prejudical in centres, was prevented. This fine structure is due (it is believed) to the combined talents and energies of the late Mr. Harrison, the architect, of Chester, who made the original design; Mr. George Rennie, who equilibrated the arch, and gave the proper dimensions of the voussoirs and form and dimensions of the abutments, the modes of constructing them, and designed the centre, the original model of which is now in our gallery; and to Mr. Jesse Hartley and Mr. Trubshaw, who worked out the details, and carried the whole into effect.

A proper theory of the equilibrium of the arch, which shall satisfy all the conditions of the question, when applied to practice, may be said to be still wanting, though much valuable information may be derived from the scientific works of Hutton, Attwood, Moseley, Gwilt, and others, on the subject.

Oblique or skew bridges have but recently obtained extensive use. Chapman built some in Ireland many years ago, and wrote an account of his mode of constructing them. On railways they were introduced by Stephenson, and are now generally employed. Buck's excellent treatise on the principles and practice of their construction greatly facilitated their execution.

## DESTRUCTION OF LUSK CHURCH, COUNTY DUBLIN.

A SCANDALOUS act of vandalism has just been committed on the ancient church of Lusk, and that by persons who should have been the first to protect this venerable relic of early days.

An effort has been made by some members of the "Council of the Celtic Athenæum," to stop the progress of destruction, but in vain. Several letters were addressed by the secretaries to the Ecclesiastical Commissioners, against taking down the old church, the site affording ample room for the new one. No answer being returned, *after a fortnight*, a personal interview was sought from the architect, who referred the matter to the secretary. At last the fact is announced, "the fine old abbey church that stood the test of centuries of wind and weather, is now one heap of ruins." Two curious monuments of the 16th century lie with the "*rubbish*." The Commissioners' secretary, 'tis true, gave the very polite hint, that "the monuments can be re-erected in the new church *at the expense of the parties interested*."

Lusk Church was an old fabric at the dissolution of religious houses, and seems to have been built adjoining a still more primitive structure,—the word "lusk" being derived from the Irish word *luska*, which signifies a vault. To shew the *notions* our architects hold in reference to these ancient churches, I shall merely quote a sentence from the contractor's specification for the new church of Lusk: "The old church is to be taken down, the materials to become the property of the contractor, and the *rubbish* to be removed or levelled."—I am, Sir, &c. J. K.

Gorey, 5th Jan. 1847.

## NOTES IN THE PROVINCES.

The Taunton people, albeit somewhat slow to move, even in the now pretty fairly worked and polished groove of municipal and sanatory reform and improvement, have at length summoned up activity and spirit enough to *resolve* on an "application to Parliament for an Act for repairing, lighting, watching, watering, cleansing, regulating, and otherwise improving this town, and for improving and regulating the market-place." Advertisements have been issued, and it is to be hoped that the Tauntonians will not break down beneath the accumulative weight of such a series of simultaneous resolutions, nor afford us any longer grounds for taunting them with the occasionally futile and retrogressive progress with which their long projected movements have hitherto dragged their slow length along. Attention, it seems, has of late, moreover, been pointed to the state of the drainage of the town; not that there is any want of common sewers alleged; for "there are plenty of them running underneath the street,"—but that "the inhabitants are not allowed to cut into them;" so that, in fact, they are like a colon without follicles,—a great gut without excretory ducts,—an organism much more characteristic, certainly, of the folly and absurdity of man himself, than of the wisdom and simplicity of nature in his own formation. —— It has been determined to advertise for contract tenders for either rebuilding or widening the West-bridge at Sherborne.—— Mr. Lewis, the sculptor, of Cheltenham, has just completed for Lord Ellenborough, a column of Caen stone, for erection at Southam, to commemorate the achievements of the British forces in India, during the period of his lordship's government there.——An infant school, with a dwelling-house attached at either end, has been erected at Ilford, by Messrs. Curtis, the builders, of Stratford, from a design, in the Elizabethan style, by Mr. Mason, the architect, of Lime-street, city, and at the expense of a lady, Miss Ellen Thompson, of Ilford. ——A separate note from Birmingham will be found in our present impression. ——It is said that a new railway station is to be erected close to the west bridge at Northampton, so as greatly to increase a traffic already so much beyond what it was of old intended for, that the trampling, kicking, and over-running of pedestrians by horses is a thing of every day occurrence. A reverend vicar of the vicinity recommends a boarded pathway swung on chains or fixed to the wall, as the most effectual and cheapest plan of remedying the evil. A like case occurred at Stratford-on-Avon, where the traffic along Sir Hugh Clopton's bridge was accommodated, a few years since, by a path of open iron-work. There could be no difficulty, therefore, in adding to the exterior of the walls a footpath more substantial than any wooden one: even a stone flooring indeed might be laid down.—— Old Weston Church, says the *Cambridge Chronicle*, has been undergoing considerable repair according to plans designed by, and executed under direction of, Mr. Allen, the architect of St. Ives.——Alterations in Springfield Jail, according to the *Chelmsford Journal*, have been made, for which the contractor was lately ordered to be paid 2,000*l.*——It is proposed to erect a new bridge, as a substitute for the present temporary one, between Yarmouth and Southtown.——A chapel has been built at Aycomb, near Hexham, for the alternate use of Independents, Wesleyans, and Primitive Methodists.——The Earl of Carlisle has directed plans to be prepared of his land in the vicinity of the railway station near Morpeth, to be laid out in streets or villas.—— The Commissioners of Woods and Forests, who are to be in Edinburgh on the 26th instant, are to have estimates and proposals for the new corn market there brought under their notice.——The *Cork Constitution*, speaking of certain abuses in the public work system says, that in some districts it is difficult to get even masons to do a day's work. In Mallow lately, when some small job was required at a public oven, which the relief committee had judiciously opened in order to provide the poor with bread, not a mason could be had. They were all employed as superintendents, &c., on the roads, and not one of them, though offered a day's wages for the work of a few minutes, would consent to go, and only that the committee succeeded in borrowing one (from a Government officer it is said) they would have suspended operations altogether, and have left the needy to "the regular course of trade." Complaints too still continue of the peasantry quitting their native employment on the land, for employment on the public works, so that the small farmers are abandoning cultivation altogether; and even, it is sherwdly suspected, following the example of their poorer neighbours, in many cases, applying for public work without much occasion.

## DALSTON INSTITUTION COMPETITION.

Sir,—When the advertisement for designs for the Dalston Institution appeared (on the 10th of October last, although it is dated the 2nd), I had some leisure; I therefore wrote to the secretary, Mr. R. Simons, for the requisite information, complaining, at the same time, that the time given (from the 10th to the 28th of October) was extremely limited. After some days' delay, I received his instructions, which included the size of the required building, the sum to be expended (which was not to exceed 1,500*l.*), and a remark, that an elaborate design was not required, and that it must be in the Italian style. I prepared a design in the Italian style, and forwarded it to Mr. Simons. It was designed in as simple and chaste a manner as possible, having an eye to the 1,500*l.* It was a design that would admit of considerable enrichment if it was thought requisite. As soon as it was received, Mr. Simons wrote to me to inquire what sum it would take to execute my design. I told him 2,000*l.*, or it might be reduced to 1,800*l.*, executing it in a plainer style. I told him, however, that no building of such a size as the one required, could be executed for a less sum than 2,000*l.*, if it had any pretensions whatever. My design was returned. I should not have troubled you with this letter, only I see a letter in The Builder of last week, complaining of the manner in which the committee have acted. For my part, I have determined never again to compete unless I know something of the respectability of the advertising committees. As "Alpha" states, the prettiest picture has no doubt been chosen, and a design to cost, not 1,500*l.*, but 3,000*l.*—I am, Sir, &c.,

J. Blenkarn.

Pellow House, Ollerton, Notts, Jan. 10, 1847.

Another correspondent has forwarded the following list of the tenders delivered *for the carcass only*.

| | Main building. | Theatre. |
|---|---|---|
| Brake | £1,765 | £1,243 |
| Dean | 1,693 | 1,312 |
| Plaskett and Shelton | 1,692 | 1,300 |
| Wood | 1,685 | 1,300 |
| Knight and Son | 1,677 | 1,247 |
| Wm. Smith | 1,660 | 1,333 |
| Trego | 1,660 | 1,273 |
| Glenn | 1,642 | 1,208 |
| Kebbell | 1,635 | 1,250 |
| G. J. Carter | 1,624 | 1,189 |
| Edw. Carter | 1,600 | 1,200 |
| Rider and Son | 1,584 | 1,170 |
| Yeoman | 1,579 | 1,183 |
| Wm. Higgs | 1,559 | 1,147 |
| Burton | 1,522 | 1,125 |
| Cooper and Davies | 1,000 | 1,000 |
| Elston and Son | 1,442 | 1,264 |
| Pegrum | 1,459 | 1,069 |

Quantities furnished by Charles Fowle.

The lowest amounts, in the whole, to 2,528*l.*, the highest to 3,008*l.*!

Brimington Church.—This church, which is now being rebuilt from designs and under the superintendence of Mr. Mitchell, architect, Sheffield, is in the decorated style which prevailed in the 14th century. The plan is a double rectangle, having a nave with clerestory 57 feet by 20 feet, side aisles 57 feet by 12 feet, and chancel 25 feet by 17 feet, with the old tower at the west end. From want of funds it was thought necessary to reduce the expenditure, by omitting the clerestory, thus materially injuring the effect of the design. It is now, however, hoped that a sufficient sum may be raised for retaining this part of the original plan.

## THREATENED REMOVAL OF WESTMINSTER BRIDGE.

A public meeting, numerously attended, was held on Monday evening last at the Westminster Literary Institution, to consider the proposed bill for the removal of Westminster-bridge. All were unanimous in condemning the monstrous proposition, in favour of which, indeed, we have not yet heard one voice raised.

The chairman, Sir de Lacy Evans, said, in the course of his speech, that a committee of the House of Commons had recommended the erection of a new bridge on the same site as the present. It was stated that no less than 20,000,000 of people, and from 4,000,000 to 5,000,000 of horses, passed over this bridge in the course of a year, and the numbers had greatly increased of late years. There was greater traffic over Westminster-bridge than over any of the others except London-bridge. Mr. Barry, the architect of the new houses of Parliament, had prepared the plan of an iron bridge, to cost 260,000*l.*; but the committee had recommended a stone bridge, the expense of which was estimated at 360,000*l.* The bridge estates were expected to furnish more than 170,000*l.* of that sum, so that the expense to the public would be comparatively small. To the general astonishment, it appeared that some parties had now got the Commissioners of Metropolitan Improvements to sanction the introduction of a bill to abolish Westminster-bridge, to stop up this means of intercourse, to annihilate all the important interests connected therewith. He had now been nearly seventeen years in Parliament, and had never met with any thing so extraordinary. He thought Lord Morpeth had been grossly imposed on, or he would not have lent his name to such a proposal.

The Dean of Westminster said he attended to oppose it, as well on account of the interests of the public as of the chapter, of which he was the head. Property would be ruined, improvements stopped, and the labouring classes greatly injured.

Mr. B. Hawes, M.P., said he would oppose the bill in every stage. As to the Woods and Forests, he did not believe they were promoters of it. It was a private bill for private interests.

The following resolutions were passed:—

"That the proposed abolition of Westminster-bridge, and the application of funds appropriated by Parliament for its maintenance, to the erection of another bridge near Charing-cross, is unjust and injurious to the public, to the parishes of St. Margaret and St. John, and to individuals, for the following principal reasons:—Because it would abruptly close the long-established thoroughfare from Surrey to the city of Westminster, St. James's Park, and the daily-increasing neighbourhood of Pimlico and Chelsea; and leave no communication whatever across the river west of Charing-cross, free of toll; and also, because the cost of approaches to a bridge on another site alone would suffice for the erection of a new bridge on or close to the present site. Because it will entirely put a stop to the opening of new streets through the notoriously crowded, ill-drained, and dilapidated portions of these parishes (one of which streets has already received the sanction of Parliament), and prevent all improvements therein. Because the streets in connection with the present bridge were laid out by commissioners appointed by Parliament, and a very large amount of property has been therein created, under an implied agreement that a bridge should be maintained by Parliament on this spot for ever, and that the substitution of a bridge on a distant site (involving an enormous depreciation in the value of such property, and almost ruin to many individuals) would be a breach of faith which ought not to receive the sanction of the legislature.

"That independently of the most important considerations contained in the former resolution, and of the question, financial, local, and architectural, involved in the proposal for erecting the bridge near Charing-cross, and making the approaches thereto, this meeting is of opinion that its substitution for a bridge on the present site would be productive of manifest public inconvenience, because it would throw the enormous carriage traffic of Westminster-bridge, a portion of that now using Waterloo-bridge, and ultimately the traffic from all the south of England railways, on a spot which is now at times impassable by reason of the immense traffic from the city to the west end and western suburbs of the metropolis.

"That a copy of the foregoing resolutions be forwarded to the Commissioners of Westminster-

bridge, and that the members of the city of Westminster and the borough of Lambeth be requested, both as members of the commission, and as our representatives in Parliament, to oppose the appropriation of the property set apart for maintaining the present bridge, to the erection of a bridge on a distant site; that a committee be formed to consider the best means of opposing the threatened measure, and if expedient, in concert with other opposing parties, that a subscription be commenced to defray the necessary expenses, and that a committee be appointed, with power to add to their number."

## NOTE IN BIRMINGHAM.

POLLUTION OF WELLS: PLANS FOR LUNATIC ASYLUM.

The sanatory condition of the town of Birmingham is at present engaging the serious attention of the authorities there. It has been found, that fæcal and putrid fluids are constantly sinking into the ground, from innumerable privies of an improper or imperfect order; and that these must have so poisoned the very sources of the town-supply of water, that "in all the wells in Birmingham more or less of ammonia is to be found in consequence." And it would be well if nothing worse than ammonia could so penetrate; but, even independently altogether of the intolerable idea of the thing, there cannot be a doubt that the wells must be impregnated with far more deletereous matter than mere ammonia. Be this as it may, however, the subject is not only at present engaging serious attention, as we have just observed; but, strange to say, "a French Count with his Engineers" have gone to Birmingham, for the purpose of offering their services towards the effectual removal of the causes of this serious evil. The fact is, this French count has taken out a patent, both in France and England, for the chemical reduction of manure into dry and scentless solids; so that Mr. Higgs has need to look to his laurels and his patents. This enterprising nobleman proposes, for a consideration of course, to divide every privy in Birmingham, at his own expense, into two distinct receptacles, one for ashes, &c., and the other for the more valuable chemical manure; which latter he will then be ready to convert, "by a chemical process, into a dry, portable manure," within the "very privies" themselves; thus fixing the deleterious gases and fluids at once into innoxious matter, removable forthwith, without the slightest injury to olfactory sensibility or to health; but, on the contrary, with the expeditious and effectual annihilation of a fertile source of serious injury to both; and that, too, without awaiting the formidable obstacles in the way of the construction and establishment of any general system of drains or sewers. The "covering, dividing, and puddling, of the privies," and the erection of the "chemical manure factory," will, of course, be very expensive; but the count, although he has not yet come to terms with the Birmingham commissioners, counts, of course, upon a remunerative profit to himself, as well as to the community at large. The city of Paris, he informs them, reaps an annual harvest, from such fertile sources, of no less than 500,000 francs, or 20,000*l.*, even without the operation of the save-all chemical scheme proposed. The annual expense of the working of this new scheme at Birmingham, exclusive of the heavy expense to be incurred by the count in the establishment of his "factory," and the improvements of his depôts or privies, he estimates at 20,000*l.*, and he expects to be sufficiently remunerated for the whole of this Herculean or Augean labour and expense, by a mere "premium for extraction, either by a fixed price per ton, or by a yearly sum, to be paid by the town to the company," under a "contract of considerable duration."——The erection of lunatic asylums,—a subject at present engaging much interest and discussion in various towns and counties throughout the empire,—is, at Birmingham too, dividing the attention of the municipal authorities with the other sanatory measures just alluded to;—the *other* sanatory measures we say, since the restoration of the insane to a sanatory state is, of course, a subject deeply and most intimately connected,—as indeed, is the occurrence of insanity itself,—with the general question of the sanatory state of towns. The architect's plans for the proposed asylum at Birmingham have been presented to the council. They were prepared, say the committee, without an existing asylum as a model; but there is good reason to think, they add, "that, if approved by the council, the asylum would be recommended as a model for the kingdom." They "forbear, however, to append the architect's estimate to their report, until the tenders for the execution of the work have been supplied." A member of council, in expressing his surprise that the probable cost of the building had not been stated, remarked that the towns of Liverpool, Manchester, Leeds, and Sheffield, had not decided upon erecting an asylum; and that the county of Hereford, and the city of Hereford, had agreed with three other counties to erect one jointly. The Birmingham plans have been approved by the Commissioners in Lunacy.

## THE DECORATION OF RAILWAY STATIONS.

Felix Summerly has addressed a letter, through the columns of the *Athenæum*, with the purpose of shewing "how the patronage of art may come legitimately within the scope of railways." He says:—"Already, the great railway stations now in progress of building or in contemplation—at Euston-square, at Birmingham, at Liverpool, at Hungerford-bridge, at London-bridge, at Shoreditch, at Oxford, at Carlisle, and elsewhere—are destined to rank among the most marked architectural features of our times, provided the natural wants of the buildings are permitted to direct the expression and sentiment of their architecture. A railway station, it must be admitted, is as susceptible of architectural character as a church, a palace, a clubhouse, or any other building. The ability of the architect may make stations at once symmetrical and beautiful; and if he be a true inventive genius, he will not be discouraged by the seeming difficulties of dealing with the apparently awkward proportions of railway stations. But the architectural forms of stations are not my special theme. My purpose is to shew what a noble opportunity these great halls of meeting afford for promoting the decorative arts of painting and sculpture: an opportunity for reviving that natural union of decoration with architecture, which we find to have existed in the public buildings of all nations,—among the Egyptians, the Greeks, the Romans, and throughout the middle ages in our own country, until the advent of puritanism."

"Decorate the principal railway stations with paintings and statues,—coloured windows and mosaic pavements; and the multitudes awaiting the arrivals and departures of the trains, will thus be educated in art with the least possible parade of being so taught. An opportunity will be afforded to gratify and improve busy, hard-working thousands, especially of the manufacturing class, who have no means of access to private picture collections, and little leisure or opportunity to visit our one National Gallery."

"What a noble work it would be to have a series of frescoes, illustrative of communication and commerce, adorning the walls of the waiting rooms of Euston-square or Birmingham,—the windows resplendent with stained glass, and the floors decorated with mosaic pavements! But the cost?—some may ask, hesitatingly. At once let me say, that a railway should not be asked to decorate its stations with high art until it pays a dividend of 10 per cent.

The cost, in fact, would fall upon the public itself,—and be by them contributed welcomely for their own benefit; though the work would be instigated and promoted through the liberality of the shareholders, who would obtain all the credit justly due to the enterprise. Suppose 20,000*l.* were so applied,—spread over a period of three years, if necessary. This amount would be much less than 1d. in the pound on the gross receipts of the London and North-Western. It might, I think, be proved, if it were necessary to do so, that a station made highly attractive for its art would directly benefit the traffic. The passport to the picture hall would be the passenger's ticket. Railway shareholders are proverbially most liberal and generous, in spite of the idle imputations of Mr. Morrison or the taunts of "Cato;" and if Mr. Glyn thought it necessary to say to his brother shareholders at the next general meeting, "We propose to adorn our principal stations in the best manner of which British art and skill are capable—to give to our customers such architecture, paintings, sculpture, and decoration, as shall not be surpassed in England, and shall rival those of the stations in Germany"—I believe the meeting would welcome the proposal with cheers.

What corporation in the past history of the world can boast, like the London and North-Western, of an annual receipt of more than a million and a half of pounds sterling? Surely, the King of Bavaria, with his Glyptotheca—or Leo the Tenth, when he caused Raffaelle to decorate the Vatican—or the Doges of Venice—had no such resources at their command. And surely we have painters equal to the work—Mulready, Maclise, Eastlake, Edwin Landseer, besides Etty, Cope, Herbert, Dyce, and others. If railway companies would enter upon this noble course, we should soon have our public buildings rivalling those of modern Germany and ancient Italy. It would only be following the example of the church and of the ancient guilds."

## ARCHÆOLOGICAL MEETINGS.

On Friday, the 8th inst., the *Archæological Institute* met at four o'clock in the afternoon, at their rooms in the Haymarket, and the *British Archæological Association* at half-past eight, in Sackville-street.

At the *Institute*, Mr. Stapleton was in the chair, and the subject fixed for discussion was "The works of the early goldsmiths." Mr. Hudson Turner, secretary, introduced it by some interesting remarks, shewing, among other points, the effect of the early goldsmithery on the artistical work of the period, on which a discussion followed. Mr. Newton read a description of some extensive Roman remains recently discovered at Gatterly Grange, near Catterick Bridge, Yorkshire.

At the *Association*, Mr. Pettigrew was in the chair, and the attendance numerous. Mr. Roach Smith read a communication from Matthew Bell, Esq., on the excavations recently made at Bourne Park, near Canterbury, where numerous discoveries, from time to time, have been made, of high interest, under the direction of the president of the association, Lord Albert Conyngham.

Mr. Wansey exhibited two querns, or hand-mill stones. They were found about twelve feet from the surface in excavating on one of the estates of the Fishmongers' Company in Ireland. An elaborate paper, by Mr. Jones, followed, on the Eumenides of Æschylus; a subject closely connected with the singular piece of sculpture discovered some months since in the City stone-yard, by Mr. Price, and which, notwithstanding the exertions of the association, is in danger of further mutilation or entire destruction. The fragment in question represents the three mythic personages often found represented on works of art of that period, particularly in Germany. The remainder of the evening was occupied with discussions relative to cromlechs, and other early sepulchral remains found in England; in which Messrs. White, Wright, Keets, Fairholt, and Godwin, joined.

A question of considerable importance was mooted, as to the asserted sale from the British Museum, of metal copies of medals and coins, so closely resembling the originals, as not to be discriminated by the best judges. This certainly ought not to be permitted.

The Dry Dock, Malta—commenced by driving the first pile May 10th, 1842, under the plans of Mr. Scamp, carried out by Mr. Walter Elliot, is fast approaching towards completion. The extreme length, from the gates to the centre of the bow, is 274 feet, and to the square 222 feet; the width 82 feet; and the depth from the level of the water 25 feet. It is constructed of limestone, principally from Gozo, being less porous than any other stone found in these islands. Until recently, there were about 2,000 persons at work in the quarries or elsewhere connected with the dock, having in their families about 5,000 souls. Now, however, there are only 300 employed. The first class masons receive 1s. 4d. a day; second class, 1s. 2d.; third class, 1s. 1d.; labourers, first class, 1s.; second class, 10d. The cost of the dock, it is estimated, will be about 90,000*l.*, independently of factories, &c., which are not yet estimated.

### THE IMPERIAL ASSURANCE OFFICE COMPETITION.

We mentioned some time ago, that certain architects and *others*, had been invited to submit plans for a new building for the purposes of this company, on a site adjoining the Hall of Commerce in Threadneedle-street, City. Eight designs were, we believe, submitted; and Mr. John Shaw being called in to assist the directors in the selection, the first premium was awarded to Mr. Gibson, and the second to Mr. Christian.

### PREMIUMS FOR INVENTIONS AND DESIGNS.

The council of the Society of Arts offer the following premiums, amongst many others: —

1. A prize of ten guineas, with the Society's medal, for the effective ventilation of private rooms or buildings designed for large assemblies.

2. *The same* — for an improved method of preventing the emission of noxious vapours from the gratings of sewers, which shall permit a free passage of the sewerage, and provide against bursting the drains.

3. *The same*—for a specimen of printing in distemper by blocks, so as to "keep register" more perfectly, and produce finer specimens of art in paper-hangings, than by the ordinary methods.

4. *The same* — for the best application of glass in the construction of roofs.

*The same*—for the invention and application of a cheaper kind of glass than any now in use.

5. A prize of five guineas, with the Society's medal, for the best original pattern of a paper-hanging for an ordinary sitting-room, to be printed with not exceeding four blocks. The design to be full size.

*The same*—for an ornamental design, of a geometrical character, suitable for a roller window blind.

6. The Society's gold medal—for the finest specimens of Irish marble suitable for decorative purposes.

They also offer their gold and silver medals for original designs in architecture, and of architectural ornaments or details, and drawings of existing buildings, including geometrical elevations.

## New Book.

*Old England's Worthies; a Gallery of Portraits from authentic sources.* Cox, King-William-street, Strand.

The twelfth number of this very cheap book, published on the 1st of the present month, completes the work. It contains in the whole 72 portraits of eminent statesmen, lawyers, warriors, men of science, and artists; with twelve illustrative engravings in colour, and well-written biographies, with head-pieces. It makes a handsome as well as interesting volume, well deserving of a large circulation. It was originally published by Mr. Knight, but by a recent arrangement has passed into the hands of Mr. Cox.

Projected Works.—There are advertisements in the current newspapers, for contract-tenders for building an extensive carriage bazaar and coach manufactory at Southampton; razing and rebuilding a house at Gravesend; constructing two reservoirs, part of an aqueduct and branches, and other works of the Bristol Water Works; repairing roads in Staffordshire; and (175 miles) in Herefordshire; rebuilding and repairing 5 bridges in Haddingtonshire; also, for the whole railway works, in separate divisions, of 5 and 6 miles, of Bristol and South Wales Junction; 5 and 11 miles of Oxford, Worcester, &c.; 5, 6, and 13 miles of South Wales; 2, 7, 1, and 4 miles of Monmouth and Hereford; 20 miles of Newcastle and Berwick (Kelso), in two divisions; 6 miles of Edinburgh and Bathgate, in two divisions; 19 miles of South Eastern; 2nd and 3rd contract of Rugby and Stamford; portion of Fleetwood and Preston Junction, and widening Preston and Longridge at Fulwood; also, for widening 600 yards of Greenwich, and enlarging London Station; building and finishing stations at Monkwearmouth and Newcastle; 5,700 square yards platform, and 10,000 super. yards roofing, at Leeds Station; and for 2,000 coal waggons with wooden bodies, for Midland Railway, &c.

## Correspondence.

### THE BUILDINGS ACT "CONVENIENCES,"—THE DALSTON COMPETITION.

Sir,—"An Old Architect" complains, in his letter in your number for this week, of the want of urinals in our streets. I beg to say, that I think the Official Referees have endeavoured to remedy this evil: I mean by the interpretation they have lately put on the portion of the Act relating to projections from the fronts of houses, as it is quite clear that, if their decision on this point is to be abided by, whenever one person building wishes for cornices or other projections, and sets back his front from the general line of building to obtain them (which he will have to do, supposing his neighbours value the space more than appearance), a corner will be obtained, which will be extensively used for the purposes alluded to.

While addressing you, allow me to mention that, like your correspondent "Alpha," I applied for the particulars issued by the committee for the Dalston Literary Institution, but, unlike him, I did not send in, as I was quite convinced that what they were asking for could not possibly be done for the money proposed to be expended.—I am, Sir, &c.

Jan. 8, 1847. G. R. W.

### ELECTRIC TELEGRAPH.

Sir,—Your correspondent, A. D., has directed your attention to an ambiguous sentence, which has accidentally crept into the account of the electric telegraph, given in the "Engineers and Contractors' Pocket Book." As it was the intention of the writer of that little article to convey correct ideas on the subject of electro-telegraphy, so it is now his wish to remove any misapprehension which may have been caused by an unguarded expression.

The passage in question would have been more correctly worded, had it stood thus:—"If he *move* half round *the needle*, so as to present his back to it," &c. In this case, no wrong conclusion could have been formed. All that was intended by the introduction of this passage was, the explanation of the fact, that the position of the wire, whether above or below the needle, and the reversal of the electric current, would have equal influence in determining the side to which the needle would be deflected.—I am, Sir, &c.

London, Jan. 12, 1847. E. C. P. B.

### TO OPEN CARRIAGE GATES.

Sir,—I should be glad if some of your numerous correspondents will inform me, as to the best and cheapest method of opening a large carriage gate (made of wood) from a lodge, without coming out of it. I have thought of several methods, but none seem to be quite the thing I could wish.

I am, Sir, &c., Henricus.

The Wood Trade.— Churchill and Co., in their annual circular, just issued, say the trade in wood for 1846, after much vacillation during the spring and summer, has closed in an improved and healthy state, with ample evidence that the consumption of the United Kingdom continues on the high scale of 1846—which had far exceeded all previous years. They estimate the comparative annual importation and consumption as follows:—

| Importation of wood to the United Kingdom For the years.... | 1843. | 1844. | 1845. | 1846. |
|---|---|---|---|---|
| In loads..... | 1,373,238 | 1,558,612 | 2,054,528 | 2,041,000 |
| Entered for home consumption in the same years. | 1,365,025 | 1,543,060 | 2,009,721 | 1,988,000 |

It appears that the colonial wood trade is not curtailed by the abatement of protective duty, but, on the contrary, is progressively increasing. The quantity of square timber of all kinds brought down to the port of Quebec during 1846, is found to exceed all former periods, amounting

In 1846 to 37,404,409 cubic feet
„ 1845 „ 27,749,094 „
„ 1844 „ 17,850,891 „

Monument to Sir Charles Morgan.—A considerable number of designs were submitted to the committee in competition; from these they selected a model by Mr. Evan Thomas, of London. It consists of a sitting figure of the baronet, on a tasteful pedestal, the sides of which are decorated with agricultural emblems in high relief.

## Miscellanea.

Public Cooking Ovens for the Working Classes.—We derive the following description from a recent Austrian publication. "Public cooking ovens have been established amongst the Jewish community at Prague for years past: this sect of religionists deserve the credit of everywhere maintaining their own poor. The construction and working of these ovens is the following:—They are common baking ovens, of round or oblong form, as best suits the locality. Their external wall, however, is furnished with a number of mural shelves and niches, the use of which shall be presently explained. They are heated and open to the public at a very early hour, when (at Prague, at least) the working people go to their work. Hither, therefore, they bring their meals, either for breakfast, but most usually dinner or supper, after the work of day has been performed. The cook receives their dishes, and places on them a label, whose utility is particular, and must be briefly explained. The people bringing their meals for preparation, may have them returned at any reasonable hour; some even wait for them. But suppose a person brings a dish early in the morning, which he does not want but at night, then the cook places in it one of the many tin labels at hand, on which all hours of day and night (with their fourth divisions) are inscribed. Thus, a person wanting his meal at a quarter past nine P.M., a label to that effect is placed on the vessel. The charge is from one to four farthings per dish, according to size and trouble required. If the person does not call at the appointed hour, the meals are kept warm in the above shelves."

Norfolk and Norwich Archæological Society.—The annual general meeting of this society was held at the Museum, Norwich, on Thursday last. The Venerable Archdeacon Collyer was unanimously called to the chair. —The Reverend R. Hart read a paper descriptive of the wood carvings exhibited by Mr. Back. They had been brought from Belgium some time ago, and Mr. Hart read several descriptions of similar carvings in some of the continental churches, in order to identify the position they had occupied, and the purposes for which they had been intended. He was of opinion that they had been used as ornaments to the pulpits. He could not assign a later date to them than the end of the 17th century. Four of the carvings represented an angel, lion, lamb, and eagle, typical of the four Evangelists. Others represented St. Ambrose, with his symbol, a bee; St. Jerome, with a lion; St. Augustine, with a burning heart, and St. Gregory the Great with a triple crown and a dove; St. Dorothy, bearing the flowers of Paradise; the Empress Helena, with the true cross; St. Dominic the founder of the order of preaching friars; and a monk, bearing the sacred monogram, supposed to be Ignatius Loyola, the founder of the order of Jesuits. In conclusion, the rev. gentleman pointed out the value of a knowledge of symbols, by the aid of which antiquaries were enabled to ascertain the subjects of these ancient carvings. Various other communications were read.

Railway Works.—The Eastern Counties Railway Company are about very large works at Stratford, comprising almost a new town. We learn that no fewer than 300 houses are to be at once erected, at a cost of 200,000*l.*, the contract having been taken by Messrs. Curtis, of Stratford. It is also contemplated to erect a church at the same spot, and provide other institutions for the moral welfare of the inhabitants.

Defective Works: Fall of a Bridge.—On Friday week, a bridge over the Bishopstoke and Salisbury branch of the South Western Railway, at Timsbury, Wilts, fell in with a general crash, obstructing the way for a considerable space, and again delaying the frequently announced opening. By chance, the workmen were found, on calling over the roll, to have all escaped.

Our Obelisk.—We learn that in the course of the alterations now making in Alexandria, under a French engineer, the prostrate obelisk, known as Cleopatra's needle, which was presented to the English Government some time ago, has been buried in the sand, so that no trace of it remains.

TO PREVENT IRON FROM RUSTING.—Zeni recommends, for this purpose, eighty parts of pounded and very finely sifted brick-dust, which is to be mixed with eighty parts of litharge. The mixture is ground upon a slab with linseed oil to a thick paste, and diluted with oil of turpentine. Before use, the iron, even when it is new, should be rubbed quite clean. M. Zeni asserts that iron, which had been twice painted with this and exposed for some time daily to the action of the sea, had remained entirely free from rust.—*Chemical Gaz.*

IMPROVEMENT OF THE RIVER.—On Saturday, a notice was posted at Guildhall announcing the intention of the Corporation of the City to apply to Parliament for leave to bring in a bill to extend the powers of the Court of Conservancy of the river, over the River Thames and Medway from Staines to Yantlett Creek. The powers sought for are to pull down and rebuild bridges, erect steam-boat and other piers, to cut canals, to deepen the rivers, and to erect or form embankments, docks, harbours, jetties, and quays.

TERMINUS IN PARIS.—The Council-General of the Roads and Bridges have submitted to the Minister of Public Works, its decision respecting the site of the grand terminus of the Paris and Lyons railroad. It is to be established on the Boulevard Contrescarpe, near the Place de la Bastille, and will require the construction of a costly viaduct over the streets Moreau and Traversière and the grounds of the new prison of La Force.

BAPTISTERY.—A novel feature has been lately introduced into Trevethin Church, under the sanction of the bishop of the diocese. A baptistery, measuring 8 feet by 3 feet 6 in., and 4 feet deep, has been placed near the south door, wherein it is intended, should any person have conscientious objection to the sacrament of baptism by sprinkling, to perform the ceremony by immersion.

CAST MARBLE.—A discovery is stated to have been made at Charlottenburg, by which marble may be cast in moulds of any size, the marble being equal in quality to the purest Carrara marble. Several figures have already been cast of the size of life. The cast is stated to be one dollar a foot.

## TENDERS

For additional Wing to the Surrey Lunatic Asylum.

| | |
|---|---|
| Grissell | £41,472 |
| Lee | 37,700 |
| Little | 37,600 |
| Hicks | 37,400 |
| Bird | 37,375 |
| Baker | 36,400 |
| Kelk | 35,500 |

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, Jan. 18.—Statistical Society, 12, St. James's-square, 8 P.M.

TUESDAY, 19th.—Institution of Civil Engineers, 25, Great George-street, 8 P.M. (anniversary).

WEDNESDAY, 20th.—Society of Arts, Adelphi, 8 P.M.; Association of Architectural Draughtsmen, 33, Southampton-street.

THURSDAY, 21st.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*M. J.*" (Brixton).—We are unable to give any account of Langham Hall. A memorandum of the descent of the lands will be found in Hutchin's Dorset, second edition.

"*W. C.*"—The subjects named are not quite what we want.

"*J. B.*"—Could not recover from the Insurance Company.

"*J. M.*"—We are not aware that any drawback is allowed "on materials used in the building of schools connected with the Established Church."

"*Stations on Leeds and Bradford Line.*"—A correspondent asks for a list of the tenders delivered last month, for building there.

"*G. R.*" (Wolverhampton).—Shall be engraved. We wish the exact form of the upper (oval?) panels was clearer.

"*A Subscriber.*"—It is not within our plan to furnish prices.

"*G. H.*"—The communication shall be forwarded to Mr. Higgs when we obtain his address.

"*C.*"—Tupper Carey, Esq., Secretary to the Committee, Guernsey. Designs to be sent in on or before Feb. 15.

"*J. J.*"—We fully admit "the importance of having the eye instructed by correct examples of mathematical lines." So many matters, however, press upon us, that we are quite unable to attend to all.

"*G. R.*" (Hampstead).—We will inquire.

*Received.*—"A Subscriber" (Dalston). "G. R. F." "A. G." (Soho-square). "Rev. E. C." "J. J." "W. D. L." "G. W." "Observations on Steam Ships and the use of Iron in their construction. By Christopher N. Nixon (Effingham Wilson).

NOTICE.—Covers for Volume IV. of THE BUILDER, may be obtained at the Office, 2, York-street, price 2s.; or the publisher will bind sets at 3s. each.

## ADVERTISEMENTS.


TO BUILDERS AND CARPENTERS

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMS'S Wholesale Warehouse, No. 3, Chiswell street, Finsbury square, near Whitbread's Brewery.

Best Patent Cut Clasp

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d |
|---|---|---|---|---|---|
| 5d. | 7d. | 9d. | 1s. | 1s 6d | 2s per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.

Best Town Glue 1s. per cwt. Do. S. Cash, 2s. per cwt.

Best Patent Sash Line

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s. | 12s per gross |

Elliptic Stoves, 15 per inch. Register do. 6d., 7d., 8d., per inch. Self-acting Kitchen Ranges, with Oven and Back Boiler.

Wrought Bars and Bright Fittings.

3 ft., £3. 3s. 3 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. 0s. | £3. 12s. | £3. 16s. | £4. | £4. 10s. |

Henly's Patent Improved, with Back Boiler and Wrought Iron Oven:—

| 6 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5. | £6. 15s. | £6. 5s. | £7. 10s. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.

Do. Hitchin do. at 6d. per inch.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country promptly attended with a remittance or reference will meet with prompt attention.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Ingots, Iron Cake and Ash pit, Doors and Frames, Boilers and Frames, Lamps, &c., and all of the best description, at very moderate prices.—CAST IRON UPSETS

ORNAMENTAL STOVES.

JEREMIAH EVANS and Company respectfully invite the attention of Noblemen and Gentlemen furnishing or refitting their mansions, to the most extensive and varied Stock of DRAWING-ROOM and other STOVES in the kingdom, which contains many recent improvements, uniting great heat with small consumption of fuel, and are manufactured of every description of pattern, including the Gothic, Grecian, French, and Elizabethan; also fenders and fire-irons en suite. Improved Kitchen Ranges, with arched steam apparatus. Hot and Cold Baths of all descriptions, and every requisite in furnishing an range, at wholesale prices. Pictorial Drawings upon application. Estimates for warming buildings, conservatories, &c.—Manufactory and Show-rooms, 62, King William-street, London-bridge. Established A.D. 1807.

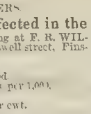
HOT WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to JOHN WEEKS'S improved method of Heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories, and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last few years some hundreds of buildings have been heated upon this plan, and the parties for whom they were erected are entirely unanimous in the satisfaction, also their willingness to vouch for their efficiency. An improved method for which references may be seen in operation upon the premises. BENJAMIN POWLER, 64, Dorset-street, Fleet-street.

TO ENGINEERS AND BOILER MAKERS.

LAP-WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Southwark Bridge Manufactory, Pardon-street, Southwark, have License from Mr. Richard Prosser, the Patentee. These Tubes are now extensively used in the Boilers of Marine and Locomotive Steam Engines, and adopted in the Government, Post Office, and the largest and most eminent Engineering Establishments. Copper Tubes, prepared and welded expressly for the Welded Tubes may be used in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Camden Birmingham; London Warehouse, 8, Upper Thames-street.

SMOKY CHIMNEYS EFFECTUALLY CURED.



WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT,

For the cure of smoky chimneys, has been established for the last Ten Years, and has proved to be an effectual remedy.

The Patent Pot must be fixed on the top of the chimney, and can be effectually swept from the inside of the house.

The Pots are made of Fireclay, and set in Roman Cement.

The Pots are supplied with them at the Manufactory, VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and Stables laid with Patent Asphalte Concrete, in any part of the Kingdom. Apply to JOHN PILKINGTON, ASPHALTE CEMENT MANUFACTURER AND PAVIOR, 13, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Builders Supplied. Estimates sent free by return of post.

FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Defiance Steam Filter, the only machine which will, in large quantities, filter sea, canal, or river water, to render it fit for domestic purposes, is now prepared to execute orders. Four Guineas, producing from 100 to 300 gallons daily; for the more delicate purposes of tea, coffee, and table use, 7 guineas. Apply at the Manufactory, 57, Long-acre, Covent-garden, London.

TO ARCHITECTS AND BUILDERS

THE attention of Architects and Builders is directed to the Patent Architectural Works for CARVING IN WOOD by machinery, by which the most elaborate designs may be executed from the very choicest ornaments, with the exception of the work of carving in part. A Show-room is fitted up on the premises, containing a variety of specimens, and the public are invited to inspect their merits. Communications should be addressed to "Architectural Carving Works, Dorset-place, Pimlico," having no connection with any other establishment.

PREPARED FLOORING BOARDS, AT REDUCED PRICES.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge Wharf, Upper-ground-street, Blackfriars, and at Ely Castle's, Shipyard, Millbank street, Westminster, a large, very general, and well-assorted stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension. Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Pine Sashes, Weatherings, Moulds. All sawn and prepared goods delivered free of expense except timber. Sawing charged at mill prices. Very extensive Drying Sheds.

TO BUILDERS, &c.

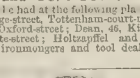
JOHN NEWSON having now completed his machinery for preparing floor-boards with the smallest possible waste, and as cheap as hereto fore, is enabled also now to complete every kind of sawing and grooving at the same mills. A good assortment of planks, deals, battens, cut boards, match boarding and mouldings; oak and deal sash stiles, mahogany, oak, birch, and beech, in planks and in cards, veneers, &c., all dry and fit for immediate use, being well covered by extensive drying sheds.—Also, oak and beech laths and pantile laths for sale at his Timber Yard, Grosvenor-row, Pimlico.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Portland Pantiles.

SILCOCK and Co.'s PATENT PLANES may be had at the following places:—

Archer, 45, George-street, Tottenham-court-road; Blyth, White chapel; Cook, 424, Oxford-street; Dean, 46, King William-street; Fenn, 105, Newgate-street; Holtzapffel and Co., 64, Charing-cross; and of all ironmongers and tool dealers in the United Kingdom.

MUIR'S PATENT  PLANING MACHINERY.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being close to the Thames, by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM, Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Offices, Hatton-garden, Holborn, will be open from the hours of Ten and Four, where all persons desirous of making Sewers to communicate with the Sewers of the said Commissioners, or to purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording such easy communication as they may consider most proper to apply for at the above office.

By the Court,

STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

TO BUILDERS and Others interested in Building on ground fronting or bounding upon, within the district under the jurisdiction of this Court, drained by water-courses falling into the Canal known as the City of London and the Ranelagh Sewers.

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that no such sewer or drain shall be constructed and made but in such line and manner as shall be directed by the said Commissioners or their surveyor.

And that every person who shall neglect or refuse to comply with the requisitions of the said Act in this respect will be liable to be fined upon his conviction before a magistrate at Petty Sessions, and that the Commissioners have directed that no application for the above purposes will be attended to unless the excavations necessary for the same shall be made to the depth at which the sewer can be drained.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained into such sewers, they will not allow any sewers or drains into sewers, to be made for the same.

It is recommended to all persons about to purchase or take leases of premises, to see that the same are properly drained into the sewers.

All petitions must be delivered at this office at least three clear days before they are to be heard by the Commissioners, and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the petition dismissed.

All communications made with any sewer without leave of the Commissioners will be considered as an infringement of the Act, and the parties making the same will subject themselves to a fine.

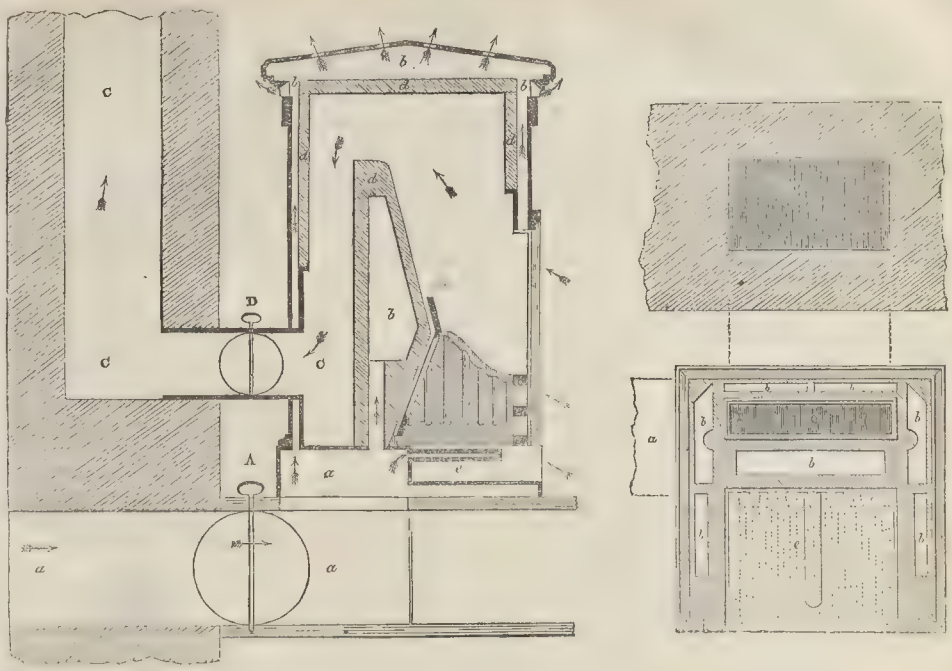
The provisions of the Metropolitan Buildings Act, 7 and 8 Victoria, cap. , not superseding the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and the regulations of such Act must be complied with in the execution of the Act. The execution of such works, under the superintendence of the Surveyor, is recommended, and the fees will be found in the Schedule annexed to the Act. Any person who shall neglect to comply with this regulation will be liable to the penalties above mentioned.

By order of the Court,

LEWIS C. HERTSLET, Clerk.

STEPHENS'S PROCESS for DYEING and STAINING WOOD, as substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sickly and unreal appearance when compared with the natural variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of this process, which expresses paint in appearance, while at the same time it preserves and adds to the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process now named, and will, moreover, be more durable when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 51, Stamford-street, Blackfriars-road; sold also at the office of "The Builder," 2, York-street, Covent Garden, London; Hodgunson, Widemarsh-street, Hereford; R. Sutton, "Review office," Nottingham; R. Wills, 29, High-street, Ipswich; and in Manchester at Grace's Sketch Works, Garratt-buildings. In bottles of 6d. and 1s. each, also in 1s. jars. The colour may be obtained in powder at 8s. per pound, which dissolves in water to form the proper stain, and one pound will make one gallon of stain. N. B. The Trade supplied.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.




*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*c* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same. Yours truly,

ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my church is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,

WILLIAM GARRATT, Minister of St. John's, Fulham.

Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell.

MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

Letter from Professor BRADLEY.

King's College, London, July, 1846.

SIR,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant, THOMAS BRADLEY.

*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

# THE BUILDER.


MONEY to any amount immediately ADVANCED in large or small sums, for long or short periods, by way of MORTGAGE or otherwise; the interest varying from 5 per cent upon Freeholds, Copyholds, or long Leasehold property (being direct from the freeholders), up to Life Interests, Money in the Funds, in the Purchase or advance upon Absolute or Contingent Reversions, and upon the Personal Security of Parties of Responsibility; it is requested that applicants be prepared with full particulars of the security proposed to borrow on. Apply personally, between Twelve and Three; or by letter, prepaid, to C. F., 5, Salisbury-street, Strand.

STOCK BRICKS.—300,000 of Superior Old Stock Bricks for SALE, at the Temple Gallery, British Museum, Entrance Montague-place. For further particulars, inquire of J. COX, on the premises.

HOUSES TO BE SOLD.—One Six-roomed and one Eight-roomed House, together or separate, let to well respectable tenants. Apply to Mr. MACKRORY, 1, Milton Terrace, Vauxhall bridge Road, Pimlico.

BUILDING MATERIALS.—Lot 1, HOSPITAL, HARROW ROAD.

TO BE SOLD by TENDER, the internal fittings of the old Chapel, consisting of sound Oak and Fir Doors, Framing, &c., large Copper, Water-closet Apparatus, Brass work, &c. Sealed Tenders to be delivered to the Secretary, at the Hospital, by Wednesday, 20th January, 1847. To view, apply to the Porter on the premises.

PATENT KAMPTULICON COMPANY, Office, 18, Cornhill.

STOCK ON SALE 3,000 feet super. Kamptulite Pavement, similar to that laid in the palace of Buckingham Palace, Norman Gateway, Windsor Castle, Admiralty Court Yard, Lord Radnor's stables, &c.; 2,000 yards of Floor cloth, for preventing damp, noise, &c., similar to that used in numerous churches, public Comp, noise, &c., similar to that used in numerous churches, public buildings, Lunatic asylums, railway carriages, buffers, &c.; 3,000 feet Planking, similar to that ordered for her Majesty's riding-house at Windsor castle.

Two LIFE BOATS, one capable of saving 160 lives at a time, built of a material that cannot be destroyed by rocks, shot, or by long thrown against a ship's side.

Samples may be seen at the Office as above.

A FEW Statuary Marble Chimney Pieces FOR SALE, at the following low prices:—Three 2 ft. 6 in. Openings, 8 in. piers, 35s. each; two 2 ft. 10 in. Openings, 10 in. piers, 50s. each; several larger Openings, 11 in. and 12 in. piers, 70s. each; with Grates, and some with carved blockings from 6 feet 3 with £12. Approved bills, if required, at three or six months, according to the amount. Apply at 34, Chichester-place, King's cross.

TO CARPENTERS, AND OTHERS.

TO LET ON LEASE for Ninety-eight Years, or to be Sold at a Low Ground Rent, Two well built Cottages, near Haverstock Hill. Improved Rent. Inquire of Mr. QUICK, 26, Great Tichfield-street.

TO BUILDERS, BRICKLAYERS, LIME, SLATE, OR COAL MERCHANTS.

TO LET, a Compact and Convenient Wharf, situate in Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, will adapted for any of the above Trades, having excellent land and land carriage ways. For particulars, apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace road, Lambeth.

TO CARPENTERS, BLIND-MAKERS, AND UNDERTAKERS

TO BE LET in the above line, a Good Business, in one of the first business neighbourhoods of London, at a Low Price.—For cards of address, apply at the office of "The Builder," 2, York-street, Covent-garden.

TO BE LET.—Brick Earth. One Acre or a larger quantity, on the South Western Railway, one and a half miles from Kingston-on-Thames, and nine from London, adjoining the road leading from Wandsworth to Malden. For a term, apply to Mr. RAINE, West Barnes, Merton, Surrey; and for further particulars, to Mr. MATTHEWS, Linton, near Ross, Herefordshire.

TO BUILDERS, MATERIALS AND MONEY ADVANCED.

TO BE LET, on BUILDING LEASES, for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for forty-nine houses, situated in the streets leading from the Queen's-road Pale-ton to Lauisdown-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts of Kentish-town to the Great Eastern Railway, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

ST. JOHN'S WOOD PARK IN IMMEDIATE CONNECTION WITH REGENT'S PARK.

BUILDING PLOTS TO BE LET in this most favorable and desirable situation, commanding picturesque views of the PERRIN'S DENS, BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable Routs and Promenades of the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Austin-friars, Auctioneer, Estate Agent.

TO BUILDERS AND AUCTIONEERS.

TO BE DISPOSED OF.—A first-rate and very compact Business, in the above line, in a good market town, about two hours' ride by railway from London. The owner is about to retire. Twelve to twenty hands are constantly employed in reparations and buildings, having a good private connection. Stock and premises at valuation. Undeniable reasons for parting. Stock to include £10 to about £100, part of which may be left on approved bills at long dates; a small premium may be required in addition. For further particulars, address, C. D., the Office of "The Builder," 2, York-street, Covent-Garden, London.


## SALES BY AUCTION.

TO STONE MERCHANTS, BUILDERS, AND OTHERS.—CAEN STONE, now lying at the CUSTOM HOUSE.

MR. MARSH (Late Fuller and Marsh), has received instructions to SELL by AUCTION, without reserve, in the Barges now moored off the Custom House, to meet Purchasers of Cargoes of THURSDAY, January 21st, Several Twelve Cubic, in Lots, TWENTY BLOCKS of CAEN STONE, varying in dimensions from 10 to 20 feet long. May be viewed the Morning of Sale, and Catalogues had of Mr. MARSH, Auctioneer, Surveyor, &c., 37, Bucklersbury, Mansion House.

TO PAPER HANGERS, BUILDERS, HOUSE DECORATORS, AND OTHERS.

MR. BRAY, Jun., has received instructions to remove for Peremptory Sale, to his Rooms, 359, High Holborn, on WEDNESDAY, January 20th, at Twelve o'clock, an entire new stock, comprising upwards of 3,700 pieces of paper-hangings, dining, parlor, bed room, staircase, and other patterns, in rich common stock, gilt, satin, tapestry, Elizabethan, sandbola, and other patterns. The stock is lotted to suit the trade and private buyers. May be viewed the day prior and morning of sale, and Catalogues had at the Rooms.

To Builders, Timber Merchants, Carpenters, Pianoforte and Cabinet Manufacturers, and others, for Cash, &c. Early Sale, Certain-ground, Shoreditch.—Mr. JAMES COUGHS extensive and excellent stock of about 2,000 cubic feet of well seasoned timber, part, extending from the Curtain road to Shoreditch.

MR. DEACON will SELL (unreservedly) next TUESDAY, 19th inst., and following days, at Eleven for Twelve, by order of Mr. GOUGH, the capital seasoned stock, comprising white and yellow deals, ditto in plank and battens, Memel and Dantzic timber, yellow pine, cut deals and plank, dry wainscot, Honduras mahogany, best and second dry pine planks, spruce deals, a few scaffold poles, fir quartering, &c. &c.—The stock may be viewed until the sale, and catalogues had upon the premises, and of the Auctioneer, 2, Berners-street, Oxford-street.


TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only,

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W. W. RAWLINS, Bangor Wharf, King's Road Bridge, Camden New Town, begs respectfully to inform builders and others, that he continues to supply grey stone, and chalk lime, blue lias lime, Roman cement, plaster of Paris, plasterers' hair, Thames ballast, sand tiles, cement chimney-pots, Welch goods, and all kinds of building materials, this being the nearest Lime Wharf to the North of London. Yorkshire paving slabs, sinks, &c., Thames ballast, and coal delivered per Barge, in the river or on any part of the Regent's Canal.

TO BUILDERS AND OTHERS.

MESSRS. H. G. and E. ROSHER, having closed their Lime Wharf at Montague Close, Southwark, have removed their business to Albion Wharf, Holland-street, Bankside, where they intend keeping a constant supply of Greystone, Flame-burnt, and Plasterers' Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Pipe Bricks, Lights, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland-road.

*** Ground Lime for Concrete.

FIRE BRICKS.—STOURBRIDGE (Rufford's and others) best made BRICKS, at WARDS, Hounslow Wharf, Bankside, for Sale, to be SOLD for arrival. This is a great advantage to the purchasers, saving all the expenses of unshipping, lighterage, landing, reloading, &c. An immense stock of all the best made Stourbridge, Welch, and Newcastle fire goods at summer prices, although freights and other expenses have considerably advanced. Shippers, gas companies, engineers, builders, and large buyers supplied at lower prices than they can import, besides the advantage of having an immediate supply without waiting the uncertainty of ships arriving at this season of the year.

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, bed moulds, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.

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2 Unlike other natural cements, its hardness is uniform throughout its entire thickness.

3 Its surface, which may be made equal to that of the finest marble NEVER THROWS OFF ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

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For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentee, Plaster of Paris and Cement Manufacturer, 126, DRURY LANE.

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Shop Fronts are more damaged and disfigured by the Shutter Bar than any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the inventor, and it is one main of the ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate — To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

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## The Architect, Engineer, Operative & Artist.

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### ADVERTISEMENTS.


WANTED, by a steady person, a situation as Shop Foreman, or to conduct as General Foreman to a Job, either in town or country. Address to W. B., 29, Marsham-street, Horseferry-road, Westminster

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SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

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LEWIS SLIGHT, Clerk.

Clerk's Office, Town Hall, 12th January, 1847.


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"Herapath's Journal," Nov. 28th, 1846.

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"Sunday Times," Dec. 6th, 1846.

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### CONTRACTS.


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PERSONS desirous of Tendering for the Execution of any, or all of the Works required in the rebuilding of Ince Hall, near Chester, can see the Plans and Specifications at the Hall, where they will be for inspection from Thursday, the 21st of January, to Wednesday, the 10th of February, inclusive. The Tenders to be sent in to Messrs. SHARPE and PALEY, Architects, Lancaster, on or before Wednesday, Feb. 17th.

TO ARCHITECTS.

THE Committee of the Army and Navy Club are desirous of receiving designs for the Erection of a Club House. A Premium of £200. will be given for the most approved design, and £100 for the second. Full particulars may be obtained, on application to the Secretary, at the Army and Navy Club, 13, St. James's-square, between the hours of TEN and TWELVE o'clock.—By order of the Committee.

13, St. James's-square, J. WALCOT, Secretary.
20th January, 1847.

HACKNEY UNION.—CONTRACT FOR NEW BUILDINGS AT THE HACKNEY UNION WORKHOUSE

THE Guardians of the Poor of this Union are ready to receive TENDERS for the erection of NEW BUILDINGS at the Hackney Union Workhouse, in Lower Homerton. The plans and specifications of which may be seen at the offices of the Architect, situate at No. 5, Crown-court, Old Broad-street, London, from Monday, the 18th of January instant, till Monday, the 1st of February following, both days inclusive (Sunday excepted), from 10 in the morning to 3 in the afternoon of each day. Two securities will be required in £50 each for the performance of the contract to be named, and their place of abode are stated in the tenders, and to be approved by the Guardians. The Guardians do not bind themselves to accept the lowest tender, and one of the conditions of the contract will be, that the contractor shall not underlet his contract, or any part thereof, or any of the works comprised therein. Sealed tenders to be sent in to the Clerk, on or before Tuesday, the 2nd day of February, 1847, endorsed "Tender for New Buildings at the Workhouse." The Board will meet at the Board room in the Unionhouse to open the tenders, on Wednesday, the 3rd day of February, at Twelve o'clock, when the contractors are required to attend personally, to answer when called for.

The contract must be approved by the Poor Law Commissioners. Dated the 19th day of January, 1847. By order of the Board of Guardians,

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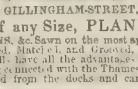
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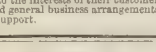
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By Her Majesty's  Royal Letters Patent

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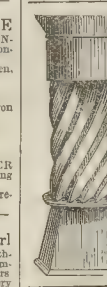
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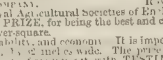
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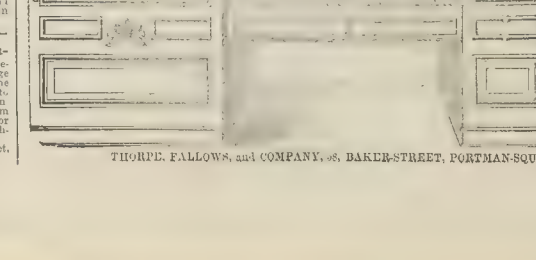
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THORPE, FALLOWS, and COMPANY, 98, BAKER-STREET, PORTMAN-SQUARE, LOND

The Builder.

No. CCVII.

*SATURDAY, JANUARY* 23, 1847.

A STATEMENT having been circulated to the effect, that an accident had occurred to the walls of Covent Garden Theatre, and that another architect had been called in, to examine the extent of the mischief and remedy it,—a confirmation or denial of the assertion was asked for from us by correspondents, and we were led to inquire into the circumstances and look through the building. The result of this is, that we can confidently pronounce the report a fabrication without the least foundation: no accident of any sort has occurred, and no fresh architect has been called in or hinted at.

In making the examination, a fact became known to us which requires to be stated, having especial interest at this moment, when the propriety of preventing the use of wood-bond in brickwork is a matter of question. The whole of the wood-bond in the lower part of the walls of the theatre had decayed entirely, and being of considerable size, 9 in. by 6 in., and even larger, had left the building in an evidently insecure state, only made known by the stripping consequent on the present reconstruction of the interior. In one wall, five bricks thick, it appears that bond on either side of it occupied a thickness equal to three bricks, and was quite rotten! The whole of the timber in this position has now been removed, and its place supplied with *brickwork in cement* to an extent of 800 feet, running measure, so that the building is now considerably stronger in this respect than it ever was before.

The cause of this entire decay within a comparatively short space of time, deserves investigation. Although perhaps, no other reason need be looked for than the effect of the wet mortar and damp brickwork in which the timber was set. The building was of course hurriedly carried up, and the bond (which was in the face of the wall) cased in at once by framing or otherwise, so that the moisture could not evaporate. When timber is placed in the centre of a wall, and so encased that the atmosphere is totally excluded, decay seldom takes place; nor is it likely to do so if, when placed in the inner face of a wall, it is first allowed thoroughly to dry, and then covered by the plasterer: provided, of course, that it be sound timber of a durable sort, and that the insidious access of moisture be prevented.

That it is desirable in the majority of cases to avoid the use of wood bond cannot be doubted. Apart from its shrinking, when not properly seasoned (and so leaving apertures and weaknesses in the walls), and the probability of decay in many situations, its use has often entailed the rebuilding of the walls of structures destroyed by fire, which otherwise might have been kept up. By the substitution of hoop iron bond, as the majority of our readers know, the evils in question may be avoided, and better work obtained, provided that the bond be properly fixed with occasional courses of brickwork in cement. The hoop iron (if pitched and sanded so much the better) should be strained tightly, the whole length of each wall in one piece if possible, and secured at the end by turning it up at right angles, and lapping it over the upper courses; connection at the angles ought not to be forgetten.

Bond timbers are valuable in new work by distributing the various weights, and preventing irregular settlements. The front and back walls of ordinary dwelling-houses, consisting for the most part of slight piers, indifferently executed in too many cases, are more likely to remain sound and unshaken when bond timbers pass through piers and openings (afterwards to be cut out), and so hold the whole together, until the work gets its bearing and consolidates.

An equivalent for this is not provided by the hoop iron *alone;* a cement bond is necessary; but unluckily the additional cost of this, small as it is, is sufficient to prevent the use of it, and so in many cases where wood bond is prohibited, the stability of the structure is made to suffer.*

A correspondent wished to be informed last week if we considered he might use bond-timber in 9-inch external walls; and he said further, that the district surveyor had told him he might not do so.

The second part of schedule D, which treats of external walls, says: — "With regard to other substances than the component materials of external walls,—there may be such *wood* and iron as may be necessary;" and recognizes the necessity of plate, lintel, and bond, by providing that they "must be fixed at a distance from the external face of the wall of four inches at the least." At the end of the clause, however, it says, — "But no timber must be laid into any external wall in such manner, or of such length, as to render the part of the wall above it wholly or in great part dependent upon the wood for support, or so that any such wood might not be withdrawn without endangering the safety of the superincumbent structure, except in the case of breast-summers."

The district surveyors do not consider this provision binds them to prevent the use of wall-*plates*, even in a 9-inch wall, because of the difficulty of doing so; but they feel themselves not merely authorized, but bound by the spirit, as well as letter, of the clause, in the case of bond, when other expedients may conveniently be resorted to, to object to the use of timber in such a situation.

As to a 14-inch external wall, we are disposed to think there is nothing, strictly speaking, to prevent the use of timber bond as formerly; nevertheless, we strongly advise all builders to avoid it, and adopt, as indeed is now almost universally the case, hoop-iron bond and Roman cement.†

After the above remarks were in type, it occurred to us to inquire at the Metropolitan Buildings office if the referees had expressed any opinion on this subject, although we knew that they had not published any award conveying it. We found that they had done so as far back as May last, in the shape of an award on a joint requisition from Mr. C. Oldfield and the district surveyor of St. Pancras, which the former gentleman had afterwards refused to take up. The matter being one of some importance, and the referees having taken a different view of the question from that which we have expressed above, we are glad to be permitted to bring their decision before the public.

The requisition required "the determination of the official referees as to the legality of inserting continuous wooden plates and bond along and in external walls, to carry the joists and timbers of the building; and whether such plates should be limited in size according to the thickness of the wall, for instance, 4 inches by 3 in a 9-inch wall, 9 inches by 4 in a 14 or 18-inch wall, or 4 inches by 4.

The said referees determined "first as to walls 9 inches thick, that inasmuch as continuous wooden plates 4 inches by 3 inches laid into such walls, would render such walls dependent on the said woodwork for support, and that such woodwork might not be withdrawn without endangering the safety of the superstructure, such construction would not be conformable to the rules as to the construction and materials of external walls in part 2, of schedule D, of the first-mentioned Act.

And secondly, as to walls 14 inches or 18 inches thick, inasmuch as continuous wooden plates 9 inches by 4 inches, or 4 inches by 4 inches, laid into the face of such walls, would render the said walls in great part dependent on such wood for support, and so that such wood might not be withdrawn without endangering the safety of the superincumbent structure, such construction must be deemed contrary to the rules of the said Act."

## SOME ACCOUNT OF THE ANCIENT CITY OF SYRACUSE.

The ancient Syracuse occupied the first rank of all the cities of Sicily, or Magna Græcia, in point both of extent and political importance; and there are few remains of ancient cities, even in Greece herself, which are more interesting to the scholar or the antiquary.

I visited the ruins and the modern city in company with some fellow-students in the summer of 1822. The classical interest of the spot, the beauty of the situation, and the splendour of the climate (noted by Cicero for its sunshine in every day of the year) were such, that not even a week's painful imprisonment in the quarantine, on a subsequent occasion, could diminish my feelings of admiration for this renowned spot.

The present paper being principally devoted to the architectural description of the ancient city, I will not occupy the time of the meeting with a long account of its history; it will be sufficient for our purpose merely to refer to the tradition of its having received its inhabitants, in very early ages of the world, from Egypt and Phœnicia; that they were driven out by the Siculi, who, in their turn, were replaced by a colony from Corinth, led by Archias, one of the Heraclidæ, in the second year of the eleventh Olympiad, or about 732 years before the Christian era. The city was named by them Ortygia, or the island of quails (the same name was originally given to the island of Delos).

* In the majority of speculative buildings erected within the jurisdiction of the Act, we fear no bond of any kind is now used.

† The following extract from General Pasley's work on "Limes and Calcareous Cements" will serve to shew the strength of hoop-iron in opposition to a tensile force:

"The extraordinary resistance communicated to brick beams by longitudinal hoop-iron bond, the value of which has exceeded our expectations, induced us to try a few experiments on the actual strength of the hoop-iron alone, in opposition to a force tending to tear it to pieces in the direction of its length, and acting from one end, the other being fixed.

*First, with 1¼-inch hoop-iron.*—Its thickness being what is described as No. 15 wire gage, or one-sixteenth of an inch nearly, and its weight per foot being 2,520 grains, or 5·6 lbs. Having fixed a piece of this hoop-iron in a vertical position, and suspended weights to the lower end of it, which we gradually increased, it broke down under a total weight of 6,163 lbs., after the iron had elongated thirteen sixteenth parts of an inch in the length of about 18 inches.

*Secondly, 1-inch hoop-iron.*—We next broke down a piece of hoop-iron 1 inch wide, of No. 18 wire gage, weighing 1,220 grains to the foot, by a total weight of 2,961 lbs., which produced a previous elongation of half an inch.

*Thirdly, ¾-inch hoop-iron.*—Finally, we broke down a piece of hoop-iron three-quarters of an inch wide, of No. 20 wire gage, and weighing 840 grains to the foot, by a total weight of 1,842 lbs., which produced a previous elongation of one three-eighths of an inch.

The results of these experiments agree very nearly with the statements of the strength of iron of this description in the works of Professor Barlow and Tredgold; and as the strength of iron has been fully investigated, and accurately stated, by these and other authors of reputation, we did not think it worth while to pursue this subject any farther."

It has been suggested, that straps of 1¼-inch hoop-iron would be strong enough for connecting the rafters and tie-beams of roofs of moderate span, instead of ordering wrought-iron straps for the purpose.

We have the united testimony of ancient historians and poets to the effect, that the city rapidly increased until it arrived at so great an extent, and to such a degree of splendour, that Thucydides (long before it reached its summit of prosperity under Dionysius) acknowledged it to be equal in size to Athens; and Cicero mentions it, in one of his orations, as the *largest* and most magnificent city in Greece.*

The city was under different governments until freed from the tyranny of Thrasybulus, 446 B.C.; and sixty-one years afterwards it was usurped by the Dionysii, who were expelled by Timoleon 343 B.C. The celebrated part it took in the wars with Carthage, its memorable conflicts with the Athenians, and its sad and mighty fall, after enduring a three years' siege by the Roman conqueror, Marcellus, are events so well known to every scholar, as to require no further allusion to on my part at this meeting.

In after years, the Saracens completed the ruin the Romans commenced; and A.D. 827 Syracuse resigned to her rival, Palermo, the proud title of Capital of Sicily. From that time the city has dwindled into comparative insignificance. Her population at the present time does not exceed 12,000; and that commerce which once filled its glorious harbours with the ships of Rhodes, Alexandria, and Carthage, is now confined to a few speronaras engaged in a miserable coasting trade.

Syracuse is said to have derived its name originally from the neighbouring Marsh Syraco (now called *Il Pantano*), and situate on the right bank of the Anapus; it was afterwards called *Tetrapolis*, a city formed of *four* distinct quarters, and these were named *Ortygia*, *Acradina*, *Aycha*, and *Neapolis*.

According to Strabo, the circuit of the ancient walls was 80 stadiæ, or 22½ miles, including the suburb of Epipolæ, which was to the westward of Neapolis, and commanded the whole city. At the extremity of Epipolæ was an almost impregnable fortress, called Euryale, mentioned by Livy, and other historians.

The great port of Syracuse—one of the finest in the Mediterranean—is about five miles in circumference. As you enter from the ocean, to the left hand is the rock Plemmyrium, distant from the opposite shore of Ortygia about half a mile. It was across this entrance to the port that the Syracusans, by advice of Hermocrates, threw a strong chain, and thus blockaded the Athenian fleet.

In modern times, the great port of Syracuse has its name connected with a glorious event; for it was here that Nelson revictualled his fleet previous to the battle of the Nile. The lesser port is on the other side of the island Ortygia; it was called Portus Marmoreus, according to some authorities, from the bottom having originally been paved with marble; but perhaps with more probability from the costly buildings which lined its shores.

I will now endeavour briefly to describe the four quarters of the city, commencing with the most ancient one. Ortygia was formerly considered the most important part, in consequence of its commanding the entrance to both the ports. The tyrants established their residences in this division, and added, from time to time, to the fortifications. The Romans also, when masters of Syracuse, regarded the situation of Ortygia in the same important light, and prohibited any native citizen from residing in that portion of the city.

The Temple of Minerva was the most sacred and important building in Ortygia: it now forms the cathedral, or duomo, to the modern city, to which purpose it was converted during the 12th century, when the Goddess of Wisdom was obliged to resign her shrine to "Our Lady of the Columns;" for such was the change in the dedication of this edifice.

The temple was of the Doric order, peripteral and hexastyle, with fourteen columns on the sides. The lower diameter is about six feet seven inches, and the height twenty-eight feet ten inches. The character of the order resembles the Agrigentine examples.† Twenty-one columns of the Peristyles, with portions of the entablature, are still standing; but, unfortunately, they are built up in the outer walls of the duomo. The two columns of the Posticum also remain. The columns, unfortunately, have been disfigured with modern plaster and additional mouldings; and it is much to be regretted that these, by some oversight, have found their way into an important work on Magna Græcia, and are there shewn as part of the ancient work. It was only after much entreaty and persuasion, and offering ample security, in case of injury, that the church authorities (who, unfortunately, in Sicily, are not so devoted to archæological pursuits as the clergy in this country) gave us permission to raise a scaffold, and clear away these unseemely encumbrances.

Cicero has given us an excellent description of the gorgeous magnificence of this temple, which, spared by the piety of Marcellus, was stripped of every thing but the roof and walls by the rapacious Verres. "Its doors," says the Roman orator, "were the theme of universal eulogy, exhibiting the labours of Hercules, curiously wrought in ivory, the angles of each separate panel being adorned with golden bosses of exquisite workmanship, while a Medusa's head, formed of the same rich material, shone above the portal, surrounded with its bristling snakes." We learn also from Athenæus, that upon the exterior summit of the roof was elevated an enormous shield, consecrated to Minerva, and visible to a great distance by the reflection of the solar rays. A custom prevailed among the Syracusan sailors, to secure a safe return from their voyage, of carrying from an altar near the Temple of Juno some ashes in a chalice, which, with flowers, honey, frankincense, and other aromatics, they cast into the sea as soon as they were about to lose sight of this shield. The interior of the walls of this temple were covered with paintings, amongst which was an equestrian combat of King Agathocles, one of the most esteemed works of Syracusan art: this, with twenty-seven other admirable pictures, did the unscrupulous Verres carry away. According to tradition, Archimedes drew an equinoctial line in this temple, and Mirabella says that in 1582 the commissioners appointed by Pope Gregory for the correction of the calendar came to Syracuse for the purpose of examining it. This building has suffered much from earthquakes, but I strongly suspect the hand of man has been the great destroyer: the modern façade of the Borromini school forms a strange mixture with the rigid Doric of the ancient peristyle.

Of the Temple of Diana, two Doric columns with a small portion of entablature alone remain. To judge of the effect of them is no very easy matter, for the columns are unfortunately encased by the walls of a modern dwelling, and the capitals are absolutely inclosed in a wretched closet. Notwithstanding this sad modern degradation of the great Diana's fane, these scanty remains possess considerable degree of interest, as belonging to the most ancient temple of Ortygia; and it is a curious circumstance, that the style of the columns, with the bold swelling capital, strongly resembles the order at Corinth, the mother city. The Selinus and Pæstum examples have also a great resemblance to it. The intercolumniation must have been very small, there being only 1 foot 6½ inches between the abaci of the two capitals. I am happy to state, that since my visit to Syracuse, the Duke of Serradifalco (a nobleman so well known to us all for his successful architectural researches in his native country, and for his contributions to the library of the Institute), has discovered the lower portions of these columns. Near this temple stood the celebrated Baths of Daphne, so named from a laurel grove sacred to Diana: the spot is now called Bagnara, and many remains have been discovered near it.

The celebrated fountain of Arethusa next claims our attention. This classic spot, sacred to the nymph to whom divine honours were offered, and upon whose shrine even Hercules sacrificed, still pours forth its abundant supply of fresh water as of old, but alas how different its present state! It is now the public washing place of the town; and when I saw it, a number of Hungarian soldiers were lounging around it, enjoying their merschaums, quite unconscious of the fame of the spot, or of the gibes and wit that the Syracusan laundresses were indulging in at their expense.

According to Diodorus, the celebrated building, the palace of sixty couches, which in magnitude and splendour was so superior to the temples, that the Gods, from jealousy, are said to have destroyed it by thunder, was situate in Ortygia. This, together with the palace and gardens of Dionysius, the citadel surrendered by Dionysius to Timoleon, the Palace of Hiero, afterwards the residence of the Roman prætor and proconsuls, and the workshops of the infamous Verres, have all disappeared, and their sites are now occupied with modern fortifications, and narrow streets of miserable dwellings.

I now proceed to the adjoining quarter of the city, called Acradina, described by Cicero "as the second city, containing a spacious forum, a beautiful portico, and an ornamental prytaneum, or public hall, from which Verres stole the inimitable statue of Sappho, the great work of Silanion!" Of these buildings there are now no existing remains. It is, however, probable that the Church of San Giovanni occupies the site of an ancient temple; and Mr. Hughes, in his admirable and elaborate description of the city, supposes it to have been the Temple of Jupiter, in which Hiero suspended the Gallic and Illyrian spoils presented by him to the Roman senate; and from a passage in which Cicero upbraids Verres for allowing a piratical corsair to sail into the port, and penetrate up to the very forum, we may infer that the forum was placed near the Isthmus.

In this quarter of Acradina are several of those Latomiæ, or stone quarries, which are so numerous in Syracuse. The most remarkable one is perhaps the one attached to the Capuchin convent, and now converted into a garden, forming one of the most beautiful and retired spots that possibly could be selected for devotional study.

There are also various subterraneous remains in this quarter, with vaults constructed of earthen pots, and the ruins of a bath excavated by Landolina, in 1804, in which was found the beautiful Torso of Venus, now forming the most valuable specimen of ancient sculpture to be found in the museum of the modern city.

The celebrated catacombs are in the quarter Acradina, and whether they are the works of the Syracusans previous to the Roman conquest by Marcellus, or subsequent to that period, is still a matter of conjecture. Mr. Hughes is inclined to attribute them to the Romans. At all events they are prodigious works. Denon describes them as a perfect subterranean city. The principal street or avenue in the catacombs is about eighteen feet wide and ten high, with numerous recesses and chambers on either side, with separate receptacles for the bodies, in one of which I counted no less than fifteen divisions. Swinburn relates that he saw a gold coin of the time of Icetas just taken out of the jaws of a body found in a tomb here: this must have been the *Naulon*, or Charon's fare.

Along the main street, at intervening distances, are transverse streets, forming at their intersections square and circular apartments, which are generally vaulted, and in some of them are conical apertures for light and air. Around these chambers are numerous recesses symmetrically formed. In some parts the walls are covered with fine stucco, and there are the remains of painting, with monograms and symbolical devices, the works probably of the early Christians. An old Capuchin monk acted as our cicerone in going through the catacombs, and the effect of his slow and solemn step, and the glare of the torches through this city of the dead, will not be readily effaced from my memory.

Of the walls of Acradina there are still remaining considerable vestiges, and the rock itself is in some places formed into battlements.

Not far from a gap in the rock, called Scala Græca, where the quarter of Acradina terminated, and that of Tycha commenced, may be traced one of the principal gates of ancient Syracuse, and which, like some of the other gateways, was admirably contrived for defence, the assailants being forced to expose their *right* side, which was unprotected by the shield, to a great length of wall, and the missiles of its defenders.

From Scala Græca a broad road traversed the city to the point Ortygia, lined on each side by strong walls and towers. Fazello states, that a little beyond it, in the quarter of Tycha, stood the town called Galeagra, wher

* Urbem Syracusas maximam esse Græcarum urbium pulcherrimamque omnium sæpe audistis. —Cic., Orat. 2, *in Ver.* lib. iv.

† I have shewn the capitals half the real size. The anta cap may be considered as a good example of the favourite Becco di Civetta, or Owl's Beak moulding of the ancients.

a Roman soldier, during the conferences of Epycedes and Marcellus, by numbering the courses of stone and computing their height, found the wall much lower than common opinion, and scalable by the ordinary ladders. By these means Marcellus took the city in the night, during a festival of Diana, when the inhabitants, more attentive to their superstitious observances than the means of defence, were in a state of great intoxication.

The quarter, Tycha, is described by Cicero as the third city; and he says it was so named from a Temple of Fortune within its precincts, and that it contained a spacious Gymnasium, and many sacred edifices. Of this once splendid quarter of the city little now remains, excepting large sepulchres cut in the rocks, channels of aqueducts, and vestiges of the city walls. To account for so large a space being so completely cleared of the remains of the numerous buildings which formerly occupied it, one is almost led to the supposition that, from the facility of transport given by the immediate vicinity of the port, the materials must have been transported to other shores.

Neapolis is the fourth quarter of the city mentioned by Cicero, and, as its name implies, was the last built. It was adorned with a theatre of vast dimensions, two superb temples—one of Ceres and another of Proserpine—and a very beautiful colossal statue of *Apollo Temenites*.

The theatre is perhaps the most perfect of all the ancient buildings of Syracuse. It was the largest in Sicily, and is computed to have contained 30,000 persons. Its situation, on a rising ground, commands a magnificent view over the ports and surrounding country. The greater portion of the seats are cut out of the the living rock.

In my examination of this edifice I had the great advantage to possess the elaborate and careful studies made in the previous year by Professor Donaldson; and as these have been given in so admirable a manner by that accomplished architect, in the supplementary volume of "Stewart's Athens," it is unnecessary for me to attempt a further description of a work already so familiar to the members of this Institute.

Above the theatre are numerous excavations in the rocks, remains of water courses, streets, and sepulchres. One, more perfect than the rest, is called the Tomb of Archimedes; and although the sepulchral stele, with the sphere and cylinder carved upon it, are no longer to be found to authenticate its identity, one feels unwilling to doubt that this must be the very monument discovered by Cicero, and pronounced by him as the sepulchre of the immortal Archimedes.

Not far from the theatre are the remains of an amphitheatre, which was also in part excavated from the platform of living rock. The arena, seats, corridors, podium, subterranean cells, and water-ducts are still easily traceable. The construction is evidently Roman.

The extensive quarries, or Latomiæ, are principally in this quarter of the city. They are said to have been excavated by the Athenian prisoners, and afterwards used as places of confinement. No greater contrast can be imagined than their former with their present state; for those once gloomy abodes of the victims of Dionysius are now flourishing with the luxurious vegetation of the pomegranite and the orange, and are watered by the transparent streams which still flow along the ancient channels; and the spot where the infamous Verres incarcerated not only Syracusans, but Roman citizens, is now termed "*Il Paradiso*." In this Latomia is the church of San Nicolo; under which is a chamber excavated from the rock, 64 feet 6 inches long, 22 feet 6 inches wide; and from the remains of a water-duct at one end it was probably used as a reservoir.

I must not pass by the curious cavern called the ear of Dionysius, which is about 170 feet in depth, 35 feet in width, and 60 feet in height. It is stated that Dionysius constructed this cavern on acoustic principles, for the purpose of overhearing the conversation of the prisoners confined within its walls. There is beyond doubt a wonderful power of conveying and increasing sound in this curious vault; but an examination of it, including the somewhat hazardous ascent with ropes and pullies to the cavity near the top, impressed us with the notion that this power, as is the case with most echoes, is more to be ascribed to accident than to art.

Neapolis was also adorned by a colossal statue of Apollo Temenites, which stood proudly pre-eminent on a rising ground, and was preserved, says Cicero, by its magnitude, from the sacriligious grasp of Verres. Suetonius states, that it was contemplated by the emperor Tiberius to place it in the library which he had built, or restored, in honour of Augustus; but that he was prevented by the Deity in a vision.

The ruins of the Temple of Jupiter Olympius are situate on a gentle eminence on the right bank of the Anapus, overlooking the great port. Portions of the shafts of two Doric columns alone remain standing; but I am rather doubtful whether these are in the the original position. It is to be much regreted, that so little is left of this temple, which, in its original state, was described as the richest monument in Syracuse. In its adytum was placed the famous statue of Jupiter, esteemed one of the three* most noble representations of that deity ever produced, and from which Dionysius stripped off the golden mantle, replacing it with one of wool, accompanying his robbery with the impudent apology, that gold was too heavy in summer and too cold in winter for the king of the gods, but that wool was adapted for both seasons.

I believe I have now generally, though I fear very imperfectly, described the principal remains of the four quarters of the ancient city; and I will trespass for a few minutes longer only upon the attention of the meeting by making some short observations upon the suburbs and outworks.

*Epipolæ*, so celebrated in the sieges of Syracuse, is to the westward of Neapolis, on a spot (as its name imports) commanding the whole city. It was inclosed by Dionysius within those remarkable fortifications and walls said to have been constructed by him in the incredible short space of twenty days, and upon which he employed 60,000 workmen and 6,000 yoke of oxen.

It was also defended by a fort, which, according to Fazello, was called by the Greeks Labdalo, but Mr. Hughes is of opinion (judging from the descriptions of Thucydides and Diodorus) that Labdalo was considerably lower in the descent, and that the fort in question was the celebrated Hexapylon, a work constructed with extraordinary military skill and art. Mr. Cockerell (and I cannot appeal to a higher authority in these matters) states that he considers the remains of this fortress to be the most admirable specimen of ancient military architecture he had ever met with in all his extensive travels.

The principal entrance is admirably constructed for defence, with flank walls, from which the assailants were exposed to the attack of the defenders. Some of the walls are of solid masonry, 12 feet in thickness. Others, of that species of construction termed *Emplecton*,† are fifteen feet thick. At two of the angles of the walls are square towers of solid masonry, and there are several remains of fosses, twenty-five to thirty feet deep, cut in the solid rock, and defending the accessible approaches to the castle. In one part is a subterranean passage, nine feet wide and twelve feet high, leading in an inclined plane from the castle to the fosse, probably for the use of cavalry; and in other parts of the walls are small openings, about two feet in height, and sufficient to allow a man to creep through, by which the sorties were probably made.

The suburb of Epipolæ was terminated by a second almost impregnable fortress, called Euryale, mentioned particularly by Livy in his account of the siege of Syracuse, by Marcellus. In the seventeenth century the village of Belvedere was built on this spot, but no vestige of it now remains.

The river Anapus, so much vaunted by the poets and historians of old, is now a small stream, and its banks covered with lofty reeds and aquatic plants, growing so luxuriantly as almost to impede our progress in a small boat. We contrived, however, to reach the beautiful fountain of Cyane, a natural basin of about fifty feet in diameter, and celebrated by the poets as the spot where Pluto made his descent with Proserpine. We here saw the elegant Papyrus plant growing in great perfection, and it is said to be the only spot in *Europe* where this rare plant flourishes.

It has been remarked that there is no ancient example of any state so circumscribed in territory, extending so far and wide its influence, as Syracuse. In military fame she was equal to Lacedæmon, and contested successfully with the Athenians for naval pre-eminence! Her laws excited the admiration of Aristotle. The great Theban bard sung the victories of her conquerors in the games of Greece. From her power emanated the colonies of Acræ, Casmenæ, and Camarina. Her resourcess were so great, that Gelo offered to assist the Grecian states in their armament against the Persians with 28,000 troops and 200 *Triremes*, and, in addition, to supply provisions for the entire army of Greece, during the continuance of the war; and the perfection she had attained in the fine arts was such as to soften the hitherto rigid habits of her Roman conquerors, to refine their taste, and to excite and ensure their clemency.

Fazello tells us that her skill in works of gold, silver, and embroidery, was proverbial! The extent and magnificence of her buildings we have already adverted to. The superb medallions of Philistides sufficiently testify the superiority she had attained in the numismatic art; and of the extent of her sculptural embellishments we may form some idea from the remark of Cicero, that the Syracusans lost more *statues* by the rapacity of Verres than they did *men* by the *victories* of Marcellus.

The indefatigable Capodieci† presents us with a glorious list of warriors, statesmen, poets, philosophers, and men of science, whom he claims for Syracuse; and proud indeed must that city be which could produce Agathocles and Dionysius as commanders, Philistus as an historian! the poet Theocritus, and, greater by far than all these, her own Archimedes!

The achievements of the great Timoleon took place at Syracuse; within her walls the divine Plato for some time resided; the eloquence of Cicero was heard within her senate; and in later times the great apostle of Christianity tarried there on his way to Rome.

I trust this feeble attempt to describe the ancient Syracuse, will be excused, with all its imperfections; and most amply shall I be repaid if the interest of this meeting has been in the least degree promoted by a short account of that city, where the friendship of Damon and Pythias was fostered, and whose inhabitants derived their greatest pleasure in listening to the verses of Euripides!

SAMUEL ANGELL.

* One, in the Roman capital, from Macedonia; a second at Pontus; and the third at Syracuse.—*Cic. in Ver.*, 2, lib. iv.

† Plin, Nat. Hist., lib. 36, c. 22,

* Herodotus, lib. 7, cap. 157.

† The compiler of forty folio volumes on the antiquities of his native city.

## THE DISADVANTAGES OF BUILDING COMMITTEES. ‡

MANY causes there are which operate to the continuance of existing evils; but if, on my own individual responsibility, I were called on to state the one which most of all conduces to hinder the advance of improvement in ecclesiastical architecture, I should attribute it to that monstrous anomaly usually known by the name of building committees. It is no theory which prompts the observation, nor is it any jealousy which would wish to confine to this society the care or the credit of architectural supervision, but it is the plain experience of many years which makes it almost a matter of truth to declare this opinion.

We may suppose that the type of these committees exists in the Metropolitan Church Building Association and the Church Building Commissioners. Now constituted as these bodies are of our superiors in the church, and with zeal and intention the most devoted and right minded, I am constrained to speak of them in no other terms than those of the profoundest respect; but what service they have done to the cause of church architecture every one who has had any experience of the matter very well knows. But why building committees are now to be formed in the country for building or restoring churches, one is quite at a loss to understand, for it is quite plain that they are the means of retard-

‡ From a paper by the Rev. Eccles Carter, read before the "Bristol and West of England Architectural Society." Although agreeing with it in the main, we are bound to say we have acted under committees, on more occasion than one, with the greatest satisfaction to ourselves.

ing the very objects they are professedly formed to promote.

It almost invariably happens that the persons composing them are selected from no knowledge of the subject, but from wealth or importance in other respects; and it is not unfrequently the case, that various and conflicting interests tend to promote disunion amongst them, and to nullify the effect of consultation. Consequent upon this system is that most pernicious one, putting up churches to competition, both as regards architects and builders; and when it comes to the choice and decision of plans and estimates, it very generally, and not unnaturally, happens that the cheapest is considered the best; the cheapest, that is for the present time, though posterity will have to mourn over the false economy of their ancestors.

It is enough to assert, that it is impossible for any architect to act under such influence, or to do himself or his cause credit, when he is canvassed and advised, cut down and perplexed by the contradictory statements of such a body. He is driven to the alternative of manfully refusing to listen to suggestions and alterations in his plans which he knows to be wrong, and so losing his employment; or of compromising his character as an architect, by perpetrating enormities suggested by the committee for cheapness or conveniences, but of which he has to bear the discredit. A good architect therefore becomes dispirited or disgusted; an indifferent and careless one becomes reckless.

It might be some evidence against a system, that I believe if every architect in England were canvassed on the subject, not one would be found to hold up his hand in favour of these building committees, constituted without reference to architectural or ecclesiological knowledge, and, in fact, without any further responsibility than their own consciences may suggest. It is a still stronger evidence against it that I have hardly known one man who had any knowledge of the subject, who did not bitterly lament having joined such a committee, and in very many cases has found it necessary to save his own credit by refusing to act upon it; and, moreover, if we may judge of causes by their effects, it is a staggering fact that the best instances of restorations of old churches, and the building of new ones, have been where no committee has acted, but one person has been responsible, though aided of course in his opinions by persons competent to give it.

If I am wrong as to fact, I beg I may be presently corrected. In place, then, of these numberless committees, rent by conflicting interests in themselves, and each one differing in opinion and knowledge of fact from the other, laying out for plans of designs by competition, and sitting in judgment on things by which the most experienced, under the same circumstances, might be easily deceived (for drawings and designs are very different from realities), instead of such a disjointed and cumbrous machinery as this, it would seem the most rational plan to have, when required, one body of men who should decide on the propriety of each particular church within its own district. And what body more proper than the committee of an architectural society, composed, as it is, of professional architects, clergymen, antiquaries, and others, whose business it is to make themselves acquainted with the facts and details of church architecture, and who, having no interest to serve, can have but one single object in view, viz., to rear a temple fit for God's service, the best that can be reared with their present means?

There is no occasion, then, for competition; an accredited architect can be fixed on for the work; and if, by the advice of the committee, any thing is done wrong, there is a responsible body, and every one knows who they are and where they are. The clergymen and churchwardens in each parish are the committee to whom the law has entrusted the care of the church. It is reasonable that they should discharge their responsibility by getting the best advice they can on the subject. But if they are not competent to fix on an architect, and to judge of the correctness of his proposals, they certainly are not competent to decide amongst a number of different plans and conflicting opinions. And as to their calling in indiscriminately, the opinions of persons no better qualified than themselves to give it, it would really seem as reasonable to send, in sickness, for a physician, and then to summon four or five of the worthiest friends one could find, to sit in judgment on his prescription. If, then, in any parish where a church is to be built or restored, the clergyman would seek the advice of an architectural, instead of a heterogeneous committee, and if any committee be required to act, let them be the responsible body. We should then see what is the use of architectural societies, not by the talk and noise they make in the world, but by the solid and substantial temples which would silently be reared for the service of God.

## THE NEW CHURCH IN THE CITY ROAD.

### EFFECTS OF THE WEATHER ON MASONRY.

The church, now in progress in the City Road stands within a crescent, which is on the north side, about an equal distance between the Angel and the Eagle Tavern. The style may be considered as late early-English, and though plain, is ably treated in all points, particularly in the mouldings. The plan consists of nave and aisles, chancel, a north chapel to the chancel, continuous with the aisle, and a tower in a corresponding position on the south. The north chapel is only to be distinguished externally, by a broader buttress of separation; but the tower projects a little in advance of the north aisle. The lower part of the tower will be groined, and this, and the north chapel open into the aisles, and the chancel, by large arches. A sacristy is placed in the angle between the north chapel and the chancel, the latter projecting some distance eastward. There is a turret staircase to the tower, and also one at the west, probably for an approach to the organ loft. The houses of the crescent approach so near to the walls of the church, that it has been necessary to cut off the angle of the sacristy—the door now being in the splay. The architect has also had to omit buttresses at the angles of the church, and to substitute a splay, the angle being corbelled out above. It is precisely such points as these, which become fortunate opportunities in the hands of an able architect; but they require a more than ordinary insight into the principles of the art. One who had a very moderate knowledge of the style he had chosen, or a partial acquaintance with examples, such as he had been accustomed to copy, relying only on such aids, assuredly would under such circumstances, fall into some glaring error, and such an example as that in question, furnishes a fitting, though slight illustration, of what we have often endeavoured to inculcate, in urging the importance of a perfect knowledge of examples, combined with the desire to learn their principles, and to use them as the materials, out of which to originate really new productions. The great sameness of character in many of the designs for cheap churches, already commented on, is a proof of the imperfect state, in which our knowledge of Gothic architecture still remains.—The piers of the nave are varied in plan, and will have alternately, moulded and foliated capitals. The entrances are one at the west, and a south door projecting with a gable head, so as to afford room for deeply recessed mouldings and shafts. The east end is lighted by five lancets. The windows of the aisles are of two lights, the space above the mullion being pierced with a quatrefoil. They are splayed out to a great width in the interior, after the manner of old examples. The materials used are Bath stone for the mouldings, and Kentish rag for the walls. The latter material has been disposed in irregular courses, this church being one of the few new ones, in which the material has been employed in the manner, recommended in a recent article published elsewhere. An opinion as to the comparative effect of this method, and that where stones in the courses, are used all of equal height, can hardly be formed till the work is pointed, and complete. Mr. Scott is the architect.

The severe frost, about ten days ago, did great injury to this building, as to many others in London. Every arch in the arcade which is erected, has suffered, the voussoirs being split, so that it will be necessary to replace them with new stones. The wall had been in a very damp state, not only from having been recently erected, but from the previous rain, which seems to have run down, and gained entrance at the top of the label. Two adjoining voussoirs have failed, in most cases, through the expansion of one, against the other. Too great care cannot be taken in protecting walls from the weather at this season, for although ordinary precautions be employed, serious injury may be done, as in this case, in a single night. It may be remarked, that the north side of the arches, that next the quarter from which the wind blew, is the only one in which the fissures are apparent.

## ON STAINED GLASS WINDOWS.

At the Decorative Art Society on the 13th inst., Mr. C. Cooper read the first portion of a paper "On Stained-glass Windows, chronologically considered," noticing such as were executed before the 16th century. He introduced the subject by stating, that his observations would have reference to stained-glass as a pictorial and decorative adjunct, classifying the principal features which characterized the works of several periods in ecclesiastical and public buildings. A brief description was given of the various properties of glass in use, such as *painted glass, pot metal, and flashed glass*, and it was said that England during the middle ages was not celebrated for manufacturing the more costly and beautiful tints, it being usually stipulated in the contracts of those times, that for the more precious colours none should be used "but glass from beyond seas." Painting upon white-glass was pointed out as producing muddy opaque effects of a perishable nature,—*pot-metals*, as being essentially brilliant and durable, and *flashed glass*, as allowing the partial removal of the coloured surface by grinding, as practised in the examples during the 15th and 16th centuries, or by the more economic action of the fluoric acid. The greater brilliancy and depth of colour produced by the two latter kinds beyond that in which the colours are painted on the glass, and subsequently burned in, was demonstrated, and it was said that a prejudice in the public mind as regards the decline of the art, might be attributed to the practice in later times, of using painted glass when attempting pictorial display.

The reader said, that the earliest notice of glass being employed for windows occurs in Bede's account of sending to France to procure glass manufacturers, and to bring them over to glaze the windows of the monastery at Weremouth in the 7th century, and which mission was successful. The artisans then brought over gave instructions to the English in the art of making glass for window-lamps and other works. Although the account given was not clear, as to the nature of the glass, made, he would infer that it was *coloured* glass from Walpole's having ascribed the introduction of painting into this island to Bede. The examples of the 9th century were said to exhibit barbarous attempts in delineating the human figure;—the Norman and Semi-Norman windows, as having considerable merit;—the 13th, 14th, and 15th centuries present progressive improvements in the art, with admirable fitness of design; but the 16th century, in the reader's opinion, witnessed the decline of the art, at least in the suitableness of the design to the material; which he explained to arise from attempts to produce perspective effects in which the drawing and foreshortening are accurately represented, but the figures and objects at various distances are of an uniform depth of colour. From the unsuitableness of the material, aerial perspective was never attained.

Mr. Cooper next entered upon an analysis of the designs and colours peculiar to the several centuries. Previously to the 11th century, representations of the human form were attempted in a rude manner, without any shading or pencilling; the colours being pot-metal, and the outline formed by the leading. The flesh and features were sometimes left in clear white glass. The subjects usually consisted of three or more figures—saints, kings, attendant angels, &c.—on a deep blue ground, and the colours were nearly always restricted to the primaries. With reference to the 12th and 13th centuries it was stated, that the general design is composed of geometrical forms in panels, either squares or circles, or portions of them. The vesica piscis being frequently met with (formed from the intersection of two equal circles at their centres), and also the

square, placed lozenge-wise. Although the design may be sometimes complicated, the ground-work will be formed by the square and the circle; and several diagrams were shewn in explanation of this view. Another peculiarity was adverted to: every geometrical compartment exhibits a complete picture; thus, a single window may contain from twenty to fifty perfect tableaux, chiefly scriptural, and sometimes presenting a complete and consecutive history. No perspective is attempted; and the background is usually deep blue, and sometimes red, black, or yellow. Letter inscriptions are to be met with, forming the base line, and surrounding the subject. The predominant colour, in effect, is a glowing purple or violet tone; blue and red glass being freely used, and the detail of the design, from the minuteness, being subordinate to colour. A great similarity was said to be observable between the works of this period, executed in this country, and those on the continent. Designs of windows in Canterbury and Lincoln cathedrals, and others at Bourges, Lyons, and Strasburg, were described and compared. He thence inferred, that the examples we possess were not executed in this country, or if so, that they were designed by Norman or French artists.

In the fourteenth century single figures and heraldry were more frequently introduced, other parts of the windows being filled by quarries, with foliage painted black, or partly yellow. A continuous pattern, with rosettes, pateræ, fleur-de-lis, &c., in full colours, and a surrounding border in rich colours, are peculiar to this period. Towards the end of this century, large canopied figures, occupying the whole light, are met with (as at Tewkesbury). These figures were treated in two distinct ways as regards the colouring, some having the whole background in rich colours, generally blue, and sometimes red, but no white glass appearing. In the other case, the backgrounds are clear glass and devoid of colour. The designs are in other respects similar. The reader supposed that the former were adopted in buildings having no painting on the walls, while the latter would, by admitting a considerable portion of pure light, be essential to the proper effect of mural decorations, tapestries, &c.

Po'-metals, it was said, were principally employed for all the coloured portions, and some curious accounts of expenses, &c., for preparing the tables on which the design was set out the full size, and for breaking, joining, and painting the glass, were quoted.

The paper will be resumed (and the remarks continued to the present time) at the next meeting of the society, on the 27th inst.

## TERRA-COTTA.

Sir,—I beg to make a few remarks on the subject of terra-cotta, in reference to a quotation from a contemporary, which appeared in The Builder of September 5th, 1846, depreciating this valuable and efficient material; stating, that it is unfit for interior use, and that it is very expensive. Now, I beg to say that this is quite a mistake; for it is from thirty to fifty per cent. less expensive than stone, and more durable than any building stone when the proper ingredients are used in mixing it, and well burned; for the high degree of heat to which it is subjected causes it to become a semi-vitrified substance, and renders it quite impervious to the weather. Frost or damp has no effect upon it; consequently, it retains a sharpness and surface unimpaired by atmospheric changes. The fragments of terra-cotta in the British Museum, upwards of 2,000 years old, will fully bear out this remark.

Nearly a century has elapsed since the introduction of terra-cotta into this country; and many works executed in it may be now seen unimpaired and as perfect as when first executed; while the natural stone in and about the same building, will in many instances be found to have gone to decay.

It is a material capable of high finish and good relief, and admirably adapted for all kinds of architectural decorations. I here give a few names of places where it has been used:—the gateway, &c., of King's College, and various works at Cambridge; the frieze, capitals, trophies, figures, fountains, &c., Buckingham Palace; the caryatidæ, and the whole of the architectural decorations at St. Pancras Church; the frieze and capitals of St. Paul's school; the capitals and other enrichments of All Souls' Church, Langham place; the colossal statue of Britannia on the Town-hall, Liverpool; the pediment (subject, death of Nelson), statues, &c., Greenwich Hospital; the vases on the terrace—front of Somerset House; the statue of Britannia, 12 feet high, and all the figures, &c., on the Nelson Monument at Yarmouth, facing the sea, the *stone* of which is *rapidly* decaying; the statues, &c., at the Bank of England; the rich Gothic screen at St. George's Chapel, Windsor; and other works too numerous to mention.

As you are a professed and able advocate for the advantage of the arts in architecture and building, I trust you will give this subject space in your valuable journal, rather than encourage the depreciation of a material that is really good, useful, and economical.

I am, Sir, &c.,

Hoddesdon. James Pulham.

## AWARDS OF OFFICIAL REFEREES.

### SMALL DETACHED OFFICE BUILDINGS.

In the case of a closet building erected without notice at Forest Hill, Sydenham, in the Lewisham district, the district surveyor laid information against the builder for the following irregularities:—

"The south wall of said building, being carried over soil pit on old wood bearer (without counter arch, and the floor-joist-ends also *bearing* on such wood bearer); also portion of back wall returning from quoin at south side, built on dry brick steining of four inch thickness for foundation thereof. The roof parapet walls not being of sufficient height, schedule D part 2."

The referees' award was: "that inasmuch as the building in question comes within the modification made under the authority of the Commissioners of Works and Buildings, dated the 5th September, 1845,* relative to small office buildings detached from any other building and from ground not in the same occupation to an extent equal to the height thereof above the ground, and not exceeding eight feet in height and half a square in area,—the said building is not subject to the rules of the first-mentioned Metropolitan Buildings Act, cited in the said notice of irregularity."

Costs, with the exception of those attending a hearing on the premises, required by the builder, to be paid by the district surveyor.

### THICKNESS OF INCLOSING WALLS.

With regard to four buildings of the first-rate, and four buildings of the extra first-rate, of the dwelling-house class, proposed to be built in Platt-street, St. Pancras, for the Association for Improving the Dwellings of the Industrious Classes,—the said buildings were to contain five stories, inclusive of the rooms in the roof thereof, and were in effect buildings of the third rate.

A requisition from Mr. Moffatt, on the part of the society, stated that,—"by schedule C, part 2, of the said Act, it is required that the external walls of the said first-rate buildings be of the thickness of 17½ inches in the three lowest stories, and thirteen inches in thickness, in the two topmost stories; and that the external walls of the said extra first-rate buildings be of the thickness of 21½ inches in the lowest story, and of the thickness of 17½ inches in the four remaining stories.

And whereas it is prescribed under the rule in schedule D, part 1, of the said Act, headed, "Thicknesses of inclosing walls to stories of buildings of whatever rate," if any such wall (i. e. an external wall) be abutted by cross or return walls within a length of 12 feet, and if not more than one aperture or recess occur within such length of 12 feet, and not more than one-half the quantity in length be taken out of such compartment of a wall by any such aperture or recess, then such external wall may be built of any thickness not less than 13 inches, notwithstanding the rate of such wall may require a greater thickness."

And whereas it is desired by the said W. B. Moffatt to build all such of the external walls, of all the said buildings as do not exceed 12 feet without cross walls, of the thickness of 13 inches, and, as the said W. B. Moffatt considers, in conformity with the said Act.

And whereas a difference of opinion has arisen between the said W. B. Moffatt and the district surveyor, touching the applicability of the last rule herein before quoted, the said surveyor being of opinion that the thicknesses prescribed for external walls in sched. C., part 2, are the minimum thickness for the rates of buildings to which they respectively apply, and that no departure may be made therefrom, other than such recesses in the said walls as the surveyor may authorize under the rule "construction and materials," in schedule D., part 2, of the said Act, and that the rule hereinbefore quoted applies only to any additional height of story beyond the usual height."

The referees were accordingly requested "to declare the true intent and meaning of the herein before quoted rule, and also whether the same may be applied, and does apply, to the external walls of the buildings in question, and to determine whether the said external walls may be built of the thickness of 13 inches only throughout, or in case the said W. B. Moffatt should think fit, of the thicknesses prescribed by schedule C., part 2, of the said Act for external walls of dwelling-houses of the third rate."

At the hearing, the following further question was also referred to them:—"Whether, inasmuch as there is to be no basement or under-ground story to the proposed buildings, and there is to be no kitchen fire-place and range, it will be necessary to build the backs of the fire-places on the ground, or lowest story, of the thickness of 13 inches."

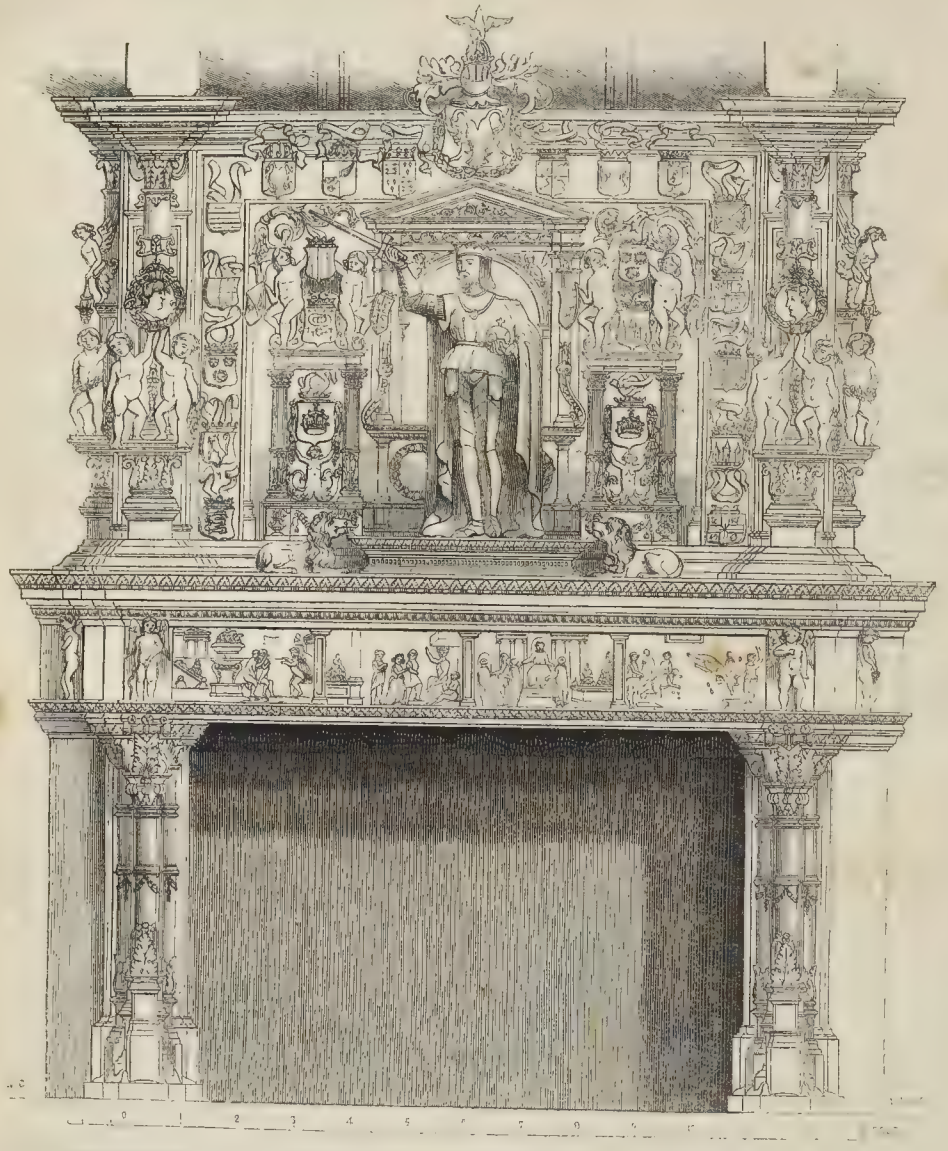
The referees awarded:—"That the rule in question (that is to say, the last of the rules in schedule D, part 1, headed, 'Thickness of inclosing walls to stories of buildings of whatever rate') does apply, and may be applied, to the external walls in every story of buildings of the first class, where such external walls are abutted by cross or return walls not less than 8½ inches thick, coursing and bonding therewith within a length of 12 feet; and that, if any external wall of the building in question be so abutted, and if not more than one aperture or recess occur within such length of 12 feet, and not more than one-half the quantity in length be taken out of such compartment of such wall, then such wall may be built of the thickness of 13 inches—so, nevertheless, that in the buildings of the central portion, the cross walls be carried up to the ceiling of the story next but one below the topmost story, at least 8½ inches in thickness; and so that in the wings (these buildings being of the extra first-rate) the cross walls be carried up to the ceiling of the story next below the topmost story, at the least 8½ inches in thickness. And as to the matter of the chimney backs, we do hereby further determine and award, that, notwithstanding the circumstances stated at the hearing of this matter, it will be contrary to the rules of the Metropolitan Buildings Act to build the back of any chimney in a party wall, in the lowest story, of the thickness of 8½ inches, or of any less thickness than 13 inches; and that it is not competent to the official referees to dispense with such rules."

Expenses to be paid by the society.

* See The Builder, Vol. III., p. 445.

Martin's Cement.—An injunction has been applied for by Mr. Stevens, in the Vice-Chancellor's Court, against Mr. Keating, to restrain him from infringing the original patent granted in 1834, for the manufacture of this cement. The specification of the patent now vested in the plaintiff claimed a right of manufacturing powdered chalk or gypsum, and a strong alkali, by neutralization with an acid, into a good imitation marble or cement, capable of receiving a high polish; and by another patent in 1840, alum, &c., were specified for mixing the materials in a solid state. The defendant in 1846, however, took out a patent for a cement, treating the mixture of gypsum with an acid and alkali as an old thing; claiming the use of borax instead of alum; and stating that he had obtained a contract for supplying the new Houses of Parliament with his new cement. The Vice-Chancellor held that the plaintiff had a *prima facie* right to the injunction; but that he must be put on terms to bring an action forthwith to try the validity of his patent.

CARVED FIREPLACE IN THE "PALAIS DE JUSTICE," BRUGES.



## THE PALACE OF JUSTICE AT BRUGES.

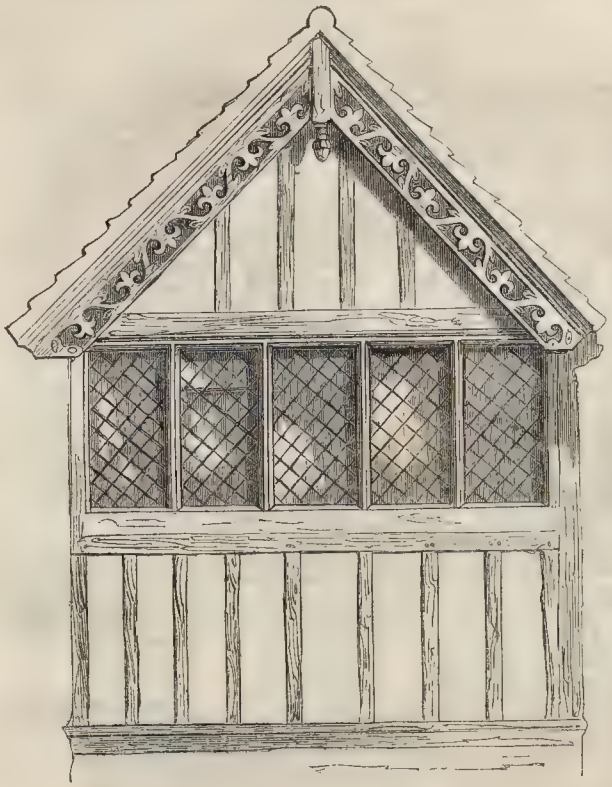
The appearance and condition of this interesting town must now be strangely different from what it was in the middle ages, when it bore the title of the Florence of West Flanders, and was well spoken of by Petrarch and other writers of the period, whether as regards historical associations, public institutions, or the succession of great men, Bruges has sent forth throughout Europe. She has fallen into comparative obscurity; still it is a place that must not be passed over lightly; there are still objects of no mean interest to command attention, and to my mind it still retains a more general air of antiquity than any other town in Belgium, and a ramble through its narrow streets, with the lofty and steep gables on either side, with here and there a house more richly decorated than its fellows, will bring to recollection some of Prout's finest drawings. No buildings will be found here comparable either as to extent or beauty with those of Brussels, Antwerp, or Ghent, yet the few that are remaining will well repay an attentive examination.

The grandest monument remaining of this once far-famed place is the church of Notre Dame, which is thus spoken of by Roscoe. "It rose to its present state from a small chapel, built by St. Boniface in 745, and dedicated to the Virgin; its length is 300 feet, and in breadth and height it is equally grand and imposing. The extent of the nave of the four lower aisles or wings, and of the swelling dome, presents a magnificent *coup d'œil*, and gives it an air at once picturesque, and of peculiar grandeur. The grand choir, in its dim religious light, the two magnificent aisles illumined by the splendour of the variegated and deep stained glass, all possess an absorbing charm to extort admiration from the coldest mind."

In this church is the monument of Charles the Bold and his daughter, Mary of Burgundy, the two last sovereigns of Flanders: it is a very rich and elaborate composition, but not equal in purity of design to many works of the preceding century. In the nave, near the entrance to the choir, stands a pulpit carved in oak, and in the same style as those generally found in Belgium.

But it is in the Palace of Justice that the most elaborate specimen of wood-carving is to be found. The exterior is modern, and presents little worthy of notice; but the room, known as the chamber of Charles the Fifth, well deserves attentive study. The whole of one side is covered by the most elaborate carving. The centre is occupied by the chimney-piece, shewn in the engraving, the lower stage of which is worked out of black marble, with the exception of the cupids and bas-reliefs (representing the history of Susannah), which are of statuary marble. The figure in the centre is intended to represent the Emperor Charles the Fifth; above him are

## GABLE AT IGHTHAM, KENT.

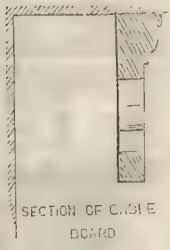




SECTION OF MULLION



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SECTION OF GABLE BOARD

placed the imperial arms; and around those of Spain, Flanders, Brabant, and the different members of the ducal house of Burgundy; on the right of the chimney-piece are statues of Charles the Bold and his wife, Margaret, sister to Edward the Fourth of England; on the left, the figures of Mary of Burgundy and her husband, Maximilian, of Austria. A very faint idea can be given by any engraving, of the exquisite manner in which the whole of the carving is executed. From a date on one of the sides, it appears that this elaborate work was done in the year 1529. At the time of my visit the whole was undergoing the most careful repair; and it was easy to perceive, that the men engaged on the work had fully entered into the spirit of it, and were anxious to make it as perfect as their skill would permit.

It is merely repeating an oft-told tale to say, that the same encouragement is here given to every branch of the fine arts, as in every other town in Belgium. There is a Royal Academy supported by Government, which contains schools of painting, sculpture, and architecture, besides numerous private collections of great merit.

Surely the attention of our own Government should be called to the fact, that in every considerable town of Belgium there are means of study provided and superintended by the Government authorities; while in England, with the exception of schools of design (not too well conducted) in a few of our large towns, there are no means provided by which the people may cultivate a taste for the arts. Still, we are rather better off than we were a century back, when some of our finest works in sculpture were executed by foreign artists. Upwards of twenty of the noblest monuments in Westminster Abbey are the work of two sculptors from Antwerp — Sheemakers and Rysbrack. W. C.

### OLD ENGLISH GABLES.

The accompanying example of a gable and barge-board will probably be found useful. Those generally supplied in architectural works being usually selected from the most costly examples, can seldom be imitated by the builder, yet the small unpresuming cottage gable is often as effective as the one of more elaborate design.

It is from a cottage at Ightham, in Kent. The construction is perfectly simple, and is explained by the accompanying sections.

### FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Polychromism in Mediæval Buildings and Sculptures.*—At the restoration of the fine church at Reütlingen, Würtemberg, erected in the 14th century, a series of wall-paintings were discovered, and freed of the whitewash which overspread them. They are legends of St. Catherine, and a Passion, without much art-worth; still, interesting for German art-history. The Germans used, at this period of art-development, those colours still stronger, more brilliant and varied; and were compelled, therefore, for the sake of making somewhat apparent the effect of architectural form, which was *vanishing* under the colour, to use more sharp outlines and pronounced angles. Still, even then (in the 14th century), German art was exempt from those distorted shapes and broken-up forms, which disfigure its later periods, and would appear nigh impossible, if their deterring specimens were not before our eyes. The church of Reütlingen, and the adjacent castle of Urach, contain valuable specimens of German architecture and art of the 15th century, as the Saint Sepulchre and the font of the former, the oratory of Count Eberhard, at the latter place; some of which have been figured in Mr. Heidelоff's "Ornaments of the Middle Ages."

*Mr. Hübsch's Architectural Ideas.—Karlsruhe—The New Museum.*—This capital of the grand duchy of Baden is adequately progressing in its art-tendencies, and the new museum of fine arts belongs to the most prominent buildings of Germany. The architect, Mr. Hübsch, has therein put forth a sort of *art-credo*, having declared, that he is seeking for new paths in architecture, as Cornelius, Thorwaldsen, &c., have found for painting and statuary. Mr. H. thinks, that the monuments of high mediævity (*hohen Mittelalters*) and especially the basilicas, are *autochtonic*—and prototypes of form and the laws of construction; while other modern art-thinkers and critics consider them (conjointedly with their painting and statuary) as the last impairing eradiations of antiquity, from which, perhaps, only the huge structures of the times of the crusades may be excepted. However this may be, the museum has a decidedly monumental character, whose scope is perceptibly indicated by the statues and relievos of its porch. The front exhibits a perfect working out of the principle of *Trylogism*, and the different chief compartments, like portals, windows, &c., are arranged according to a certain consequential grouping. The chief cornice rises in the middle of the *façade* to a flat gable, but without any defined pediment, in the manner as we see it in ancient churches, as well as in the relievos of the ancients. Splendid and bold is the vestibule, with double ascent stairs, and large compartments ornamented by the frescoes of Schwind. The lower rooms contain casts of important sculptures of ancient and modern times, and some antiques. On the ceilings are depicted a series of mythologic subjects and allegories,

mostly after the hints of Goethe on the picture collection of *Philostrates* of old. Very pleasant to the eye, and well matched with the light colour of the sculptures, is the light tint of the walls,—but the glaring contrast of the pedestals, a dark porphyry or sienite, does not deserve equal commendation. In the upper rooms pictures and drawings are exhibited, and the works of Overbeck, Schnorr, Veit, Hess, &c., are great ornaments of this collection. Amongst the cartoons lately exhibited, that of the four *Facultates* for the great Aula of the university of Bonn, is most remarkable. Amongst the pictures of ancient times, a portrait of a man and his wife, by G. Peecz, another portrait of a man, said to be of Hubert Van Eyck, a Holy Family, by Lorenzo Credi, &c., are worthy of attention. Especially interesting to our German neighbours is a portrait of Newton (wrongly, though, ascribed to Peter de Witte), as they say that its resemblance to Goethe is quite astonishing!

## SHALL ARCHITECTS MEASURE?

"Sir,—I am induced to offer you a few observations, in consequence of reading the report, in your last number, of the meeting of the Institute on the preceding Monday, and the remarks made by Mr. Tite on that occasion on the subject of measuring. I quite agree with Mr. Tite as to the importance to architects of a knowledge of measuring, but I would ask how architects are to attain this very useful and important branch of the profession, while any person professing measuring is excluded from the Institute (albeit many of the most valuable members of the Institute have been what many of the architects are pleased to call "measurers" in their early days), and while even Mr. Tite himself considers that any change in the mode of measuring should come from the "operatives rather than the profession." It should be remembered that measuring does not merely consist in the expert use of two five feet rods, or the adding together of two and two to make four, but that in order to measure and *value* correctly the different descriptions of work contained in a building, it is necessary to acquire a knowledge of the different operations which have to be performed in order to attain certain results—of the different kinds and amount of labour in an elaborate piece of joinery; or to produce a Corinthian capital or cornice, or a piece of Gothic tracery from a rough block of stone. And here I would venture to suggest to Mr. Tite to ask some of the "operative" authorities in measuring, how they would fix a price to stone per foot cube, which should apply in such a case as I have alluded to, and at the same time to stone, as used by engineers in railway work, &c.

Returning, however, more immediately to my subject, I would observe, that the information thus gained is that which an architect requires in order to prepare a proper specification, and working drawings, for any work he may have to execute; and without which, instead of being able properly to superintend and direct others, he must always be at the mercy of his clerk of works, or other people. It is the want of this sort of knowledge which leads to the grievous results which we too often see in cases of competition (witness, as recent cases, the Kensington workhouse and the Dalston Literary Institution), where the real estimates are so much at variance with the amounts proposed to be expended in the first instance, and which tend to throw so much discredit and excite so much prejudice against the profession generally. I could enter much further into this subject but for fear of trespassing too much on your space and your readers' patience; but at some future opportunity, should you deem this worthy of notice, I hope to resume the subject.

In conclusion, I should like to be informed whether any of the candidates for district surveyorships have been examined on this branch of their profession. I know that in the list of subjects upon which it was proposed to examine the candidates this was included; but I am quite sure that some, had they been questioned as to measuring, would have been sorely puzzled, though in other respects taking, and deservedly so, a high standing.

I am, Sir, &c.,

G. R.

## RAILWAY JOTTINGS.

A new and rather an odd point of law was decided on Thursday week in the Court of Exchequer, in the case of Wilson *v.* Lord Curzon, to wit, that the only person whom the secretary of a provisionally registered company can sue, for arrears of salary due to him, is himself, if he happens to have taken a leading interest in the promotion of said company; for the plaintiff, in such a suit against Peter to pay Paul as this would be, is not unreasonably, perhaps, supposed "to have appointed himself," as the official main-spring of the incipient company.——The question of warming railway carriages, lately recommended by us to the notice of our readers, is still kept astir by the continued frosty cold of the present season. The *Liverpool Journal*, reverberating the echo, asks why our railway carriages are not yet warmed, although it is now nearly two years since the question was first propounded; and although, since that time, railway carriages in America have been heated, and some of the Belgian and French companies also have, during the present winter, adopted means to warm their carriages. "Have any English companies taken up the scheme? No, not one that we know of. Some may ask, is the thing practicable? or will it pay? It is easily practicable, and it will pay better than other outlay on any line adopting the plan. The swift boats on the several canals have long had the scheme in operation—to warm their best cabins. [We can not only testify to the fact, and the comfort, of this practice, on canals through routes where railways had not penetrated, but that respectable parties have often preferred travelling by canal on this account alone, even where railways have now penetrated. On the canal between Edinburgh and Glasgow, the worst cabins, no less than the best, are comfortably heated, as others are, somewhat in the following way:] Copper tubes, about 4 feet long and 6 inches in diameter, are filled with hot water, and laid on the cabin floor; these will preserve and give out heat quite sufficient for comfortable warmth during a space of five or six hours. Indeed," adds the journal, "we have travelled with one for eight hours, the water unchanged, and there was a comfortable heat at the end of the journey. How, you may say, can this plan be applied to carriages? Nothing easier. In all carriages a narrow recess or box may be made across and under the floor where the passengers' feet rest, betwixt the seats, but parallel with them; and if the make of the carriage frame will allow of an outside opening to put in the hot-water tubes, they may be fitted with doors. If this is not practicable, let the door be in the floor, and be perforated, shutting over the door, and then covered with the mat or carpet; this will equalise and diffuse the heat. One or two stations will require a boiler to heat the water; there must be tubes to hold it, and the present staff of porters would place them in the carriages in a few moments, even in the longest train. Think of going to London, or elsewhere, this cold weather, warm all the way, and with warm feet at the end. Reader, would you not give an extra shilling for such a luxury?" The great and universal importance of this subject in a sanatory point of view, no less than for the sake of mere comfort, on which health often so much depends, will be our excuse for devoting so much space to this section of our present jottings.——The London and North Western Company, it is said, realize no less than 20,000*l.* a year in rents from restaurants alone upon their various lines.——The grand central station about to be erected by this company at the Chester terminus of the Chester and Crewe branch is estimated to cost 80,000*l.*——The platforms for the Britannia and Conway bridges, on which the tubes are to be constructed, according to a contemporary, "are now in course of erection, and a considerable quantity of the iron is already manufactured. The platform at the straits will be 1,000 feet in length, with wharfs and sheds to protect the workmen. In a few weeks the construction of the tubes themselves will be commenced and rapidly proceeded with. The apparatus for raising these ponderous structures is also in a forward state, under the direction of Mr. Edwin Clark, the engineer appointed by Mr. Robert Stephenson to superintend the operations, and in a short time the aerial gardens of ancient Babylon will be more than rivalled by this modern monument of enterprise and ingenuity."——At the opening of the Lancaster and Carlisle line, the following statistical facts were stated by Mr. Mould, the contractors' superintendent, at the banquet given by his employers, Messrs. Stephenson, Brassey, and Mackenzie.——In the blasting of rocks no less than 4,800 barrels, or 200 tons, of gunpowder had been used. The patent fusees alone, if put on a line, would reach 400 miles. The number of nights during which the men worked was 152,147. The number of horses employed was 10,500. No fewer than 400,000 yards required blasting, as it could not be removed by any other means. The number of bridges on the line was 219; of culverts, 230; and of viaducts, 500, The greatest number of men employed was about 10,000, and the number of workmen altogether was equal to 3,000,000 in one day; whilst the excavations averaged 100,000 cubic yards per mile. The number of waggons employed was 2,200, which, if extended in a line, would reach nearly five miles; and the temporary wheeling planks, placed end to end, would extend to thirty-five miles.——The inhabitants of Penrith are beginning to reap the benefits of railway transit. The price of coal in that town, which has long been 1s. per cwt., is now reduced to 8d. per cwt., a saving of 33 per cent. to the consumer. ——Galignani cites a letter from Bordeaux, in which it is stated, that dilapidations have been observed in the tunnel of the Paris and Bordeaux Railway, under the quarries of Bel Air, at Lormont. Some of the supporting piers have given way, and fissures are perceptible in the vault. The director of the works took immediate means to prevent the damage from extending; and information of what had occurred was sent to the board of directors.——The following matter-of-fact railway romance is from a sketch by Elihu Burritt, the learned, and something more than merely learned, American blacksmith:—"During a storm and violent gale, the long railway bridge across the Connecticut, between Hartford and Springfield, was, *en masse*, lifted by the wind and thrown into the river beneath, which is here 200 yards in breadth, with a powerful current, at this time swelled to a dreadful height by an unusual flood of rain. The line here crosses by the bridge at a height of 50 feet above the river, and after an abrupt curve has been passed. The train left Springfield at the usual time on the present occasion, when there were no electric telegraphs, we suppose, to announce the peril in the way. "The storm raged violently without," says Elihu, "but the passengers within congratulated themselves on their comfortable situation, thinking of the pleasant homes and firesides which they soon expected to reach. On came the train—the engine blowing off its head of steam—breasting its way nobly against the gale, which almost threatened to check its progress, and the hot iron hissing furiously in the falling rain. No one knew or even suspected that the bridge was gone. For two years, by day and night, the trains had passed and repassed, until safety had obliterated a thought even of the possibility of danger. But no bridge was there to receive them, and the long train, with its precious freight, rushed swiftly on to this precipice of destruction! It was not customary to stop there, except to check the speed for the landing of passengers; but the people there had learned the loss of the bridge, and kept a sharp look out for the approaching train. It comes! The word is given, and—they are safe. Every heart leaped from its place, and the head swam giddy with fear, as the thought came of that fearful leap in the dark, and long will the passengers remember that dreadful ride, and the friendly, yet fearful cry, 'The bridge is gone.'"

Labourer's Cottage: Premium for Design.—In addition to the list already published, the Society of Arts offer a special premium of thirty guineas for the best design and working drawings of a labourer or workman's cottage, to combine cheapness with convenience, comfort, wholesomeness, and neatness. To be accompanied by a specification of the works and internal arrangements, and an estimate of the cost in the district where the designer lives. The drawings are to remain the property of the designer, with the condition only of their immediate publication.

## HAYDON'S VIEWS AND OPINIONS.*

*Public Taste.*—The people of Britain are often blamed for not having taste for this style or that. First they are told, they have no taste because they perceive the extravagance of the German school; then they have no taste because they abhor the false view of nature in the French school; but you never find them having these objections to Titian, to Raffaelle, or the Greeks. Believe me, to me these are evidences that my countrymen are organized to receive true impressions from nature, and not false ones; I believe the people, and know them to be in advance of the production; and if our statesmen would back their sympathies for good works, we should soon see productions which would put a stop to this calumnious and offensive censure.

*West, Fuzeli, Flaxman, and Stothard.*—Never were four men so essentially different as West, Fuzeli, Flaxman, and Stothard. Fuzeli was undoubtedly the mind of the largest range;—West was an eminent *macchinista* of the second rank;—Flaxman and Stothard were purer designers than either. Barry and Reynolds were before my time, but Johnson said, in Barry's Adelphi, "there was a grasp of mind you found no where else;" which was true.

*Imitation.*—I hope I have impressed you all with this leading truth, viz. in an imitative art, the knowledge of how to imitate is as important almost as how to invent; and the man who affects to despise the means to imitate, does not see farther than the great men before him, but not half so far. It cannot be too often repeated in the British school, that none of the elements of design must be neglected; if you cannot draw, or colour, or invent, or light and shadow, or compose, you are not a painter, and never will be entitled to the name. The great men before us did not obtain their fame by such conceited folly; and if such folly be not held up to eternal reprobation, it is a disease which will return like any other epidemical tendency, till entirely branded out of the art.

*Discontent in Artists.*—This disposition to hope for the future, regret the past, and despise the present, is innate in human feelings; and has always been the characteristic of men whose imagination predominated over their reason in all things. No genius was ever encouraged to the full extent of his own desires, and all men attribute their failure, or their obscurity to every other cause but their own want of conduct, their own want of talents, or their own deficiencies of understanding. The seeds of discontent must ever exist in a nature which lives for ever in a vain struggle to realize the visions of an unlimited conception! What, after all, were the chambers of the Vatican?—the Sistine Chapel?—or the Lesche at Delphi, with what their great inventors could have done, or did imagine, in a state of being unlimited by space, unchecked by the depravity of crime, the feebleness of disease, or the wretched limitations of a miserable earth, but twenty-four thousand miles in circumference?

*High Art in England.*—The people are decidedly alive to the importance of grand art here in England, and have always crowded to where any grand works of art are to be seen; but the enthusiasm of the people has never been seconded by the state; and the great works successively produced these last fifty years, which have rescued the country from the stigma of incapacity, are hidden from the public eye after the first ebullition, rotting, forgotten, and neglected, till a new season, and a new subject, a cow with two heads, or an ass with three legs, obliterate the recollection of either. Within my own time, works of all classes of art, which, if collected in one gallery, would inevitably set British art in its true colour before the world, have been shewn and decayed. In fact, I am quite correct in stating, that in no two schools in Europe could an equal number of works be shown, with all their faults, containing so much genuine and native excellence; and yet, owing to our want of a local habitation, a native resting-place for the *élites* of our productions, we have no decided character in Europe, and, till we have such gallery, we never can. Every illustrious foreigner goes away with contempt, on the whole, for the genius in England in the arts; when at this very instant there are works in cellars, or lost in the obscurity of private collections, which, if centralized in a National Gallery, would place English art for ever on a basis of the proudest hope; and prove, if such were her productions in spite of her obstructions, what might reasonably be expected from a condition of liberal and annual state support. It naturally occurs to every foreigner, what is the reason? The reason is naturally found in the various influences of our social condition. To the various number of our influential societies, each acting on the other, and all combined, like Freemasons, to assist each other, in opposition *rather* to all independence of thought, or abstract principles of conduct, than in support of it.

* Lectures on Painting and Design. By B. R. Haydon. Vol. II. London: Longman and Co. A volume of great value and interest.

## NOTES IN THE PROVINCES.

The tenders for the erection of the Warstone cemetery chapel, cloisters, and other buildings, of the Church of England Cemetery Company, were examined on Tuesday week, according to *Aris's Birmingham Gazette*, and the successful competitor was declared to be Mr. Barton, of Lambeth. The other works at the cemetery have been carried on as rapidly as the late severe weather would allow, and the completion of the whole establishment towards next autumn, is anticipated. "The style of building," says our authority, "is Gothic, and what is termed the decorated English, but with a strong tendency, in its profuse ornaments, to the florid, or perpendicular style of the 14th (15th) century. The building itself is cruciform, and consists of a chapel, with a long range of open cloisters running north and south, and a tower and lofty spire projecting in front from the centre of the cloisters. The length of the chapel, &c., from east to west, is about 90 feet; the cloisters, from north to south, upwards of 150 feet; and the height of the tower and spire 116 feet. Below these buildings are a crypt, and a range of catacombs for the reception of corpses, and a tunnel communicating with a double row of circular catacombs. On the west front the main buildings will be of white Derbyshire stone; and the circular catacombs in front of red sand-stone, in keeping with the nature of the ground in which they are made. The cloisters are pierced on the west side with highly decorated windows, but have the east wall blank, for the reception of monumental tablets to the memory of the dead. The levelling and preparation of the ground are now nearly complete, and ready for planting, as soon as the weather permits."——Among other improvements talked of, as likely to be carried out in Dorchester, is that of a new street, to throw open the hospital from the County-hall, by the removal of the dilapidated property opposite; and the building of a fashionable crescent, to be called, "Colliton Crescent," with a north-west view of the scenery around.——The Earl of Verulam has given the munificent sum of 1,500*l.* towards the endowment and building of the proposed new church at Lavistock-green, St. Albans. His lordship has also given a piece of land as the site for the church.——At Bristol, meetings of operatives and of rate-payers have resolved to recommend the town council to postpone all furtherance of the Street Improvement Bill, until the dock question has been pushed onwards to a settlement in the anticipated negotiation between the Dock Company and the Free Port Association; means for completing which would require to be provided by the citizens, while it is admitted that the contemplated improvements,—one of the first of which is the formation of a new street from Bristol bridge to the railway terminus, a sort of Bristol Piccadilly, will in all occasion an expense of 3,000*l.* a year, which it would be inconvenient to incur simultaneously with the raising of the anticipated resources necessary for the Free Port Association scheme. And besides, as observed at one of these meetings, "a lunatic asylum, to be erected at an expense of 20,000*l.*, was hanging over their heads."——A "Bristol and Bath Economic Conveyance Company," announces the not now altogether unprecedented advantage of transit for the million at one penny per mile, by omnibuses, or, rather, by omnibi, as classical reporters, by a somewhat singular sort of double plurality, prefer to term it.——A separate article on "Liverpool" appears in our present impression.——The solicitors' bills for obtaining the Bury Improvement Act alone amount to the sum of 3,695*l.*——A sanatory committee has been appointed at Doncaster to discuss the subject of the sanatory condition of the town.—— The sewage of Aberdeen is valued at 300*l.* to 400*l.* per annum, and doubtless, under the economical superintendence of sewage or chemical manure companies may be made worth a great deal more. Arrangements are being made for its application to agricultural purposes.

## NEW ROMAN CATHOLIC CHURCH IN SHEFFIELD.

A church of considerable size and pretensions, dedicated to "S. Marie," is about to be built in Norfolk-row, Sheffield, from the designs of Messrs. Weightman and Hadfield, of that town. The *Sheffield Times* gives an engraving and description of it, from which we learn that the plan consists of a nave and aisles, a transept, a chancel with two side chapels, and a loft at the south side, in the transept aisle, for the organ; a second aisle on the north side of two bays for a requiem altar, and a tower, in which will be placed the font and baptistery. There will be an entrance porch at the south side, in Norfolk-row; and there will be a portal near the transept for the clergy and church officials. There will also be entrances at the west end and north side. A large vestry will be placed at the south side, east of the transept; and a cloister will be formed from this part of the building to connect it with the church.

The dimensions of the church are to be as follows:—

| | Feet. |
|---|---|
| Length of the nave to the chancel arch.. | 105 |
| Width, including the aisle ..... | 61 |
| Transept, from north to south ..... | 85 |
| Chancel up to the arch ..... | 40 |
| Whole length of the church, from east to west, externally ..... | 154 |
| Whole width, with the transepts ..... | 92 |
| Height up to the ridge of the nave..... | 60 |
| Height in the aisles..... | 20 |

The architectural style of the church is designed after the cross church of Heckington, in Lincolnshire, a specimen of the decorated style.

The south part, towards Norfolk-row, is very interesting. The tower, which stands at the south-west corner, is buttressed in stages with canopy heads, having windows in the south side to light the baptistery. In the next stage is a tabernacle and statue of the Virgin. The next stage has four windows of two lights for the belfry story.

The tower is crowned with a coronet and battlements, and has four hexagonal pinnacles, crocketted and engaged to the spire, with an opening through the *arc boutant*. The spire has crocketted openings in alternating stages, and is surmounted by a cross and weathercock. The total height, from the pavement in Norfolk-row, is 200 feet.

The south porch has canopied buttresses, with niches for the four Doctors of the Church. The parapet is panelled in wavy lines. The gable will be surmounted by a cross. The doorways will be moulded, and the porch will have stone seats. The south aisle has two windows betwixt the porch and transept, separated by a buttress, niched for a statue of S. Paulinus, first archbishop and apostle of Yorkshire. The transept will have a four-light window. The chancel window will have seven lights, the head filled with tracery. It is intended to represent the principal events of the life of the Virgin in stained glass. The clerestory will have large three-light windows.

The north side of the church, though not much seen, will be properly carried out in all details; and the same remark applies to the west end, in which there will be an entrance doorway deeply splayed, and a window of four lights rising into the gable.

The north entrance doorway will be under the second window of the north aisle, running into it, having a sunk niche and bracket for a statue of S. Michael.

The chapel on the north-east side of the chancel will be for the reservation of the sacrament. A turret-stair ascends from this chapel to the rood loft, and it is crowned with a crocketted spire for the angelus bell.

## LIVERPOOL.

The local sanatory Act is already doing its duty. "Steamers, instead of vomiting forth huge columns of black smoke, have been compelled to bring science to assist them in its consumption, and while the atmosphere on the river and about the pier heads is much purer, the unsightly nuisance which reflected such odium on this community has disappeared," and, together with it, the waste of a full third of all the fuel hitherto not consumed, as it now is, to the profit of those compelled thus to act no less without both annoyance and evil to others, than with both profit and good to themselves.

Besides the smoke nuisance, the Act contains various clauses respecting other nuisances and improvements, an abstract of which, though at some length, and from a merely local Act, we shall give without deeming any apology requisite, since doubtless, such provision for health of towns in general will be ere long no more merely local, but made generally applicable, either by the passing of numerous separate Acts or by the enaction of some one comprehensive measure, of a similar description, for the sanatory regulation of towns throughout the empire.

The Act in question, then, contains effectual and summary provision for preventing nuisances and annoyances in streets, or near thereto, and effecting cleanliness therein;—for registration and inspection of slaughter-houses and knackers' yards, and for removing filth therefrom at least once in every twenty-four hours, and keeping a sufficient supply of water in them;—for regulating the manner of keeping swine, and preventing the keeping thereof within any dwelling-house or knacker's yard, and for describing the limits within which it shall be lawful to keep the same;—for regulating the duty of scavengers, and the management of public privies and urinals;—for regulating the removal of the contents of midden steads and privies, and for preventing foul water soaking from any premises, and also for preventing any such middensteads or privies, or any hog-sty, dunghill, or manure heap from being a nuisance;—for registration of lodging-houses, and maintaining cleanliness therein under a penalty of 40s., and in case of a continuing nuisance, of 5s. a day. Similar penalties are to be inflicted for other nuisances. A medical officer of health is to see to the healthiness of dwellings, and the purification and white-washing of houses; and an inspector of nuisances is to act in his own proper province. The escape of gas is to be visited with a penalty of 5*l.* a day after twenty-four hours' notice, existing gas companies to be relieved from previous double penalties. In future, no house to be erected shall have any rooms less than 8 feet in height, except cellars, 7 feet if to be inhabited, or otherwise 6 feet. Every inhabited room must have one window 5 feet by 3 feet, or 15 feet in area; attic and cellar windows 3 feet square, or 9 feet in area; all to be casements opening on hinges or pivots, or double opening sashes. Every new house must be provided with an ash-pit, and a properly constructed privy, with a funnel or flue to carry off any offensive stench. The council may enter premises to cleanse or repair privies, cesspools, or drains, and recover the expenses. House drains, at a proper level, must be made on twenty-eight days' notice, wherever a sewer of sufficient size and proper level passes within 30 feet of any part of the house, and all gully holes of sewers or drains must be properly trapped, to prevent escape of noxious effluvia; a penalty of 5*l.* to be incurred for intringement of provisions for proper construction, stopping, or unstopping, of drains, &c. A map of all existing sewers, drains, water pipes, gas pipes, &c., on a scale of 60 inches to the mile, is to be kept at the Town Hall for inspection by owners of property. No street, being a carriage road, shall be made of less width than 30 feet, including footways of 5 feet clear on each side; and no house shall be built in any street of greater height than the width of such street; no court shall be built of less than 15 feet in width, with an open entrance the full width of the court; these latter provisions all under penalties of 20*l.* a day.

The *Liverpool Journal* states, that there were "some seventy candidates for the office of superintending the levelling and making of sewers, that each and all of these sent testimonials of capacity and character from authorities competent to recommend, but that the sub-committee resorted to a very summary mode of disposing of their claims: that the question was not "What are they?" but "Who knows them?" A. B.—"Does any gentleman of the committee know him?" "None." "Knock him off?" C. D.—"Does any one know him?" "None." "Knock him off." Seventy were thus "knocked off," in the "twinkling of a bed post," and the remaining "five" would have shared the same fate, were it not for the prudent apprehension of Mr. Alderman Nicol, who apprized the committee that they ought to recommend some one. With characteristic facility they recommended the last, or nearly the last, five; but, on re-examination, it was discovered that none of these five would do, and the talk is, that on Thursday, Mr. Hartley was written to, to recommend a suitable engineer."

A report of the progress of the New North Docks shews the operations to be of much greater magnitude than is generally supposed, and that the whole of the nine new docks are in course of rapid completion. They cover an immense area, nearly the whole of which has been reclaimed from the strand of the Mersey. At the south end of this new range of docks there are three of them running eastward from the river; and these will form a chain communicating with the Leeds and Liverpool Canal. The eastern dock of this range is on the east side of Regent road; and it is probable that another may be formed between it and the canal on the east side of Great Howard-street. According to the *Liverpool Standard*, the walls round some of the docks are nearly at their full height from the bottom of the excavations, out of which, however, large masses of material have yet to be removed, chiefly of red freestone, the quarrying of which will, it is thought, go far to meet the expenditure. The walls are built up, to about the level to which the water will rise, of this stone; and above this they are of grey granite, in irregular blocks and pieces, presenting a patch-work appearance, like the outside wall of the Albert Dock, but of great strength, the mortar being milled, from the Halkin Mountain limestone, which sets rapidly, and becomes as hard as the rock itself. The discovery of the properties of this cement has already, it is said, saved much expense to the Dock Estate, as it appears that it is not requisite to hew the stones into square blocks as heretofore—pieces of any size or angular shape being applicable, provided they shew a smooth outward surface. The landing steps in the outward wall and the tops of the quays are of chiselled granite, and there is a vaulted or tunnelled passage at one of the landing-places for the conveyance of cattle, sheep, &c. The quays can scarcely be said to be yet formed, but on the sites which they will occupy, there are paved and macadamised roads, over a great length of which, including the margin of the sea-wall, a carriage may be driven. There are several large mortar-mills worked by steam. The lime is ground with fine clean sand, in circular revolving iron troughs, beneath huge circular grindstones, and the well-tempered cement is rapidly carted off, in a smoking state, to the several parts of the works where the masons are employed.

The site of the first of the new churches for Toxteth Park having been fixed on, the building committee have selected for its design one furnished by Mr. Hay. The style is middle-pointed. The building will consist of a nave with spacious aisles and clerestory. The roofs are high-pitched and shew all the interior timbers. In lieu of pews there will be open-benches for 1,100 people.——The amount already subscribed to the Church Building Society, which now exceeds 12,600*l.* was recently augmented by a donation of 500*l.* from the "Society for B. C. P. per J. B. Treasurer," into the secret of which somewhat cabalistic cyphers the *Express* thinks, it has "some inkling" though we confess our own darkness on the subject of this "kindly association in first-rate hands," who at all events evidently prefer doing good by something like stealth, rather than by that ostentation which is in truth the real motive of many charitable doings.

During the past year, the following houses and warehouses have been erected or in course of erection within the limits of the municipal borough. Mr. Rishton, the Town Surveyor, has supplied these statistics. A vast amount of building, however, has also been going on in the outskirts, at Bootle, Walton, West Derby, Old Swan, Aigburth, &c.—Under 12*l.* per annum, 710; from 12*l.* to 25*l.*, 2,328; from 25*l.* to 35*l.*, 236; from 35*l.* upwards, 186; total, 3,460; warehouses, 44. Comparative statement of the number of houses erected in each year since 1837:—1838, 1,052; 1839, 997; 1840, 1,576; 1841, 1,761; 1842, 2,027; 1843, 1,390; 1844, 2,450; 1845, 3,728; 1846, 3,460; total, 18,441. ——The following churches are now in course of erection at Birkenhead:—St. John's, at the cost of Messrs. J. Mallaby, J. S. Jackson, and W. Jackson; St. James's, at the cost of Messrs. W. Potter, W. Jackson, and J. W. and M'Gregor Laird; St. Anne's and another at the cost of Mr. W. Potter; and St. David's, by public subscription, originated by the Rev. J. Baylee, for the Welsh inhabitants. There is also a new church building at Seacombe. These, with the churches of St. Mary and the Holy Trinity, and a chapel at Oxton, lately opened, will comprise nine churches for the present population of 25,000, and Mr. W. Jackson and Mr. Potter have signified their intention to erect each an additional one next year.

## ON BRICK MOULDINGS.

A correspondent of the *Bury Herald* says:—

"In a county like ours, where there are no quarries and so many clay pits, and where consequently stone is so dear and scarce, and bricks, both red and white, so common, I rather wonder that brick is not more used for the finer mouldings in the place of stone. In former times, and it might be equally so now, mouldings of all kinds were highly ornamented, frames to windows, porches, chimneys, &c., were made of brick. Besides being much cheaper, and quite as durable as stone, they had this advantage,—that the most intricate patterns could be made nearly as cheap as the plainest; and also, that any colour might be used, if not in the brick itself, yet on the outside and burnt in. White brick round the windows, or at the corners of houses, proves a good foil to shaped flints; red brick to white, and *vice versa*.

I shall mention one or two instances of the use of moulded bricks. Westhorpe Hall, one of the first buildings of this class, was erected by Brandon, Duke of Suffolk, about the year 1500, who resided there with his wife, a king's sister and widow. Though hardly a remnant even of the ruins remains, yet fragments turn up which shew the beauty of the brick mouldings. They are of a very hard and compact white brick, which retains its original sharpness, and some of them, having the duke's crest in relief upon them, still ornament a bridge of the same date as the hall. The other example is West Stow Hall, built by the same duke, the gatehouse of which is a noble specimen of brick building. As an example of the use of brick mouldings in churches, I may name Ixworth Thorp, a doorway of which church has its mouldings and circular (Saxon?) arch, formed of red brick."

The duty on bricks, levied as it now is, prevents any attempt at improvement, or experimental endeavours.

English Buildings in China.—The *Edinburgh Register*, in noticing a "Club-house, Victoria, Hong Kong," executed by Mr. George Millar from designs by Mr. George Strauchan, architect, Edinburgh, remarks, that though, five years since, on "Hong Kong," the "Island of Fragrant Showers," the only buildings were a few fishermen's huts and a low mandarin's house; already large and elegant merchants' houses and gardens extend a couple of miles along the sea beach; commodious barracks, and Catholic, Episcopalian, and Presbyterian churches, are to be seen, with colleges for Chinese youths, and a mosque for Mussulman natives. Bungalows adorn the hill sides, with thriving plantations, and a drive equal, in picturesque, to our own, "Queen's Drive" [round Arthur's Seat, from Holyrood] encircles the island, commanding views of the mainland of "Quang Tung," the estuary of the Canton river, with its hundred islands, and a wide expanse of ocean.

## BRISTOL AND WEST OF ENGLAND ARCHITECTURAL SOCIETY.

On Monday, the 18th inst., a general meeting of this society was held at the Institution, in Park-street, Bristol, the Venerable the Archdeacon Thorpe in the chair. The Rev. Eccles Carter, honorary secretary, read the Report of the committee for the past year, from which it appeared, that the society was in a satisfactory condition, and that its usefulness was recognized by application for advice in respect of St. Andrew's Church, Chippenham; St. Luke's, Brislington; Markbury Church; Two Mile Hill Church, and others; they had occasion to regret, that at St. James's Church, Bristol, some suggestions made by them had not been carried out.* At Two Mile Hill Church, the ringers were admitted to the loft by a door not connected with the church; to which the committee was opposed, as tending to separate the ringers from the services. The restoration of the upper part of Dundry Church was in their hands, but was stopped by the weather.

The chairman having addressed the meeting at some length on the topics mooted in the Report, a committee for the new year was elected, and other routine business transacted. After this, Mr. F. Niblett read a paper on the architecture of fonts.

Before the meeting broke up, it was resolved, that a paper, by the honorary secretary, on architectural societies, and the hindrances in the way of their successful operation, read at a previous general meeting, should be printed and distributed. A part of this paper will be found on another page.

* The restoration of this Norman church, to which we alluded some time since, is now completed. Two ponderous and discordant galleries at the west end, have been put up without the good will of the architect employed.

## OXFORD.

Strong efforts are being made here, in favour of a national measure for the establishment of general cemetries. At a meeting of the town council, held on the 14th, a form of petition was brought up, and after some opposition, agreed to. Those who opposed it, did so on the ground, that it was "an attempt to agitate the people against the clergy, and to oppose those who ought to be treated with respect and love;" and said, they thought that those to whom they looked for religious solace and support ought not to become the objects of a *quasi* political warfare. And so think we too; but the fact is, no such feeling actuates those who would get rid of burials in towns. Existing interests must of course be protected.

At the same meeting, the following report from the Sanatory Committee was read: At a meeting of the Sanatory Committee held on the 13th inst.—Resolved, "That Alderman Butler be chairman of this committee. That this committee desire their chairman to call the attention of the next council to the present inefficient supply of soft water; to the imperfect sewerage and house drainage; and the greatly increased mortality, which the committee believe to be chiefly consequent upon these evils. That the individual members of the council be requested to report to the sanatory committee all nuisances which they may be cognizant of, and which they consider to be prejudicial to the health of the town, in order that the same may be registered, and the proper steps taken for their abatement. The chairman is requested to summon this committee on an early day, to take several matters into consideration."

The drainage and sewerage of Oxford is exceedingly bad, and, with the defective supply of water, sufficiently accounts for the greatly increased mortality.

Monumental Sculpture.—There seems to be a want of invention amongst our modern sculptors, not so much in the mere outline of monuments (their forms are numerous enough) but a want of something that would at once speak to the imagination. It is yet left for some man of mind to illustrate death from the history of our holy religion—to sculpture that sleep after life's long storm, and call from the marble such forms as we believe we shall meet with in heaven.—*Miller's Country Life.*

## New Book.

*The High Pressure Steam-engine Investigated.* By Dr. Ernst Alban. Translated by W. Pole, F.R.A.S. Parts I. and II. Weale, London, 1847.

Some may perhaps wonder, the translator says, at being referred to the writings of a foreigner, and to the results of foreign experience, for information on a subject so essentially English as that of the steam-engine. One reason, however, is at once apparent: "ever since the time of Newcomen, the attention of the English has been almost exclusively directed to that modification of the steam-engine which depends for its source of power principally upon the condensibility of steam, namely, the low-pressure condensing engine, in which a very moderate elasticity is used. The other great class, comprising that variety of engine which owes its efficiency principally to the elasticity of the steam,—the high-pressure engine,—is (or at least was a very few years ago) scarcely known among us in comparison. While we find the condensing engine studied carefully, treated of most voluminously, and manufactured by wholesale, we deplore the neglect which the high-pressure engine has suffered;—we look in vain for information upon it; and we are scarcely able to point, even in the present more cultivated field of locomotives, to a solitary specimen deserving the name of an economical producer of steam power."

The author maintains, that the high-pressure is more safe and more economical than the low-pressure condensing engine. He proceeds first to examine the objections brought against the former, dwelling especially on its alleged danger; discusses the causes that tend to produce explosions, and shews the errors often committed in the manufacture of vessels for the generation of high-pressure steam. He then points out what he considers the advantages of the high-pressure engine; and afterwards treats in detail of the boiler and the furnace The third and fourth parts, to conclude the work, will contain, the translator says, the author's views as to the construction best adapted to secure the ends proposed, namely, safety and economy.

## Correspondence.

THE ROYAL MEDAL FOR ARCHITECTURE.

Sir,—Having observed your willingness to make public any remarks that are conceived with an intention of increasing a knowledge in "*Fine Art* Architecture" perhaps you would kindly insert the following ideas in your valuable journal:—

Being a competitor for the Royal Gold Medal for 1846, given by her Majesty through the Institute of Architects, and appropriated by them as a stimulus for the juvenile branch of the profession of architecture, I would humbly suggest that (after the gentlemen to whom they may be referred for selecting the best design have pronounced their decision), the whole of the designs would be exhibited, *at least* to the competitors themselves. This would, in my opinion, and to speak for myself, be a kind of reward to the unsuccessful, for the labour they may have bestowed on their respective drawings, and would in very many ways be productive of good results to the rising members of the profession. I am totally ignorant as to the course the institute may think it right to adopt, but if I may be allowed to make a suggestion, would suggest that the committee of selection should point the *principal* objections to, or defects in the designs generally, embracing not only the elevations, but the arrangement and construction, &c.: this would make the awarding of the Royal Gold Medal a source of instruction and profit even to the unsuccessful, and in some instances might be better in after life than even gaining the prize. I am, Sir, &c.,

London, Jan. 19th, 1847. "Nemo."

DALSTON INSTITUTION COMPETITION.

Sir,—Referring to the communication you have already published on this subject, I can state that the commissioners were distinctly told at the time of their receiving the drawings sent in competition, that a building such as their *written* instructions set forth could not be built in the vicinity of the metropolis for twice the outlay (1,500*l.*) to which they judged right to restrict the competing architects.

A building such as their printed prospectus described might possibly have come within their mark, but that one required by their pen and ink instructions and outline plan was plainly far beyond the scope of their so described intended (?) outlay, of which fact they were advised to assure themselves by reference to similar institutions of recent date, whose names were also placed before them.

Let us hope that for their own credit they have erred through ignorance rather than through design; be that as it may, somebody must pay for the trouble given in furnishing quantities and making out the dozen and a half estimates for the carcass only, given in your number of last week!—Your constant reader,

Tuesday, Jan. 19th, 1847. Q.

Sir,—I observed a letter from a correspondent of yours, calling himself "Alpha," in reference to the Dalston Literary Institution competition, and complaining of the result. But I would ask him what else he could expect from a committee so utterly ignorant of what is due for professional exertion, as to suppose that any architect could be paid even his necessary expenses for such an object by the paltry premium of 10*l.*, which they offered through your columns? "Alpha" should have known, that in the first place he was rendering himself amenable to the decision of men without one idea of that upon which they pretended to judge, and in the next, that he would have to contend with no member of the profession of any respectability, and would therefore expose himself to all sorts of tricks and chicanery.

Are not rumours afloat of a similar transaction in the competition for a new church at Battersea? This was, I believe, a "close" competition, and it is therefore more difficult to reach the facts of the case.

It is to be hoped, however, that continued exposure will, in time, put a stop to these nefarious proceedings. I am, Sir, &c,

Jan. 14th, 1847. An Architect.

## Miscellanea.

Stained Glass in Leeds.—At the parish church of Leeds two new lights at the east end, each consisting of three long openings, have been filled with stained glass, executed by Mr. Wilmshurst. These occur on each side of the centre, or original window, which is filled almost entirely with ancient glass. The new light, on the north side, contains some of the principal events in the life of our Saviour, each composition being under a canopy. The subjects are; "The offering of the Wise Men," "Christ disputing with the Doctors," "Blessing Little Children," "The Tribute Money," &c. The south light exhibits some of the principal events in the life of St. Peter, in whose name the church is dedicated; as, "The Deliverance from Prison," "The Charge," "The Draught of Fishes," &c., in all, nine subjects. The tracery of the windows is filled with the representations of angels, scrolls, &c. There are also six panels, one at the bottom of each opening. Those at the four sides contain emblems; and in each of the central panels is an inscription upon a scroll, intimating that the windows are the gift of Mr. Blayds, and sacred to the memory of his two elder sons, who respectively died in the years 1842 and 1845. The colours, especially the blue, red, and ruby, are very brilliant; and the whole is creditable to the taste and execution of the artist.

The Morgan Testimonial.—The statue by Mr. J. Evan Thomas, selected by the committee, as we mentioned last week, is to be executed in bronze. The premium of 30*l.*, offered for the second best design, was awarded to Messrs. Haines and Co., builders, of Southampton.

Competition.—Designs are wanted for a club-house for the Army and Navy Club, as will be seen by advertisement in our present number.

Holborn Hill Viaduct.—The company formed to effect this important improvement, have postponed their application for an Act till next session.

PROJECTED WORKS, &c.—Advertisements have been issued, through the past week's newspapers, for contract tenders for the erection of new buildings at the Hackney Union Workhouse; the various works to be done in rebuilding Ince Hall, near Chester; the repair of about 50 miles of the Bromyard roads, in 8 districts; the supply of about 2,800 tons of broken granite at Leicester; of 5,000 tons of malleable iron rails, 1,800 tons of cast iron chairs, 120 tons of spikes, and 77,000 Memel or larch sleepers, for the Leeds and Thirsk Railway; and 750 tons of iron rails, for the Taw Vale Railway and Dock Company; also for the whole works, in separate tenders, of about 6 miles of the Bristol and Exeter; a portion of the Sheffield and Goole, &c., near Barnsley; 8 miles of the Birmingham and Stour Valley; 6¾ miles of the Ambergate and Boston, &c.; 5 miles (the remainder), of the Edinburgh and Northern; and 11 miles of the North British, at Dunse, Tranent, and Cockenzie; also for 125 tons of spermaceti and other oils for light-houses at Dublin, &c.

KAMPTULICON.—We understand that the Kamptulite Pavement is ordered to be laid down for the carriage drives at Buckingham Palace and Osborne House. The walls of the riding house at Windsor Castle are also to be lined about 6½ feet from the ground, with the Kamptulicon Planking, as a protection from injury in case of accidents. This material would seem to be applicable for many useful purposes. It is composed of cork and India-rubber.

THREATENED REMOVAL OF WESTMINSTER BRIDGE.—We need scarcely say, that we have heard the announcement, that the bill for the removal of Westminster Bridge *will not be proceeded with*, with great satisfaction. The secret history of this extraordinary proposal would be amusing if not instructive.

A TRIFLING DIFFERENCE OF OPINION.—Three tenders were delivered the other day for rebuilding parts of two houses in Clare-court, Drury-lane. The highest, Chesterman, was 318*l.*; the second, Dean, 235*l.*; and the third, Hooper, 138*l.*

THE WELLINGTON STATUE.—Now that Parliament have met, it is to be hoped that the western entrance to London will no longer be disfigured, but that the statue will be immediately taken away, and that the architect of the arch will be commissioned to make that structure complete, in accordance with the original design.

NATIONAL GALLERY.—We learn with much regret, that Mr. Eastlake, R.A., has resigned his appointment in the National Gallery.

## TO CORRESPONDENTS.

"*N. M.*"—If the "fire bricks" be carefully set in cement, on a sound foundation, the floor will be less penetrable by moisture than if pointed with lime. A sound foundation, however, is of the greatest consequence. If asphalte be procurable for setting the bricks, we should recommend it. A thin bed of concrete with a layer of broken glass in it, to keep back the rats, would make the whole perfect.

"*Naves of Wheels.*"—Although somewhat out of our path, we have, in consideration of the position of the inquirer, taken some pains to ascertain if cracks in wheel naves can with *certainty* be prevented; and we find, in the opinion of those best informed, that they cannot.

"*G. G.*" (Portsmouth.)—Write to the Secretary, Great George-street, Westminster. The Number is out of print.

"*G. B. J.*"—We formerly published lists of prices of materials regularly, but found reasons for discontinuing them. The other suggestion shall be considered. We shall be happy to see the lithograph.

"*Subscriber.*" (Bedford.)—To prescribe for a smoky chimney without seeing it would be useless: take a good pinion on the spot.

"*Rex.*"—The houses cannot be built as shewn on the plan sent.

"*A Measurer.*"—Next week.

"*E. W. F.*"—We avoid giving recommendations.

"*Gamma.*"—Write to Secretary of Society of Arts, Adelphi, and he will return full particulars.—"Orders" may be drawn in name of the publisher, Mr. Charles Wyman.

*Received.*—"Philocrome," "A friend to fair and impartial competition," "W. H." (Maningtree), "Mr. P." (Pimlico), "E. C. S. B.," "Lithographed View of the Priestwood Church, Bucks: with Schools and Parsonage House," by Mr. E. B. Lamb, Architect; "Report on Cordes and Locke's Condensing Rotary Steam Engine," by Mr. Josiah Parkes, C.E.; "Punctuation reduced to a System," by William Day. Oliver: Pall Mall; "Railways for the Many, and not for the Few; Second Edition, with some Remarks on Building Societies;" by James Ward, Esq. Smith and Elder: Cornhill; Prospectus of the "Amateur Musical Society," Mr. Henry Leslie, Honorary Secretary. The object of this society, is the formation of a full orchestra, to meet weekly during February, March, and April, for the performance of classical composition. With Prince Albert, the Duke of Cambridge, the Earl of Westmoreland, &c., among the members; the Earl of Falmouth one of the violins; Lord Arundell, the trumpet; the Hon. George Cadogan, the bassoon; Lord Fitzgerald and the Marquis of Kildare, among the violoncelli; and the Duke of Leinster and Sir Alexander Macdonald, two of the bassi,—this may justly be called, *the* "Amateur Musical Society," and be placed among the "events" of the day.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

NOTICE.—CHEMISTRY AS APPLIED TO CONSTRUCTION.—The Builder of next week will contain the first of a series of papers on this important subject, by Professor Griffiths, of St. Bartholomew's Hospital.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

MONDAY, Jan. 25th.—Royal Institute of British Architects, 15, Grosvenor-square, 8 P.M.

WEDNESDAY, 27th.—Society of Arts, Adelphi, 8 P.M.

THURSDAY, 21st.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.


## ADVERTISEMENTS.

TO BUILDERS, DECORATORS, PAINTERS, &c.

**DEPOT of FRENCH Paper-Hangings,**—M JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market, and the prices very moderate S BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

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N.B. To expedite the procuration, personal application at the office will in all cases be better, the party bringing with them the abstract of title, plans, &c.

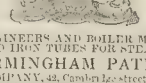
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TO ENGINEERS AND BOILER MAKERS

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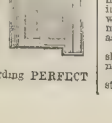
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"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

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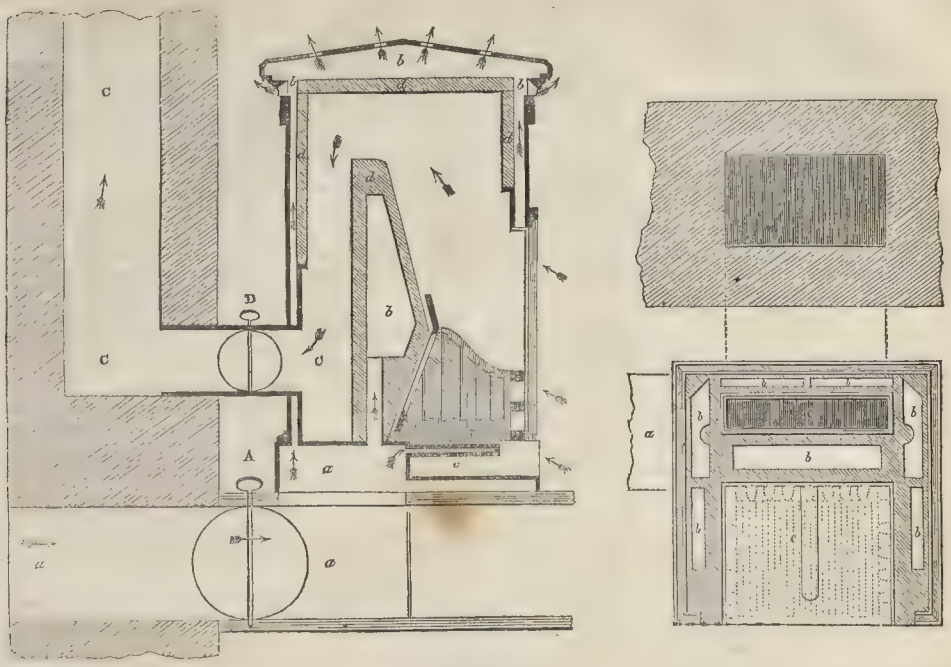
It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes abovenamed, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.

# CUNDY'S PATENT IMPROVED OPEN FIRE PLACE, HOT AIR, VENTILATING STOVE.




*Description of Diagram.*

*a a a a* Fresh air channel, for admission of external air.
*b b b b* Hot air chambers (formed with artificial stone, *d d d d*) through which the air passes into the room, and is heated without being injured.
C C C The direction the smoke and vitiated air takes after it has passed through the fire and heated the artificial stone of the hot air chambers.
*e* Blow pipe to preserve perfect combustion placed immediately underneath the grating of fire place.
A and D are regulators.
The arrows shew the way the external fresh air is admitted, next passing through the hot-air chambers into the room, and lastly taken out of the room through the fire and up the chimney—thus completing ventilation.

This STOVE embraces the following most important principles connected with the economy of

## WARMING AND VENTILATING CHURCHES,

And other Public and Private Buildings, viz.:—

HEAT by RADIATION from the Open Fire.

HEAT by CONDUCTION.—A copious and continuous stream of PURE WARM AIR is conducted into the room through the large Stove, at a regulated rate, by means of an air channel underneath the floor, communicating with the external air.

HEAT by REFLECTION.—The external casing of the Stove becoming warm, communicates its heat to the surrounding atmosphere.

VENTILATION produced by the OPEN FIRE—which will carry off the Vitiated Air through the chimney at the same rate the Pure Air is conducted into the room through the interior HEATING APPARATUS of the Stove, thereby keeping up a regular and agreeable system of Ventilation.

ECONOMY of FUEL.—This Stove, from the peculiar construction of the Fire Place, will produce a most BRILLIANT FIRE with the least possible quantity of fuel, and will continue to burn so long as any particle of coal remains.

## TESTIMONIALS AFTER A WINTER'S TRIAL.

Gothic Villa, St. John's Wood, Oct. 22, 1846.

SIR,—Perhaps there are few private individuals who have had more experience in stoves than I have had; I have tried most of the newly invented ones, and rejected all but yours, two of which I have tried in my temporary church, and found them to succeed so well, that I have introduced them into All Saint's Church, St. John's Wood.

The following reasons induce me to approve of them:—Exemption of effluvia; the emission of a great body of pure warm air; the perfect system of ventilation; the sight of the fire; the consumption of vitiated air; the little attention requisite; the cleanliness connected with them; and though last, not least, the great economy of fuel.

All more I can say in favour of your stoves is, that whenever I require a stove, either for my house or church, I shall purchase your patent Stoves, and recommend all my friends to do the same.

Yours truly,
ED. THOMPSON, M.A.
Incumbent of All Saint's, St. John's Wood.

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29, Charter-house-square, Monday, Feb. 17, 1846.

DEAR SIR,—The Stoves which you have recently erected in my church have been highly successful, and I have great pleasure in expressing to you the entire satisfaction which they have given to all parties. The church, which was notoriously noted for its coldness and bad ventilation, is now most agreeably warmed and well ventilated. I shall be most happy, on any occasion, to bear testimony to the excellency of your stoves; and I will endeavour, to the best of my power, to make them known, and I will certainly recommend them to my friends.

I remain, Dear Sir, yours faithfully,
WM. ROGERS, St. Thomas's Charter-house.

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St. Thomas's, Charter-house.

We, the undersigned, do hereby certify, that during the last three winters we suffered severely from the cold in the Church of St. Thomas's, Charter-house, although we had three large Arnott's Stoves, which consumed one sack and half of coals each day they were lit. The building was never warm; in consequence of which the congregation fell off, though we had a zealous preacher in the Rev. Dr. James. We have now two of Cundy's Patent Stoves, which consume but one cwt. of coal per day between them, and they impart to the church a comfortable heat and ventilation.

WILLIAM BUSHMAN, Verger.
THOMAS GEORGE, Beadle.

St. John's, Fulham, 2nd May, 1846.

My Dear Sir,—I have very great pleasure in giving my testimony to the efficiency of your Stove, as combining the double advantage of thoroughly warming and constantly ventilating any large church or building. Your invention appeared to me to be in theory all that could be desired; and I can honestly say, that I have not yeth discovered the point in which the practice falls short of the theory.—The area of my churc is computed to be nearly 200,000 cubical feet, and though a second stove will be required, the one already erected has fully answered my highest expectations, and realized all that you had given me to expect. If confirmation were needed for evidence of its efficiency, I might further state, that I had peculiar difficulties to contend with,—that various attempts had been made, and that every attempt had proved a signal failure,—that I was exposed to the charge of boldness in attempting what had baffled others; but that such is the power, the efficiency, and the comfort communicated by your Stove, that I know not of a dissentient voice, and have heard only of approval with unanimous consent.—I might add, that I was first led to the making inquiry respecting your stove, having gathered indirectly, that a disposition not unfavourable towards it was entertained in a certain high quarter, where, on account of ability of discernment, the smallest approach to approval must carry with it great weight.—I remain, Dear Sir, yours faithfully,

WILLIAM GARRATT, Minister of St. John's, Fulham.

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Letter from the Rev. MATTHEW O'BRIEN, (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

Upper Norwood, 22nd June, 1846.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my lecture room at King's College, last year, in place of a common stove (of Arnott's construction, I believe). I have no hesitation in saying from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell.

MATTHEW O'BRIEN.

*** Since this stove was put up, four others have also been fixed, one of which is placed in the Medical Library.

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Letter from Professor BRADLEY.

King's College, London, July, 1846.

Sir,—I am happy to be able to bear testimony to the efficiency of your stove, which is fixed in my lecture-room at this Institution. It seems to have all the essential requisites of a good stove, a rapid draught, freedom from all smoke, and from that smell which arises from iron, heated in contact with the air of a dwelling-room, which is entirely avoided by your arrangement.—I am, Sir, your obedient Servant,

THOMAS BRADLEY.

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*To be had of the Manufacturers,*

## MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

Where they may be SEEN IN OPERATION, and where also may be seen an ELEGANT assortment of REGISTER and other STOVES, FENDERS, CULINARY APPARATUS, &c. &c. ARCHITECTS and BUILDERS supplied with IRON and BRASS CASTINGS, at Messrs. DOWSON'S FOUNDRY, 5, SEYMOUR-PLACE, BRYANSTON-SQUARE. Smith's Work, Gas Fittings, and all other works appertaining to a Smith and Founder, undertaken at estimated prices.

# THE BUILDER.


LIGHT LARGE WORKSHOP AND DWELLING-HOUSE WANTED, a DWELLING-HOUSE, with a LARGE LIGHT WORKSHOP at the back, with a back entrance thereto, situate in the neighbourhood of Oxford-street, Holborn, or the Strand.—All letters addressed A. K., office of "The Builder," will be immediately attended to

TIMBER SAWING FRAME FOR SALE.
WELL Manufactured, and in complete working order, and only sold in consequence of the room being required for other purposes.—Apply to W. G. WARDLE, Stanzate Saw Mills, Palace road, Lambeth.

BUILDING GROUND.
TO LET, some Excellent Building Ground, money would be advanced equal to the prime cost of the proposed houses. No party who cannot give most satisfactory references need apply.—FRANCIS E. H. FOWLER, Architect, 28, Sackville-street, Piccadilly.

TO BUILDERS AND OTHERS.
LAND TO BE LET, on advantageous terms, on Building Leases, at West Ham, Middlesex; Streatham and Carshalton, Surrey; Boxmoor, Herts, and Tunbridge Wells, Kent.—For particulars, apply to Messrs. BROOKS and GREEN, Estate Agents, Surveyors, and Auctioneers, 28, Old Bond-street.

BUILDING GROUND, PUTNEY.—To be LET on Lease, sundry Plots of Building Ground, delightfully situated near Putney Bridge, the Steam-boat Pier, and the Richmond Railway; suitable for the erection of Villas and other Residences, having a View of the River Thames, with constant and cheap communication to all parts of the Metropolis. A BARN and GRANARY upon the Premises for SALE.—Apply to Mr. J. B SHEPHERD, Surveyor, 14, Bucklersbury, City.

TO TIMBER MERCHANTS, DEALERS, or Commission-Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.
TO BE LET, on Lease, for 21 Years, Excellent BUSINESS PREMISES, with Residence attached, chiefly situated, No. 4, Albion place, on the High-road, Holloway, near the Chapel of Ease. Rent, £70 per annum.—Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Jewry, and of Mr. LLOYD, on the premises.

HIGHBURY GROVE, HIGHBURY BUILDING LAND
TO BE LET, a valuable piece of Building Land, situate on the west side of Highbury Grove, being the most beautiful part of Highbury, with beautiful pleasure-grounds in the rear for the erection of a Villa Residence £60 on each House will be advanced, if required; as the works progress. Term, Nine Years from 29th September, 1846. Ground-rent, £12 12s. Particulars may be had of Messrs. OVERTON and HUGHES, Solicitors, 25, Old Jewry, and of Mr. LLOYD, No. 4, Albion-place, Holloway-road

TO BUILDERS.—MATERIALS AND MONEY ADVANCED
TO BE LET, on BUILDING LEASES, for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's-road, Dalston, to Lansdown place. This is one of the most rapidly improving neighbourhoods near London, and is the principal thoroughfare from all parts westward to the new Victoria-park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

ST. JOHN'S WOOD PARK !!! IMMEDIATE CONNECTION WITH REGENT'S PARK
BUILDING PLOTS TO BE LET in this most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's-park.

TO BUILDERS AND AUCTIONEERS
TO BE DISPOSED OF.—A first-rate and very compact Business, in the above line, in a good market town, about two hours' ride by railway from London. The owner is about to retire. Twelve to twenty hands are constantly employed in reparations and buildings, having a good private connection. Stock and Fixtures to be taken at valuation. Premises may be purchased, or rented on lease. Stock is reduced to about £400, part of which may be left on approved bills at long dates; a moderate premium is expected, or additional rental. For further particulars, address, C D, at the Office of "The Builder," 2, York-street, Covent Garden, London.

TO TIMBER MERCHANTS
MESSRS. BEADEL and POULKES are instructed by the Worshipful Company of Haberdashers, to SELL by TENDER, a portion of the useful Timber now growing upon the Hatcham Park Estate, immediately contiguous to the Station at New Cross, on the Croydon Railway. The Timber, which is being cleared for Building purposes, comprises upwards of 300 Ends: Consisting of Elm, Ash, Chestnut, Sycamore, Venetian and Carolina Poplars many of the latter, large measure, a quantity of useful Seconds and other Timber. Mr. Newhart, of No. 4, Monmouth Place, Old Kent Road, or the Gardener at the Mansion, will shew the Trees, which are marked with white paint. The Timber is to be taken up and the ground levelled within three weeks after acceptance of Tender; and the purchaser will be allowed to stub such of the trees as can be so removed without damage to those remaining. Sealed Tenders will be received by Messrs. BEADEL and POULKES, Estate Agents and Timber Surveyors, 23 Gresham-street, City, till the 27th of February, next, after which the person whose Tender shall be accepted, will have due notice

SEWERS, MIDDLESEX—HOLBORN AND FINSBURY DIVISIONS.
NOTICE IS HEREBY GIVEN, that a Court of Sewers for Holborn and Finsbury Divisions, in the County of Middlesex, will be holden at the Sewers' Office, No. 7, Hatton Garden, on FRIDAY, the 29th day of January, 1847, at Two o'clock in the forenoon precisely.
JOSEPH UNWIN, Summoner and Clerk.

Sewers' Office, for Holborn and Finsbury Divisions, &c
No. 7, Hatton Garden.
TO BUILDERS AND OTHERS.
Interested in buildings, or in ground for building upon, within the district of Holborn and Finsbury Divisions, the Parish of St. Leonard, Shoreditch, and the Liberty of Norton Folgate, in the County of Middlesex, and the borders and confines of the same.
THE Commissioners of Sewers for the above Limits, DO HEREBY GIVE NOTICE, that previous to making any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, application must be made by petition, the form of which may be had at their office, to which must be attached a plan of the intended line of sewer; and which must be constructed conformably with their regulations.
And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated to too great a depth, the Commissioners have directed that, upon application being made at their office, previous to the excavation of such ground information shall be given as to the lowest depth at which the same can be drained.
And the Commissioners do also give Notice, that whenever the lowest floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not now any sewer to be made for the same, nor for the use or service of such buildings: and further, that no buildings or erections of any kind will be permitted to be made upon or over any sewer.
All communications made with any public sewer, without previous application, as aforesaid, will be stopped out; and the parties making the same will subject themselves to a fine.—By the Court,
STABLE and LUSH, Clerks.

*** The public is also informed, that all rates imposed by the said Commissioners are to be paid by the tenant, and allowed by the landlord out of the rent, except where the tenant, by special covenant or agreement, is bound to defray the same.

TO BUILDERS, PAINTERS, AND OTHERS.
MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only, 63, WATERLOO-BRIDGE-ROAD.
An Apprentice wanted, to board and lodge with his friends. Premium, £30.

DUTY OFF ORNAMENTAL WINDOW GLASS.
CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 8d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square. Terms, Cash only.

SASHES PRIMED, GLAZED, and sent to any part of London at 8d. per foot.
BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon the best wholesale terms.
FOREIGN SHEET. BRITISH SHEET
BRITISH CROWN. PROPAGATING GLASSES
Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, shew-cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.
Dry and Ready Ground Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.
VARNISHES and GENUINE WHITE LEAD; MILLED LEAD in SHEETS, 22s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.
For complete Lists, priced, Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public; it will greatly add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sunblind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

CHAS. WM. WATERLOW,
MANUFACTURER

of Sashes and Frames and Joiner to the Trade, 121, Bunhill-row, and 5, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices. Upwards of 400 DOORS, and a large variety of Sashes and Frames always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building


SHOP FRONTS, SASHES AND FRAMES, DOORS, &c.
MADE FOR THE TRADE.
JOHNSON and PASK,
1, Angel-street, Clerkenwell,

Beg to inform the Trade, and the Building Public in general, that they cost nothing in manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiner's work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country. Lists and Estimates forwarded by return of post, to any part of the country.


TO PLASTERERS.
LIME FOR PLASTERING, that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORBES'S WHARF, Battle-street, Blackfriars. Shafts for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

TO BUILDERS.
W. RAWLINS, Bangor Wharf, King's Road Bridge, Camden New Town, begs respectfully to inform Builders and others, that he continues to supply grey stone, and chalk lime, blue lias lime, Roman cement, plaster of Paris, plasterers' hair, Bangor slates, sand, tiles, cement chimney-pots, Welch goods, and all kinds of building materials, this being the nearest lime Wharf to the North of London. Yorkshire paving flags, slabs, &c. Thames ballast, sand delivered per Barge, in the river or on any part of the Regent's Canal

TO BUILDERS AND OTHERS.
MESSRS. H. G. and E. ROSHER, having closed their Lime Wharf at Montague Close, Southwark, have removed their business to Albion Wharf, Holland-street, Bankside, where they intend keeping a constant supply of Greystone, Flame burnt, and Pinner Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland-road

*** Ground Lime for Concrete.

FIRE BRICKS.—STOURBRIDGE (Rufford's and others) best made BRICKS, at WARD'S, Hondurus Wharf, Bankside, London, to be SOLD for arrival. This is a great advantage to the purchasers, saving all the expenses of unshipping, lighterage, landing, reloading, &c. An immense stock of all the best made Stourbridge, Welch, and Newcastle fire goods at summer prices, although freights and other expenses have considerably advanced. Shippers, gas companies, engineers, builders, and large buyers supplied at lower prices than they can import, besides the advantage of having at home into supply without waiting the uncertainty of ships arriving at this season of the year.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, when Messrs. Geo and Thos Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping back all Wood, however backward preventing them eating through and disfiguring the paint above.
Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.
In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does it the pure best.
Sold wholesale and Retail by Messrs. G and T Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.
The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.
PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

MASONS' Provident INSTITUTION.—The First Annual General Meeting of the Donors and Subscribers to the above Institution will be held on Monday Evening, January 25, 1847, at the City of Westminster Literary and Scientific Institution, Great Smith-street, Westminster, for the purpose of receiving the Report of the Auditors and General Committee, and for the transaction of other important business connected with the Institution.
JOSEPH T. WHITEHEAD, Hon. Sec.
Chair taken at Half past Seven.

ARCHITECTS, BUILDERS, and the Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney-shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, bed mouldis, &c. &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. Modelling executed for the Trade.
A first-rate assortment of shop-front trusses ready for fixing. Centre flowers fixed complete 33 per cent. cheaper than papier mâché.

PORTLAND CEMENT.—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

GREAVE'S LIAS CEMENT, stone-colour, free from vegetation, does not crack, and is well adapted for every description of modelling and casting.
GROUND LIAS LIME, for concrete, or as mortar for sewers, dock-walls, and hydraulic works generally; is superior to any other lime or cement.—Office, 2, South Wharf, Paddington, and Stratford-on-Avon
Agent for Liverpool—Mr Wylie, 56, Gloster-street
Ditto, Manchester—Mr. J. Thompson, Back King-street.
Ditto, Chester—Mr. J. Harrison, Linen Hall-street
N.B. Marble Floors. A large quantity of Vein and Black Marble on sale at reduced prices

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.
CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S and S pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substances with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—
1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in seven days, without pecling, when put upon dry work.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.
For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.
For the floors of halls and fire-proof warehouses, its hardness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.
Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.
JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—
It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above named extraordinary and valuable advantages, nothing can approach it in point of economy.
Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred. Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 3, Maiden-lane, Queen-street, Cheapside, London; of whom also may be had,
JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and Houses that have been covered with Stucco, which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas Messrs. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

ROYAL POLYTECHNIC INSTITUTION.—Professor Schonbein's GUN COTTON, and other EXPLOSIVE COMPOUNDS, with brilliant Experiments, lectured on by Dr Ryan, daily at Half past Three o'clock and on the Evenings of Mondays, Wednesdays, and Fridays. The principle Evenings of Mondays, Wednesdays, and Fridays. The principle of the ELECTRO-MAGNETIC TELEGRAPHS explained daily by Professor Bachhoffner, including the Patent of Messrs. Cook and Wheatstone, in use on the Railways, and the more recent Patent of Messrs. Nott and Gamble. The various Models explained. Magnified Specimens of DISEASED POTATOES examined by the OXY-HYDROGEN MICROSCOPE, with the DESTRUCTIVE INSECT, supposed by A. Smee, Esq., F.R.S., to be the cause of the disease. A beautiful series of NEW DISSOLVING VIEWS. The DIVING-BELL and DIVER, with EXPERIMENTS. The PHYSIOSCOPE, new CHROMATROPE, &c. &c.—Admission, 1s.; Schools, Half-price.



LONDON: Printed by CHARLES WYMAN, of 49, Cumming-street, Pentonville, in the County of Middlesex, Printer, at the Printing office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent-Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, January 23, 1847.

# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 208. **JANUARY 30, 1847.** *Price ..... 3d. Stamped ..... 4d.*


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**WANTED** by a Competent and Experienced Young Man, about Thirty Years of Age, a Situation as Plumber.—Address A. B., 4, Gilbert-street, Oxford-street.

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**WANTED** Employment in a Builder's Office by a person Twenty-eight Years of Age, who has been with an architect. His object is to obtain practical knowledge. Salary moderate.—Address to J. B., 41, Fore-street, London Wall, City.

**WANTED** a Respectable Young Man not less than Twenty-one Years of Age, to be Articled for Three Years to a Coffin-maker, &c. One that has any knowledge of bench-work would be preferred. No Premium required.—Address, prepaid, to Y. Z., office of "The Builder," 2, York Street, Covent Garden.

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**WANTED**, by a Young Man aged Twenty-four Years, Employment in the office of either an Architect, Surveyor, or Builder; he is a good draughtsman, and is thoroughly acquainted with building in all its branches, having been brought up practically; he also possesses a good knowledge of Levelling and Estate Surveys. Salary required moderate.—Apply by letter to A. B., care of late Redmunds and Co., 103, Fleet-street.

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**WANTED**, by a Young Man of the greatest respectability, a Situation in a Builder's Office; he has been similarly engaged, writes a neat hand, and would make himself generally useful, and in a respectable situation would have no objection to giving his services gratis. Address, T. C., care of Mr. Leggett, News Agent, Union-road, Landport, Portsmouth, Hants.

**WANTED** by the Proprietor of a Patent who is bringing the subject of his patent into general operation, an Active Intelligent Person, who must be a good bookkeeper, and accustomed to the management of workmen, a knowledge of the construction of buildings, particularly in the smith and founder's departments is indispensable.—Apply personally, at 89, Welbeck Street, Cavendish Square, between the hours of Twelve and Five o'clock.

N.B. Security will be required.

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**WANTED** by a Builder, about Four Miles from the City, an Active and Experienced Shop Foreman; he must be a superior joiner, and competent to execute a good staircase, make working drawings, and direct generally; also to keep the account of men's time and material. He will be required to produce satisfactory testimonials of character and ability from his present or late employer.—Address, post-paid, full particulars, age, &c., to A. B., office of "The Builder."

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**ARTISTS, DESIGNERS, and Amateurs** are informed that the GENERAL PRACTICAL SCHOOL OF DESIGN, 128, Maddox-street, Hanover square, Master, J. D. Leach, Esq., is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female—with Weekly Lectures on Art. Terms, One Guinea per Quarter.

R. W. HERMAN, Hon. Sec.
24, Green-street, Grosvenor-square

**MR. CHARLE'S LUCY'S ATELIER,** for the Study of the LIVING MODEL, &c. &c., is NOW OPEN at his Residence, Tudor Lodge, Albert Street, Mornington Crescent. Terms—Morning Class, 16s. Evening, 12s. A course of Lectures on ANATOMY, by J. Marshall, Esq. will be delivered on the successive Monday Evenings, at 8 o'clock, commencing on February 1st. The Lectures are FREE only to the Students attending the classes.—Particulars to be had of Mr. Lucy.

LIAS LIME WHARF, PADDINGTON.

**NOTICE.**—I hereby CAUTION all parties from PAYING ANY MONEY to HENRY HOULDEN on my account.

RICHARD GREAVES.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks

TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES.

**HER MAJESTY'S JUSTICES and COMMISSIONERS** of SEWERS for the City and Liberty of WESTMINSTER, and part of Middlesex, HEREBY GIVE NOTICE, that they have approved a plan, whereby an efficient drainage, at a very moderate cost, may be obtained for property in the above situations, abutting on streets where there are sewers. The plans and sections may be seen at the office of the Commissioners, No. 1, Greek-street, Soho.—LEWIS C HERSLET, Clerk to the Commission.

**KENSINGTON NEW WORKHOUSE.**

We, the undersigned, being a Committee appointed by a Meeting of the Rate-payers of the Parish of Kensington, in Vestry duly convened, for the purpose of taking such steps as they may be advised, either at law or equity, to prevent the Board of Guardians unnecessarily expending the Funds of the Parish in carrying out the above scheme, DO HEREBY CAUTION all parties who may be invited to send in Tenders for the work, that any contract entered into by the Guardians for that purpose, will be resisted by the Parish as illegal.

WM. HAWKES, Chairman.
F. PRATT BARLOW,
JOSEPH LIGGINS,
JOHN PERCEVAL,
RICHARD NORRIS,
W. J. WOOD,
P. SMITH,
OTTO HANSEN SASSE,
W. J. DREW.

TO BUILDERS.

1, Cannang-place, Kensington, January 27th, 1847.

**THE Guardians of the poor of the Parish** of Kensington HEREBY GIVE NOTICE, that they are ready to receive TENDERS for the works to be done in the erection of a New Workhouse for that parish. The plans, specification, and conditions, may be seen at the office of the architect, Mr. ALLOM, 31, Hart street, Bloomsbury-square, where copies of the quantities may be obtained, on TUESDAY, the 2nd of February next, and following days.

The Tenders to be delivered at the Board Room of the present Workhouse on or before Eleven o'clock in the forenoon of Tuesday, February 9th next.

N B. The Guardians do not bind themselves to accept the lowest tender. S. CORNELL, Clerk to the Guardians.

CONTRACTS.

TENDERS FOR BRICKS, LIME, SAND, CEMENT, AND CARTAGE

**THE Court of Sewers for Westminster and** part of Middlesex, will be ready on Friday, the 5th of Feb., at this Office, at 1 o'clock, to receive sealed TENDERS for the supply during the next six months, of Stock Bricks, Blue Lias Lime, Thames Sand, and Roman Cement, all of the best quality. Also sealed TENDERS for a loose cart, and man, at per day, and for carriage of Soil and Rubbish per cube yard.—Forms of Tender, &c. may be had on application at the Court House, No. 1, Greek-street, Soho-square. LEWIS C. HERTSLET, Clerk.

28th January, 1847.

OAK CLEFT PARK FENCING

**WANTED** immediately, about Seventy-five Rods, to be fixed near Canonbury, Islington.—Any person desirous of sending a proposal for the Work may have the particulars by sending a letter, post free, to Mr. HILL, Surveyor, Canonbury Tower, Islington.

TO IRONFOUNDERS AND SMITHS.

**WANTED CONTRACTS** for Iron Railing and Copings of the same pattern and weight as that surrounding Harrington-square, Hampstead road, London. The quantity contracted for not to be less than 50, nor more than 1,800 feet. The contract to be for the supply complete and fixing the same the brick piers not to be included.—Address, Messrs. NEWMAN and Co., 5, Great Randolph street, Camden-town, London.

**THE Committee for the Erection of Schools** at Hildenborough, near Tunbridge, are desirous of receiving TENDERS for the works. The Plans and Specification will lie for the Inspection of Builders at the office of Messrs CARNELL and GOTHAM, Solicitors, Tunbridge, on and after Tuesday next, the 2nd February; and the Tenders are to be sent to AUGUSTUS LANGTON, Esq., Cold Harbour, Tunbridge, on or before Tuesday, 9th February. The Committee will not bind themselves to accept the lowest Tender.—Jan 1847

TO BUILDERS.

**PARTIES desirous of CONTRACTING** for the erection of additions to, and making alterations in the present house at Spitalton, near Northampton, may see the plans and specification at the office of the Architect, Mr. FOWLER, 13, Essex-street, Strand, on and after the 4th of February next, till TUESDAY 16th, from Ten till Four o'clock; and at the same hours from the 18th to the 20th at the office of Mr. MARKHAM, solicitor, Northampton. All tenders must be delivered on or before the 1st of March next, addressed to the architect as above, of whom any further particulars may be obtained.—The lowest tender may not be accepted.—York, Jan. 26th, 1847.

CONTRACTS FOR WORKS

**NOTICE IS HEREBY GIVEN,** that TENDERS for the following WORKS will be received at the undermentioned times and places:—

BRISTOL AND SOUTH WALES JUNCTION RAILWAY.

Contract No. 1.—From the junction with the Great Western Railway at Bristol, to a point in the parish of Stoke Gifford, being a distance of about five miles.

Contract No. 2.—From the termination of Contract No. 1 to the New Passage, being a distance of about six miles.

Plans and specification may be seen, and printed forms of tender obtained, at the Engineer's Office, at the Railway Station, Temple Meads, Bristol; and the tenders must be addressed to the Directors of the Bristol and South Wales Junction Railway, and sent to the Company's Office, Exchange-buildings, Bristol, on or before Twelve o'clock, on Monday, February 8

OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.

Morton Contract and Shipton Contract, being of the respective lengths of five miles twenty-nine chains, eleven miles forty-six chains, and extending from a point near Shipton, in the county of Gloucester, to a point near Charlbury, in the county of Oxford.

Plans and specifications may be seen at the Engineer's Office, Worcester, and the tenders must be addressed to the Directors of the Oxford, Worcester, and Wolverhampton Railway, and delivered at the Railway Office, 449, West Strand, London, on or before Twelve o'clock, on Tuesday, February 9th.

SOUTH WALES RAILWAY.

Contracts Nos 11, 12, and 13, Swansea Division, being of the respective lengths of five miles seventy-two chains, six miles sixteen chains, and thirteen miles thirty two chains, and extending from near Kidwelly, through Carmarthen, to Whitland, county of Carmarthen.

Plans and specifications may be seen, and printed forms of tender obtained, at the Engineer's Office Carmarthen; and the tenders must be addressed to the Directors of the South Wales Railway, and delivered at the Railway Office, 449, West Strand, London, on or before Twelve o'clock, on Wednesday, February 10.

MONMOUTH AND HEREFORD RAILWAY.

Contracts Nos. 1, 2, 3, 4, and 5, of the respective lengths of two miles four chains, four miles sixty chains, seven miles six chains, one mile fifty-one chains, and four miles fifteen chains, situate between Ll ine Lacy, near Hereford, and Westbury on Severn, Gloucestershire.

Plans and specifications may be seen, and printed forms of tender may be obtained, at the Engineer's Office, at the Railway Station, Temple Meads, Bristol; and the tender must be addressed to the Directors of the Great Western Railway, and delivered at the Railway Office, at Paddington, on or before twelve o'clock, on Thursday, February 11

IMPORTANT TO BUILDERS.

**THE ARCHITECTURAL CARVING** COMPANY beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston-place, Pimlico, leading out of Ebury-street. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

**CARVINGS IN WOOD.**—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public at an extremely reduced price, every possible variety of Carved Wood for external and internal enrichments—thus substituting the genuine material for those numerous imitations which have (as justly) been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Lobby Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.

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**DREDGING MACHINE for SALE.**—A [illegible] DREDGING MACHINE, with [illegible] horse high-pressure [illegible] the most [illegible] construction [illegible] all stores and materials all [illegible] of Bolton, complete [illegible] ready for immediate use [illegible] year. The whole is in excellent repair, and [illegible] consequence of the work being finished for which it was built. May be seen on the Severn above Diglis Lock, Worcester, and particulars had of Mr. Gissell, Lambeth. N.B. If necessary, the machinery may be readily removed to another vessel.

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**FRENCH PAPER HANGINGS.**—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers is at Messrs. MARKS & CO.'S, 9, Princes-street, Leicester-square, established 1812, where the Trade may be supplied [illegible] Immense Stock of NEW SPRING PATTERNS, at prices that will defy the [illegible] prices that at present [illegible].

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TO BUILDERS, DECORATORS, PAINTERS, &c.

**DEPOT of FRENCH Paper Hangings.**—M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market, and the prices very moderate. S. BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

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**LIME FOR PLASTERING**, that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FOREST'S WHARF, Earl-street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

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TO BUILDERS AND OTHERS.

**MESSRS. H. G. and E. ROSHER**, having closed their Lime Wharf at Montague Close, Southwark, have removed their business to Albion Wharf, Holland-street, Bankside, where they intend keeping a constant supply of Cement, stone, Flame-burnt and Plaster of Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lamps, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland-road.

*** Ground Lime for Concrete.*

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CEMENT AND PLASTER ORNAMENTS.—TO ARCHITECTS, BUILDERS AND OTHERS.

**W. HUGHES and CO.** having purchased a large quantity of Moulds, Patterns, &c., the stock of Mr. G. BARTLETT, of Duncan Terrace, City Road, consisting of a great variety of Chimney Shafts, Ballusters, Trusses, Cantilivers, Vases, Animal and other Figures, for external purposes; Centre Flowers, Soffites, Bed-moulds, Brackets, &c., for inside work, which, being added to [illegible] enabled to supply Builders and the trade in general [illegible] above description of Ornaments at reasonable prices. Modelling executed with strict attention to drawings. Address W. HUGHES and Co., Ornamental Plasterers, &c., No. [illegible] Row, Upper Street, Islington.

**PORTLAND CEMENT.**—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for external work, [illegible]. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank-street, Westminster.

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**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or [illegible] stone [illegible].

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

---

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.**—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously sailing [illegible] of the same description [illegible] selves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical action upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties which it exclusively possesses.

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, [illegible] of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, [illegible]. The most satisfactory references can be given. [illegible] Plaster of Paris and Cement Manufacturers, [illegible], DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, [illegible] place, Liverpool.

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TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO CEMENT.** The following are the positive advantages possessed by this [illegible] over every Cement [illegible]. It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise [illegible]. It [illegible] never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. [illegible] the Sea-side. It may be used in the hottest or coldest Climates at any season. [illegible] or Glass. It will carry a larger Proportion of Sand than any other [illegible] use being very clear and distinct. The first cost of this material [illegible] with all [illegible].

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and [illegible] together with a volume of [illegible] at the office of "The Builder," and [illegible], SOLE AGENTS [illegible] Cheapside, London [illegible].

JOHN'S and CO.'S PATENT [illegible] STUCCO PAINT, [illegible] Houses that have been covered with Roman or [illegible] which have become dirty and discoloured. It is [illegible] having an affinity for Stucco, binds itself with [illegible] Paint whatever. It is [illegible] by any Painter, [illegible] situations.

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TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS [illegible], [illegible], WATERLOO-BRIDGE ROAD.

An [illegible] with his friends. [illegible] 130.

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CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars [illegible] of Mr. GEORGE GATES, 18, Southwark [illegible], London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at [illegible] pier, adjoining Caen Wharf.

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CAEN STONE DEPOT, NORWAY SUFFERANCE WHARF, GREENWICH.

**W. TUCKWELL, Caen Stone Importer,** informs Architects, Builders, Masons and others, that he has [illegible] DRY SEASONED CAEN STONE [illegible] Allemagne [illegible] by Mr. TUCKWELL, at the Wharf, and at the [illegible] of Mr. E. A. WITHALL, Surveyor, [illegible] CAEN STONE supplied direct from Caen to any port.

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PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO ROAD.

**SAMUEL CUNDY** begs to inform Architects and others, that GOTHIC WINDOWS and every other [illegible] ARCHITECTS [illegible] TRACERY for CHURCHES [illegible] PROVINCES, executed [illegible] TOWN.

BUILDERS and MASONS can have every description of Stone [illegible].

[illegible]

THE WORCESTER ENCAUSTIC TILES, in all their beautiful [illegible] to the usual extensive stock of Chimney pieces and FONTS.

Estimates given for building generally.

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**LADYSHORE TERRA COTTA.**—The attention of Architects, Builders, and others engaged in building is respectfully [illegible] to this material, which combines the beauty and durability of the best Fire [illegible] at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the [illegible] churches, one in Manchester and one at Bolton-le-Moors, and a parsonage house and the ornamental parts [illegible] many other churches and buildings, &c. Its advantages are, that it is not a "Composition," nor of the nature of [illegible], but HARD BURNT CLAY. [illegible] than carved stone or wood and equally durable.

The principal ornaments manufactured are capitals, trusses, bosses, [illegible] pinnacles, finials, chimney tops of all sizes [illegible] and every variety of [illegible] for building purposes.

This material is warranted to resist all the weather. Specimens may be seen, and every information obtained, on application to the Proprietors, E. P. WILLOCK and Co., 10, Exchange Arcade, Manchester.

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SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, [illegible], and 131, Chancery-lane.

**THE Patentee having fixed a great number** [illegible]

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**PATENT REVOLVING SAFETY SHUTTERS, WITH CONVEX IRON LATHS, PATENT CORRUGATED WINDOW BLINDS, &c.**—The attention of Architects [illegible] IMPORTANT IMPROVEMENTS in the [illegible] REVOLVING IRON SHUTTERS, [illegible] the patent [illegible] laths are 12 times stronger than the ordinary flat laths, to insure their general adoption. The patentee invites attention to his greatly improved gearing [illegible] all the [illegible] even by wear, be liable to run down, and entirely avoids the necessity of using the ratchet-wheel: and is at once simple and [illegible] SAFER and MORE DURABLE [illegible] the SAFEST and MOST EFFECTIVE [illegible] THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS [illegible] IMPROVED DRAWN METALLIC SASH BARS, ASTRAGALS, MOULDINGS, STALL BOARD PLATES, &c. [illegible] Howard & Co., 115, Old street, London.

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INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.** [illegible] favour of the Patentees, in the Court of Exchequer, in the action [illegible] fringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST [illegible] put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they [illegible]

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[illegible] Lombard-street, London; Works, at Deptford, Kent.

[illegible] Planing and Moulding, Cutting-machines [illegible] adapted for Builders' purposes [illegible] in operation at the Works.

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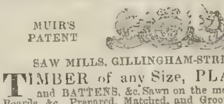
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The Builder.

No. CCVIII.

SATURDAY, JANUARY 30, 1847.

WHEN an eminent officer in the British Museum addressed a letter to the architects in November, 1845, relative to the formation of an extensive collection of British antiquities, we, in common with many others, were led to expect much more than it seems was intended; we fondly persuaded ourselves that we were at last, to obtain what we had long and earnestly striven for,—namely a MUSEUM illustrative, amongst other things, of OUR NATIONAL ARCHITECTURE; and thereat were greatly rejoiced. In our report of the conversation at the meeting of the institute when the letter was read,* we find one member pointing to a previous application to the trustees of the British Museum to induce them to establish a museum of architecture, mentioning the manner in which a recent motion in the House of Commons by Mr. Wyse, to the same effect, had been negatived, and hailing with satisfaction the present determination of the trustees. Mr. Donaldson, in the same strain, alluded to what the French had done in this respect, and suggested that separate provincial museums should also be established, rather than bring all remains to London. And Mr. Britton said, he had advocated the establishment of such a museum for five and forty years; instanced many cases of the disappearance of architectural remains; and expressed his delight in finding he might yet see a museum of such national antiquities before he passed off the scene.

All this, however, was unfortunately premature. The national antiquities contemplated did not induce *architectural* antiquities, and without any disrespect to the excellent writer of the letter, or the trustees, whose intention is excellent so far as it goes, we were just as far, and we fear *are* just as far, from obtaining what is so much desired as we ever were.

Further efforts must therefore be made, and if the trustees of the British Museum still refuse to provide such a collection, and the Government will not interfere to obtain it either there or elsewhere, we would call on one or both of the archæological associations to make the attempt.

Our present intention is to make a public appeal on this subject to the trustees; and to make that successful, we would solicit the good offices of THE MARQUIS OF NORTHAMPTON, as one of their body, who has given much attention to the study of architectural antiquities, and is much interested in their preservation. His lordship, as we have reason to know, admits fully the value of such a collection as we desire,—who, indeed, can doubt it?—but perhaps feels there are difficulties in the way, not of obtaining, but of housing it satisfactorily. For our own parts, we would ask no great extent of accommodation in the first instance, being satisfied that the value of such a museum would soon be universally recognized, and would enforce the provision of further space. Even in one small apartment, the Oxford Architectural Society have arranged a nucleus for such a collection, of considerable practical value. The examples would be arranged chronologically, and might embrace, even if the space were confined, mouldings in series (an important point), capitals, bosses, spandrils, corbels, tracery, shrines, &c. &c., and if the museum were on a proper scale, a series of arches, a series of windows, pillars, doorways, the varieties of groining, screens, and distinctive ornaments of every period. Diagrams might be used temporarily, to fill gaps in the series; carved woodwork, ironwork, tiles, alphabets, coloured decorations, and stained glass of the various periods, would of course be included, and would form a whole of the greatest immediate value to a very large class, and in result to the whole community.

Architecture occupies at this time the attention of many more in England than it did formerly; and when we call to mind our architects, clergy, builders, sculptors, painters, carvers, modellers, smiths, glass-painters, decorators, and others, it will be seen how large a portion of the public would be directly benefitted by the establishment of a museum of architecture, to say nothing of the much greater number who would be indirectly so. As Mr. Wyse said, in his address to the House of Commons, on the 27th of June, 1845, "It is only by a juxta-position of the monuments of art connected with the different epochs, from the earliest to the latest, that we can either duly estimate the past or produce for the future." He thought it was a cardinal mistake to call on artists to produce historical works, without the means of cultivating their powers, and ascertaining the spirit of the age they had to represent. These means ought to be afforded in a liberal and ample manner, worthy of so great a nation. Hitherto our artists have had but small means; their enthusiasm has been great, but their education has been limited.

A student, by drawing and comparing in such a museum as we desire, would gain there in a month a clearer knowledge of characteristics than he could otherwise in a year. To obtain a large and valuable collection would not be difficult or expensive, if once commenced; and how much that has been destroyed might have been preserved, had some public and recognized receptacle for ancient remains been opened long ago? Mouldering in cellars and lofts, there are yet many private collections which their owners would gladly place in any public repository, while there are two or three which should be obtained even at some cost. The question of cost, indeed, ought not to be considered; the education of a people should not be measured by money. In France, Germany, and Belgium, such collections are being rapidly made. England alone, who most needs them, is denied the advantage! England, where even the rulers are for the most part profoundly ignorant of art, and are unable to estimate rightly its powers and value!

Up to this time we have spoken only of a museum of *mediæval* architecture, and for this it is we must first strive; but we cannot shut our eyes to the importance of obtaining a collection ultimately, where architectural history, as a whole, might be studied; and where we might trace the gradual progress of unbroken connection, from the earliest recorded time till now, which distinguishes it. The prospect of this, however, is far distant; the other is visible, and easy of attainment; and if the distinguished nobleman we have named will aid a request to his co-trustees, that they will recommend the Government to provide, in the British Museum, for a collection illustrative of our national architecture, we shall have little doubt of a successful issue, and his lordship will be entitled to the warm thanks of his countrymen.

* See Vol. III., p. 558.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.

BY PROFESSOR GRIFFITHS.

INTRODUCTORY.

CHEMISTRY, as applied to construction, is an extensive, important, and occasionally intricate department of practical science, the study of which cannot be abruptly undertaken; it will therefore be necessary to make a lengthened introduction to the subject.

This will materially facilitate all future proceedings, for the leading characters of the agents of chemical research will be gradually revealed, and this will be infinitely preferable to encountering them as perfect strangers, of whose qualifications we may be ignorant, although we receive them with courtesy.

It will therefore be the duty of the writer of these papers to unfold the portals of a vast and magnificent temple of science, abounding in stores of extraordinary discoveries, and important practical facts, more rich and inexhaustible than those appertaining to any other in the wide domain of human knowledge.

Chemistry, with its furnaces, crucibles, retorts, acids, alkalies, salts, and metals, may be deemed at first glance to have no connection whatever with construction, and therefore foreign to the profession of the architect, whereas the exact contrary is the case, for it will hereafter appear that chemistry is concerned in every material employed by him, from the pencil and paper with which he forms his first rude sketch, up to the marble and metal of which he constructs the most elaborate edifice.

"The true end of all science is to enrich human life with useful arts and inventions;" thus said the illustrious founder of "Inductive Philosophy," and the chemist, with honest pride, can hold forth to his fellow men the most convincing proofs of the truth of the above aphorism, and of the zeal with which he has laboured under its guidance.

Chemistry, applicable, as it is, to every department of science, art, and industry, neither admits of a very concise, nor perfectly accurate definition; but for the present purpose the following may suffice. Chemistry is that branch of natural knowledge which teaches us the properties of substances called elements, and of their mutual combinations; it inquires into the laws which affect, and into the powers which preside over, their union; it examines the proportions in which they combine, and the modes of separating them when combined, and endeavours to apply such knowledge to the explication of natural phenomena, and to useful purposes in the arts of life.

Such being the case, it is obvious that the mere physical or mechanical properties of the materials employed by the architect, demand little attention from the chemist; his leading, or sole study, is to ascertain, as far as possible, the composition, or the elements, of all forms of matter, and then he can afford information to the architect regarding the natural and artificial causes which either ensure the permanence of an edifice, or promote its degradation.

The following example will probably suffice to illustrate the business of the chemist. If a mass of marble be deprived of support, it falls to the ground, in obedience to the *attraction* of *gravitation*,—*i.e.* a mechanical attraction; the marble is hard, compact, requiring considerable force to break it, in consequence of its particles being held or bound together by *attraction of aggregation*, this is also mechanical attraction. The architect, the builder, and the engineer, can afford an immense fund of information to the chemist regarding the velocity of the fall of the mass of marble, and the force which holds its particles together; but he is far from resting satisfied with knowledge of such mechanical properties. He asks, "Can you inform me of what things the mass of marble consists, that is thus subject to the attraction of gravitation and attraction of cohesion? To this question his fellow-labourers in the temples of the sciences can make no reply, and, therefore, the chemist draws upon the stores of his own to discover if there be another power of attraction totally different from mechanical attraction, which he expects will be *attraction of composition*. Mechanical processes will not aid the chemist in this investigation; for however he may break the mass of marble, or comminute it into the most impalpable dust, he only destroys its attraction of aggregation,—the minutest particle is still marble, as true

marble as the parent mass from whence it was broken and abraded; he gains no information into the things of which it is made; he therefore resorts to the means and appliances of his own well-furnished laboratory, and seeks for some chemical agent that will unbind the particles of the marble, and display the secrets of its composition.

Fire is a grand and powerful agent in the chemical laboratory for extorting a confession from substances, as to their composition, and indeed so constant is its employment, that the chemist is often designated as "the philosopher by fire," his working motto was "*sine igne nihil operamur*," and although the progress of research has proved the necessity of numberless agents besides fire, it is still perfectly indispensable in chemical operations, and in many instances it will effect the decomposition of substances, placed within its power. Suppose then, the chemist take fifty parts by weight (for by weight he exclusively works), of pure Carrara marble, and place it in a crucible, and subject it to the bright red heat of a furnace for some hours, then withdraw the crucible, allow it to cool, and examine its contents. He finds that the heat has not dissipated the marble, or at all events there is a white solid substance in the crucible apparently about the same bulk as the original marble, but removing this carefully and appealing again to the balance, he finds a deficiency in weight amounting to twenty-two parts, and yet he is certain that no portion of the original marble has accidentally fallen out of the crucible during the exposure to the furnace fire. He notes this deficiency in weight, he repeats the experiment again and again, and invariably finds that fifty parts of pure Carrara marble lose twenty-two parts, or in other words that only twenty-eight parts of a white fixed substance remain in the crucible; by this proceeding he has established an *experimental fact*, and it admits of verification by any person who will take the requisite care in accurately weighing the marble before and after its exposure to the heat of the furnace.

The loss of weight is beyond doubt, but submitting to it for a time as demanding a searching investigation hereafter, the chemist directs his attention to the twenty-eight parts of solid matter in the crucible, asking the question, "is this still marble?" He knows that marble is perfectly tasteless, that it does not absorb water, but he finds that if he place a minute particle of the fixed residue upon the tongue, that it is excessively caustic and acrid, and if he pour a small quantity of water upon a larger portion of the residue, both it and the water, from being originally cold, become most intensely hot. The residue, then, evidently cannot be marble, but is probably one of its constituents or components, and by following up the above simple trials of taste, and the action of water, with more accurate trials or *tests* (the action of which need not be here particularly specified), the chemist at length infers that the white fixed residue is identical, in all its characters and properties, with a substance universally known as *pure* or *quick lime*. Then comes the question, "have the original fifty parts of marble derived causticity or acrimony from the burning fuel, or has the heat changed or transmuted the marble into quicklime?" The first part of this question carries with it an obvious answer, viz., "there is a deficiency of twenty-two parts, and therefore nothing can have been derived from the fire; and in answer to the second part, the chemist does not entertain the idea of a transmutation, but deems it far more probable that the fixed residue is really one of the constituents of the marble, forced from its union with another of volatile nature by the heat of the furnace. He therefore repeats the experiment again, intently watching the crucible, but can discover nothing escaping from it, although at the close of the operation he still finds twenty-two parts by weight deficient. The chemist now concludes that the matter volatilized by the fire must be of some highly attenuated nature, and probably resembling the air in its physical characters and habitudes, and knowing that bubbles of air will easily rise through water (as when air is blown from the mouth through a straw dipped into water), he modifies the apparatus in which he next intends to submit the marble to heat, so that the volatile or aërial matter as it is expelled may be collected and examined as follows:—

The powdered marble is introduced into an earthenware retort. The bulb of this is placed in the fire, whilst the neck or beak protruding from the fire is dipped beneath the surface of water contained in a basin or small trough. As the bulb becomes hot, numerous bubbles of air rise from the beak through the water, and by filling a large wide mouthed vial with water, and then inverting its neck beneath that contained in the basin or trough (exactly the same as the long necked glass globe of a bird fountain is inverted into the water of its cistern), the neck is carefully raised above the beak of the retort, so that the bubbles of aëriform matter now rise through the water in the bottle, whilst a corresponding portion of water descends from it into the basin or trough.

The heat is continued until the bubbles cease to be emitted, and then by corking the bottle whilst its neck is under water, the aëriform matter is confined, and by placing the bottle in its ordinary position upon a table, its contents can be examined. The aëriform matter thus extricated from the marble, is transparent and invisible as the air itself, but upon withdrawing the cork of the bottle, and quickly introducing a small lighted taper, its flame is instantly extinguished; now it would continue for a certain time in a similar sized vial, containing a similar quantity or volume of air, so this simple test by flame proves the substance in question to differ from air in one of its characters, though it resembles it in the two others above-named, and by pursuing the investigation with other tests, the theory of whose action will be fully detailed hereafter, the chemist is led to conclude that the aëriform matter expelled from the marble by the action of heat is identical with that which exists in common soda-water, and it is known by the name of *carbonic-acid gas*. Here then the chemist has effected an analysis of the marble, and modifying the apparatus, the agents of decomposition, and so forth, he finds that in all cases fifty parts of marble will invariably yield twenty-eight parts of lime and twenty-two parts of carbonic-acid gas; for it, although a gas, can be confined, weighed, and measured with the same facility as the solid lime.

But the chemist is not yet satisfied, he next reasons thus, "as I can obtain only these two things from the marble, are they its true constituents? if so, it is extremely probable that when they are mutually presented to each other *attraction of composition* should ensue, and marble should be produced. He therefore proceeds to the operation of *synthesis*, the very reverse of *analysis*, and finds that if he dissolve lime in water, so as to form a perfectly transparent liquid, upon pouring a quantity of this into the vial containing *carbonic acid gas*, that the materials instantly become milk white, that in the course of a short time a white sediment is found at the bottom of the vial, and upon analysing it, *quicklime* and *carbonic acid* are again presented in the proportions by weight of twenty-eight of the former to twenty-two of the latter, exactly as they were presented by the original marble. He finds that this newly and artificially formed sediment or *precipitate* as it is technically called in allusion to its *falling*, is chemically identical with *marble*, but mechanically or physically differing from it, inasmuch as it is soft and pulverulent, instead of having a granularly foliated texture; but even this he can confer by ramming the precipitate tightly in a crucible, then perfectly closing its aperture, and exposing it to an intense heat.

Thus, the chemist can not only decompose natural marble, but he can form artificial marble, in virtue of the laws which govern *attraction of composition*, or, as it is more commonly and conveniently called in the laboratory, *chemical affinity*; and to denote in precise terms the composition of marble, he calls it *carbonate of lime*. But these two new substances, *carbonic acid* and *lime*, do they in their turn admit of decomposition or analysis?

The chemist, by very refined and highly powerful agents, proves that they may be analysed, and that carbonic acid consists of charcoal or *carbon*, and a gas called *oxygen*; the former a black, brittle, combustible substance; the latter an invisible gas, incombustible, but capable of supporting combustion; that *lime* also yields *oxygen*, and a combustible metal of silvery splendour, named *calcium*; so that *lime* is no longer called an *earth*, in strict chemical nomenclature, but an *oxide of calcium*, or, in familiar language, it may be called a *rust*, for common rust is a compound of oxygen and iron.

Throughout all these trials or experiments regarding quantitative analysis, the balance is appealed to at every step; the chemist finds that six parts of *carbon* combine with sixteen parts of *oxygen* to form twenty-two parts of *carbonic acid*; and that twenty parts of *calcium* combine with eight parts of *oxygen* to form twenty-eight parts of *lime*; and that these twenty-two parts of carbonic acid, and twenty-eight parts of lime, will combine to produce fifty parts of carbonate of lime. He has no power over the attraction of composition to force these substances to combine in any other than their unerring, their definite weights; and it matters not in what climate, or at what season, the experiment be made.

The *carbonic acid* and *lime*, yielded by the marble during the foregoing simple analysis, are called its *proximate elements*, because they are *nearest* to, or *first* come to, the hand of the chemist, and will immediately, when presented to each other, combine to produce the marble or the carbonate of lime, whilst the *carbon*, *oxygen*, and *calcium*, yielded by the more complicated or refined analysis, are called the *ultimate elements* of the marble, because, in the present state of chemistry, they do not admit of analysis or simplification. They, and some others to be named, are barriers opposed to the progress of analysis.

In former ages, the term *element* was used to denote *absolute simplicity*. Thus, Air, Earth, Water, and Fire were deemed absolutely *simple*, and capable of forming all other bodies by their mutual admixture or combination. This doctrine was long entertained by philosophers, and has only been abandoned within the last century.

Thus, every variety of aëriform matter was looked upon as of the same nature as the Air around us. Under the general term Earth were classed all substances which remained fixed and unburnt in the most intense fires of the furnace. Water was regarded as a substance neither compoundable nor destructible by any operations; and Fire was deemed to be a peculiar form of matter, having the power of destroying.

But the modern chemist, setting aside theory and hypothesis as of little or no value, and abiding exclusively by the test of experiment, has proved that Air consists of two gases, viz., *oxygen* and *nitrogen*; that Water also consists of two gases, viz., *oxygen* and *hydrogen*; that the various earths consist of *oxygen* and *metals*; and, lastly, that Fire is the common result of intense chemical affinity between two or more substances. Constantly experimenting upon the various forms of matter presented throughout the wide realms of nature, and the limited provinces of art, constantly inquiring regarding *attraction of composition*, the occupation of the chemist is one of pleasure and satisfaction, for in the generality of cases he finds the newly-elicited facts are not only inherently interesting, but susceptible of important and useful applications in the interpretation of natural phenomena, and in aiding the progress of the arts and sciences.

In the science of chemistry at the present day all substances that can be analysed, *ex. gr.*, such as marble, carbonic acid, and lime, are called *compounds*, whilst all substances that resist this treatment, *ex. gr.*, such as oxygen, carbon, and calcium are called *elements*. This term being used to denote substances which may not be absolutely undecomposable, but which at present remain undecomposed. The attraction of composition or the affinity that holds their two or more components together, being superior to the power of any decomposing agents that can be found in the chemical laboratory.

There are no less than fifty-five refractory substances which defy analysis; they present types of the three physical forms of matter, viz., the solid, the liquid, and the aëriform, or gaseous; they are all *ponderable*, and are subject to the agencies of light, heat, and electricity, which are imponderable. The ponderable elements are capable of uniting in various ways to form a great number of compounds, and these compounds in their turn are capable of uniting with each other to form a greater number of complex compounds, and so far as the knowledge of the experimental chemist extends, it leads him to consider that

all natural and artificial productions consist of elements, and of their combinations, according to definite laws of weight.

Such being the case, it follows that the various materials employed by the architect in construction, *ex. gr.*, such as marble, stone, brick, cement, plaster, stucco, timber, iron, copper, tin, lead, zinc, glass, paint, and varnish, must present a vast fund of chemical information, and in the next paper it is proposed to give a very general account of the elements, and some of their most important compounds, and then to enter upon the particular investigation of the principal materials employed in construction.

## IMITATION AND ARTIFICE IN FORM AND MATERIALS.

Amongst the many debated questions in architecture, which, from their unsettled state, are the great obstacles to the knowledge of the theory, and to the perfection of the art, great difficulties surround that of the limit to the use of artifice and imitation in design. We could not, without forming some estimate of the value of imitations of materials, properly complete our series of papers on interior decoration, since it is in this department, that the inquiry is most frequently presented to us. Conscious of these difficulties, we still feel that such questions are seldom discussed without the publication of untenable theories, which, instead of elucidating the point under discussion, often mislead. It is some of these views, which it may be mainly our purpose to combat.—The subject may be treated as,—imitation of forms,—and imitation of materials, and each may be considered, as part of the general question of the propriety of imitation and artifice under all circumstances, and as regards the choice of fitting objects and means of representation. The objection to all imitation would sweep away such features as pediments to windows, and rustic work,—and, if consistent, sculpture, and every part in which a representation, and often the expression of a use, was hinted at.

It seems to us, that there are certain powers of sensibility, deeply implanted in human nature, which, if examined into, would afford a ready solution of many undecided questions of propriety in design. Amongst these are the dislike of every attempt at deception, and, consequently, the admiration of sincerity and truth. Such a principle is highly valuable in architecture. But, it is the tendency of most inquirers, to terminate their investigation with the perception of one admitted truth, and to discourse authoritatively with the assumption of that alone,—correlative facts, and principles of equal moment and influence, being disregarded. Architecture is by no means the only art or science, which has been led out of the direct line in its progress, by erroneous general conclusions from one particle of undoubted truth. Long before the time when Pope wrote—

> "A little learning is a dangerous thing!
> Drink deep, or taste not the Pierian spring,"

men forgot, as now, that several truths may be co-existent, and that a definite conclusion cannot, with propriety, be hastily made. In architecture, as, we believe, says Lord Aberdeen, there has been too great a love of generalizing.

So great, then, is this natural love of sincerity, that the failure of any deception is sure to recoil in disgust at the attempt; and to this extent do we deem, that the principle warrants us in condemning those so-called imitations of materials, which, except from their being put forward as substitutes, could never suggest the idea of any connection between themselves, and what they are by some persons understood, conventionally, to represent. The failure of the attempt, it is, which calls for rebuke; though the mere fact of an imitation of form or material, is not always to be understood as deception. When the material employed has advantages, it would not always be desirable to debar it from taking the appearance of another; and it does not follow, that any person will be deceived, or that such an intention was formed at the outset. The question simply is, whether one material may be so far used to represent another, that it shall not suggest the want of any qualities possessed by the original, or, whether the designer must lay aside a very large number of the obvious and constantly recurring resources of his art. The objections against all imitations, if taken in the manner in which they are made, admit of no medium between the admission of those, which put forth no character of deception, and the exclusion of such as gilding, scagliola, and veneering. In the case of the first and last, the question would never be raised; but the supposed principle, which rejects a material or form, because it has certain qualities of another, and may so appear to some people, to represent what it is not, to be consistent, should admit of nothing but solid material. If we are free to choose between a column of Sienna marble, and one of scagliola not inferior in appearance, we might select the former, but certainly, for its value, its durability, or other reasons, often confounded, but properly to be discriminated from the question of art. Practically, indeed, we may prefer the marble, as not incurring the risk of failure through accident, or want of skill in workmanship. If we are informed that the material is marble, the knowledge of the mercantile value, or the durability, may enhance the pleasure; but is not this wholly irrespective of the pleasure derived from it as a work of art, and in itself so far unimportant, comparatively, as to be outweighed by the advantages—cheapness, perhaps—of the substitute?—The material imitated must also be such as might reasonably be supposed to be adapted to the situation, so that imitations, such as those of granite or bronze, will have to be carefully considered, for if these imitations be employed in any unusual place, they challenge only a closer inspection of their merit, as substitutes. Want of durability may often make us object, and properly so, to an imitation, when otherwise it might be perfectly allowable. The merit of the chief requisite of art is not entered into, the substitute being condemned apart from such considerations, and before they are broached.

The first question, then, which has to be asked, relative to any imitation, is:—What was the intention? if to convert one material to the appearance of another, the answer is at once decided by the success with which the intention has been carried out.

Middling art can no more be tolerated than middling poetry. In every work there must be a certain completeness. This characteristic it is, which distinguishes the sketch of a master, which may have but a small amount of labour, from the most pains-taken work of the tyro; in the former, nothing more was attempted than the materials, and the opportunity fulfilled.

As regards the use of imitation in forms, we deem that many of the objections, recently made to rusticated masonry, columns and pediments to windows, and some other matters of detail, are equally mis-conceived, and would, if founded on true data, apply to every species of architectural decoration. It could readily be shewn, we believe, that every ornamental feature in architecture, except perhaps mere sculpture, has taken its origin from some use, and it was this conviction that led us to assert in a former paper, that architecture would soon be reduced to the state in which it was with the Druids. The resemblance between the form and its original, we take to be often a chief element in its beauty. It has been an adopted principle in architecture, and correctly so, that in all ornament, it is well to preserve the semblance of utility. The theory, that all impressions of the beautiful originate in association, is doubtless something more than hypothesis, and, therefore, not to be forgotten before the interference with a long admitted principle of art.—But, we even doubt, whether the use of pediments over windows and doorways in interiors is to be altogether condemned, notwithstanding the arguments which are current against them. We find them in the works of some architects, whose practice has been considered to give authority, and who could not have failed to consider the objections to their use. They have been used, even by Sir William Chambers, in the interior of Somerset House. We should ourselves prefer to adopt a feature, in which the connection between the actual type and its derivative was more remote, in other words, that where there could not be the object of utility, the suggestion ought to be *all* that should find expression. The blocks under a cornice, may be of no use as supports, but that appears to be the cause of placing them there, and the mind admits it as a reason for their presence. The labels over arches are of no use in protecting from the wet, at least internally, and the moulding would do equally well without a corbel, yet it is the suggestion of these uses, which is the chief cause of our satisfaction with them. As Reynolds has well observed, "by imitation only, variety, and even originality of invention, is produced;" and a distinction should be made between imitation and deception, the first a most important part of the art, the second generally its enemy.

We have thus endeavoured to shew, that not the mere *fact* of the imitation, but rather, only the want of success, is matter for regret, according to the particular intention, and that imitations of materials are perfectly admissible, provided they are so good, as to awaken no sense of inferiority to their originals. We have also already argued,* that imitations of pilasters, panels, and other decorations, in which painted decoration is substituted for relief, with intent to deceive, are mistakes such as we have alluded to; but that landscapes and other works in oil, water-colours, and fresco, are not to be objected to, since these can never be considered as in the place of realities. And also, that were these last intended as deceptions, it would lesson their value as works of mind, and class them rather with tricks of hand. Thus, for example, a figure painted upon the wall in neutral tint, having also a cast shadow, would be an imitation of the statue, the place of which it would supply, whilst a figure painted in colours, and without the shadow, like some of the figures in the centres of panels at Pompeii, would be a *picture*, complete in every respect, and perfectly admissible.

Even stucco might be tolerated, if it could be done in the best manner, so that the superior qualities of stone could not be thought of. But this degree of excellence is unfortunately seldom attainable now. The ancients employed stuccoes which had the hardness of marble, and were even used as protection to some kinds of stone, whilst we are compelled to superadd coats of paint, which destroy every resemblance to stone. The material in general is also very unsightly, notwithstanding the frequent addition of paint, which at length destroys all beauty of outline in ornaments and mouldings. It is true, that there are other objections to stucco, which indeed make us regret, that there should be such a material, from the facilities which it affords to the uneducated in art; but there could be no objection to it, if it were, and if it always remained, a perfect imitation, and if its use could be restricted to those who would make it subservient to design.

## ROYAL INSTITUTE OF ARCHITECTS.

Jan. 25.—Mr. S. Angell, V.P., in the chair. Dr. Bromet presented an account of Upton Church, and exhibited a sketch of a thirteenth century arch there, the architrave of which is wood. The mouldings of the archivolt were described as the dog-tooth, alternating with small rounds.

The honorary secretary read a description of the ancient Norman refectory in the bishop's palace at Hereford, containing some curious woodwork, of which there are few specimens left, belonging to the Norman period. This hall or refectory was originally 110 feet long and 55 feet wide, and was divided into three aisles by two ranges of wooden pillars and semi-circular arches; longitudinally it was in five compartments. Only half the roof remains, and yet is sufficient to shelter the principal apartments of the present episcopal residence. The interior, massive and grand, must have had a good effect; the pillars are sturdy, the arches and beams solid. It has been little noticed by topographers and antiquaries, partly because it can only be approached by the staircase of the episcopal residence. Its date the writer considered, was soon after the Conquest. The spandril pieces of the roof, he thought, must have been cut out of timber four feet wide! Mr. Clayton afterwards described the Hall at Oakham, another curious Norman apartment, in three aisles, and four compartments longitudinally. The main arches, semi-

* Vide Vol. IV., p. 482.

circular, have the dog-tooth ornament around them.

The chairman, in remarking upon these examples, said, timber buildings had the great merit of always seeming to be what they were; there was no counterfeit in them. Other examples of wooden pillars being asked for, Mr. Poynter mentioned, that the Guildhall at York, had wooden pillars, and belonged to the fifteenth century. Dr. Bromet said, the upper floor of the White Tower (of London) had wooden pillars.

Mr. R. D. Chantrell then read some observations on the existing remains of an ancient Norman roof, over the chancel of Adel Church, Yorkshire, discovered by him in 1843: and Mr. Scoles exhibited a drawing of a "cradle" roof, probably of the thirteenth century.

In connection with the vault formed of earthern tubes, described at the last meeting, Mr. Donaldson exhibited a drawing of the church of San Vitale at Ravenna, the vaulting of which was constructed of earthern pots. The vault illustrated at the last meeting, probably belonged to the sixth or seventh century.

Some specimens of Dampier's patent architectural tiles, in blue clay, were exhibited; also models of others in ornamental forms. Mr. J. D. Hopkins, architect, remarked, that he himself invented these tiles nine years ago, and was quite surprised when he found them getting into use, some time since, under a patent.

The chairman announced, that the drawings submitted for the royal medal would be open for the inspection of the members on and after the 27th instant.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*The Ninivch Antiquities at Paris.*—These valuable relics have been brought from Abushir to Havre by the Royal Gabarre *le Cormorant*. Mr. Botta had them conveyed on rafts from Mossul to Bagdad, whence they were conveyed down to the embouchure of the Shat el Arab by the crew of the above vessel. As these antiquities consist of soft alabaster, great care is required in their conveyance, on which account they will be brought on the Seine down to the very steps of the Loûvre. Two halls on the ground-floor of this building have been prepared for their reception. Fears are entertained, that these preparations have begun too late, and that the Niniveh blocks may share the fate of the huge Egypt monuments, which have been piled up like lumber in some adjacent halls, for the last twenty years (?) As, during the last session of the French parliament, 300,000 francs have been voted for the publication of Mr. Botta's discoveries, the work is in a fair way of progress; and the first parts are expected to come out very shortly. It will consist of an historic and descriptive text by Mr. Botta, and 180 plates of basso-relievos, after the splendid designs of Mr. Flandin; with 250 plates of inscriptions, copied by Mr. B, (likewise the designs) *on the spot*. So far, the French government has done every thing to place this discovery on a line with the great work on Egypt, undertaken by Napoleon, which (to use a phrase of the King of Bavaria) will last longer than his military renown. It is to be regretted, that no arrangements have been made to make such a work accessible to every competent artist,—or, at least, to every reputable library. But as the price of a copy is 1,800 francs (75*l.*), and only 100 copies are to be sold, it will be attainable but by few persons.

*The Triest Art-Union Exhibition.*—This city, situate on the confines of Germany and Italy, may be presumed to combine some of the art-characteristics of both these countries. Here, also, the works of foreign (not Austrian) artists have been admitted—assimilating art to the legitimate principles of free competition. Thus, landscapes of Morgenstern, in Munich, Ruyter, of Antwerp, Leyboldt, at Dresden, were here to be met with. It is said, however, that the works of Italian artists (even Bisi and Canella, at Milan) stood much behind those of the Germans. Amongst the architectural views, those of A. Bayer, at Baden, occupied the first place; amongst them a basilica, painted with a bold brush. Mr. Zeichini, of Padua, exhibited a fine perspective view of the interior of the dome of St. Stephen, at Vienna. The Triest journalists invite foreign artists to exhibit their works in that city,—reminding them, moreover, that for bold rock scenery, inland and on the shores of the sea, no other city can be found to equal Triest, whose vicinity to Istria and the monuments of Salona and Spalato (corrupted of *Palatium*), may also be taken into account.

*Railway Speculations in Germany.*— The principle, that *every too much is noxious*, has been amply exemplified during the present railway panic at Berlin, where a company effectually offered at the Bourse shares of the Stargard-Posen line, to the amount of 5,000 dollars, for *nothing*—but the stipulation to fulfil the conditions which may hereafter be imposed upon the shareholders; the receiver, of course, gaining all the deposits, &c.

*German Public Library at Rome.*—The King of Prussia has ordered that the library of the late Prince Henry, consisting mostly of German works (many costly-illustrated artworks), should remain at Rome, and be made accessible to the German—we trust to *all* the—public.

*Late Conflagration at Berlin.*—An awful fire has raged of late in some of the populous quarters of Berlin, by which the insufficiency of measures and means, in the case of such catastrophes, has been fully proved. It is, however, to be hoped, that this mishap will afford some lesson, also, for the widening of some parts of Berlin, which are quite in the same state as they were in the fifteenth century. A law of expropriation, also, to purchase such rickety lumber of houses, becomes every day more urgent.

*A Sight of Futurity.*—I see in my mind's eye a time, when *all* (of us) will be, what they have been destined by nature for—*human beings;* an idea, eccentric, yet attainable. I see, like in the times of remote antiquity, splendour and show reserved *alone* for the temples of divinity, and the uses of the public (*people*). I see *art* displayed *everywhere* where it can be beheld by *every one*. I see huge piles and temples and colonnades vibrating with the festive strains of happy—yet not luxurious people. I see *not*, and never can conceive, an *equality* of talent (power!), physical force, beauty, genius, but I behold a human society of human beings! I see every attention paid to human comfort—every square and street and house and room tidy and sleek, and clean and *clear!*—But I see also civilization (like the great luminary of day) moving *westward*. Niniveh buried; the temples of Balbeck nearly drifted over with sand; the Jerusalem of Solomon un-recognizable by a throng of events; the Pyramids despoiled of their once granite-lustre; the Parthenon a mere wreck of the times of old; Rome withering into decay! In the West—*nearer* or remoter West, the shine of a 5,000 years' concluding civilization glares on our sight; different, *at least*, from what it has ever been before. But, whatever the seer and poet may dream, the philanthropist wish for, the statesman devise or even enact, it is the builder who has to *construct* the futurity of prophecies. —[*Isis of Oken.*]

## INSTITUTION OF CIVIL ENGINEERS.

THE NEW ROOMS.

Sir John Rennie, president, in the chair. The annual general meeting of the institution was held on Tuesday evening 19th inst., and at the ballot for the officers for the ensuing year, the following gentlemen were elected:—Sir John Rennie, president; W. Cubitt, J. Field, J. M. Rendel, and J. Simpson, vice-presidents; J. F. Bateman, J. K. Brunel, J. Locke, Sir J. Macneill, J. Miller, W. C. Mylne, T. Sopwith, R. Stephenson, G. P. Bidder, and J. Cubitt, members; and Captain Coddington, and C. Holtzapffel, associates of council.

The report of the council was very satisfactory, as it announced the institution to be in a prosperous state in every respect, and induced a full conviction that the recently improved premises would be advantageously occupied for the members and the profession generally. Telford medals were presented to Messrs. Barlow, Snell, Harding, Williams, Parkes, West, and Ritterbandt; and premiums of Books to Messrs. Turnbull, Heppel, and Robertson. *Council premiums*, consisting of collections of books of considerable value, were presented to Messrs. Barlow, Snell, and Harding, in addition to the Telford medals. It was announced in the annual report of last year, that the council intended establishing these premiums, and from their value and the stimulus they offer to the competitors, it is hoped they will produce good communications for the meetings.

Succinct memoirs were given of the deceased members, Messrs. Crane, Deville, Handley, and Winsland.

The report entered fully into a description of the alterations of the building during the recess. It appeared, that in consequence of the resolutions of a general meeting, Mr. T. H. Wyatt, architect, was requested to make certain alterations, and Mr. Grissell undertook their execution. Within the short space of four months, these have been completed, and all are inhabited except the theatre, which is yet too damp. The principal works appeared to be the remodelling the basement story; putting an entirely new foundation beneath and partly rebuilding the front wall, which has been cased with Caen stone, and decorated in the Italian style, with a portico at the entrance and balconies to the first and second floors. The ground-floor rooms are thrown together, and decorated with oak panelling. The rooms on the first and second floors are made to communicate with each other by folding doors, forming suites of rooms for libraries. The new theatre is so much enlarged as to contain nearly one hundred persons more than the old one; it is now twenty-two feet high, well lighted both by day and night. The thanks of the meeting were unanimously given to Mr. T. H. Wyatt, the architect; Mr. Grissell, the builder; and Mr. Manby, the secretary, who superintended the execution of the works.

In his address, Sir John Rennie, after alluding to the stimulus the profession had received from the number of public works recently undertaken, and the high position which the Institution had obtained from the successful labours of its various members, urged the necessity of still further exertions, in order to support the scientific character they had earned. Far from being satisfied with what they had done, this feeling should only act as incentive to greater efforts; but by continuing in the same course, they might arrive at a point as much in advance of what had been done in the present day, as they were now beyond what had been done in the time of Smeaton. He then reviewed the progress that had been made in railway travelling and steam navigation; and made some remarks upon the formation of bar harbours, the drainage of extensive districts of marsh lands; and, after glancing at the improvements which had taken place in various branches of science, he observed, that the present position of civil engineers in Great Britain had been brought about entirely by the wants of the community. Without the encouragement or fostering hand of royal or government patronage, they had attained an unequalled degree of eminence in every department; their prospects were bright, and would continue so, if they held well together, and were zealous of their present high reputation. The president then remarked upon the appointment of civil engineers by Government, to investigate into the merits of various projects which had been submitted to the Health of Towns Commission, and which he characterized as a step in the right direction; and observed, that if the same system had been pursued with regard to railways and other important works, so as to have enabled the legislature to arrive at correct conclusions respecting many of the projects, the public would have derived infinitely greater advantages than they were likely to do from their present system, as the naval and military officers who had been appointed upon these commissions, however talented in their own profession, and highly honourable and well-intentioned, must, after all, derive their information from civil engineers, who alone would be competent judges. Neither could he approve of the system of interfering too much with private enterprise; the public understood their own interests much better than any government, and although the present system might have some defects, it had hitherto worked well. Competition had produced talent and employment for it, and the result had been eminently satisfactory. They had only to compare many of the establishments of government with those of private

individuals, to find that the latter were preferable, whether as regarded celerity, quantity produced, or economy of manufacture; but the moment the continental system was followed, and every thing rendered subservient to government, the general energy would be cramped, and the public works of this country would dwindle into comparative insignificance. Civil engineers were bound to give every assistance in their power to the legislature, in order that public works should be established on the best principles; and the profession should make their services indispensable by their superior knowledge, and the liberality with which they offered them. The government and the public would necessarily apply to them, and they would then receive the due reward of their exertions.

The meeting was adjourned until Tuesday evening, February 2nd, when the following paper was announced to be read: "An Account of the method employed in laying the permanent way of the Philadelphia and Reading Railway, U.S.," by W. E. Newton.

## THE SCHOOL OF DESIGN AND THE BRITISH MUSEUM.

SIR,—Suffer me through the medium of your widely-circulated journal, to offer a few remarks respecting the School of Design, in which I am a student. I am led to do this from the following circumstances:—The school has been accused of inefficiency, disputes have arisen among the masters, the students have been called upon to deliver their ideas, and state what they imagine to be the want complained of. Now being one of those appealed to it has occurred to me, that by bringing the matter before the public, the end sought by the masters will be obtained; and at the same time, the additional advantage will be procured of provoking discussion upon the suggestions offered, of drawing the attention of artists and competent persons who might be willing to give their advice and assistance, and by these means enable the committee of the council now sitting to receive new views, and have fresh light thrown upon a matter about which so little unanimity has hitherto prevailed.*

In offering the following remarks to your notice, I would be understood to give them merely as suggestions. Where so many, and of such high talent have failed, surely it would be presumptuous in me to endeavour to point out a path by which success would be obtained; but, at the same time, the greatest results are often produced from the poorest and least expected sources, and if these remarks but attract the attention, and direct the inquiries of some of our leading artists, architects, and sculptors, to the establishment of a nervous system of education in artistic, decorative, and industrial design, one great object for which the nation is most anxious will be answered; and England, as it is superior in power to all other nations, may likewise stand pre-eminent in art.

It has always seemed to me, as a student in the Government School of Design, that the standard of education was taken too low, and that though the hand was guided, and good studies were placed before the student, that the mind was left uneducated. The practice in all cases was taught, and taught well, but the *principles* that guide the practice were unexplained, no course or system of study by books, in connection with his drawing or painting, was pointed out to him, no lectures illustrative of the history or principles of his study were delivered to him, and he was left to flounder on from a Roman cast to an arabesque of Raffaelle, or from a Pompeian pilaster to a fragment of the figure. Without system and a well-directed course of study, the highest efforts are ineffectual, and the energies, otherwise well directed, are by this means wearied and disgusted. What is the course of study needed, or what the routine of instruction to be pursued, of course must proceed from a careful consideration of the subject by competent persons. I have merely stated my own feelings with regard to the want that I have felt, and I believe other students (though they do not like to express them), fully concur in the views that I have here set down.

Our country is eminently industrious over all other nations of the earth, and only point out the path to be followed and the sons of England are universally successful. In one respect alone, in that of art, are we inferior; our productions reach all quarters of the world, and provoke degrading comparisons between our own taste, and that of our continental neighbours, who are rapidly taking the lead of us in foreign markets, with their fancy manufactures on this account.

Let us endeavour to trace this to its cause. Our manufacturers, on being appealed to, say, we find it of no use to expend large sums of money in producing original and beautiful designs, for in nine cases out of ten an inferior copy from our continental neighbour, or something turned out by a practical genius in the factory, will command a larger sale than the most laboured and elegant invention. Whence does this proceed? surely from the want of art-education in the people; once accustom the public mind to appreciate the true proportion of form, originality and beauty of design, with correct harmony of colour,—and the unsightly abortions, now put forward by our best manufacturers, would speedily give way to an impulse that would place us at the summit of excellence in this as in every other respect.

With such a prospect as this before us, is it not incumbent on the Government to bestir themselves boldly, so as to give full and free scope to the wishes and wants of what must be the majority of the people? and to do this all niggardly ideas must be at once thrown aside: the importance of the object claims that it should be treated in a generous and magnificent manner, and that if we wish for a successful result we must give freely and encourage nobly.

I would suggest that a building should be erected purposely for the uses of the school; that each floor or room of the building should be appropriated to its own study; that in each room there should be a desk or tribune from which a lecture should be delivered to each class at least weekly, such lectures to be printed and delivered to each student in the school; that a *large* library for reference and study should be opened for the use of the school; and the student should not, as at present, be allowed to select his own book, but that a steady course of study should be pointed out, and those books given to him by the masters that would best assist him in the object for which he is working: on these books he should either be required to write a page of notes, or else he should be asked by the master a series of questions, to prove his having studied the subject.

I would also suggest that a complete register be kept of the school, with remarks against each name as to studiousness, advancement, &c., that half-yearly reports be made, and prizes given, these prizes on no account to be money.

In connection with this subject, I would also propose another and more comprehensive theme;—to make the school what it ought to be, and to diffuse as widely as possible the benefits to be derived from it, I would make the British Museum available, with its immense collection of art treasures, and I would also make it a means of educating the nation at large, or that portion of it which is, at present, debarred from studying the artistic and industrial productions of all ages contained within its walls. The class I allude to are those confined to business during the day,—surely, an immense, a well-educated, and, take them as a body, a most wealthy and influential class in our country,—to place before them the beauties and treasures contained in our Museum; to educate them in the study of the harmonious and beautiful; and by this means to lead them to exercise a purer taste in the selection of their greatest and minutest wants, will be one of the best ways of bringing about the "consummation so devoutly to be wished." This object is to be obtained by throwing open the British Museum to the public in the evening, not merely three nights in the week, but every night except Saturday, when in nine cases out of ten, the time that is wasted at theatres, and places of more amusement, would be instructively and profitably employed.

In order that the Museum should be available for the School of Design, the new school should be contiguous to, and connected with, the Museum; and such books, casts, prints, vases, &c., as should be required for the use and study of the scholars, should either be removed, under proper restrictions, or the students should have free access to copy night and day in the Museum. Of the good conduct of the people admitted to the collection in the evening there could be no doubt; the crowd would be quite as orderly as in the day; due care being taken to refuse admission to improper and riotous characters. It might be objected, that the gas would injure many parts of the collection. To obviate this, the building should be lighted, as the present House of Commons, by gas from the outside of the skylights and windows, by which means all heat and impure air would be effectually excluded, and an even light procured, by which the students might work.

It might be urged, that such a system would incur great expense; to this I answer, that for such a boon and for such an object, the people would gladly and freely concede all that was asked.—I remain, Sir,

A STUDENT IN THE SCHOOL OF DESIGN, AND STEADY SUBSCRIBER TO YOUR JOURNAL.

* A large mass of evidence has been taken by the committee, and will afford us matter for comment before long. ED.

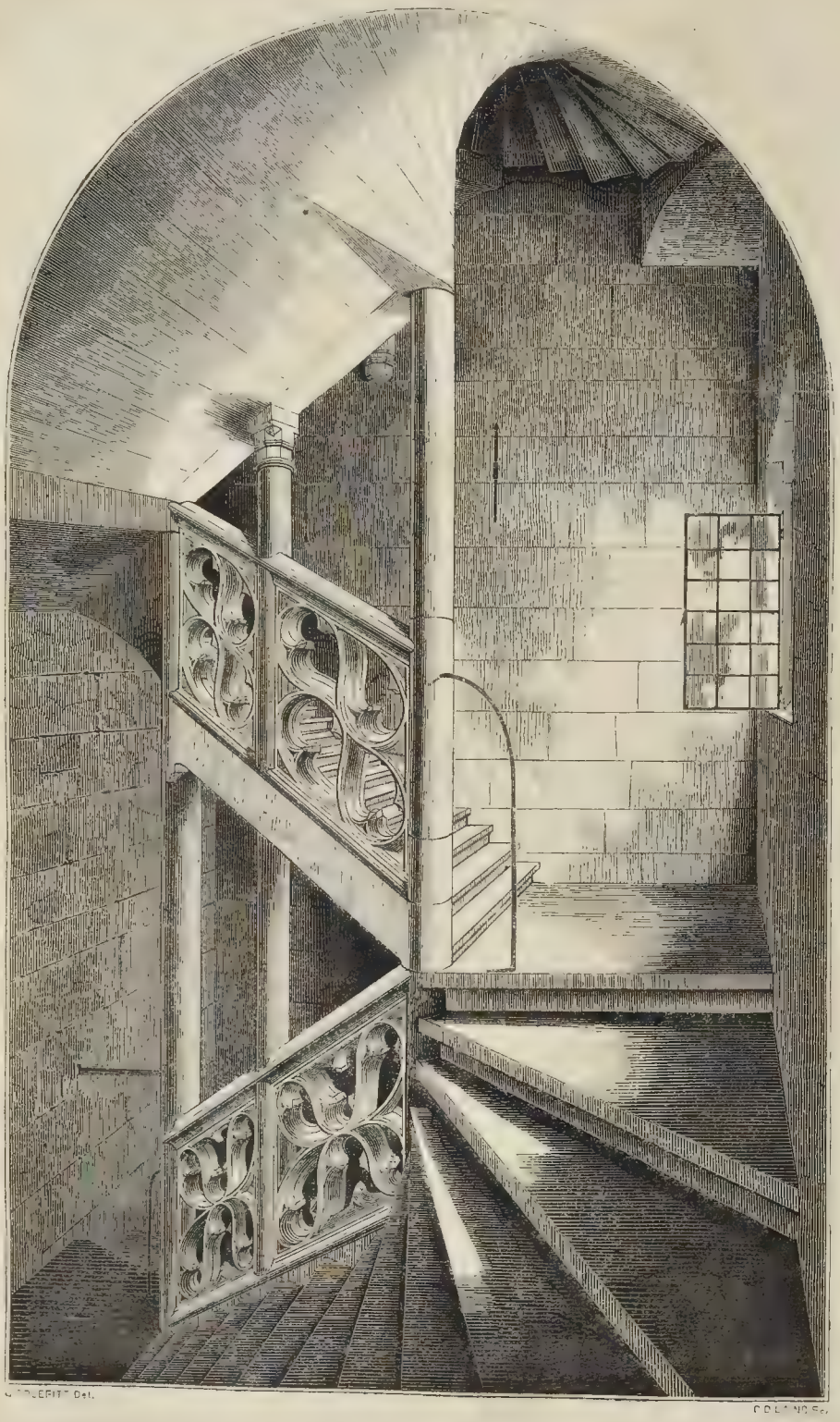
## VENTILATION.

AT a meeting of the Society of Arts, held on the 20th instant, a paper by Mr. Mather was read, "On the Ventilation of Schools, Churches, Public Rooms, &c." The author, after a lengthened introduction, proceeded to state, that the application with which he had been honoured from the committee of the Union Schools at South Shields for suggestions for ventilating their schools, had afforded him an opportunity of doing so. The first room is a school for boys, and is on the ground-floor; its length is 60 feet, breadth, 30 feet, and height, 13 feet; and contains 23,400 cubic feet. The second room, for girls, is on the upper story, and is 45 feet long, 30 feet broad, and 13 feet high; and contains 17,550 cubic feet. In the first room there are 180 boys, each breathing not less than 1,200 times an hour, and requiring more than 142,000 cubic inches of atmospheric air per day of twenty-four hours, which, for 180 boys, will be 25,560,000, or for the five hours they are confined in the school-room, 5,325,000 cubic inches of atmospheric air, a 7th and 3 5ths of the entire air of the room, pouring into it in that time from their lungs about 391,500 cubic inches of carbonic acid gas,—taking it 5 per cent. of the atmosphere inhaled,—mingling with it, also, nearly 3,206,750 cubic inches of free azote, or nitrogen, which, with the carbonic acid gas, constitutes a large portion of the school atmosphere. I entered these school-rooms, observes the author, towards the conclusion of school hours, and found the air vitiated to a serious extent,—emanations from the lungs and skin being very perceptible and sickly.

In order to prevent the injurious effects resulting from such an atmosphere, it is necessary that the whole air of the room should be changed at least every half hour, so that all noxious gas may be removed. For this purpose, he proposed that an aperture not less than 12 inches by 24 inches should be made through the wall on the west side of the room (the most open and unobstructed), 6 feet from the floor, equidistant from the end walls. This would be sufficient to displace the entire contents of the room every half hour, passing in at the rate of 6 feet per second. This column of air he proposed should be carried directly across the room by means of a woollen tube 12 inches by 16 inches, like a beam, and a second tube, 10 inches by 10 inches from the same aperture, should rise perpendicularly against the west wall to the ceiling, cross it at right angles, and then descend the east wall till it meets the horizontal beam at its extremity. From the centre on the floor, a tube is to rise as a pillar supporting the horizontal beam. These tubes are each to have about 500 holes drilled in them for the purpose of spreading the air in all directions. The author then proceeded to suggest various plans for the ventilation of churches and dwelling houses of all descriptions, and also of confined courts, lanes, and streets.

THE MEMENTO FOR H.R.H. AT GUERNSEY.—The subscription to commemorate the momentous incident of the visit of the Royal Consorts to Guernsey, is announced to have already exceeded the sum of 1,260*l.*

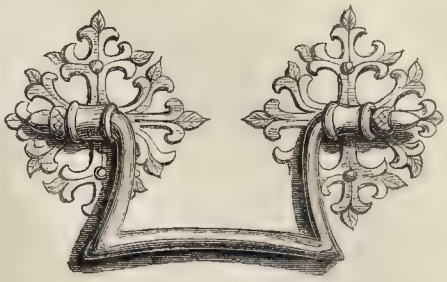
GOTHIC STAIRCASE, AT ANTWERP.



## MEDIEVAL IRONWORK: HANDLES FROM COLOGNE.



FROM THE TOWNHALL.



FROM ST. MARIA CAPITOLINI.

### GOTHIC STAIRCASE AT ANTWERP.

Several years have passed since we were last in Antwerp, yet our recollections of it are as vivid as if we had returned but yesterday. The wonderful pictures with which it is filled, its noble churches, and the picturesque effect produced by every street, are not easily forgotten.

A short time ago we mentioned a few of the churches, and gave a representation of some of the more modern carved wood-work in the cathedral.*

In Antwerp may be seen some of the finest of Rubens' works,—the prodigal king of colourists,—and his old leathern chair stands in the museum there, with an undying wreath upon it. When you go to that museum, good reader, and you may do so, and see much besides, for less than a week at one of our trumpery watering places will cost you—do not fail to look at some early sketches by Rubens, with his intentions, as to the pictures, written upon them, also his "Adoration of the Magi," and "Christ in the Arms of his Father." "The Fall of the Rebellious Angels," by Floris, with the bee painted on it by Matsys, the "blacksmith," is full of imagination, and there are several wonderful pictures by Vandyke, the elder Franck, and others.†

In the gardens of the museum is a tomb over the remains of Corneille de Vrindt, sculptor and architect, who built the Hotel de Ville. There are also mural inscriptions to several other artists, including one, if we may trust our notes, to Appelmans, architect of the cathedral, who died in 1434.

The exchange, or Bourse, erected at the beginning of the sixteenth century, served as the model for Sir Thomas Gresham's exchange in London. The open quadrangle which it forms is about 180 feet long and 140 feet broad, and has around it a covered walk, enclosed by curiously sculptured columns and trefoil arches, which carry the upper part of the structure. The columns are octagonal, curiously sculptured, and have good bases and caps, but the trefoil arches and the groining of the covered way are what would be called in England, "Churchwarden's Gothic."

This brings us to the subject of our illustration. Adjoining to the Bourse there are three Gothic staircases, all upon the same principle, but having each different details. They are interesting examples, and the most perfect of them is represented by the annexed engraving, from a sketch made for us last summer.

* Vol. IV., p. 534.

† Our note book says the museum contains 211 original pictures and 17 copies.

### MEDIEVAL IRONWORK.

We have often had occasion, in the course of this publication, to call attention to examples of elegant metallic works executed by the artificers of the middle ages. A fine specimen was recently engraved from Abbey Dore, in Herefordshire, with many capital specimens in the previous volume; and we now add the accompanying handles from Cologne. The first is a handle with a small escutcheon, on one of the doors of the Town Hall, and is an interesting design, visibly in Flemish ironwork of the fifteenth century, of which many fine specimens exist in the low countries. The second is a horizontal handle upon the door of the Church of St. Maria Capitolini; the ends of the handle after they pass through the staples terminate in acorns; the small escutcheons are elegantly foliated, the main design being grounded on the cross crosslet of heraldry.

### NOTES IN THE PROVINCES.

It is proposed to build a new mechanics' institution at Ipswich.——The extension work at the west end of Yarmouth pier is on the eve of completion. The principal breakwater, it is thought, will be a sufficient one, but doubts are entertained of the smaller. All the defective work has been repiled, and is expected to last for forty years. An additional expenditure of 400*l.* or 500*l.* about the north pier is looked forward to in the ensuing summer.——The new Post Office at Leicester is nearly finished. It is considered to be rather ornamental, which is more than can be said of many provincial post-offices.——The ancient church at Cranoe, says the *Leicester Journal*, has for some time past been in a very dangerous and dilapidated state, owing to the sinking of the foundation. Means for its restoration are much required. The congregation have altogether deserted it, the incumbent performing divine worship in the large school-room recently erected by the Earl of Cardigan.——Damages to the extent of 25,000*l.* for the intentional dilapidation of Kinerton Hall, and destruction of its ornamental timber, have been obtained at law by the Duke of Leeds against the executors of his own father, who was held to have no right to "do what he liked with his own," as the property was his only so long as he lived, having only, in short, a life-interest in it. ——It is proposed to erect a building at Sheffield sufficiently commodious for the fourfold purposes of an athenæum, a school of design, a mechanics' institute, and a philosophical society.—— It is considered that a cathedral that will do credit to Manchester and its bishop expectant cannot be completed under 100,000*l.*; and it is hence proposed, that in the meantime not more than the chancel and two transepts, with the central tower to unite the nave and chancel with the transepts, be attempted; these, with a peal of ten bells, to cost about 50,000*l.* This sum it is proposed to raise by 100 individuals contributing 500*l.* each, whilst subscriptions in smaller sums are being raised for the erection of the nave. The site proposed is the high ground at Cheetwood, rather towards Broughton. The *Manchester Courier* says:—"We apprehend that, for a work of such magnitude, these suggestions are on a reduced scale. To build a cathedral worthy of such a see as Manchester,—for the extent of country over which its jurisdiction will extend, and embracing Manchester, Liverpool, Bolton, Rochdale, Oldham, Ashton-under-Lyne, Bury, and other large towns, incomparably the wealthiest ecclesiastical districts in Great Britain,—one hundred and fifty thousand pounds would be required to be raised. There ought to be no difficulty in accomplishing this, simply by the plan suggested; and a well digested and perfectly organised system, kindred in method and in spirit with that by which Sulpice Boisseeree has succeeded in recommencing the works (after a lapse of six centuries) for the completion of the Cathedral of Cologne, could not possibly fail to have its due effect upon the munificence of English wealth and the piety of a purer form of Christianity than that which the *Dombau Verein* (or Cathedral Building Society of Cologne) appealed to." —— The Birmingham brass-founders, and other staple trades there, have been of late in a somewhat depressed state, but, according to the *Sheffield Iris*, "the wire-drawers are fully employed, and have been so for some time; large quantities of their material having been required during the last few months in the construction of the electric telegraph along the various lines of railway in different parts of the country; and, as a proof of the quantity of iron now required for this novelty, it may be mentioned that, during the last twelve months the contractors to the company (resident in the town) have supplied for that purpose, in the country alone, many hundred tons of the wire. ——The offer of a premium by Mr. J. H. H. Foley, of Stourbridge, for the best plan of sanatory reform and improvement for that town by means of joint stock companies, was responded to by only one essay, and that not at all of the practical and comprehensive nature either intended or desired. Here, as elsewhere now, however, the expected measures of the

Government have, in the meantime, placed in abeyance all local efforts which might otherwise have been by this time in course of progress towards the realization of the ends in view.——Considerable works are going on in the interior of the parish church of Baldock, at a cost of from 1,500*l.* to 2,000*l.*—— The practicability of projecting water from the street plugs by the mere hydraulic power of the mains themselves, thus obviating the necessity of using fire-engines in cases of fire, has been tested at the works of the Liverpool and Harrington Water Company, Hotham-street. A branch of ⅞ bore was fixed to a common fire plug, and by the mere pressure of the water alone, it was projected nearly to the summit of a tall chimney, about 100 feet in height; the altitude was, in fact, much greater than that usually attained by means of fire-engines, and the volume of water considerably augmented. The stream was directed perpendicularly, obliquely, and horizontally, and in each case with the same effect. Some further experiments were subsequently made in Exchange-street East, and the results, says the *Liverpool Mail*, were equally satisfactory, considering some disadvantages which had to be encountered. With a little alteration in the street water-plugs, it is said, the plan may be effectually carried out in all cases of fire, and thus a very important advantage will be gained over the present mode of projecting water by means of fire-engines. Thus, too, our anticipations of the extension of the principle adopted at Newcastle in the use of the hydraulic power of the water-works there in hoisting goods by cranes, appear to be in the fair way to a most useful and extensive realization.——The smoke nuisance, too, is now engaging, at Liverpool, amongst all interested in the progress of sanatory improvement, that prominent attention which it still requires, and which it now must be accorded. The patent processes, however, of Mr. Williams and Mr. Kemp have there been already applied in consuming the smoke of public works as well as steamers with more or less success. The latter is said to have made a satisfactory experiment with her Majesty's steamer Ariel, and to have even proved that the long funnel itself may be altogether dispensed with; and the former has put up his apparatus in several manufactories in Liverpool, the noxious smoke of which, it is said, he has entirely removed. ——In accordance with the provisions of an Act of 10th Vict., "for making preliminary inquiries in certain cases of applications for local Acts" for the improvement of towns, her Majesty's Commissioners of Woods and Forests have of late sent numerous surveying officers, each in general consisting of one lawyer and one civil engineer or architect, dispatched in couples thus throughout the country into towns, villages, &c., where an intention of applying to Parliament for Acts for lighting with gas, paving, cleansing, sewering, draining, or otherwise regulating or improving, the town, &c., has been expressed. Amongst others, we perceive, in the current newspapers, official notices, issued by the "surveying officers; as, for instance, at Shipley, Windhill, Bingley, and elsewhere, as noted in article on GAS, that they mean to proceed, on days respectively announced, to "make such local examination and survey of the district which such proposed Act will affect, and to investigate such other matters relating thereto, as the said commissioners have by their order directed us to make and investigate;" and therefore *requiring* the promoters and others to appear before them with surveys, plans, witnesses, documents, &c., relevant thereto.

## ADDITION TO THE MANSION HOUSE.

THE new entrance to the Mansion House, on the west side, is completed, and shows on the outside a Roman Doric porch, of two pair of coupled columns in front, and corresponding pilasters on the face of the building, carrying a horizontal entablature. It scarcely seems to belong to the original structure, the parts are so much smaller than those of Dance's building, and though a great improvement even in appearance upon the former ugly covered way, has no great claims on admiration in an architectural point of view.*

* The first stone of the Mansion House was laid October 25, 1739; but the building was not finished till 1753.

## GAS IN THE PROVINCES.

BILLS are to be shortly brought into parliament for the amendment and consolidation of the various private acts at present in force for the lighting of towns, and for watching, paving, &c.——There is an amendment in the use of gas, by the way, of very general requirement, which may here be noted down while we think of it. Indeed, we have already done so in more instances than one, but the importance and general want of such an amendment induces us here to repeat the very obvious suggestion, that means for the proper ventilation of the injurious products generated in the burning of gas within doors ought to be insisted on, and provided, either by the force of public enlightenment on the subject, or of legislative enactment itself in course of the proposed amendments. Gas burners consume the vital air no less than human lungs, and we are at this moment in as lamentably defective and aboriginal a state of progress with respect to the ventilation of the deleterious products of gas burning as our aboriginal progenitors were with respect to the ventilation of their domestic hearths while chimneys were unknown. ——During the preliminary inquiries instituted at Ipswich lately by two of the surveying officers (a barrister-at-law and a civil engineer) appointed by the Woods and Forests under an act of 10th Victoria, more particularly alluded to under the head of our Notes in the Provinces, which see,—it was elicited that the quality of the gas at Ipswich is exceedingly pure, and such as to do great credit to the management, and that the price charged is 7*s.* per 1,000 cubit feet, with discount up to 20 per cent. And that the manufacture of gas itself is not an unhealthy employment, although the district at the back of the gas works there is very unhealthy. Mr. Lowe, moreover, in considering the subject with reference to the sanatory condition of the town, deprecated the practice of allowing water to accumulate around gas works, the noxious state of which often occasioned fevers of a typhoidal character of a very desperate aspect. The clerk of the works stated that the company have syphon wells in various parts of the town for the refuse of the gas in cleansing pipes, &c., and that these are pumped out as circumstances may require, so that the refuse does not find its way into the sewers. The general refuse of the gas water is used for agricultural purposes, and is carried away by the farmers. The surveyors were said to be about to visit Manchester also, and other large towns on the same mission, namely, in order to facilitate the labours of the committee on private bills during the present session of Parliament, and to save public companies as much expense as possible.——We observe that the same officers had announced a meeting for like inquiries at Southampton regarding the proposed new Gas Act applicable to that town. ——On the 8th instant, a similar commission is to be opened in Liverpool, in order to ascertain whether the Dale-street Gas Company ought to be confirmed in the power which it now has, to charge 4*s.* 6*d.* per 1,000 cubic feet, or whether the Guardian Gas Company (whose bill was rejected last session) shall be now permitted to furnish the same quantity of as good an article for 3*s.* 8*d.* The agitation of the new scheme appears to have already reduced the price of the article charged by the two existing companies there from 7*s.*, at first, to 6*s.*, then to 5*s.*, and ultimately to the still lower figure just noted. It is admitted, too, on all hands, that "better gas than that now supplied it would be next to impossible to procure," which is more than can truly be said of our own metropolitan gas, as we have already repeatedly observed. Cheap gas and good is now the order of the day in the provinces at least, and surely the metropolis will ere long be inoculated with the same sanatory virus. The reduction of the expense of fittings, too, would probably do no less additional good to the gas-fitters themselves than to the landlords and consumers. In Liverpool alone 44,000 houses will be ere long, or at least ought to be, handed over by the wax and tallow-chandler and the cotton-wick and pith manufacturers to the manufacturer of gas and the gas-fitter. As it is, it is declared that the two Liverpool gas companies supply 300,000,000 lights per annum, with a profit of 8 per cent. on the whole, and that they, moreover, expend 10,000*l.* a year in parliamentary and other expenses alone. The Liverpool people have thus, as the *Mail* very truly observes, good cause to regret that the corporation did not purchase the interests of the gas companies when they had the opportunity, as a large sum might from such sources have been additionally devoted annually to the public improvement, as is the case, and long has been indeed, in Manchester.——The lessee of the gas-works at Hereford appears to have heretofore been reaping a glorious harvest out of the citizens, as, in fact, he still must be, although it appears he has lately agreed to charge only 10*s.* per 1,000 cubic feet, under a deduction, however, of 15 per cent., a proposal which, according to the *Hereford Times*, has been accepted by the citizens.——The Bath Gas Company, in order to meet the increasing demand for gas there, are enlarging and improving their works at an expense of nearly 3,000*l.* ——The Stratford gas-works are now completed, and the parish will be lighted in course of the present, to it eventful, month.——Will it be credited that at Newcastle, the very fountain-head whence the raw material of gas is distributed for the illumination of millions of millions of burners, and where we have many a time and oft with the deepest interest and wonder contemplated the spontaneous and perpetual issue, and the vast and eternal illumination of the very mammoth of all gas jets that ever enlightened an "enlightened public," opening out of the ground itself, and even still, for all that we know—schemes to the contrary notwithstanding—expended in one perpetual, useless, and extravagant process of combustion,—that there, nevertheless, where not only the raw material, but the ready made article, may thus be had as it were for next to nothing, "the insufficient quantity, and the infamous quality, of the gas are, indeed, notorious!" Such is the fact, attested by the *Gateshead Observer*, while calling on the consumers of that thriving and independent boon-companion rather than offspring or suburb of Newcastle, whose interests are also implicated in this disgraceful state of things, to second the wrathful outburst of indignation with which the Newcastle consumers have at length set about the attainment of a remedy for "the wrongs inflicted upon them by the Gas Company," by memorializing the town council on "the inefficient and shameful manner in which the town is lighted, and praying that body itself to exercise the lighting powers conferred on it by parliament."—The town of Keswick has just been lighted with gas, and one *astonishing* circumstance chronicled by the local press is, that the shopkeepers have had it actually introduced into their shops, an astonishment which we recollect of participating in by anticipation, at Edinburgh at least a quarter of a century since, when it was introduced there, however, into shops, on a small scale, long before the town itself was "lighted with smoke," as the imaginative, but by no means usually or naturally sarcastic, Scott—himself the wonderful illuminator of his day and age—sarcastically and incredulously expressed it.——At Dalmellington, in Ayrshire, the cost of gas consumed in the street lamps is defrayed by an annual dancing festival, on new year's day, ethereally named the "gas ball,"—a really creditable way of totally reversing their old and proverbial national reproach to all obstructives in the path of miscellaneous improvement, a reproach derived from a very primitive and humble practice certainly, but in general betraying an aphoristic significance in the curt and pithy declaration, that such obstructives are provoking and impracticable blockheads, who will "neither dance nor hold the candle."

BURIALS IN TOWNS.—Mr. G. A. Walker delivered his second lecture on metropolitan grave-yards at the London Mechanics' Institution, on the 22nd inst., and struck another blow at the heart of this monstrous evil. Some recent proceedings in St. Giles's Cemetery, corroborated by the testimony of several witnesses, are too horrible to contemplate. We look to the government for some immediate effort, to guard the community against the dangers to which they are exposed under the present system.

THE LATE FLEET PRISON.—The city have paid 25,000*l.* for the conveyance of this freehold, and propose to erect a House of Correction on the site.

## LOCAL SANATORY INQUIRIES.

Professor Hosking is now in York on the part of the Board of Works, making sanatory investigations; and will also visit Cockermouth and Sunderland with the same object in view. We are told, that the other official referees, Mr. Poynter and Mr. Shaw, have also had districts assigned to them.

About three months ago the Worcester city commissioners invited Mr. Austin, the honorary secretary to the Health of Towns Association, to make a survey of that city, and report upon it. This he has done, and has proved, amongst other things, that "on three items — lost labour, excessive sickness, and funerals, there is a year's charge upon Worcester of *twenty-four thousand six hundred pounds, occasioned by an excessive mortality.*" It appears that in the year 1841, the deaths in Worcester were in the proportion of one death to every 44 of the population, and that the average age of all who died was only 33 years and four months. The importance of efficient drainage is strikingly exemplified: in streets which are culverted, inhabited by the poorer classes, the age at death was, on an average of three years, 25 years and a half; *and in the streets not culverted*, similarly inhabited, *seventeen years.*

The report has been printed and diffused, and can scarcely fail to awaken the inhabitants to the power of the destructive agents so busily at work around them.

It is indeed a remarkable thing, as Dr. Southwood Smith said the other day at Exeter, that the human family has now lived together in communities for 6,000 years at least, and has not yet made its places of abode salubrious. Perhaps there has never yet existed a single city, in any age or country, the inhabitants of which have not experienced some degree of suffering, some amount of sickness, and some diminution of the natural term of life, from the neglect of those precautions which are necessary to render human habitations healthy. "Air, water, and light, are physical agents which are indispensable to human existence. They are the primary pabulum of life; and being so, they are provided for us by nature in unlimited abundance; we have only to open our hands to receive them, always fresh, always pure, always inexhaustible; and yet there is no city or town so constructed as to admit everywhere free currents of fresh air; there are few houses so constructed as to admit of a proper degree of air and light; and almost universally the contrivances for the supply of water have hitherto been to the last degree clumsy and inadequate."

It will not be the fault of THE BUILDER if society still remain in its present suicidal state of ignorance.

## REDRESS FOR COMPETITORS.

### THE DALSTON LITERARY INSTITUTION.

SIR,—One branch of my practice brings me into frequent communication with architects and builders, and I have for some time taken in your very excellent and valuable paper, and it does seem to me very strange that, whereas there are daily complaints on the part of architects, relative to what are called "competitions," that they do not take some legal steps to obtain redress; they should remember, that it is one of the first maxims in English law, that "there is no wrong without a remedy."

In the case of the Dalston Literary Institution, one of the most flagrant I ever heard of, if all facts are correctly stated (and I must assume them to be so), it appears to me the remedy is very simple. The committee publicly put forth, that they are desirous to receive certain work from certain individuals, of a certain description, and limited by certain conditions; i. e. they have rejected the offers of those who have observed these conditions, and accepted one which violates in the grossest way the main condition of all. The cost price fixed on the article for which they contract is 1,500*l.*; and it is clear that the article accepted must cost at least 6,000*l.*, half of it being worth 3,000*l.* It is clear the contract is broken, and that all parties can recover the fair value of their work, labour, and services, from the committee.

Suppose a man direct another to buy him a boat, but when the boat is procured and tendered, he says, I want a ship, and you must keep the boat yourself; can any one doubt that the man should recover? Suppose, to come nearer the point, a man directs a house agent to buy him a cottage, and when it is procured says No, I want a palace—can any one of sane mind doubt that he would be compelled to pay for the cottage?

Let your correspondent, "Alpha," deliver in particulars of his demand for his work, labour, and skill, and immediately issue a writ against the party whose name appears. I will engage he shall recover on proof of his identity; it is no defence to say they have been deceived by the offer of the "successful candidate;" proper opinions from competent judges could have been obtained, and ignorance and incompetency is no defence at law. Should there be any tendency on the part of the secretary to shuffle, such as calling himself only an agent, and refusing the names of his principals, I think "Alpha" would have a rare rod in pickle for him. Let him immediately file a bill of discovery: the facts are short, and it would not cost more than 10*l.* or 15*l.* to put it on the file. Mr. Secretary could have no answer, and the equity would be so clear, that in about six weeks his costs would be about 120*l.* So much for the architects; if they do not assert their rights, they deserve to be cheated and swindled to the end of the chapter.

Now for the builders: they have tendered on certain particulars of quantities: most probably the circular contains the usual clause, that the parties are not bound to accept the lowest tender, but this at equity is only binding within reasonable limits. A man who estimated a house at 1,000*l.* might avail himself of the clause in case of tender for 1,200*l.* or 1,300*l.*, but certainly would be liable for the builder's expenses if the house could not be built under 3,000*l.*

Let this simple fact be borne in mind, that all contracts must be observed in their true intent and meaning, and if not, that each and every individual is entitled to his fair and ordinary charges against all and singular of the parties concerned, any clauses and conditions of the broken contract notwithstanding.

In shorter words, the committee having broken their contract, are each and all of them liable to any party who has taken the smallest trouble in the matter. I say each and all, and by a late decision of Lord Denman, if not partners they are co-contractors, and may be sued individually by any claimant.

I am, Sir, &c., DEFENSOR.

Finsbury-square.

*** A large number of letters touching the Dalston competition have been received, and shall have consideration.

## RAILWAY JOTTINGS.

THERE is said to have been a most satisfactory increase of railway revenue for 1846; the gross receipts having considerably exceeded a million sterling.——The often tyrannical and harsh exercise of official authority over passengers received a salutary check in the Exchequer the other day, in the action of damages, Chiltern *v.* Croydon Railway Company, for imprisonment of the plaintiff because he had resisted the extortion of a double fare, exacted from him because he had lost his ticket. The court gave judgment against the company on the ground that they had no right to give a passenger in charge under the circumstances of the case.——The *Doncaster Chronicle* states that the Doncaster and Peterborough loop of the Great Northern line is let to Messrs. Peto, under a penalty of 1,000*l.* a week, for non-performance of the contract, under which it must be completed by 1st February, 1848.——The five large shafts of the tunnel at Dudley on the Oxford, Worcester, and Wolverhampton line have been completed, and the bricklayers and navigators are now fully employed on the cutting of the tunnel itself, about 80 yards of the whole 980 yards of which have been completed, the brickwork being finished as the cutting proceeds. The sub-contractors calculate on cutting about 100 yards a month.

STUDY OF ANATOMY.—Our advertising columns give the particulars of a proposed course of lectures on anatomy by Mr. J. Marshall.

## CHURCH BUILDING COMMITTEES.

SIR,—Observing in your last number an excellent article on the subject of parish committees for building churches, I have sent you the following as an illustration:—

A few years since, a district church was proposed to be built (not one hundred miles from the south of the town of Shrewsbury); a building committee was appointed, consisting of coopers, painters, graziers, goalers, navy captains, &c., and the result of their first consultation was an advertisement in the newspapers, offering the extravagant sum of 15*l.* for the best plan of a church in any style, but the committee would prefer Gothic. Some nine or ten architects forwarded plans; one of these gentlemen (to make sure) sent two or three, with an extraordinary collection of clouds, vapours, and shadow. A few were not devoid of merit for originality, and others possessed considerable simplicity and fitness. A very worthy individual connected with the church thought it would be desirable that a competent person should be appointed to select the best design, and a very proper gentleman was called in, and selected one (out of fourteen), which appeared to be the most worthy of the premium. The committee then ordered tenders (by advertisement) to be sent in, signed, sealed, and delivered, to the parish clerk. Some four or five tenders were forwarded, and the amount being from 200*l.* to 300*l.* more than the committee had at their disposal, they at once abandoned plan and all. The aforesaid committee then put their heads together, and adding to their number a bricklayer builder, commenced a plan to suit their purse. From this extraordinary amount of collective wisdom emanated one of the most disgraceful Christian churches that can be imagined, without one single redeeming merit in plan or construction. The tower (or rather cockloft) was supposed to be provided for six bells, but was found scarcely strong enough for *one*. The graveyard is already eight or nine inches above the floor; the consequences are damp in the floors and walls, and evident rot of timbers, which, by the bye, have no provision for circulation of air. The roof is one barn-like span, the water conveyed from the slates, 70 feet, by 3-inch *semi* zinc troughs, down one 2-inch down-spout of the same material. The ceiling is flat, constructed chiefly of pine joists, 3 and 4 by 2, 12 feet bearing 18 inches apart. Purlins of roof 5 and 6 by 3 and 4, 12 feet bearing. The building was finished without any provision for ventilation, except by three doors in the east end. The committee thought a little air was necessary upon times, and directed their builder to apply three casements. The latter recommended *small* openings should be made, arguing that the *hair* would come in faster through these than larger ones. The committee bowed to his superior judgment, and adopted the small openings. The consequence is, the congregation are either stifled or frozen, and with their respected minister would be glad to raze the edifice from the face of the earth, if the means could be provided.

If the above is worthy your notice, you are at liberty to insert it in your valuable periodical, which I hope will ere long work a beneficial change in church building committees.

I am, Sir, &c., ANTI-QUACK.

DONCASTER TOWNHALL CONTRACTS.—The tenders lodged by six masons, six joiners, seven plumbers, five slaters, and six plasterers, for the various works necessary in the erection of the new Town Hall, have been considered by the council, and the following selected:—

| | |
|---|---|
| *Masonry.*—Messrs. Latham and Co., Darfield | £2,400 |
| *Joiners.*—Messrs. Illingworth and Bellamy, Bradford | 1,087 |
| *Plumbers.*— Mr. William Jackson, St. George-gate, Doncaster | 225 |
| *Slating.*—Messrs. Hill and Co., Bradford | 163 |
| *Plasterers.*—Mr. Tattershall, Bradford | 248 |
| Total | £4,123 |

The difference between the highest and lowest estimates in the masons' work was, 730*l.*; in the joiners', 293*l.*; in the plumbers' 144*l.* 10*s.*; in the slaters', 86*l.*; and in the plasterers', 103*l.*: total difference, 1,356*l.*

## TESTIMONIAL TO MR. J. B. PAPWORTH, THE ARCHITECT.

We mentioned a short time since, that some of Mr. Papworth's professional friends had subscribed to present to that gentleman a tribute of their esteem, upon his retiring from practice. The testimonial took the shape of a silver inkstand, and on Monday last the subscribers met at the residence of Professor Donaldson, who has been one of the most active promoters of the offering, to present it to Mr. Papworth.

Professor Cockerell, at their request, conveyed with the testimonial the congratulations and kind wishes of Mr. Papworth's friends, in an elegant and feeling address,—congratulations that he had been able to pass through a long life devoted to the Beautiful of his art, without reproach, and hearty wishes that he might long live to enjoy his escape from the sweat of the battle, and see his sons, to whom he had resigned his practice, following worthily in his steps.

Mr. Papworth, almost in tears, expressed his high appreciation of the kindness which had been offered him,—the bright ray of sunshine in which they had allowed his professional life to end. The recollection of that event would remain with him as a bright form, to smooth his course to eternity, and he thanked them most heartily and sincerely for the delight they had afforded him.

We would add expressions of our personal esteem and respect, to those which were uttered when Mr. Donaldson mentioned that it was Mr. Papworth's birthday, and called on all present to drink long life to him.

The inkstand was thus incribed:—

"To John Buonarotti Papworth, Esq., M.I.B.A., Architect to H.M. the King of Wurtemburg, first Director of the Government Schools of Design in England, &c., this Testimonial is presented by a few professional Friends, upon his retiring from practice, as a tribute of their respect and esteem for his talents as a distinguished Architect and for his worth as a Man.—January, 1847.

T. Allason, S. Angell, G. Bailey, C. Barry, R.A., T. Bellamy, W. J. Booth, J. Burrell, R. Cantwell, C. R. Cockerell, R.A., T. L. Donaldson, C. Fowler, E. M. Foxhall, G. Gutch, G. Smith, P. Hardwick, R.A., J. D. Hopkins,* J. Kaye, H. E. Kendall, J. Lockyer, J. Lockyer, jun., C. Mayhew, W. A. Nicholson,* J. Noble, W. M. Nurse, G. Papworth,* W. F. Pocock, J. Shaw, J. Stokes,* W. Tite, J. Thomson,* S. West.*

* Pupils of Mr. Papworth.

## ECCLESIOLOGICAL CARVERS AND MASONS.

Sir,—In No. 206 of your paper, January 16th, there is a notice of a "Masons' Provident Institution," of which the object, as far as I can gather, is to grant pensions to aged and needy members of the trade, and to their widows and orphans; and also to supply relief to those who are disabled by accident or bodily infirmity. The qualification, in the first case, is stated to be, that the mason or sculptor must be of ten years' standing in the trade, and fifty-five years of age. An appeal is made to employers and architects in behalf of this institution. Now, on what grounds this institution is formed, or whether any regard is had to the religious and moral influence which such a society may exercise on this large class of men, I am quite ignorant. But, supposing for a moment that all is right in this respect, I think the formation of such an institution a favourable opportunity to make some remarks on this important subject. To take the last point in your notice first, it appears to me that the appeal to employers and architects for support is most just; and I would venture to add, that such an institution, if constructed on right principles, might as justly appeal to all the ecclesiological and architectural societies now existing in England. For it is a certain matter of fact, that without efficient operatives all scientific knowledge fails of its due execution; and those persons who have been concerned in the restoration of churches well know how difficult it is to procure skilful workmen, both carvers and masons, who shall in all points be desirable to work in a *church*. This observation, perhaps, may apply especially to the clergy, who undertake the restoration of churches as a matter of principle rather than of taste or inclination, but who have sufficient discrimination to detect bad work, and sufficient knowledge of the sanctity of a church to be horrified at the indecency and irreverence of the common run of workmen.

The occupation of a mason, and more particularly a carver, if he discharge his office properly, gives him an especial claim on his employers. For it is well known, that the occupation is most injurious to health, and very destructive of human life; and I believe that a strict inquiry would discover a great proportion of early deaths from consumption amongst sculptors, and an unusual degree of illness, which occasionally disables them from work. The flexibility of hand, too, and acuteness of eye, which are required to make a good sculptor, can hardly be retained in a sufficient degree, to enable him to carry on his trade as an operative to any advanced period of life. If, therefore, they spend their lives in the service of the church (and it is chiefly in the working of the details of churches that the best carvers are required), they are fairly entitled to the best support which those connected with the church can give them. As to the qualifications for assistance from the Provident Institution, though they appear somewhat incongruous, I say nothing, feeling that the parties concerned in the framing of those rules would have gathered sufficient statistical facts to render them sound and useful.

But a method occurs to me by which carvers might be very much benefited, both as to their moral and practical condition; and that is, if architectural societies would institute premiums (after the manner of agricultural societies) for the best workmen and most decent men; and that testimonials, both as to efficiency of skill and decency of character, from clergymen and architects under whom they have worked, should be the grounds on which they should apply for these premiums. The man who had worked the longest time under the same master should have especial preference; and it would be well to make a distinction in the appointment of the premiums between those who are good carvers of new work, and those who are clever and patient at cleaning and restoring old work; for the latter is a more difficult man to find than the former.

Should you be disposed to give publication to these remarks in your useful publication, you may, perhaps, hear again on the same subject from your obedient servant,

A Practical Ecclesiologist.

Bristol, January 23, 1847.

## THE BUILDINGS ACT AND THE MASTER CARPENTERS.

A meeting of the Society of Master Carpenters was held in the Freemasons' Tavern, on Wednesday last, at 7 p.m., to appoint a committee, in accordance with the suggestion of Lord Morpeth, made to a deputation of the Society on the 17th December last, in order to prepare the draft of a New Buildings Act. Amongst those present, were—Mr. Biers (in the chair), Messrs. Masham, G. Lever, Wm. Cubitt, Timpson, Knight, Nesham, Higgs, Sparkes, Stephens, Harris, Gooch, Outhwaite, Burstall, jun., Arding, Norris, and R. L. Jecks, Secretary.

The chairman stated, that on waiting on Lord Morpeth, with a limited deputation, his lordship informed them, that though the Government did not intend immediately to proceed with any amendment of the Buildings Act, it was probable that in the course of the session, measures would be brought forward to obviate as far as possible the many complaints and objections that had already been urged in regard to the working of the present Act. At the same time, his lordship desired to know the precise nature of the objections which the deputation had to urge. The deputation therefore, referring to the petition of the society of date 12th March, 1846, against the present Act, entered into a detail of the ill-workings by which parties appeared to be most aggrieved, dwelling more particularly on the useless and oppressive nature of some of the enactments; the expense of the staff, the prohibitions as to the use of timber, which were in many cases not only useless but equivocal and mysterious, especially as relates to party-walls, and the mode of putting in plates; the enactments as to projections in front of houses overhanging the public way, &c., with many other objections. His lordship, in conclusion, had requested the society to furnish him with a draft bill, such as would appear to them to be an improvement. The present meeting had been called for the purpose of appointing a committee to carry out his lordship's suggestion.

After some incidental remarks on various points, such as those relating to disputes under the Act, whether they should not be brought before the magistrates; as to the supervision of the public building class, from which small schools and such like ought to be excluded; the expensive and uncertain, as well as of ten absurd, enactments as to fees, which frequently perplexed the district surveyors themselves; all of which Lord Lincoln had promised to attend to in the last bill. Mr. Higgs observed, that with respect to front projections, he thought the referees had taken a wrong view of the meaning of the act, which only required the deletion of a few words to prevent all mistakes. He thought the proposed committee should consist of the whole board. It would be very desirable to have men who had already been practically engaged in the matter in question. After some discussion on this point, it was ultimately moved by Mr. William Cubitt, and resolved, that the members then present should constitute the committee, with power to add to their number; and it was then determined that Mr. Grissell's name should be added to the list.

## MASONS' PROVIDENT INSTITUTION.

The first annual meeting of this institution was held on the 25th inst., at the Westminster Literary Institution, Mr. Wm. Freeman, treasurer, in the chair. The secretary, Mr. Whitehead, having read the report of the managing committee, the chairman shewed what had been attained by the exertions of the committee, as also the benefits derived from such an institution.

Resolutions were subsequently passed calling upon the operatives to enrol themselves as members of the institution, as a duty they owed to themselves and families. Thanks were given to the various employers who had contributed towards the funds, trusting that the institution would, in like manner, receive the aid of those who had not yet given it. Thanks were also voted to Alderman John Johnson, president, to the other members of the direction, and to the Editor of The Builder.* The account shewed a balance in the bankers' hands of 161*l.* 3*s.* 7*d.* The following sums were presented during the meeting:—Mr. John Foot, 10*l.* 10*s.*; Messrs. H. & J. Lee, 21*l.*; and Mr. Field, 2*l.* 2.

* For which we have to express our acknowledgments.

## THE WESTMINSTER SEWERS AND HEALTH OF TOWNS.

At a Court of Sewers, held on the 22nd inst., Captain Bague in the chair, Mr. Le Breton called attention to the strictures on the Westminster Commissioners of Sewers, contained in a report published by the Health of Towns Commission (report of Health of Towns *Association* also), and after proposing several resolutions, and some discussion, ultimately moved:—

"That the opinion of the attorney-general and Mr. Peacock be taken by the solicitors of this court as to whether any and what steps may be successfully taken against the publisher and author of the report of the Health of Towns Commission, reflecting upon the conduct of the members of this commission."

The chairman put the motion, and, on a show of hands, declared the numbers to be equal for and against it. The chairman then said that, as the issue was left to him, he should give his vote against the motion, and it was consequently lost.

Fall of an enormous Chimney at Wigan.—A chimney upwards of 400 feet high, which we alluded to during its progress, fell to the ground last week. We shall be glad to receive particulars of the foundation which was prepared for it, the height, &c. of footings, and its construction generally.

## New Books.

*Instructions in Practical Surveying, Topographical Plan Drawing, and Sketching Ground without Instruments.* By Professor G. D. Burr. Second Edition. Murray, Albemarle-street. 1847.

Although chiefly intended for military students, being, indeed, prepared for the cadets of the Royal Military College, this work will be found of great use by all who desire to acquire an art daily becoming more important. Surveying by the theodolite is clearly explained, and the use of the field-book, protractor, and plane table. The method of drawing hills and sketching them on the ground, is treated of at some length, including some valuable remarks on shade and oblique light.

*Railways for the Many, and not for the Few.* By Mr. Jas. Ward. Smith, Elder and Co.

The main object of this pamphlet, of which a second edition has just now appeared, is to advocate the reduction of railway shares to about 5*l.* each, in order to bring them within reach of that very numerous class of investors, who now have only the savings' banks to resort to. We have long entertained similar views: although such an arrangement might give more trouble in the management of a company, we are satisfied it would prove advantageous to the nation if extensively adopted.

At the close of the pamphlet, Mr. Ward raises his voice against the farcical delusion, perhaps self-delusion too, which is being practised by the managers of what are called *Building Societies*. He quotes the first annual statement of one, which professes to shew a net profit during the year on each share, whereon 6*l.* only had been paid up, of 10*l.* 17*s.* 5*d.*!! We have seen several precisely similar; the mistake by which they arrive at so gratifying and attractive conclusion being, that they regard "all the income from fines and premiums, *paid by the shareholders themselves*, as so much profit which the shareholders have made."

## Correspondence.

### mode of measuring artificers' work.

Sir,—In The Builder of Saturday, January the 16th instant, I observe, under the head, "Royal Institute of Architects," some remarks on the subject of measuring builders' work.

The chairman is reported to say, "The mode of measuring stone was especially empirical. Measuring first the cube stone, then face, bed, and joint, as plain work, then the sunk work, and then the moulded work, led to a false result."

I shall feel very much obliged to you, Mr. Editor, or to any of your very able correspondents, to be informed of the quackery or falsification in this mode of procedure, in order to pay the operative fairly for the material and labour, presuming that he surely is entitled to be paid for both.

I willingly admit, that my fashion in measuring builders' work is rather ancient, but not empirical; and I contend, that the only fair way between the employer and the employed, is to dissect the work as much as can possibly be done. I shall, therefore, be most anxious to hear of a better method.

I am, Sir, &c., A Measurer.
20th Jan., 1847.

### a gallery of british art.

Mr. Editor,—In an extract of last week's Builder, from "Haydon's Lectures on Painting and Design," I found the following observation:—"Within my own time, works of all classes of art, which, if collected in one gallery, would inevitably set British art in its true colour before the world." Now, Mr. Editor, how much is it to be lamented, that when the Government undertook to erect a National Gallery, they did not take into consideration a building sufficiently capacious to admit of a gallery, or galleries, to be appropriated solely to British art and artists, whether as regards painting or sculpture. In the present gallery, the works of our own countrymen and artists are obliged to be mixed up with the works of foreign schools. Some alteration, ere long, must take place in what is termed the National Gallery,—a name quite out of character with its appropriation, as regards works by native artists. The Gallery will soon be found too small for its present purpose, independent of which it is ill adapted, and I believe that many liberal and spirited individuals, who might feel disposed to bequeath their collections to the nation, would be sorry to see them placed in such an ill-ventilated building. Much has been said and written of late, by parties, respecting the state of the pictures; but I believe those who have been induced to pass censure on individuals who have the charge of them, have never once taken into consideration the injury pictures sustain from an ill-ventilated gallery, the dust from the visitors, and also in cleansing and sweeping.

I am, Sir, &c., A Subscriber.
Jan. 25th, 1847.

### builders' estimates.

Sir,—As your columns are at all times open to represent the evils, and expose the present system of competition, injurious alike to all parties concerned, I beg to forward for insertion in your valuable journal, the following almost unparalleled instance of the evils above referred to, in a contract for the erection of eight houses for the Peckham Building Investment Company, on some land adjoining the Licensed Victuallers' Asylum, Old Kent-road. The plans and specifications were made by Mr. George Smith, of Mercers' Hall; and the tenders were delivered on the 28th of last month.

| | |
|---|---|
| Green | £3,920 |
| Brewer | 3,800 |
| Knight | 3,460 |
| Harding | 3,126 |
| Trego | 3,120 |
| Patrick | 2,948 |
| Cooper and Davis | 2,880 |
| Walker and Lopez | 2,860 |
| Marshall | 2,787 |
| Church | 2,700 |
| Winward | 2,544 |
| Litchfield | 2,446 |
| Woolaston and Muggridge | 2,166 |
| King | 2,000 |
| Pettinger | 1,943 |

The difference between the highest and lowest tender being 1,977*l.*

I leave your numerous readers to draw their own conclusions from the above fact. Cannot some of your able correspondents suggest means, either by association or otherwise, whereby the honest tradesman could be protected from the injuries such a system entails?

I am, Sir, &c., Scrutator.
Jan. 21st, 1847.

### tenders for a cotton mill.

Sir,—I send you an account of the tenders for rebuilding a cotton mill at Pleasley, near Mansfield, Notts, as published in the *Nottingham Journal* of January 22, 1847.

| | |
|---|---|
| Messrs. Walker, Notts | £7,986 |
| Mr. C. Lindley, Mansfield | 8,400 |
| Messrs. Burton and Sons | 15,090 |

If Messrs. B. and Sons have come into the country with the idea of "astonishing the natives," it will be some gratification for them to know that they have fully succeeded.

I am, Sir, &c., A Subscriber.

Mr. Eastlake and the National Gallery.—We are sincerely glad to be able to contradict the report that Mr. Eastlake has resigned his appointment in the National Gallery, to which we gave publicity last week. It came to us with such authority that, though much surprised by the intimation, we were unable to question its truth. We trust the public may long retain there the advantage of his knowledge and integrity. On Monday night, Mr. Hume moved "for a copy of the minutes of the trustees of the National Gallery, during the years 1845 and 1846, with the names of all the trustees present at each meeting; also for copies of the orders and instructions to the keeper of the gallery respecting the cleaning of the pictures, and any directions in respect to their arrangement." Sir Robert Peel seconded the motion, and very properly desired honourable members to suspend their judgment on observations which had been elsewhere made, until official documents were laid before them.

## Miscellanea.

The Menai Bridge Experiments.—These experiments on the large scale, of which we before gave engravings and notices, have been continued till now, and are quite satisfactory. The only point on which doubt remained was as to the ability of the bridge to withstand the effect of gusts of wind by its lateral strength. For the purpose of bringing this to the test, some further experiments have just been completed. The following are some practical details of the most valuable of these experiments:—The result of the experiments clearly proves that the lateral stiffness of the tube is sufficient to resist the strongest wind which can act upon it—that is to say, for a *constant blast*, for should the blasts recur at regular intervals (which I believe they sometimes do), the vibrations would of course be increased. Taking the force of the wind at 50 lb. on the square foot, which greatly exceeds any recorded measure, the resistance offered by the Menai bridge would be about 300 tons X 2=600 tons, which is not two-thirds of its own weight; so that if the Menai tube, or a similar tube, support its own weight, when laid on the side, the weight thus supported would exceed the pressure of the wind. Now, the model tube, which is in every respect a similar tube to the Menai, being one-sixth of the dimensions, weighs 6·2 tons, and when laid on the side deflects ·85 in. only. The greatest weight we loaded it with in this position was 26,781 lb. (12 tons) X half its own weight=15 tons, with which the total deflection was 3¾ in. Under this weight the tube showed no signs of falling; but as we did not wish to injure the tube, no more weight was added. When in its natural position this tube deflected 3·2 in., with 60 tons, which after being left on for sixteen hours increased the deflection to 3·35 in. Since that time the tube has been loaded again with 60 tons, which have been left on for ten days, and the deflections at the end of that time only exceeded ¼ of an inch. The calculated breaking weight of this tube is about 80 tons. I subjoin the areas of the different parts of the tube as it now stands:—Top=24 square in. of metal throughout. Bottom=22·3 square in. of metal at centre. Do.=9·0 square in. of metal at ends. Two sides=9·6 sq. in. of metal, same throughout 75 ft. between supporters. Top, 1-10 in. thick. Sides, 1-12 in. thick. Bottom double, 5-16 in. thick at centre. Do., single, ¼ in. thick at ends.—*Railway Chronicle.*

Ventilation at Westminster.—Complaints of the alternate blowing of hot and cold blasts into the Court of Common Pleas still continue, as plaintive and piteous as ever. Mr. Serjeant Gaselee declared the other day that his "learned brothers of the bar were kept in such a state of alternation between heat and cold, that he would not answer for their lives." Mr. Rae and himself had penetrated to the poles and tropics of these northern blasts and southern simooms, and "had found persons there turning on hot and cold air alternately." Lord Chief Justice Wild, had commanded the breezes to blow gently, and he was surprized that his injunctions had not been obeyed. M. Badeley, who spoke from the back seats, must have been very badly off indeed, in that far distant region of the court; for he assured the court itself, that there "the cold air was really most dreadful." The reporters, too, have since declared, that they were, at that precise moment "bordering on petrifaction;" after which, in general, "comes a semi-par-boiling;" tending, however, according to a recent French authority, towards the same scientific end, although, in this case, not by congelation, but by the singular and interesting power of evaporation. By the science of contraries however, or rather of contradictories, probably, the reporters firmly believe, that "in general, the icy-cold draughts of air are reserved for the coldest days of winter; the hot blasts being carefully preserved for the dog-days."

A Consolatory Precedent.—"All degrees of nations begin with living in pigsties. The king or the priest first gets out of them; then the noble, then the pauper, in proportion as each class becomes more and more opulent. Better tastes arise from better circumstances; and the luxury of one period is the wretchedness and poverty of another."—*The late Sidney Smith.*

CAB-REFORM: MILE INDEX.—Mr. H. Von Uster, C.E., Putney, has invented and patented an ingenious instrument for measuring and indicating the length of ground run over by the wheels of carriages. The indicater has a face exactly like a clock, only the minute hand shews fractional parts, and quarters, halves, &c., of a mile, in place of minutes, and quarters, halves, &c., of an hour; and the hour hand takes up and accumulates the number of miles, of course, instead of the number of hours. The instrument, according the *Times*, which gives an interesting account of it, cannot be reached or tampered with either by driver or passenger; the same authority expressing surprise at the nicety of the result, ascertained by trial. As truly observed, a reform in our cab system has become one of the recognised wants of city life, and the first great step in this direction must be in the passenger himself possessing an effectual check upon overcharge. The parties most strongly interested in such a reform, however, are, perhaps, the proprietors and drivers of public vehicles themselves, since it must often have occurred to our readers that a much greater aggregate amount (probably nearly double the present sum), would be received in fares every year by cabmen, if they would be content with their legal fare, and would receive it with civility.

COOKING OVENS FOR THE WORKING CLASSES.—It must be laid down as a general axiom that our modern cities have grown up to an incommensurate size and population, but the Solon or Lycurgus to legislate for (organize) these huge masses has not yet come. It may be stated, however, at once, that public cooking-ovens are but the necessary *complements* of public wash-houses; as it stands to reason, that while the poor but industrious housewife is occupied in her cleansing avocations, the other parts of the household must, necessarily, come to a standstill; provided the above accommodation be not added (somehow) thereto. It is also to be taken into account, that while one washing-house and one cooking-house, will (separately) occupy one area + another area, they combined will occupy, say only one + one half, and the same will be the proportion of the expense of building, firing, lighting, nay, superintendence. It is nearly useless to observe, that at a cooking-oven the necessary vessels, as tin pans, &c., are to be met with, so much so, that for but industrious journeyman wants to get a meal at cost price, he has nothing to do but to purchase the meat and bring it to the oven.

THE ROYAL SOCIETY.—The award of the Royal Medal in physiology for 1845, having caused much commotion and discontent, a special general meeting of the fellows will be held on the 11th of February, with the view of removing the cause of discontent, if possible. Lord Northampton has issued cards for four conversazioni as usual, on February 13th and 27th, and March 13th and 27th.

ASSOCIATION OF ARCHITECTURAL DRAUGHTSMEN.—At the next meeting of this association, to be held on Wednesday, a paper will be read by Mr. Robert Kerr, on "Architectural Education, and the proposed establishment of an Architectural Society, for the benefit of those connected with the profession in the capacities of student and draughtsman."

THE SOANE MUSEUM.—It may be interesting to some of our readers to know that the season during which Sir John Soane's Museum is open to the public commences on Tuesday, the 2nd of February, from which day, to the last Tuesday in August, it may be viewed by application to one of the trustees, or at the Museum.

ISLE OF MAN GRANITE.—A new quarry has been discovered at Foxdale, Isle of Man, whence granite has been already shipped for Birkenhead, where it is to be used for the new docks now constructing there, and whence it might have a clear, direct, and rapid transit by rail to the metropolis itself.

BRONZE STATUE OF LORD AUCKLAND.—The casting of a large portion of this work took place on Saturday, at the studio of Mr. Weekes, in Pimlico. The casting is said to be perfectly successful.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

TUESDAY, Feb. 2nd.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 3rd.—Society of Arts, Adelphi, 8 P.M.: Association of Architectural Draughtsmen, 33, Southampton-street, Strand.

THURSDAY, 4th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

FRIDAY, 5th.—Archæological Institute, 25, Great George-street, 4 P.M.

## TO CORRESPONDENTS.

"*P. V.*" (Bury.)—Write to Mr. James Simpson, Edinburgh. We have had no experience of the "Interaco" he advocates (qy. *Internaco*), but are disposed to think it a valuable material.

"*W. H. L.*" shall appear.

"*E. C. S. B.*"—Ditto.

"*B. D.*"—Put the accounts into the hands of a respectable architect.

"*The Morgan Testimonial.*"—We are asked to say that the gentlemen who obtained the second premium should be described as Messrs. Haunes and West, architects, of Southampton, not builders.

"*C. L.*"—We will endeavour to call at the *Atelier*.

"*A Subscriber.*"—We cannot undertake to supply valuations through our corresponding columns. The premium would be regulated by the custom of the diocese.

"*Student.*"—Mr. Dollman, 27, Mornington-place, has commenced giving instruction in perspective and architectural drawing.

"*Subscriber.*" (Revesby.)—We believe Mr. Lamb's view is not published, but Mr. Weale, Holborn, could probably obtain it.

"*Subscriber.*" (Leicester.)—We shall be glad to see the remarks.

"*C. F. C.*"—An angle chimney may be built on a stone landing or iron girder. If the cottage has a basement, a chimney may be built on brick, stone, or iron corbels, in any part of the room.

"*Subscriber.*" (Beds.)—Tredgold's Carpentry.

"*W. D. L.*"—The Temple of Erectheus is called "The Erectheium."

"*Constant Reader.*"—The whole width of intended line must be kept within the "limits of deviation" marked on the plan.

*Next week.*—"Amateur," "A Builder," "G. S. P." "Young Architects of England."

*Received.*—"R. W. A." "J. R." "G. R." "J. D." "J. W." "H. C. T." "E. and J. D." "M. O'C." "G. B. W. T." "Alpha."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—Covers for Volume IV. of THE BUILDER, may be obtained at the Office, 2, York-street, price 2s.; or the publisher will bind sets at 3s. each.


## ADVERTISEMENTS.

MISS BESSEMER, EMBROIDERESS, 9, JUDD-STREET, Brunswick square, respectfully solicits orders for the cleaning, repairing, and transferring of ancient Needlework and Tapestry; also for the embroidering of Altar-cloths to new and approved designs; Crests of Arms, Cyphers, &c. &c. worked in gold or silk.—Miss B. would beg to refer to some of the first houses in the trade as to her care and abilities.

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TO ARCHITECTS, ENGINEERS, &c.

TO BE SOLD, a Subscriber's Copy of Horwood's Plans of the Cities of London and Westminster, the Borough of Southwark, and parts adjoining, shewing every House, and the Boundaries of the Parishes; Thirty-two Plates, Bound, Coloured, and in Good Condition. May be seen and price obtained at Mr. MANN'S, Bookseller, 39, Cornhill.

THE ART-UNION JOURNAL, for February, contains Three Engravings in Steel, and above Sixty Engravings on Wood, with a variety of Articles useful and interesting to the Artist, the Amateur, the Manufacturer, and the Artisan. Among the leading subjects considered and treated are the following:—The Picture Cleaning in the National Gallery—Denning's Bronze Manufactory at Paris—Mechanical Exercises—Mrs. S. C. Hall—The Living Artists of Europe—Industrial Art in France, by Dr. Cooke Taylor—The Gallery of the Earl of Ellesmere, &c. &c.; with Intelligence concerning Art in Continental States, the Provinces, &c., and Notices of the various Books of the month.

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"The Builder," Nov. 7, 1846.

THE BUILDER'S FRIEND.—Under this title Mr H. Fitzgerald has published a table, which cannot fail to be useful. It shews in one line the relative prices plank, deals, battens, and timber, bear to each other, from 3s. to 45s. the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. The information is given in a concise form, so as to fit the pocket-book.

"Herapath's Journal," Nov. 28th, 1846.

THE BUILDER'S FRIEND.—We have received a copy of a useful little Manual, under this title, that ought to be in the hands of every one in the building business. It shews at one view the relative prices plank, deals, battens, and timber bear to each other, and will save an immensity of calculation.

"Sunday Times," Dec. 6th, 1846.

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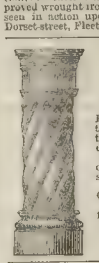
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|---|---|---|---|---|
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Best Register Stoves, at 7d., 8d., and 9d. per inch.
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Gentlemen,—Your attention is respectfully invited to the above WATER-CLOSET, the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any apartment place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it renders it (but is useful in the ordinary Apartments), all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kingsgate-street, London.

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The closet is simple in its construction, the whole of the apparatus including the trap, being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any to any Closet on the "Silent" on its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.
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| Inch. | SASHES, at per Foot Superficial. | s. | d. |
|---|---|---|---|
| 1¼ | Ovolo | 0 | 4 |
| 1¼ | Shop Fronts | 0 | 4½ |
| 1¼ | Ovolo Sashes and Frames | 0 | 8 |
| 1¼ | Ditt double hung | 0 | 9 |
| 2 | Ovolo Sashes and Frame | 0 | 11 |
| 2 | Ditto, prepared to hang double | 1 | 0 |

| Inch. | DOORS, at per Foot Superficial. | s. | d. |
|---|---|---|---|
| 1¼ | 4-panel square | 0 | 7½ |
| 1¼ | Ditto, moulded one side | 0 | 8½ |
| 1¼ | Ditto ditto, both sides | 0 | 10½ |
| 1¼ | Ditto, bead, butt, and square back | 0 | 9 |
| 1¼ | Ditto, bead, flush, and square back | 0 | 10 |
| 1¼ | 6-panel square | 0 | 8½ |

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SASHES, at per Superficial Foot.

| Inch | | s. | d. |
|---|---|---|---|
| 1¼ | Ovolo | 0 | 4½ |
| 2 | Ditto | 0 | 5 |
| 2 | Lamb's Tongue, or Gothic | 0 | 5½ |
| 2½ | Shop Front | 0 | 6½ |
| 1¼ | Green-house, or Skylights | 0 | 4 |
| 2 | Ditto | 0 | 4½ |

French Casements, Sash-doors, Fan-lights, and Circular Sashes, made to order at proportionate prices.

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| Inch | | s. | d. |
|---|---|---|---|
| 1¼ | Ovolo, sashes and frames | 0 | 9 |
| 1¼ | Ditto, both sashes to hang | 0 | 10 |
| 2 | Ovolo sashes and frames | 0 | 11 |
| 2 | Ditto, both sashes to hang | 1 | 0 |
| 2 | Lamb's Tongue, or Gothic, ditto | 1 | 0½ |

Gothic Frames and Sashes, Mullion Windows, Wainscot and Mahogany Sashes.

SHUTTERS, at per Superficial Foot.

| Inch. | | s. | d. |
|---|---|---|---|
| 1¼ | Square Sliding Shutters | 0 | 8½ |
| 1¼ | Ditto, moulded one side | 0 | 7½ |
| 1¼ | Moulded, head and butt back | 0 | 8½ |
| 1¼ | Boxing Shutters, with front moulded, and back, with 1 inch back flaps, head and butt | 0 | 8 |
| 1¼ | Shutters and back flaps, moulded front and head, and butt back | 0 | 9 |

DOORS, at per Superficial Foot.

| Inch. | | s. | d. |
|---|---|---|---|
| 1¼ | Dwarf square | 0 | 6½ |
| 1¼ | Ditto, moulded front | 0 | 7½ |
| 1¼ | Four panel square | 0 | 7 |
| 1¼ | Ditto, moulded front | 0 | 8 |
| 1¼ | Ditto, square | 0 | 8 |
| 1¼ | Moulded one side | 0 | 9 |
| 1¼ | Ditto, both sides | 0 | 11 |
| 1¼ | Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch. | | s. | d. |
|---|---|---|---|
| 1¼ | Ditto, bead, flush, and ditto | 0 | 11 |
| 1¼ | Ditto, ditt, and moulded back | 1 | 0 |
| 1¼ | Six panel square | 0 | 9 |
| 1¼ | Ditto, moulded one side | 0 | 10 |
| 1¼ | Ditto, ditto both sides | 1 | 0½ |
| 2 | Four panel square | 0 | 10 |
| 2 | Ditto, moulded one side | 0 | 11 |
| 2 | Ditto ditto, both sides | 1 | 0 |
| 2 | Ditto, bead, butt, and square | 0 | 11½ |
| 2 | Ditto, bead, flush, and square | 1 | 0½ |
| 2 | Ditto, ditto, ditto, and moulded back | 1 | 2½ |
| 2 | Six panel square | 0 | 11 |
| 2 | Ditto, moulded one side | 1 | 0½ |
| 2 | Ditto, ditto, both sides | 1 | 2 |
| 2 | Ditto, bead, butt, and square | 1 | 1 |
| 2 | Ditto, bead, flush, and square | 1 | 2 |

Front, jib, and covered doors, to any design.

Prices for Architraves, Base Mouldings, &c.; and all kinds of Joiners' Work in Wainscot or Mahogany.
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| Foot Pavements. | Coach houses and Stabling. | which also renders it very |
| Kitchen Floors particularly where it is essential to keep damps from rising. | Dog-kennels. | appropriate for the Lining of Tanks, Fish-ponds, &c. &c. |
| | Barn Floors. | |
| Garden Walks and Terraces. | Granaries | |
| Carriage Drives. | Tan-room Floors. | |
| | Malt-house Floors. | |

Covering of Railroad and other Arches.
The only effectual mode to prevent the percolation of water.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.
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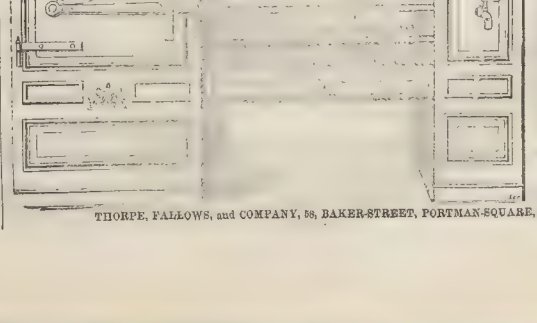
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**WANTED, a FOREMAN, to take the** practical management of a Plate Glass Manufactory, now in progress. A liberal salary will be given to an efficient and steady man. All communications will be confidentially received. Address by letter, to JAMES BUCHANAN, Esq., 13, Queen-square, Westminster, London.

TO PAINTERS.

**WANTED, by a Builder at the West End** of town, a FOREMAN of PAINTERS. He must be of good address, thoroughly understand his business in all its branches, and of active and industrious habits. Address to P. N., office of "The Builder," 2, York-street, Covent-garden, stating age and qualifications.

TO BUILDERS' CLERKS.

**WANTED, a Surveying and Estimating** CLERK in a Builder's office. He must be a good accountant, quick at figures, write a good hand, and able to take and lay down plans. A person of gentlemanly appearance, and between twenty-five and thirty years of age, would be preferred. Address to M. S., office of "The Builder," 2 York-street, Covent-garden, stating salary and all particulars.

TO SPECULATING BUILDERS, &c.

**WANTED, by an Active and Steady** Person, a SITUATION as FOREMAN &c., having held the situation for three years; or is willing to take the Carpenter's and Joiner's work of houses by the piece at a moderate price, and bind himself responsible for completion and workmanship. Address D. R., care of Mr. Borrell, Post Office, 3, Haberdasher's-place, Hoxton.

N.B. No objection to country

TO TIMBER MERCHANTS AND OTHERS CONNECTED WITH BUILDERS.

**WANTED, a SITUATION by a Young** Man of good address and business habits, having been brought up to the business of a builder, as YARD CLERK, or to represent a firm. Any party requiring the same, and accustomed to giving credit, will find in the advertiser a useful member, as he possesses a general knowledge of the London builders, as to themselves and their mode of business, well knowing the system of all building ground in and near London. Address to L. J. M., office of "The Builder," 2, York street, Covent-garden.

TO BUILDERS AND CONTRACTORS.

**A PERSON of considerable experience in** Measuring and Estimating generally, and in making out and pricing Bills of Quantities, offers his services on very moderate terms. Direct, free, to H. H. care of Mr. Follett, No. 63, Fleet street

**AN Architect and Surveyor, at the West** End, requires an intelligent Lad, to make himself generally useful. No salary will be given, as he will have an excellent opportunity of learning the profession.—Apply to A. (by letter prepaid), 17, King street, St. James's.—There is also a vacancy for an articled pupil.

TO BUILDERS AND OTHERS.

**A SITUATION is required by a Young** Man of respectability. He is well acquainted with artificers' works, and has been accustomed to the management of extensive accounts and correspondence. The highest references and security can be furnished.—Address to K. D., office of "The Builder," 2 York-street, Covent-garden.

TO ARCHITECTS, &c.

**THE Advertiser, having been three years** with an Architect and Surveyor, wishes to engage himself for two or three years to a gentleman of good practice, and where much practical knowledge may be acquired. Respectable references will be given. A small salary required.—Address to A. C., 4, St. Vincent-place, Islington, London.

**THE Advertiser is open to any Engagement** in the office of an Architect and Surveyor, or in any capacity in which several years' experience, taking out Quantities, making Estimates, Working, and other Drawings, Superintending and Measuring Artificers' Work, Levelling, &c., can be made available. No objection to Town or Country; satisfactory references furnished.—Address Z., Post-office, Kingston-on-Thames.

TO ARCHITECTS.

General Infirmary, Bedford, Feb. 1, 1847.

**THE Committee of the Bedford Infirmary,** for the erection of a Fever Hospital, give notice that they will receive PLANS on or before the 20th instant, for such building, to be capable of accommodating 50 beds, to be erected on a portion of the ground belonging to the Institution, and to be in accordance with the present building in point of architectural elevation.—For further particulars apply to the Secretary, at the Infirmary, Bedford.


### CONTRACTS.


TO IRONFOUNDERS AND SMITHS.

**WANTED CONTRACTS** for Iron Railing and Coping of the same pattern and weight as that surrounding Harrington-square, Hampstead-road, London. The quantity contracted for not to be less than 500 nor more than 1,200 feet. The contract to be for the railing, with coping and fixing the same, the brass fixing not to be included. No tenders received after the 20th of February. Address, Messrs. NEWMAN and Co., 5, Great Rand lph street, Camden town.

BEDFORD ESTATE, PARISH OF ST PANCRAS.—TO CONTRACTORS.

**PERSONS willing to CONTRACT** for Cleansing and Watering the Streets, and removing the dust from the houses on the above estate for one year, in the 25th of March next, are requested to send TENDERS for the same on or before the 25th inst., as below, where any information may be obtained between the hours of 11 and 4 o'clock.

By order of the Commissioners,
JOHN WOOD, Clerk and Surveyor,
20, Gordon-street, Gordon-square.

February 3rd, 1847.

1, Canning-place, Kensington, Feb. 4th, 1847.

**KENSINGTON NEW WORKHOUSE.**

TO BUILDERS. The Board of Guardians of the Parish of Kensington, having observed in "The Builder," on Friday last an advertisement, stated by irresponsible parties, purporting to be a Caution to Builders that any Contract entered into by the Guardians for Building a Workhouse will be resisted by the Parish as illegal; the Guardians are desirous of stating that the legality of the Poor Law Commissioners' Order for Building the Workhouse under which the Guardians Act, has been obtained by the Queen's Bench. The advertisement is evidently designed to prevent the Receipt of Tenders, but the Board believe that it will be rendered ineffective by this public notification, that the Guardians possess the amplest legal authority to contract for the Building of the said Workhouse; and they take this opportunity of reminding builders that they will receive TENDERS for the Execution of the Works at their Meeting at the Board Room, on Tuesday, the 9th instant, as stated in "The Builder" on the 5th ultimo.

S. CORNELL, Clerk to the Board of Guardians.

Guildhall, January 28, 1847

**THE Committee for Letting the City's** Lands will MEET at Guildhall on Wednesday, the 17th day of February next (instead of the 10th, as before advertised), at One o'clock precisely, to receive TENDERS for LETTING on LEASE a HOUSE, No. 19, on the north side of Broad Street-buildings, and a house No. 3, Windsor-court, Monkwell-street, for twenty-one years from Lady-day next; and also a house No. 3, Beehive-passage, Lime-street, for thirteen years from Lady-day next.—Further particulars may be obtained, and plans seen, by applying at the Office of Works, Guildhall.

THOMAS SAUNDERS, Comptroller.

IRONFOUNDRY

16s, Drury lane, and Charles-street, London.

JOSEPH GLOVER,

(Late HENDRY and GLOVER),

**BEGS to inform his Customers, that the** PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his, and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

**H. S. CHAUNCY, SURVEYOR,** HOUSE, and ESTATE-AGENT, OFFICES—10, Symond's Inn, Chancery-lane.

**DECORATIVE ART SOCIETY,** 20, Great Marlborough-street.—Wednesday, Feb. 10—Conversazione: The application of Design to Stained Glass Windows. Visitors' tickets may be obtained from E. C. LAUGHER, Hon. Sec. 17, Sussex-place, Kensington.

**ART-UNION OF LONDON: Incorporated by Royal Charter.**

PRESIDENT—H. R. H. the Duke of CAMBRIDGE.

The list for the current year is now open. Subscribers will receive for each guinea paid, besides the chance of obtaining a work of art at the distribution, a pair of prints, the "Last Embrace," and the "Neapolitan Wedding," engraved by Mr. Charles Rolls and Mr. F. A. Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of 500l. offered by the society for an historical picture.

GEORGE GODWIN, } Hon. Secs.
LEWIS POCOCK, }
4, Trafalgar-square, January 1, 1847.

**SOCIETY OF ARTS.**

PRESIDENT,
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 5th of May, 1847.—A List of the subjects for which Premiums amounting to 500 Guineas, with 30 Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, John-street, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.


### PUBLICATIONS.


Just published, a new edition, for 1847, price 4s.,

**LAXTON'S BUILDERS' PRICES,** containing nearly 11,000 Prices and Memoranda connected with building, together with the whole of the new Metropolitan Buildings Act, and the modification of the Act.—To be had at the office of the "Civil Engineer and Architects' Journal," 10, Fludyer-street, Whitehall; WEALE, High Holborn; SIMPKIN, MARSHALL, and Co., Paternoster-row; and at the office of "The Builder," 2, York street, Covent-garden.

For 1846.

**KELLY'S PRACTICAL BUILDER'S** PRICE BOOK, or Safe Guide to the Valuation of all kinds of Artificers' Work; with the Modern Practice of Measuring, and an Abstract of the New Building Act for regulating the Construction of Buildings. Revised and corrected by New Calculations upon the Present Value of Materials and Labour. Arranged by an architect of eminence, assisted by several experienced measuring surveyors. Illustrated and exemplified by steel Engravings, and numerous Woodcuts. Royal 8vo., price 8s., neatly bound.

London: published by T. KELLY, Paternoster-row; SIMPKIN and MARSHALL; and may be had of all Booksellers

**CARPENTRY.—It is intended to Publish** in Monthly Parts, a most Comprehensive, Elementary, and Practical Work on Carpentry and Joinery, in all its appliances; Ancient and Modern, Foreign and English, Domestic and Ecclesiastical; to contain 100 Engravings, with Practically descriptive Text, and to comprise

1. The well-known work of PETER NICHOLSON'S CARPENTER'S NEW GUIDE, being a complete Book of Lines for Carpentry and Joinery; 84 Plates with Additions and Improvements to the present time.

2. SUPPLEMENT A.—New Subjects of Roofs, Domes, Doors, Windows, &c., of recent construction in Public and Private Buildings. By an Architect.

3. SUPPLEMENT B. Ancient Carpentry of England. Specimens of Open Roofs and Timber Work, Standards, Staircases, Panels, &c., &c., &c. By an Architect.

4. SUPPLEMENT C. Modern Carpentry of England, France, and Italy. By an Architect.

5. SUPPLEMENT D.—Various Designs of Modern Verandahs. By an Architect.

6. SUPPLEMENT E.—Modern Fronts with Plans of the London Club-houses, Institutions, Shops of Various Trades, Professional Places of Business in London and Paris.

All will be amplified with Measured Details and Dimensions to them. The whole of these numerous and valuable additions will be of a manner to illustrate and delineate the Genius of the London and Country Carpenter, by placing before him Examples which hitherto have been inaccessible, and at a convenient cost of 2s. 6d. each Part, with Eight well executed Engravings and Text, and Published Monthly. To be completed in Twenty Parts.

Persons desirous of having the work direct as published, will be pleased to forward their names to the Editor and Publisher, JOHN WEALE, 39, High Holborn. Canvassers and the Trade in the Country who will Canvass their Counties, will be liberally dealt with. Prospectuses to be had in Paris. May 1st, and the publication continued every month till completed.

**JENNINGS'S SHUTTER FASTENER.**

Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficacy may be obtained from the occupiers. A front, containing eight shutters, secured by this system, and fitted complete, is offered for 8s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 23, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

THE RENT RECOVERING OFFICES, 23 New Broad street, City. The BUSINESS of COLLECTING and legally recovering RENTS, for half a century conducted by the Messrs. Pitt, is now carried on at the same offices by Mr. ROBERT HARDING, who solicits that the long-tried and well-known confidence of the firm may be continued to him. Rents, sales, and all kinds of business entrusted to him will be conducted with punctuality, in the interest of all parties, on the same moderate terms, and with the same personal attention.

IMPORTANT TO BUILDERS.

THE ARCHITECTURAL CARVING COMPANY (Irvine's Patent), beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston place, Pimlico, leading out of Elizabeth street. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

CARVINGS IN WOOD.—The unrivalled perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal embellishments—thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 4a, West Strand, or at the Works, Rancleagh road, Thames-bank.

CAEN STONE DEPOT. NORWAY SUFFERANCE WHARF, GREENWICH.

W. TUCKWELL, Caen Stone Importer, informs Architects, Sculptors, Masons, and others, that he has a large stock of superior DRY SEASONED CAEN STONE on his Wharf, imported only last, exclusively from his quarries at Allemagne, which, for present use, is selected with unusual care. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.—CAEN STONE shipped direct from Caen to any port.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult MASONRY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney pieces and PORTS.

Estimates given for building generally.

LADYSHORE TERRA COTTA.—The attention of Architects, Builders, and others engaged in building, is respectfully called to this material, which combines the beauty and durability of the cast Freestone at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the entire building of two churches, one in Manchester, and one at Bolton-le-Moors, and a parsonage house and the ornamental parts of a school, also in many other churches and buildings, so that its advantages and merits it is not "Composition," nor of the nature of Stucco, but HARD BURNED CLAY, in fact, plain tile work, its value will be found to be great, being so much cheaper than carved stone or wood, and equally durable.

The principal ornaments manufactured are capitals to trusses, bosses for roofs, pedestals, blank balustradings, panels, panelled bench-ends, with poppy heads, pinnacles, finials, chimney-tops of all sizes, vases, fountains, pedestals, boss, chimney pieces, indented tiles and other tiles for churches, halls, &c., and every variety of ornament that was used for building purposes.

This material is warranted to stand the weather. Specimens may be seen and every information obtained, on application to the Proprietors, E. P. WILLCOCK and Co., 19, Exchange Arcade, Manchester.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Gee and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually preventing the ill effect of knots, and, consequently, preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and much desired for

In the application, skill is not required; it is put on to the work with a brush like common paint, and may be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidising or rusting from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hot-houses, Fences, Palisades, and Shipping. Its adhesion is so great to iron, and to such that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray or sea-water.

PROTOXIDE PAINT is sold ready ground in oil, and can part with what heat its property of spreading is as 7 to 5; so that one hundred weight goes as far as one and a half of lead. It works well under the brush, and with half an additional quantity of oil may be applied with other tints it has a softer tone than white lead. For the above reasons (and during occupation, it is most preferable, being perfectly innocuous.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is not hidden by this process, but the colour which it has a tendency to display is rendered more beautiful and transparent, which, combined with the polish, produces a most delightful appearance, which cannot be obtained by the application of paint. It is used for the same purposes as paint, but is much cheaper in its application, as one coat of it will go as far as two of paint, and will last much longer, and is not liable to crack, blister, or peel off, as paint is. It is also much more wholesome, as it does not require the use of white lead, which is a deadly poison. It is made in various colours, and can be had of any colour required, by applying to the Proprietor, Mr. STEPHENS, Chemist, Hereford. Sold also at the office of "The Builder," 2, York-street, Covent-garden, London; and by Messrs. Nottingham & Co., Glass Merchants, Hereford; R. Sutton, "Review office," at Crake's Marble Works, Garratt-bridge. In bottles of 6d. and 1s. each, and at 3s. per gallon. The Oak Dun mark of unadulterated powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N.B. The Trade supplied.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS and WHITERS to the Trade only, 27, WATERLOO BRIDGE ROAD.

An Apprentice wanted, to learn and live with his friends. Premium £20.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the lowest prices, and with despatch. Apply to JOHN PILKINGTON, PATENTEE'S BITUMEN PAVEMENT OFFICE, 1a, WHARF ROAD, CITY ROAD.—N.B. Coach Arcuts and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Dent's self-acting system of filtration (the only one known by which large quantities of liquids are rapidly filtered) begs to announce that he continues to supply these apparatus, which are easily applied to cisterns and water butts, and when fixed require no care or attention from the purchaser, and never get out of order. The prices are from Two to Four Guineas, producing from 150 to 300 gallons daily, for brewers, distillers, paper makers, dyers, and large establishments to the small materially lower prices. Drawings and references may be had at the Patentee's Warehouse, 21, Long lane, Bermondsey, Rotherhithe, Office, 35, Cheapside, Bow street.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, Kept for Hire.

BENJ. FOWLER, 63, Dorset street, Fleet-street.

TO PLASTERERS.

LIME FOR PLASTERING, that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual prices, at FORBES'S WHARF, East street, Blackfriars. Shot for the slacking and mixing at the Accommodation for loading and landing bricks, sand, ballast, &c.

TO BUILDERS AND OTHERS.

MESSRS. H. G. and E. ROSHER, having closed their Lime Wharf at Montague Close, Southwark, have removed to their extensive premises, at Holland-street, Blackfriars, where they intend keeping a constant supply of Greystone, Lime burnt, and selected Lime, Sand, Cement Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland road.

*** Ground Lime for Concrete.

PORTLAND CEMENT.—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by Heaton's Portland and other stone.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it is both ornamental and durable.

Patentees and Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION. Messrs. STEVENS and SON, of Patentees, beg to caution their friends and the trade generally against confounding their invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a perfect combination, is not a mechanical mixture, but when applied to any substance with which it may come in contact, it completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER YELLOWS OUT nor SALTS, and will receive paint in two days, and in medium weather in one day.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, in the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being at less than one-fourth the cost of Portland. The most satisfactory references can be given. To be had of the Patentees, Messrs. Stevens and Son, Regent-square, Gee-street, Liverpool, and of Messrs. Drury and Newton, 18, Cranbourne-street, Leicester-square, London; Mr. R. Park, 28, Cannon-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, IRONMONGERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building of wood or brick. It so closely resembles stone that it is impossible to detect it. It never requires cutting, but is poured, and will keep for years in the cask, ready for use. It is a perfect non-conductor of heat, and therefore a most important member of every house. It is the only Cement that can be applied upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It may be used in Fresco, and will keep perfect in any Ornaments begun to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used in the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and plain. The first cost of this Cement material does not exceed that of the cheapest Cement now in use; but with all the above superior properties and valuable advantages it becomes the cheapest and most durable.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and Prospectuses fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of JOHN'S and CO.'S PATENT STUCCO CEMENT WORKS, 21, Bridge-road, and 1, Mary-ann-road, Chesapside, London; of whom also may be had.

JOHN'S and CO.'S PATENT CEMENT-COLOUR STUCCO PAINT, expressly intended for Painting all exterior Walls of Houses that have been covered with Roman or Stone Cements and which have been previously painted. It is merely two tints of the same colour, and is peculiarly suited for this purpose than White Lead Paint, which will require one or two coats of Linseed Oil to prevent its absorption into the Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT requires no oil, as it is already united with a proper quantity of oil to three parts of the best Portland Cement, and may be used by any Painter, in any climate, even in the most exposed Marine situations.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Trade that he can now supply ornamental glass from 3s. 4d. per foot superficial, and borders from 9d. per foot, run; and that the duty of the ornamental glass in London is enabled to execute at a very short notice, despatch to the Country, Paris, or Texas, Gratis only.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, Depôt for the Sale of the Plate Glass manufactured by the St. Gobain Company, Paris.—The attention of Architects, Builders, and the Trade generally, is particularly requested to this article, which stands unrivalled for brilliancy of colour, superiority of surface and polish, and possessing almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho Square.

SASHES PRIMED, GLAZED, and sent to any part of London at 5d. per foot.

BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon the best and most reasonable terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

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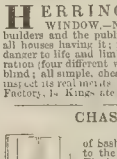
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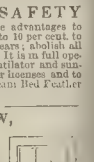
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The Builder.

No. CCIX.

SATURDAY, FEBRUARY 6, 1847.

WHEN the council of the Institute of Architects announced, in June last, the terms of the competition for the medal granted by the Queen for the promotion of architecture, we protested against the limitation of the age of competitors to twenty-five years.* We reminded the council that they had, in their circular advertisement of the subjects proposed for the medals of the Institute, and the Soane medallion, pointed out that the object of the Institute was, not merely to draw the attention of students and the younger members of the profession to the subjects proposed for the prize essays, but, "to enlist the experience, the judgment, and the taste, of those profoundly acquainted with the several departments of the art, whether members of the Institute or not:" and we then made the following remark.

"The Institute wish very properly to enlist the experience and the judgment of practised men; but the medal graciously presented by the Sovereign to advance the art and science of architecture—the greatest honour they have to bestow—is not to be opened to such candidates. The council should have ennobled this medal to the utmost, and made it open to all, so that, like the corresponding medal given by the Royal Society, it might be an object of ambition to the most eminent in the profession. Architecture has few or no honours. By the course pursued, they are not only throwing away the opportunity of creating one, but are actually, as will be found in practice, lowering the worth of their other medals."

Further consideration has made the correctness of our first view of the question more evident, and now comes the result of the advertisement to clinch it.

And a melancholy result it is. A result we must confess, much worse than might reasonably be expected; insomuch as we ought to find plenty of men of four or five-and-twenty capable of designing a building suitable to the purposes of the Royal Institute of British Architects, comprising lecture-room, library, gallery for casts and fragments, &c. not to exceed in cost 20,000*l.*, which, as our readers may remember, was the subject proposed to competitors. The reward, too, was certainly a tempting one; for, be it remembered, in addition to the royal gold medal,—the *first* royal gold medal awarded in England for the advancement of architecture, with all the *prestige* it will give,—the successful competitor will be entitled to draw upon the treasurer of the Institute for the sum of *50l.* after his arrival in Rome, in pursuit of his professional studies, at any period within five years from the time of the medal having been awarded to him, upon sending to the Institute a satisfactory study of some existing building, either ancient or modern.

This, we repeat, was a tempting offer, and ought to have produced a number of emulative competitors, and some fine fresh bold thoughts, well set forth on paper, to shew that the rising generation of architects intended doing something more than blindly copy the orders and repeat worn-out precedents, without thought of principles.

We are not amongst those who look for great and sudden changes in style; we do not expect to find architects employing details never before met with, or producing at once, as with the blow of harlequin's wand in a pantomime, a building altogether different from others already erected. As we have often said, the history of architecture is the history of a progress. A number of modifications and adaptations to circumstances, scarcely perceptible, singly, concur to produce gradually a change which can be chronicled. It requires many inventive minds, and many years, to evolve a new style in architecture.

What we do expect, however, is, that architects will recombine rather than repeat,—that they will give the most perfect and commodious arrangement for the purpose of the building, and be able to carry it out with the most proper materials and economy; that this purpose shall be fittingly and, in proportion to the means at their disposal, magnificently expressed; that the proportions shall be harmonious, whether the building be costly or simple, and the adornments strictly in character; in short, that in all the arrangements for utility, the development of the beautiful be never lost sight of.

The sets of designs submitted for the royal medal are eleven in number. One, with the motto *Tenet Deus clavum*, is a mere piece of impertinence; and there is one other, if not two, which is little better. Three or four are very creditable drawings, though far beneath what we looked for, and the remainder call for no remark. There is a creditable attempt to obtain a *monumental* character for the building in one of the designs, and the interior arrangement of a second is satisfactory; but the defects in all are so great (if the proper standard be kept in mind), the want of any thing like *genius* is so apparent, that comparison is unnecessary, as we cannot think the council will feel themselves justified in awarding the prize on this occasion.

To give the author of either of the designs submitted fifty pounds would be a sad misapplication of the Society's funds; but to bestow upon him the royal medal would at once destroy the value of that medal, and would be a public injury of very serious character. We are most anxious that this medal should be regarded as an honour worth striving for by every member of the profession; that obtaining it should give a reputation; and we therefore hope that the council will refuse to award it on the present occasion, and will in their next advertisement withdraw the limitation of age. We would further suggest that on alternate years, it should be offered for the best essay on a subject to be named.

* See Vol. IV., p. 308 and p. 325.

## CONDITION AND IMPROVEMENT OF CHESTER.

CHESTER, like other places, we are happy to say, is arousing itself to the importance of sanatory improvements, and certainly no town with which we are acquainted stands more in need of them. The statistical returns of the Registrar general shew that it does not do to depend entirely upon the good natural drainage alone, with which the fair city has been bountifully blest by Providence, as the neglect of artificial drainage entails a fearful sacrifice of the energies, the health, and even the lives of a great proportion of the community annually. Steps are now being taken to carry out an efficient system of sewerage upon a comprehensive plan, under the powers of the Improvement Act recently come into operation, and we shall look forward with confidence to the beneficial results to be derived from such a salutary measure, both in an economical and sanatory point of view, although many of that class termed of the "old school," are disposed to question its utility. Nevertheless, we are not so sanguine as to hope that the measure of sanatory reform, which we have from time to time so strongly advocated, will prove the panacea to all the "ills that flesh is heir to," without it is followed up by measures that have a tendency to check the practice of adulterating many of the necessaries of life, now so extensively prevalent.

In a former article upon this subject, we lamented over the apathy displayed by the authorities of towns with reference to sanatory improvements, and regretted, that as a nation of mechanics, and anxious to maintain that character, so little sterling science had been brought to bear upon the question, in which every member of the community was interested, both high and low, rich and poor.

Great evils are caused in this city by the constant disturbance of the streets for the purpose of repairing or relaying water or gas pipes, which is evident from a casual inspection of the cross sections of the surfaces. Our observations confirm us in the belief, that the time has arrived when some other plan must be devised for that purpose, and that subways or tunnels must be used for sewers, water, and gas pipes, or that the water and gas pipes must be banished the middle of the streets, and placed at the back of the curb-stone of the footways on each side, with a double row of mains, so that when sewers are once constructed, the middle of the streets may never be disturbed, or left, as at present, to the tender mercy of water or gas companies. And this leads us to the consideration of the construction of the roadways of streets; some better and more durable system is urgently called for, for when the arch enemies, sewage commissioners, water and gas companies, are banished, the excuse of an imperfect road surface ought not and must not be admitted, but we fear that until there is some change made, the public will have to submit, though with murmurings loud and deep. Upon this subject we shall speak at greater length at a future period.

Trapping drains by water alone, it seems clear, as already mentioned, is not effectual in its character; we are open to receive any plan that may be suggested as an efficient remedy. We are glad to hear the wretched foot pavements of this venerable city are to be replaced with flags, so that the sojourner, and he that is troubled with corns, may traverse the streets with as much ease and comfort as the "rows" and walls that bear the stamp of imperial Rome. This wise measure will, further, have a direct tendency to improve the health of the city.

The water supplied to the citizens on the intermittent system, we are sorry to say, is impure in quality, and inefficient in quantity, and is pumped up from the river Dee, and conveyed at once to the tanks of the consumers without being filtered or divested of any of its impurities, and there are neither reservoirs nor filters attached to the works. Two serious fires have recently occurred there; fortunately the one was situated near the Chester and Ellesmere Canals, the other near the River Dee, where a copious supply of water was obtained, but although a fire-plug was within a few feet of the former premises, it was not used, because it was stated there was no water on in the main; so if a fire were to occur in the middle of this city amongst the old timber buildings, under such a system, the consequences must be disastrous. No town with which we are acquainted is so well situated for a copious and good supply of pure water as Chester, and if the constant supply under high-pressure system was adopted, fire-engines might be dispensed with, and stand-pipes and hose applied directly to the mains, which would throw a greater volume of water than could possibly be done with engines; and if fire-plugs were more numerous, and hose and stand-pipes at depôts in every street, we should seldom hear of fires so destructive in their character as have recently been recorded by the press.

A discussion has lately taken place in the council on the supply of gas, a new company having been projected for the obvious purpose of supplying gas at a cheaper rate than that charged by the old company, viz., 8*s.* per thousand feet, but the permission of the council to break up the streets was refused, because the

project was in too crude a state, and the old company promised to amend and reduce the price to 6s. 8d. per thousand feet.

As a considerable profit is to be derived from the manufacture of gas, it is to be hoped the new Health of Towns Bill, to be introduced by her Majesty's ministers, will place both the supply of water and gas in the hands of the municipal authorities, and the profits derived may be applied either in the reduction of taxation or to the permanent improvement of the city.

It has occurred to us, that in this age of shares and electric telegraphs, the system of lighting the public lamps might be improved, and the old fashioned lamplighter, with his long ladder, &c., dispensed with, a great nuisance in populous places. We think that the day has arrived when the public lamps should be lighted simultaneously by the aid of galvanism.

We trust that the spirit of improvement which has recently manifested itself in Chester will respect many of those venerable and antiquated buildings that add so much to the interest of the place, both to the lover of archæology and antiquarianism, and that they will be preserved by the authorities with as much religious sanctity as the "rows" and the venerable walls that encompass the renowned city. The cathedral and other public edifices, erected of the soft red sandstone of the district, exhibit outward marks of rapid decay, and it is to be regretted that the restorations that are slowly taking place are being executed in the same friable material, although good durable stone can be obtained from Marley and Pechforton, as evidenced in the County Hall, Grosvenor Bridge, and other buildings in the locality. A fine throne has recently been erected in the cathedral from the design of Mr. Hussey.

We cannot close this article without mentioning the disgraceful practice of burying the dead within the boundaries of the town. The surface of St. John's churchyard appears to be raised nearly 3 feet above its original level, from the accumulation of dead bodies that have been deposited there. Surely another session will not be allowed to elapse, and this disreputable state of things continue.

It is contemplated to erect a magnificent central station for the five railways meeting in Chester, and that a new approach to the city will be formed. We trust that the railway companies will not be niggardly in their expenditure, but make an approach worthy of their combined energies and the citizens of Chester.

We observed that the Chester and Holyhead Railway Company had most sacrilegiously crossed an angle of the wall near the Water Tower, and, in consideration, had put up two most hideous beam bridges, instead of structures in character with the wall and the adjacent towers, and they are condemned by every man of taste as evincing discreditable parsimoniousness on the part of the company, and paying the citizens of Chester but a poor compliment.

The designs of the stations on the Chester and Shrewsbury Railway display some tact and judgment, and are gratifying proofs that some of the railway companies, at least, are sensibly alive to the importance of a little architectural embellishment.

## AWARDS OF OFFICIAL REFEREES.

### PROJECTIONS—OPEN PORTICO.

Mr. Allen had commenced in Spring-street, Paddington, a small portico, formed of two columns supporting an entablature, which projected somewhat less than the front area, and was wholly on his own ground. He quoted the following from schedule E in support of his proceeding:—

"As to all balconies, verandahs, porches, porticoes, shop-fronts, open inclosures of open areas, and steps, and water-pipes, and to all other projections from external walls, not forming part thereof, every such projection (except such part of shop-fronts, and the frames and sashes of the windows and doors, in reference to the necessary woodwork thereof) may stand beyond the general line of fronts in any street or alley; but they must be built of brick, tile, stone, artificial stone, slate, cement, or metal, or other proper and sufficient fire-proof materials, and they must be so built as not to overhang the ground belonging to any other owner, and so as not to obstruct the light and air, or be otherwise injurious to the owners or occupiers of the buildings adjoining thereto on any side thereof."

The district-surveyor, at the instance of the adjoining owners, objected; and the decision of the referees was therefore sought. The award was:—

"That the portico in question would be injurious to the owners and occupiers of the buildings on the sides thereof, and that, therefore, it would be contrary to the provisions of the Metropolitan Buildings Act to project the same before the general line of the shop-fronts on the same side of the street."

### CORBELLING FOR CHIMNEYS.

Mr. W. Snook, in building two second-rate houses, Edith Villas, North End, Fulham, had committed what the district-surveyor considered an irregularity; "namely, the chimney-breast and stack have been corbelled over the whole space, between the front and back chimney breasts, on the front thereof, on the floor next below the top floor, and to a projection exceeding 4½ inches."

The referees determined, "that the operation in question is not expressly provided for by the Metropolitan Buildings Acts, or either of them, but that the surveyor of the district was justified in laying his information; and inasmuch as the projection of the chimneys is between two chimney-breasts, which are built, from the foundation, of not less projection than the overhanging work, the subject of the information; and the construction is good and safe; such operation is not to be deemed contrary to the said Acts."

### STEAM PIPES.

Messrs. Collard, of Tottenham-court-road, having inadvertently laid iron pipes for heating their workshops so as to infringe the Act of Parliament, appealed to the referees with the hope that "as there was no possibility of accident to the building or property therein from such pipes, they being on a much safer principle than the plan long adopted by themselves in other departments of their business, and almost universally through the pianoforte trade, and inasmuch as the building is wholly detached from every other, and stands in a comparatively isolated situation, they might be spared the expense and inconvenience to themselves, and the loss of time to many of their workmen, attendant on an alteration of such pipes, especially as in a recent instance at the baths and wash-houses in George-street, Hampstead-road, contrivances certainly not less dangerous had been permitted to remain undisturbed."

It appeared that the "pipes are stout cast-iron pipes of 4½ inches internal diameter, fixed so as to be in many places at not more than 4 inches from timber, and in some places in actual contact with timber, and that they are connected with a boiler from which they receive steam, the heat of which is required and is used in an extensive series of workshops to dry wood in various forms, and to prepare glue for the manufacture of pianofortes; that means are used to prevent the temperature of the steam in the boiler from reaching such a degree as to involve the possibility of any substances becoming ignited from contact with the pipes;" and in confirmation, that some of the hollow boxes technically known as caul chambers, and charged with steam, rest upon and in close contact with pine boards, which exhibit no sign of being affected by the heat of the steam.

The referees determined, "that the pipes in question being used for conveying steam, and being fixed on the inside of a building nearer than 14 inches to timber, have been so fixed contrary to the first-mentioned Metropolitan Buildings Act, but forasmuch as we are of opinion that under the circumstances hereinbefore recited there is no danger of fire being occasioned by such greater nearness of the steam-pipes to the timbers which form part of the building, we hereby declare that we are prepared to report such our opinion to the commissioners of works and buildings, if Messrs. Collard present a representation to the official referees of the circumstances set forth in such recital, and claim a modification of the rule in schedule F of the said Act, under the head "Smoke-pipes," so far as to allow pipes for the conveyance of steam so regulated and so used for the manufacture of pianofortes and of cabinet-work, having similar requirements, to be fixed at a distance less than 14 inches from timber."

## PRESENT LOW STATE OF ARCHITECTURAL EDUCATION.

On Wednesday evening last, at a meeting of the Association of Architectural Draughtsmen, in their rooms, Southampton-street, Strand, Mr. Kerr read a very able paper on architectural education, with reference to the proposed establishment of an architectural society, for the benefit of those connected with the profession in the capacities of students and draughtsmen. From the shortness of time before going to press, we are unable to do more than give part of the paper in our present number, but will return to it next week.

When I say that the present system of architectural education is exceedingly defective, I am sure I may appeal for confirmation to the experience of every one of you. And if I were to say that this is so much the case that the architect is perfectly anomalous among professionals, I really do not know of any instance by which the position could be confuted.

But, perhaps, if you are to understand me aright and fully in what I have now said, my meaning in the term *architectural education* must for a moment be enlarged upon. By *architecture* I signify a certain Fine Art; by *Architect* a certain artist. Thus by the term architectural education, I signify education in this Fine Art—education in the work of this Artist—the teaching of a man the Art of Design (or, as I have on another occasion expressed it, the Art of the Beautiful) in buildings. There are certain other matters which in common practice are connected with this,—which enter into the calling in life under which the Fine Art practically comes;—but with these I do not at present at all concern myself. They must not be confounded with the Fine Art,—however closely connected with it in any system of practical action they may be, they belong to quite a different class among the matters of knowledge; they are not my subject. (I might also say, perhaps, that the complaint I have to make against the present manner of architectural education does not extend to these other matters, its adjuncts, in the same degree.) The subject and the person I speak of are Architecture and the Architect as I have defined the terms; when I speak of the young architect, and when I address you in that capacity, I allude to the subject of the Art of Design, and speak to the Artist. And when I appeal to your experience for confirmation of my position that the present system of architectural education is exceedingly defective, now that I have thus explained the exactitude of the idea, I am confident of a response from every mind that can at all appreciate what the Fine-Art Architecture is, that the education of our young men for their future practice of this Art of Design—this Art of the Beautiful—is most inadequately conducted indeed,—conducted in a manner perfectly anomalous in its inadequacy.

Enthusiasts tell of architecture as the grandest of all arts, and dreamers dream of its genius-work as a very wide and very glorious thing—a noble work among the works of man. They point to Phidias, to Michael Angelo, to William of Wykeham, to Christopher Wren, and call upon us to count them great names in the world's history. They tell the pupil at the desk how these are brothers in his brotherhood,—he has entered upon a very honourable walk. And truly there is something in all this that commends itself well—this architecture *is* a noble work. Look then, for a moment, at our young architect,—and see how his noble work is prepared for. * * *

Our hero's education professes to embrace a good many things,—planning houses from the beginning to the end, construction from the alpha to the omega, specifications, superintendence, and so on,—perhaps measuring, valuing. But there is one thing more than all this,—and it is with this one thing that we have at present to do,—he has been educated for an Architect—the Artist in Buildings. And he who can appreciate this—whose mind is able to grasp at once the entirety of the grand idea—cannot but allow me that here there is a thing of essentially another sphere from the

rest—and a higher sphere,—a thing of loftier nature, nobler skill, more exalted, refined acquirement. I had almost said—of more difficult attainment; and if you will take my words in peculiar meaning I will say so. To scheme house-plan, to contrive house-construction, are matters that (to use this common phrase) any man can do. But in the Parthenon of Athens, in the Cathedral of Rome, in the Minster of York, in the Hospital of Greenwich, there is something that reaches a higher height than this—something whose province our Architect now professes to be his,—and it is of this that we inquire—this thing of the loftier nature, the more difficult attainment, How has he been educated for this same?

And when we cast it up—how much study and of what nature this young Artist has now passed through to fit him for the Artist's work—how much teaching, and of what kind, he has received in that subtle noble thing DESIGN, ART,—what is it? What if I were to say it is *Nothing!* Certainly if we compare it with the teaching of the Painter, Sculptor, Musician, Lawyer, Divine, Physician, Engineer,—with the teaching, I may very well say, of any other professional whatever,—it is really, strangely, *Nothing!* There is a kind of *picking up* calculated upon, and that is all! Even taking architecture at its present miserable value—a little art of patchwork,—this system of pupillage is beneath even a little art of patchwork. And if you look on Architecture, not as it at present stands—confounded strangely with a maze of lower things—its very existence broadly denied as a principle of thought (for what can PRECEDENT be, but the denial of the existence of DESIGN? Antiquity-rule, but the denial of the power of modern mind?)—if you look on our Art, I say, not as at present it has its strange fate to stand, but thinking of it, if you can think of it, as the wide ethereal thoughtful thing it is—the broad bright province of Imagination,—tell me then how it can be that the teaching of the Architect is so little a thing of moment—how Painting, or Music, or Law, or Physic, contains so much more skill, demands so much more study, than this Art of the Beautiful? And it is in such a light that I would have you view it—Architecture in all its grandeur and freedom, an Art of Design. If Architecture is Greek precedent, then I may grant you that with Stuart at your back you are an Architect; you need but the book of canons, the little articles of your little faith. If Architecture is mediæval Freemasoncraft, then I may grant you that with Pugin and Paley and Rickman's Attempt, your creed does not much demand teaching. But if Architecture is an illimitable Art of the Beautiful—an infinite, inexhaustible, essence for the mind of man to draw up from the deep Thought-well of Fancy, its canons the mere canons of Thought and Nature, fully subtle, fully unconfined, uncontractible,—then your Stuarts and Brittons and Paleys sink into the insignificance of mere chroniclers of little corners of an empire; this Art of the Beautiful, this Genius-work of Design, transcends their little limits as the wide Atlantic transcends the little circle that you see, and there are thousands of gallant ships upon its broad bosom besides your own.

When the Architect becomes Artist, truly, Architecture will assume among the Arts a place one of the very highest of all. It is simply because it is not understood—simply because it is—(this saying, by-the-by, is not mine, it is a weapon from the very enemy's camp itself)—because it is "the only branch of human knowledge which remains an exception to this century in its intellectual advancement," —simply because it is a thing its real full self not known—that it is placed low by even its admirers, and by many excluded entirely from the beautiful circle of the Arts. And when the Architect becomes an Artist truly—when Architecture assumes its very high place—the student of those days will not be the student of these. He will not be merely taken into an office to do the office work—the mere drawing labour, writing labour, arithmetic, of house-building craft; it will be seen that there is a something apart from these,—of nobler kind, of more difficult attainment,—and to learn this —this Art-work—this Architecture—will be an object that a long train of subtle knowledges will be brought to wait upon—a goodly retinue of studies brought to serve. It will be seen that although office-work may serve the end of training the pupil for an office clerk very well, his education for an ARCHITECT is quite a different thing.

If I were to enter upon a detailed consideration of Royal Academy studies, Royal Institute studies, University lectures, it would take time which we have not to spare at present, and serve at best very little purpose. Taking Architecture at its present value, every student who has attempted education by these means can testify to their inefficiency; and if we put the art at its own true nobility, it needs but one grasp of the idea to see how utterly all these are a mockery. Neither is it requisite that I investigate the principle of instruction by the master's designs passing, in the present way, through the pupil's hands in the office-work; that this may serve valuable purpose in education cannot be denied, but that it is at all equal to the whole end of education need not be claimed. The young architect,—he on whom we have to depend as professionally taking the practice of this art of design, ought surely to be educated in some manner in the principles of design—trained for a designer.

It is manifest that no such training is had by the present system of architectural education. It is not had directly or indirectly; and the facility with which the carpenter or bricklayer manages, in our day, to set himself up for an architect is just because the education of the professional is very little different from his own. The young architect has had no training for a designer; he has *picked it up:* and picking it up is a thing which, so far as that goes, the carpenter can do just as well. When a stupid man fails utterly and for ever as carpenter, or stone-mason, or slater, his last resource is to turn architect. And not a whit worse an architect does he make on the whole; —frequently, I am ashamed to say, in some valuable respects, much better,—than the "regular dustman" himself, even many a proud metropolitan that we could tell of. It is of no use to denounce the depredations of non-professionals; the professional must step out himself. The only way for our friends to keep the carpenters back is by themselves becoming more truly, properly, architects.

There must be means provided for education in designing. What is commonly called among us a School of Design would undoubtedly be of very great service to this end. Not a drawing-school, though—not a model office. Systematic instruction in Design is what is needed—to teach the young architect Architecture—the art of beautiful design in buildings.

The plan by which I would propose to effect this teaching of Design I shall describe by-and-by, after I have propounded another project in connection with it.

No manner of instruction is complete until the pupil becomes the self-teaching student—studies, thinks, reasons for himself;—the pupil being taught the truth, is very imperfect work till it ripens into the student discovering the truth for himself. The School of Design which I have claimed is not all that is requisite. It is but preparatory—a first class to which there must be a second. Education under a teacher is mere preparation—groundwork for a very great deal which the student has to learn for himself.—When he leaves the pupillage, he is only made ready for entering upon another course of study—another manner of learning. Books come to be thought over in search of principles—not referred to as canons; doctrine is canvassed as opinion,—not received as dogma; a period of life of the most eminent and peculiar value is now entered upon—the years between the boy and the man—when the work of pupillage is being gradually applied to the practical surrounding world, and the mind is energetic in investigation,—thinking and searching and trying—following knowledge for the love of knowledge,—the years of that happy conceit, which is often railed at by the short-sighted as the culpable vanity of inexperienced youth, but which is the wise regulation of a wise Maker for laying a good groundwork of bold thought for the life that is beginning. Just as the ant or bee lays up its store against the winter, so is the human mind in these years of youth, by an instinct as beautifully true, under the same good governance, unconsciously nerving itself for the race—the long race that will weaken it, and weaken it as it runs. The pupillage of boyhood is but the preparation for these years. It is not itself the school, it is but the introduction. Now is the time of study. This lost, the loss cannot be repaired. The man at twenty is unfit for the work of forty; but so, also, is he of forty for ever unfit for the work of twenty. And if the theme of study be work of Fancy and Philosophy, so much the more is this the valuable time for thought. The world will soon drag down such energies as this,—it discords with them, it distracts them among the multiplicity of affairs, confuses, scatters them in the quick hurry of life.

## A LEAF ON THE GRAVE OF A FRIEND OF J. BARRY.

JAMES BARRY was, undoubtedly, one of the greatest artists *England* ever possessed—as well as the least rewarded; sufficient reasons to account for him not being yet duly appreciated. Still, there they are—his splendid canvasses in the hall of the Society of Arts in the Adelphi, the work of *seven years'* unremitting, and unapplauded, and unrewarded toil. It is a fact, that during this time, Barry often lived on mere bread—all friends having left him, save Edmund Burke, who surely felt some inward *con-genial* attraction towards him. But there was another friend, whom Barry's *inward* being had gained for him, the humble subject of this memoir,—Elizabeth *Cockings*, then the servant, subsequently, up to her death, the housekeeper of the house in Adelphi. There was James Barry—the stern, solitary, misanthropic *eccentric*, and the then, childish, playful girl of eighteen. The girl (we gather from *her own* confessions to us) gazed complacently at those inspired beauteous images, as they grew out of the *mute* canvass; and Barry, perhaps, painted these capricious female figures to astonish his young friend. Many anecdotes she knew to relate, shewing the pride and independence of Genius. A certain Lord had lent Barry some costly work for reference, and as the artist kept it a little while, his lordship wrote him a most friendly letter, *presenting* him with the books. This (poor, undiplomatic) Barry repulsed as a downright insult! What was to be done with a man of such feelings in a commercial, banking, higgling age. Then, he would shut himself up in his cheerless cold room—brooding and pasturing over his own mind, which, perhaps, he did not *understand* himself, and then again dart forth, venting his pride and sentiments in images, which posterity will *understand*, as we certainly do *not*. When, by such behaviour, he confused and baffled all his friends, none could approach him—save Elizabeth. Then she would bring him his meals, *dare* to deliver messages, and make his room as comfortable as his strict (and religiously observed) orders would permit it to be. And then she had to bear his death, and almost neglect of his memory. Years rolled on—there were Barry's paintings, but none for a long while looked at them. But *time* is a great *justifyer*. And then came Canova—and gazed long and intent on these apotheoses of man's history. This consoled Elizabeth's heart, who remained single all her life—as Goethe says, that a person who has ever known a departed *spirit*, can no more enjoy happiness. Be it said to the credit of the managers of the hall in the Adelphi, Miss Cockings retained her place up to her death, one of comparative ease and comfort. But she also has now departed. Few remain who have known James Barry—none, now, who has ever *loved* him.

SMELTING IRON. — EXPANSION. — The recent dreadful accident on the Great Western Railway, caused by the separation of the tire of the driving wheel, shews the importance of care in the welding, and in afterwards testing these and other parts of machines exposed to the action of such powers as locomotives and railway carriages are subjected to. We were astonished at learning during the inquest, that the tire is secured to railway carriage-wheels merely by being put on hot, and therefore in an expanded form, and so griping it by its contraction when cooled. None require to be told, even though they may not have seen, as we have, the floor of a railway carriage in flames, produced by very rapid motion, of the effect of friction on the tire, and the little security this method therefore affords.

## STAINED GLASS.

At a meeting of the Decorative Art Society, on the 27th ult., Mr. Fildes in the chair, Mr. E. Cooper, in resuming the subject of his paper "On Stained Glass Windows," observed, that a combination of the Italian, or renaissance, with gothic embellishment, took place during the reign of Henry VIII., as seen in the chapel of Bishop West, at Ely, and in Wolsey's hall, at Hampton Court, whilst, indeed, the pure Italian architectural design by Torregiano, in the tomb of Henry VII., as well as the windows, carved stalls, and organ-screen, in King's College Chapel, Cambridge, belong to this period. Some fine examples of Italian decorations, in the paintings by Holbein, at Hampton Court, were also referred to. He enlarged upon these circumstances, lest he might be supposed to have anticipated by a century the introduction of the revival more usually attributed to Inigo Jones. A detailed description of the windows at King's College, Cambridge, followed; and the east window of Saint Margaret's church, Westminster, was, in his opinion, designed by the same artist: an examination of this window will convey a correct notion of those at Cambridge. It was said, that this had been executed at Gouda, in Holland; at which place may be seen some of the finest examples of stained glass in existence: they are in the style of the revival, with a considerable portion of white glass in the background, and were painted towards the end of the sixteenth century. Some elaborate engravings of them, just completed by Mr. Weale, were referred to. The eastern window of Saint George's, Hanover-square, is also of this period. Much of the detail was said to be valuable, although a confused effect arises from the ornamental portion overpowering the figures.

Mr. Cooper then remarked, that the windows of the sixteenth century have a peculiar character in the imperfectly attained perspective effects, and the attempts to represent distances by painting; hence exhibiting a departure from the true principles of the art. He observed, that all figures should be supported by draperied or diapered back-grounds, admitting depth in colour. The windows of King's College chapel might be considered beautiful, rather from the rich colours of the glass than from the artistic merit in the application of colours to the design, which can only be made out after some little study. During the thirteenth, fourteenth, and fifteenth centuries, one uniform tone of colour pervaded the back-ground; and as one of the finest examples of this class, the window of the north transept of Canterbury Cathedral was referred to. It displays a glowing brilliancy not subsequently attained.

In the reign of Elizabeth, stained glass was largely introduced in mansions, exhibiting heraldic devices and mottos. The seventeenth century led to a notice of several windows by Van Linge, that in Lincoln's-inn chapel being a good example of this artist's productions. Others were enumerated, which belong to the eighteenth century, but they were not considered worthy of commendation, having been, for the most part, treated as an oil-painting, and with a preponderance of shadow on a transparent medium. At the present day, Mr. Cooper observed, there is a return to the practice of medieval glaziers, in the employment of flashed glass and potmetals together with minute lead-work. The east window of Saint James's Church, Piccadilly, he thought creditable in respect of glazing and richness of tone in the colours; but a higher degree of artistic merit might have been readily obtained. A proper gradation of colour in the composition had not been observed; the most elevated figure, viz., that of the Saviour ascending, being inconsistently clothed in scarlet, and which, the reader argued, should have been represented in drapery of the most aerial description. Much controversy and criticism had taken place upon the character of this window. He said that he could not detect any Gothic details in the window as executed; that the borders are Italian, from works by Raffaelle, G. Romano, and others, and may be seen in Gruner's work. The borders of mosaic-work impart a Byzantine feeling, whilst the various symbols and emblems introduced were commonly employed by the early Italian Christians. He considered that we may expect success in direct imitations of the medieval works, as seen in new windows in the Temple Church, where the colours and glazing are alike good, and the tableaux, or subjects, being small, do not render any impropriety of intensity conspicuously objectionable.

The east window of the new church in Wilton-place was next noticed as a misunderstanding of this kind of decoration. It is not yet completed; but in the lower portion a failure was said to be clearly indicated. The intention of the designer, the writer supposed to be akin to those prevalent during the transition period, when the introduction of a series of small and separate subjects illustrative of history was aimed at; but omitting the principal charm arising from the harmonious and rich glow emanating from a combination of full-toned colours. The figures in this window were then described as small, on light or white grounds, producing a spotted effect from their size, and also precluding the possibility of readily making out the subject; added to which, each figure, or group, is surmounted by tabernacle-work in pale yellow glass, feebly contrasting with the stone mullions of the window. He then argued, that one of two rules should be observed,—either a rich general effect should be produced (the design or subjects being subordinate), or the subject should be well defined, and sufficiently large to be well understood in any part of the building. Neither of which had been regarded in this last instance.

One great cause of failures at the present day was attributed to the art being regarded as a mere trade; and it was contended, that were artists of eminent talent to devote attention to the principles which regulated the application of colour to this material, we might soon realize our brightest expectations. Much might be hoped for from the great advance taking place in chemical information. The writer suggested improvements that he believed had not yet been applied to stained-glass windows. One was, to introduce "lights" in the representation of objects. Shadow had been freely used, but he argued, that dark shadowing constitutes a great fault. The best effects in a picture generally arise from the lights. By using flashed glass and a partial removal of the coloured surface these might be produced. Another plan by double glazing was mentioned, using two plates of flashed glass of different colours, and subjected to certain modifications by grinding or acid. Specimens illustrating these considerations were exhibited.

By these and other means that might be suggested, together with an avoidance of aërial perspective, a superior pictorial effect would result; and he concluded his paper by a brief recapitulation of the leading characteristics of the design and colouring peculiar to each of the centuries which had been passed under review.

## THE LIGHT AND HEALTH TAX.

A very numerous deputation of Members of Parliament and delegates attended Lord John Russell on the 29th ult. to solicit a total repeal of the window-tax. Lord Duncan, Mr. G. Daniell, Mr. Hume, Sir de Lacy Evans, Mr. Benj. Hall, Mr. Roebuck, Mr. Pattison, Mr. Masterman, and others, addressed the premier at considerable length. Mr. Hume shewed the position in which the question of the window duties stood when the present Government was last in office, and when he (Mr. Hume) withdrew a motion he had given notice of for the total repeal of the window-tax, on a promise being made by Lord Althorp that in the following year half the tax should be abolished, but which, on account of the low state of the finances of the country, was not carried out.

Lord John Russell observed in reply, that what had fallen from the members of so highly influential and respectable a deputation must necessarily command his serious consideration. He could assure them his attention should be directed to all the arguments adduced with the greatest care. He would, however, only remark, that he feared, if he should repeal this tax, there would be other parties pressing upon him, declaring that other taxes were equally obnoxious.

The deputation then withdrew, as little satisfied with the result as deputations usually are.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Bridge Construction.—System Neville.*—Mr. N., builder of the Seine-bridge of Bezons, which has been open to traffic for the last two years, has of late experimented on a bridge on a new system, of which we collect the following details. The bridge is situated on the North Line at Brussels, and has an opening of 22 métres. It is of cast-iron, and the experiments were made under the eyes of a commission, named for this purpose by government. The first train passing consisted of the engine and its tender, to which were attached four waggons, each loaded with a weight of 5,000 kilogrammes—the weight of the waggons averaging 2,500 kilogrammes each. Next, *two* trains like the former (two engines and eight waggons) were started simultaneously, but in an opposite direction, so as to pass each other on the bridge. Another set of experiments consisted in letting pass two engines, one after the other, on the same rail; then four engines, of which every two were attached to each other. They also passed in an opposite direction, and met on the bridge. Ultimately, each pair of engines was attached to four waggons, loaded as above. Two engines were then stationed on one rail of the bridge, while on the other, two engines and four waggons were passing.

The above experiments were made at a slow, and a very rapid speed. Moreover, when two locomotives were stationary on one rail, the other train was darted with great speed on the second rail, and the moment it arrived on the bridge it was suddenly stopped, and the waggons spoked. It remained only to ascertain what effect would be produced by the derangement of rails. For this purpose, the rails on one side of the lines were raised to an inclined plane, so that one of their extremities became 20 centimétres elevated above the level of the line. A waggon, weighing, with its load, 10,000 kilogrammes, and propelled at a great speed by an engine, which was detached therefrom at the entering on the bridge—continued its course on the raised rails, and became fixed at the middle of the bridge, where the rails had been taken off. It continued, notwithstanding, its course, but the shock had been so terrible, that the traverses of the waggon were broken. "All these experiments—even the last pushed to such extreme—did not occasion any derangement in the jointing or the *ensemble* of the bridge." The *arcs flèches* determined by these different trials varied from 0·020 métres to 0·030 métres. The commission, for the sake of using every precaution, has ordered the bridge to be loaded with a considerable weight, which has to remain a fortnight in its place.

*Art improving—Monarchs.* [From Goethe.] —The king invited Joseph II. to Fusaro; and *Philipp Hackert* had also to come there with sketches of three pictures. Before dinner the king explained to the emperor the pictures with much energy and taste, so much so, that the queen was surprised, and said to Hackert: "You have well initiated the king into painting, which I am much pleased with. *The good God has sent you to us.* I am enchanted that the king *finds enjoyment* in the fine arts; and this we have to thank you for."

*Athletizing of Working Classes.*—The free state of Frankfort precedes (it seems) most others of the continent in this respect, as the association for the above purpose counts already 400 members, and arrangements are now completing, for affording youth an opportunity of systematic and *progressive* bodily education (*sic*) in every season and every state of weather. The association have offered themselves to co-operate with the brigades in cases of fire —which, however, to accept has not seemed expedient but under very extraordinary circumstances. Still, even the offer speaks well for the *heart* of these new athletes.

*Railroads in Egypt.*—The barrage and embankment of the Nile are progressing satisfactorily, and in December last 20,000 persons were employed thereon, working alternately day and night. Ali Pasha, in fact, contemplates great structural improvements in Egypt, which he certainly will carry out if his life be so far prolonged. Amongst these is a railroad from Alexandria to Cairo, another from Suez to Cairo. An embankment of the Nile in Nubia (!) is also spoken of. Thus civilization

seems to *return* to those places where, certainly, it took its origin.

*Napoleon — the Builder.*—During a comparatively short reign, this man, whom we are wont to consider merely as a warrior, executed the following astounding public works:—He constructed the great sea-basins of Antwerp, Flushing, and Cherbourg; the ports of Dunkirk, Havre, Nice, and many others; the roads of the Simplon, Mont Cénis, Mont Génèvre, and the Corniche, opening the Alps in four directions. He built the bridges of Austerlitz, Jena, des Arts, Sèvres, Tours, Roanne, Lyons, Turin, Rouen, &c., and made roads throughout France, too numerous to mention. Napoleon constructed the canal which joins the Rhine to the Rhone, uniting the seas of Holland with the Mediterranean; the canal between the Schelt and the Somme; the canal of Arles, &c.; drained the marshes of Bourgoing, Corentin, Rochefort, &c. Paris owes to *him* the embankment of the Seine by way of stupendous rock-built quays; an abundant supply of water, its markets, *granaries*, and a great number of public buildings and establishments; the grand gallery of the Louvre, the *Museum of Architecture*, for the formation of which a member of the Institute was sent to Sicily, to *effoss* and collect parts of friezes, architraves, capitals, &c. Not to enumerate the many arches, statues, and monuments erected by him, as well as the renovation of many venerable churches and palaces.

*Glass Domes.*—The dome of the large hall of the Civil Tribunal at Brussels, which lights this huge building, has given way under the weight of snow which fell upon it from adjacent houses. Fortunately, there was no public audience there at the time.

*Giguntic Bridges.*—The Emperor of Austria has just ordered the erection of a suspension-bridge over the large (combined) arm of the Danube, near Vienna, being about the breadth of the Thames at Woolwich. As, however, several small islands and sandbanks intersect this stream of water, pillars, with stupendous freestone and granite foundations, will be erected thereon. This bridge will be a very essential complement of the great Austrian North Line, and an ornament to Vienna and its environs. Mr. Schirn, whose superior skill has been attested by the erection of the suspension-bridge over the Moldau at Prague, is the architect of this new structure. The estimated cost, to be borne by the public purse, is five and a half millions of florins—equivalent to one million English sterling value. Another bridge, of similar dimensions, will be that over the Vistula, on the Prussian Eastern Line from Berlin to Königsberg. It will be the most extensive bridge-structure in the world,—that over the Lagunes, at Venice, not excepted. The estimated cost will be four millions of dollars,—equalling, as well, a million of English currency.

## RATING ASYLUMS, &c.

On the 29th ultimo, the senior sister of a Roman Catholic Asylum, in Fulham Lane, for the reception of erring females of all denominations, appealed against a poor rate levied by the parish of Hammersmith. The asylum is conducted by nuns. The parties received into the asylum are employed in needle-work and washing, from the profits of which the institution is principally supported, and the appellant claimed exemption on the ground that as a charitable institution, the managers of which had no individual benefit accruing to them, it was not rateable.

In support of the appeal, Mr. Bodkin cited the case of the Queen *v.* Shee, the President of the Royal Academy, wherein it was held that the defendant, having no exclusive residence in the Royal Academy, was not liable to be rated. It was also shewn, that the asylum was exempt from Government assessments, water rate, or window tax.

For the respondent it was contended that the appellant was rateable, she being the manager of the institution, and was deriving actual benefit from the proceeds of the industry of the inmates.

The assistant judge said, he thought the senior sister, or appellant, had no more interest in the institution than any other inmate, and therefore would disallow the rate.

## LONDON.

A morning contemporary of the daily press the other day was informed by a correspondent, "that the Commissioners of Woods and Forests have definitively resolved that the Wellington Statue shall remain on its present site, and that the workmen employed at the Triumphal Arch at Hyde Park-corner will commence removing the scaffolding to-day." The wish, however, of this correspondent, must have been father to his information, for almost the very next day (1st February) came the counter-information of Lord Morpeth himself, in the House of Commons—responsive to Captain Polhill's "wish to learn whether the noble lord was prepared to give any information to the House on the subject,"—that "the Government have signified their wish to the Sub committee of the Wellington Statue that it should be removed from the place which it occupies."——Government have also, on the other hand, quite decided on not removing Westminster-bridge.——The extension of the electric telegraph, now in course of deposition under the principal thoroughfares, to the several fire-brigade stations, is about being taken into consideration by the authorities. The instantaneous intelligence it would communicate to the fire-preventive force throughout the metropolis will doubtless result in the saving of much property and life. The wires on their way from the south-western station to the central office [in the Strand, still talked of seemingly, although it was alleged, some time since, that this point as a central office was abandoned] has reached Lancaster place; three weeks having been spent in crossing Waterloo-bridge.——Friday week a Court of Sewers for the limits of the Holborn and Finsbury division was held at the office of the commissioners, at which it was resolved to construct the following new sewers:—In John-street and Rodney-street, Pentonville, 980 feet long; in Penton-street, &c., 1,020 feet long; in Castle-street, Finsbury, 230 feet long; in Compton-street, Cleikenwell, 790 feet long; in Turnmill-street, Clerkenwell, 230 feet long; and an outlet sewer at the north end of the Liverpool-road, and in Henry-street, Hampstead-road, a length of 1,400 feet. The Court then took into consideration, and agreed to, the propriety of a further extension of the sewer towards Holloway, commenced at the termination of the City sewer in 1839, and which had been carried beyond Ball's-pond. It was now proposed to form a tunnel sewer to Holloway, 6,100 feet long, which would cost 7,930*l.*; and a branch one from it, 2,500 feet in length, at a cost of 3,000*l.* Mr. Rowe's, the surveyor's, annual report was read, from which it appeared that 35,038 feet of sewers had been formed last year; and that 100 miles had been practically flushed.——The dilapidated balustrade on the Adelphi-terrace, which has for some time past been in a very dangerous state, was yesterday (Wednesday) we observed in course of removal. It is to be replaced by a light iron palisade.——The new church of St. Andrew, Marylebone, of which we recently gave an engraving, was consecrated on the 28th ult. according to previous notice.——The Marylebone vestry have been organizing their forces in opposition to the Regent's Canal Railway scheme, the strongest objections to which appear to be grounded on the threatened abolition of the exclusiveness or seclusiveness of the vicinity, as urged in a report, by their committee, and on complaints such as that of Mr. Edwin Landseer, that from the opening of a tunnel at the bottom of his garden, and the annoyance of the noise of the engines and the whistles, the loss of a portion of his garden, &c., he would probably be obliged to quit the vicinity, and erect a studio elsewhere, while his brother's house would be completely undermined, and he also of course compelled to remove. Cases of personal inconvenience such as these will no doubt occur, and all due allowance be made for them, both as to number and degree, in considering the relative merits and advantages, or demerits and disadvantages, of such a scheme; and Lord Morpeth has promised that he will do so "both legally and morally, and then decide, upon the principle of justice."——The salubrity of the district of Kensal New Town was held to be endangered, as our readers may remember, by the proposed erection of the Kensal-green Gas Works, in which cannel coal is to be used, for the improvement of our metropolitan gas, and for the consequent removal of what is at present a nuisance of a far more general and extensive order than the mere erection, in any one locality, of gas works, especially one of this description, in which, as we have already observed (vol. iv. p. 608), effectual means of a novel and still secret, though patent order, are to be adopted for the prevention of all noxious exhalations in the preparation of the gas. The Chancery case alluded to in our previous notice of this project was before the Court on the 1st instant, on some point of law, when the leaning of the Lord Chancellor appeared to be plainly in favour of the company. His lordship declared the Master of the Rolls to have rightly declined to grant the injunction asked, the plaintiff having failed to make out any case for the interposition of the Court. The whole difficulty had arisen by the defendants' declining to disclose the secret of their patent, a disclosure which, as his lordship observed, no sensible man would make, and which no one had any right to insist on.——In the Court of Queen's Bench, on the 28th ult., in the indictment *v.* Flockton and three others, for having erected a nuisance in the river Thames, called the Waterman's Floating Pier, at Paul's-wharf, near Blackfriars-bridge, the Court adjudged the defendant Flockton should pay a fine to the Queen of 25*l.*, and the other defendants 1*l.* each, and that they be severally imprisoned until the fines be paid. The defendants had pleaded guilty, but that there were a great many piers on the river of the same nature as that complained of, and in particular that the corporation itself had erected at Blackfriars-bridge a permanent wharf which projected into the river much farther than the pier erected by the defendant. Arguments of this nature, however, could not be listened to by the Court.——The twenty-third (or seventeenth) annual report of the Commissioners of Woods, Forests, Land Revenues, Works, and Buildings, of date 27th August, 1846, has just been issued in a printed form. The report itself is only nine folios in length; but the appendix, like a lady's postscript, is in truth the body and substance of the whole communication, being itself no less than eighty folios in length. It contains, amongst other particulars of course, an account of the progress of the metropolitan improvement carried on under the authority of the Woods and Forests. We have already anticipated much of what might have been extracted from this report, so far as relates to the state, previous or subsequent to August last, of various lines of thoroughfare, such as that from Coventry-street to Long-acre, Oxford-street, to Holborn or New Oxford-street, &c.; but there are various items of interest which we may here note. Thus from Appendix, No. 20, it appears that the property purchased up to January, 1846, for the purpose of carrying out these lines of thoroughfare, cost, for the New Oxford-street line, 287,155*l.*; Bow-street to Charlotte-street, Bloomsbury, 96,408*l.*; the Coventry-street line, 179,543*l.*; the line from London-docks to Spitalfields, 136,241*l.*; from East Smithfield to Rosemary-lane, 18,256*l.*; in all 717,604*l.*; and that there still remained purchases to be made to the extent of 10,813*l.* From Appendix No. 23, it appears that the total paid or agreed to be paid for property required for the formation of Victoria-park, amounted to 86,873*l.*

Institution of Mechanical Engineers.—The new Association held their first meeting at the Queen's Hotel, Birmingham, on Wednesday week, for the purpose of enrolling members, agreeing to rules for the government of the society, and electing officers for the ensuing year. Mr. George Stephenson was elected president by acclamation, and on taking the chair delivered a short address, in which he adverted to the difficulties of his own early career, and encouraged young engineers to proceed earnestly and endeavour to check the present strong continental opposition. Messrs. Beyer, M'Connell, and Miller, were appointed vice-presidents; Messrs. Hunter, Fothergill, Buckle, and Cowper, the council. A general meeting of members is to be held quarterly. After the business meeting was concluded, a festive gathering of the members took place, and was also presided over by Mr. Stephenson.

WINDOW: HERNE CHURCH, KENT.




## WINDOW FROM HERNE CHURCH, KENT.

Rickman gives the following account of this church:—"It has a very fine early English tower at the west end of the north aisle, with some decorated windows inserted; the nave has a very fine five-light perpendicular window, and a good early English door under it. The aisles of the church are embattled." It would almost seem that Rickman had not visited the interior of this church, as he does not mention either the handsome oak screen at the end of the north aisle, the old seats of excellent design in the centre chancel, the fine arch mouldings of the tower, or the rich font, besides other matters worthy of notice.

The window shewn in the illustration is on the west side of the tower; the mouldings are very good, and the entire composition has a very rich appearance.

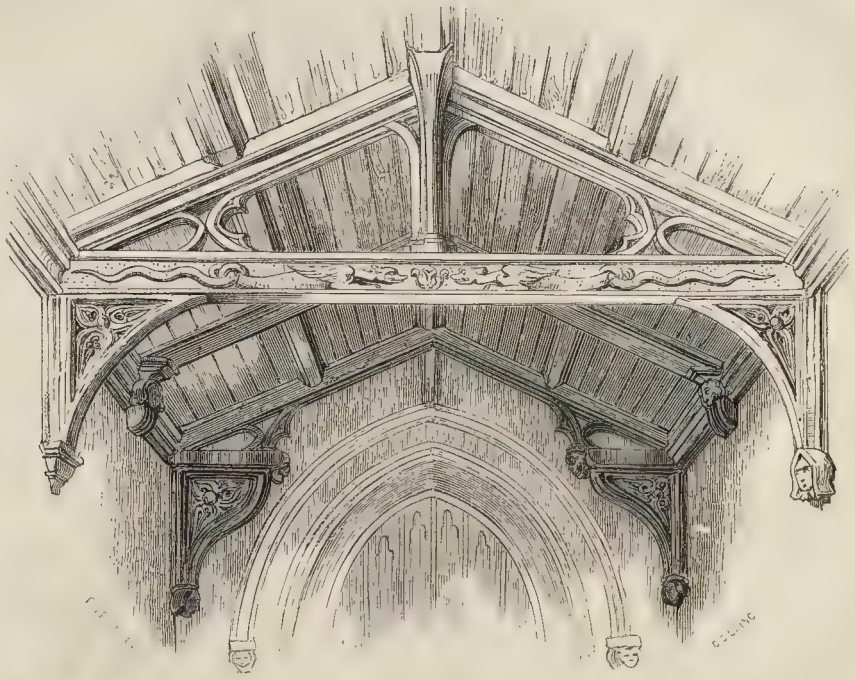
A, section of sill and string.
B, Plan of jamb.
C, Plan of label mould.

## ARTISTICAL CHAT.

The British Institution will open on Monday with only a middling display, the top men being absent. There is no Landseer, no Stanfield: indeed, if we are correctly informed, there is no one work sufficiently prominent to take a visitor there a second time. We shall be able to say more next week.

Sir John Jervis, her Majesty's attorney-general, has been elected on the council of the Art Union of London. "L'Allegro" and "Il

## TIMBER ROOF: THAXTED CHURCH, ESSEX.



Penseroso," have been selected by the council of this body for illustration by drawings on wood, to be executed by the first artists and engravers of the day, and presented in a connected form to all subscribers, in lieu of a print.

An original painting by Michael Angelo has been bequeathed to the university of Oxford by Mr. Fairholme, of Chappel, Lauder, with a direction that it be placed in the new university galleries, where are now deposited the drawings by Michael Angelo and Raffaelle, formerly collected by Sir Thomas Lawrence. The painting represents the infant Saviour asleep on his mother's lap, and originally consisted of a mere sketch, by Michael Angelo; but it was subsequently filled up by his pupil, Marcello Venusti.

The Liverpool papers mention the following act of liberality:—Mr. Charles Chaloner, of Oak Hill, Old Swan, has recently had Mr. Herbert, R.A., staying at his seat, for the purpose of painting his portrait. When the work was finished, the host, without asking the artist's terms, placed a sealed letter in his hand, requesting his acceptance of its inclosure. On opening the envelope, Mr. Herbert found a check for *a thousand pounds*. Another Liverpool patron of art last week, it is said, paid a thousand pounds for a picture by Etty.

A committee has been organized in Dublin to arrange an exhibition of the works of old masters, for the relief of the general destitution. The Earl of Arran and other noblemen have offered to aid the scheme by all the means in their power. Donors, or subscribers of 1*l.* and upwards, are to be considered original members, and have the privilege of admission for the whole season for themselves and immediate family, and exclusive admission during the first week, after which the public generally will be admitted on the following terms:—Season ticket for a single person, and not transferable, 2s. 6d.; single admission, 1s.; catalogues, 6d. and 3d. each.

Mr. Howard, R.A., having retired from the office of secretary to the Royal Academy, with the enjoyment of its emoluments, Mr. J. P. Knight, R.A., has been elected deputy secretary.—The *Art-Union Journal* says, a *Concours* will be opened this month in Paris, for the painters on glass, for the purpose of restoring the windows of the *Sainte Chapelle*, and of some other structures.

We learn from the *Athenæum* that Mr. Severn is painting in fresco the interior of the splendid hall at Gatton Park, near Reigate, the property of the Countess of Warwick. This hall is, we are informed, an exact imitation of the Consini Chapel at Rome, and is lined with the richest marbles from Italy.

Mr. Barry has been elected a foreign associate by the Brussels Academy of Fine Arts.

### TIMBER ROOF: THAXTED CHURCH, ESSEX.

The church of Thaxted is considered by Morant to be "the most spacious and stately, and, upon all accounts, may be called the best, in this county. The length of it is 183 feet, and the breadth 87 feet, in the inside, exclusive of the thickness of the walls and the projection of the buttresses; its circumference, buttresses and all included, is 345 yards. It is built cathedral-wise, with a cross aisle, and consists of a spacious and lofty body, with north and south aisles. At the west end stands a noble tower and spire, all of freestone, the perpendicular height of which, from the summit of the vane to the ground-floor, is 60 yards 1 foot. In it are six bells."

The roof of the south transept, which we engrave, is believed to have been constructed in the early part of the reign of Henry VIII., as the badges of Catherine of Arragon occur in this part of the church. It is a good example of the timber-work of that period, and is well finished in all its detail. The tie-beam is ornamented with boldly-cut figures of winged dragons, with long knotted tails; the ground of the sunken part of the beam being indented similarly to the dotted back-grounds seen in woodcuts of that period. The king-post has a moulded base; the angle of the roof above each side of the tie-beam is filled with tracery, as also on the spandrils which support it beneath, and which rest on corbel-heads, some of which are human, and wear the pedimented head-dress introduced in Henry the VII.'s reign, and others of grotesque and fanciful animals. The principal rafters are supported by similar corbel-heads.

### THE BUILDINGS ACT IN GREENWICH.

A very numerous meeting of the inhabitants of Greenwich and Deptford was held at the Swan Inn, Deptford, on the 28th ultimo, to petition Parliament for the repeal or revision of the Buildings Act. Mr. W. J. Evelyn was in the chair.

Mr. David Wire moved the first resolution:—

"That while this meeting admits that the public safety and health demand that an Act for regulating buildings should exist, yet it is of opinion that the existing Buildings Act does not secure either of these objects in a simple and satisfactory manner."

He pointed out at considerable length some of the annoyances and vexations caused by the Act. "A flue could not be altered to prevent smoke without a demand of 10s. by the district surveyor. A privy could not be built or repaired, nor a chimney-pot or brick removed and replaced without the intervention of the surveyor, at a cost of 10s., nor could he underpin a washhouse, but a demand of 5s. was made. A hog-stye could not be built, pulled down, or altered, without the intermeddling of this agent of the law. The intermeddling and strange interpretation put upon the Act was worse than the payment of fees. The law was unintelligible and badly framed. A neighbour of his had been served with nine informations by the district surveyors on one building. A person could not proceed with any kind of building but he was sure to be entrapped by some clause or other of the Act. He (Mr. W.)

understood that no less than 4,000 cases, since the passing of the Buildings Act, had been laid before the official referee. Did not that show what a mystified law it was? It was a bar to improved ventilation, and indeed to all improvement."

The following other resolutions were then passed, Messrs. Dawson, Corbett, Hall, Knott, Pascoe, Lee, and Irvine taking part in the proceedings:—

"That the interference of district surveyors in small matters, their fees, the fee of the official referee, are burdensome to the class of small builders, and in the first-mentioned cases ought to be abolished, and in all cases modified."

"That it is desirable to have an appeal from the judgment of the official referee."

"That the Act as a whole is unintelligible, and needs in every clause to be revised by practical men, so as to simplify and shorten its provisions, and to remove from it all objectionable and oppressive restrictions."

A form of petition to the House of Commons, and of memorial to the Woods and Forests, was then determined on.

## FURTHER NOTE ON GAS IN THE PROVINCES.

The surveying officers held their first meeting at Southampton on Monday week, but the proceedings were merely preliminary. The case of the new or "Southampton Consumers" Gas-light and Coke Company was opened by Mr. Coxwell, who stated that the great deficiency of gas there at present, and the price, were the grounds on which another establishment was requisite. The inquiry was adjourned till next day, as a short-hand writer was necessary, and does not appear to have been present. A director of the South Western Railway offered the services of the electric telegraph, but in so indefinite a way, that when one of the surveying officers thanked the director, and declared that "it would assist them materially," the solicitor of the old company "excited much amusement by reminding the learned gentlemen that the short-hand writers' notes could not be so transmitted." Neither, indeed, could the short-hand writer himself, for that matter; and as to a telegraphic dispatch in quest of him, in all probability an ordinary messenger by rail would have been equally, if not more effective, as an adjournment till next day had been determined on. Complaints of injury to the gas-pipes and lamps by the excavations for the sewers had been made by the old company to the improvement board; and on considering these, the question was started whether there was not in their lease with the company a reserved power to the commissioners to take possession of the gas works altogether, and themselves to manufacture gas; the very practice through which improvements have been so handsomely supported at Manchester. It is strange that the question whether there be such a reservation in the lease of a company whose establishment and supply are held to be so insufficient and unsatisfactory should only be now started, when another remedy for the evil has been proposed, in the establishment of a new company. It was also wondered whether the new company would interfere with that privilege, supposing it does exist. Now is the time, if it be not too late, to consider the advantage of laying hold of such a privilege, for the common good and the improvement of the town, as has been so successfully done at Manchester, the history of whose gas exploits ought to be before the eyes of the community at Southampton and elsewhere at this eventful moment. If we recollect aright, some statistical and other details of this matter will be found in the Parliamentary Gazetteer of England and Wales: which see.——The enormous per centage which the Gas Company at Mansfield are making on their gas and meters is now a subject of general complaint there. The inhabitants are said to be most scandalously treated too. "The taps of the street lamps are frequently not more than half turned on, and the lights are often extinguished altogether by two o'clock on dark nights. Well may larking gentlemen escape the police. But all this will not be much longer endured. If persisted in, the public must and will take a decisive step."——In addition to our note on the *Liverpool Guardian* gas question, last week, we may here observe, that though the further reduction of the price of gas to 3s. 8d. per 1,000 cubic feet, is a prominent feature of the new measure, another feature, no less prominent and interesting to the shareholders at least, if not to the public at large, is the assurance of a profit of 7½ per cent. even on that unprecedently low price; "and this they are prepared to prove can be realized in consequence of the improvements which science has introduced into the manufacture, and by the vast increase of the population and buildings."——The town council of Berwick-on-Tweed, according to the *Berwick Warder*, have been requested by the inhabitants of Spittal to extend the local Act for lighting the streets with gas, to Spittal, which, strange to say, has not been hitherto done, although it contains a population of no less than 2,000, and although a great portion of that population have now the benefit of gas in their houses. It is full time that a community such as this should be put on a par with almost every small town in Scotland as well as England even of 700 inhabitants, much less of 2,000.

## SOCIETY OF ARTS.

January 27th.—Mr. George Moore, vice-president, in the chair.

The first paper read was by Mr. Irvin, on his "Patent Machinery for the Manufacture of Architectural Carvings," concerning which we spoke long ago. The second communication read was by Mr. Henry Cole, "On the Formation of a National Gallery of the works of British Artists by means of public voluntary contributions." The author proposed, that an exhibition of the works of one living artist should take place in the society's rooms annually; that a graduated charge should be made for admission to view the same; and that, after deducting from the receipts the cost of such exhibition, the remaining fund should be appropriated as a commission to the artist to paint a picture, without restricting him to any particular subject. The picture, when painted, to be presented to the National Gallery, or in some way made the property of the nation, and to be so placed as to be open to the public free for ever. Thus, the author thinks, art might be promoted, and that such commissions would be calculated to obtain from artists pictures which they would feel a pride in shewing to their countrymen as their best works, on which they would rest their fame, and which they would offer to posterity as the best specimens of their genius and ability.

It was stated from the chair, that the proposition had been under the consideration of the council, and arrangements for carrying it out are being made by the Committee of Fine Arts.

Mr. Startin, surgeon to the London Cutaneous Institution, forwarded some remarks "On a Pneumatic Inspirator for the use of Dry Grinders, Divers, Firemen, &c., also on its applicability for the administration of sulphuric or other medicated vapours." The immense destruction of life in that large division of our population, whose occupation produces dust or noxious vapours, the author observed, has attracted the solicitude of physicians for many years past, but no means have hitherto been devised of effectually arresting so great an evil. To give a vivid idea of the nature of this evil, we need but refer to the statistics of mortality among dry grinders of needles or cutlery; by which it appears, that the majority of deaths occur between the ages of twenty-six and thirty. After enumerating the various trades by whom such an instrument might be used with advantage, he proceeded to describe the apparatus, which consists of a thin case of metal, glass, or other substance, 1¼ inches deep, 2¾ inches long, and 3¼ inches in breadth at the base, and is so constructed as to cover the mouth and nostrils, and is retained on the face by an elastic band. This case is provided with two valves, made of vulcanized India-rubber; one is in front of the case, and opens outwards; the other is in the bottom, below the mouth, and opens inwards; a tube is attached to the case, below the latter valve, and opens into the external air, or it may be fixed to a vessel carried in the folds of the dress, and arranged with a tube, having one opening to the air, whilst its lower extremity is immersed in a fluid, which shall absorb or neutralize the noxious particles.

## MUSEUM OF ARCHITECTURE AND THE SOANE COLLECTION.

Sir;—In reference to the leading article in The Builder of January 30th, on the subject of architectural antiquities, in which many judicious remarks and hints are made, I venture to ask a question.

Is the museum of Sir John Soane so irrevocably shut up, in that diminutive fancy den in Lincoln's-Inn-fields, as to be for ever a mere useless toy?

Valuable and most encouraging as this collection might become, as the very nucleus of what the above article advocates, it nevertheless now is, and must remain, in its present confined position, a mere splendid toy, to be gaped at twice a week by "country cousins," and the seekers after gratuitous sights. As to any real value either to professional architects or the lovers of architectural antiquities, and in a more extended and valuable light, as a studio for artists, it is useless; and its costly library is a sealed volume.

But if, Mr. Editor, the will of Sir John Soane is such that the house and collection must remain, like the Siamese twins, inseparable, is it not in the power either of the trustees or of Parliament, so to modify the terms of the bequest as to make it constitute the centre of a collection, and by purchase of adjacent houses, really constitute a museum of "architectural antiquities," worthy the name, and of England,—a fitting and appropriate *vis à-vis* to the museum of the College of Surgeons, and an addition of no mean value to that noble square, and to the grand pile so lately raised by the munificence and good taste of the benchers of Lincoln's Inn?

Your constant reader,

E. W. Smith.

Bedford, February 2nd, 1847.

## GLOUCESTERSHIRE ARCHÆOLOGICAL SOCIETY.

This society held their first *conversazione* at the Shire Hall, Gloucester, on the 25th ult., when the president, Mr. W. Vernon Guise, read an interesting address, which is reported, *in extenso*, in the *Gloucestershire Chronicle*. After inviting the county gentlemen to join their ranks, he said:—

"I would impress upon all the necessity of elevating our pursuit into a *science*, and not permitting it to degenerate into a mere hunt after cabinet curiosities. We must keep in view a higher purpose, if we would aspire to the attainment of such results as, though small, may be no unworthy contribution to the general stock of true antiquarian knowledge. Then, not in vain will these memorials of the past have been strewn around us; and it will be a grateful and ennobling task to trace the history of our county in the numerous relics of bygone ages, scattered over its surface,

> 'Like dials which the wizard Time
> Hath rais'd to count his ages by.'"

A communication from Mr. Purnell B. Purnell, on Roman antiquities discovered at Stancombe Park, was read. In 1819 walls were found there of a small Roman villa, varying in height from one to two feet. Plaster still remained on them about one inch and a half thick. "The material of this was coarse and strong, faced with a coating of about one-eighth of an inch thick, very hard and smooth, and this was painted in fresco. It is known that the Romans used pounded marble for this coat, and painted it while the wall was damp; the paint and wall drying together, the former was not subsequently liable to be rubbed off. The paint on these walls was a striped border, colours, crimson, pink, and green, severally, to different rooms. There was no tessellated pavement. Forest of Dean paving stone had been used in some rooms, and floors of cement in others: there might be about six rooms. Neither Roman brick nor tiles were found, nor any apparatus for heating the rooms."

The excavation now going on covers six acres. The walls of thirty-two rooms are exposed, in five of which are the remains of tessellated pavements. The building was destroyed by fire, the tessellated pavement, with the exception of that in five rooms, removed, and nothing of any value left. The walls are in some places as they fell,—the timbers burnt to charcoal, and the tiles broken.

The villa will be interesting for inspection, not on account of the pavement only, but from the works affording the only opportunity which has as yet occurred in this county of seeing at one view the perfect foundations of a Roman villa, with all its offices and dependant buildings complete, not interfered with by modern buildings, roads, or trees.

## ALL SAINTS' CHURCH, EAST HORNDON.

East Horndon Church is situated about four miles S.E. from Brentwood, in Essex. It stands on a high hill, which commands a magnificent view of the country down to the Thames; and the hills of Kent may be distinguished in the horizon. The village of East Horndon is on the Brentwood side of the hill.

The church has a very singular appearance, as it is built entirely of bright red bricks (the churches generally in this neighbourhood are of this material, stone being very scarce), and roofed with tiles. This is a cross church, and consists of western tower, nave, and chancel, transepts, and south chapel. On the north of the chancel is a small revestry. The transepts intersect at the junction of chancel and nave, and are very short, extending but a few feet beyond the nave walls. The tower is square and massive, and has a large octagonal turret at each corner, which dies off into a gigantic buttress, about 12 feet from the ground. It is divided into two stages by a string course, just above the buttresses, that is to say, at the union of turret with buttresses. The parapet consists of steps; thus, from one turret, it descends three steps, to the centre of the wall; and then rises three to the next; and so on all round. The upper stage contains four long, plain, circular-headed, square-edged windows. Probably, the date of the erection of this tower is about the latter end of the seventeenth century. The staircase runs up the south-east turret.

The windows (with the exception of those in the tower) are all late perpendicular; and (excepting the east window) they are of three lights, square-headed, with foliations and dripstones. There are two in the south chapel, one in the north transept, and another on the north side of the nave. The east window is three-light pointed perpendicular, with tracery. The north door of the nave is pointed perpendicular, with plain mouldings and dripstone; and the south transept contains another plain pointed doorway. A four-centred door opens into the south chapel.

The nave contains nothing of any interest but the font. This is square Norman, standing on four corner pillars, and a centre pillar, all, but the latter, with capitals and bases. It is ornamented with a Greek cross, with the ends trefoiled, and intersecting arches, each subject being represented on two sides. These ornaments are very rude and shallow. It is lined with lead. In Poole's essay on "The Appropriate Character of Church Decoration," this is mentioned as an instance of a Norman font in an unfinished state.* The pillars which support the bowl are modern.

The seats in the nave are all open. There is a small gallery at the west end.

The north transept contains only the mutilated remains of an arch (apparently the canopy of a tomb) in the wall. In Salmon's time (about 1760), there was a mutilated monument, which he mentions as having part of an inscription in brass, bearing the date 1400; it was then said to be in memory of one of the Tyrell family. In the south transept is a black slab resting on solid masonry, and let into the wall. At the back of it, on the wall, are the marks of brasses. Salmon states that, "under the south wall are the effigies of a man in armour, with his children kneeling behind him, of whom, not so much as tradition informs us." This is the only tomb he mentions as being in the south wall, and it is the only one remaining in that part of the church to which he could possibly refer. This transept is a chapel belonging to the Petres; but there are, I believe, none of that family buried here.

Internally, the separation of nave from chancel is marked only by the distinct roof, and the ascent to the rood loft, now used to reach a small gallery. The chancel has a groined oak roof, and at the intersections are bosses, with the vine leaf, shields, and the usual perpendicular ornaments.

Just below the altar steps is a large incised slab of alabaster, seven feet by three. "It represents a female with a horned head dress, within a canopy, the shafts of which are composed of a series of niches, five on each side, containing figures of the children of the deceased, each of whom holds a label, on which their names are incribed. Those on the right side are: "Walterus p'mogenit', To...., Will'ms, senr., Joh'nes, Will', junr. On the left side, Johe's Tirill clic' (abbreviation of clericus), Alicia, Elizabeth, Alionora," the last a female figure with hands conjoined in prayer, is without a label. On the sides of the head of the figure is "j h s mercy;" also two escutcheons of arms, one of Coggeshall, the other of Tyrell and Coggeshall. The inscription runs round the verge of the slab, and has at the corners the symbols of the evangelists; it is as follows:—"Hic jacet humata Alicia, filia Will'mi Cogesale militis et Antioche consortis sue quondam uxor John'is Tyrell militis, qui quidem Joh'es et Alicia habuerunt inter se exitium filios et filias quor' noi'a hic scripta sunt ex utroque p'te istius lapidis que obiit anno domini millesimo cccc°xxii° cui' anime propiciet' deus, amen."* Which may be thus translated:—Here lies interred Alice, daughter of William Cogesale, knt., and Antioche, his wife, formerly the wife of John Tyrell, knt., which said John and Alice had between them issue, sons and daughters, whose names are inscribed on both sides of this stone, who died in the year of our Lord 1422, on whose soul may God have mercy. Amen. "The slab is in fine preservation" (that is as to the engraving, for it is cracked seriously in three places); "and of French design and execution; but one other of the same kind is known in England" (this refers to its French character),—"that at Brading, in the Isle of Wight. This, though of not quite so rich a design, is in a better state of preservation."†

The supposition of its French origin, is thus confirmed by Salmon—"John Tyrell Knyth, was by Henry Vth. appointed captain of the carpenters, for the new works at Calais, to be paid 12d. a day's wages."‡ In a pew in the chancel, are preserved two poppy heads, of perpendicular design. On the north side of the chancel is (what is now used as) a revestry. The probability is, that it was originally a chantry chapel. It is groined with oak, with perpendicular bosses. Over the door is the trace of an arch extending the whole length of the chantry, which was apparently divided from the chancel by a screen. At one end, a brass is fixed against the wall. It represents a widow wearing the wimple, and is about two feet long. There is no inscription.

In the east window is some modern stained glass; originally, there was the following inscription in this window—"Thomas Tyrell Knyth, and Dame Eleonora, and for all the soulys that schuld be preyd for. Prey for the welfar of the seyd Thomas Tyrell Knyth, of John Tyrell Knyth, Alice his wyffe, and for all Christen soulys."§ This refers to John Tyrell and Alice, above mentioned, and the father and mother of the former.

The south chapel (which belonged to the family of Tyrell), is separated from the chancel by two four-centered arches resting on piers, which consist of four half pillars with a cavetto connecting each, with octagonal capitals. The mouldings are good, and the whole is a favourable specimen of perpendicular work. There are several modern mural tablets to members of the Tyrell family, but the most interesting is to one who adhered to Charles I., and suffered for his loyalty. On the wall are hung a helmet and two gauntlets in good preservation.

This church is in a good state, everything is clean, and every remnant of antiquity appears to receive that respect which is due to it.

There is a report that the head of Queen Anne "Bullen" is buried under the black marble slab in the south wall above-mentioned; but what foundation there is for the report I do not know.

### HISTORICAL NOTICE.

The parish of East Horndon was known before the Conquest as Tornindune. Suene held it at the time of the Survey, and the whole continued for some time in his family.

Upon the forfeiture of Henry de Essex, the standard bearer, this estate was given to a family surnamed De Cornhull, by King John, in whose hands it continued till it passed into the family of Neville, by the marriage of Joan de Cornhull to Hugh de Neville. He gave an entire manor* in Thorndon to Waltham Abbey, which gift was confirmed by his son, John de Neville. We find frequent mention of the De Thorndons; probably this branch of the Nevilles took that title. This manor remained in the hands of the Abbey of Waltham till the suppression. Henry VIII. then granted it to Sir William Petre, and it still remains in that family. The rest of the parish (with the exception of the manor of Herongate) continued in the descendants of Neville till the reign of Richard II. Henry IV. and his successors retained the estate in their hands, probably belonging to some Yorkist.

The manor of Heron, or Herne, appears to have been derived from a hernery here. The family of Heron possessed it, and it came by marriage into the hands of the family of Tyrell, by the marriage of Sir James Tyrell to Margaret, daughter of Sir William Heron, in the reign of Edward II. or III. He was succeeded by his son, Sir James: then came Sir Walter, and then Sir Thomas. This family was anciently of great power and importance in Essex, being supposed to have descended from the Walter Tyrell who shot Rufus. Many members of it held the office of sheriff of Essex. Thomas Tyrell was knight of the shire several times under Edward III. The manor of Herongate was held by Sir John Tyrell in 1413, captain of the carpenters and sheriff of Essex under Henry V., and treasurer of the household to Henry VI., by Sir Thomas Tyrell in 1476, and Thomas Tyrell in 1591. His son Sir John succeeded; then his son was created baronet in 1666; his son Sir Charles succeeded him, he died in 1714, and was followed by his son Sir John, who died in 1740.

The hall at Herongate was destroyed during the last century, and nothing was left but two towers, which are engraved in the "Beauties of England and Wales."

East Horndon Church has been engraved in the Antiquarian Repertory, published in 1817.

Thorndon Hall, the fine seat of Lord Petre, built from the designs of Paine, is situated within this parish.

Amateur.

## THE YOUNG ARCHITECTS OF ENGLAND

BY ANOTHER OF THEMSELVES.

Mr. Editor,—Allow me to ask a question of you or any of the older members of the profession,—"What is a young architect to do, and how is he to get on?"

Suppose he is out of his time; has been on the continent (we won't say for how long) for improvement; has no end of sketches and drawings; a love for his profession; and a very great desire to be doing something. He then goes into an office; thinks Mr. T. Square a very nice man, but that he knows nothing about "Christian architecture," and is a regular "Pagan," so he leaves him, and walks off to Mr. Workallnight, who "sends in" for every competition advertised in the London or country newspapers. This architect (who never did any thing but compete and get the second premium), commences his drawings just three days previously to their "going off," and always writes to the committee, asking for more time, "as a month is so short a period for getting up the splendid drawings that he intends to send them." However, in they go on the day named, having, with those in the office, worked for the three nights until three in the morning; and when, after all, he finds that some one has been more fortunate than himself, writes to The Builder, complaining

* Page 45. It is here called the font at Herongate; but Herongate was a manor within this parish, as afterwards described.

* It will probably be noticed, that in this inscription, and the names above, the mark of abbreviation is omitted in some instances, and misplaced in others; but they have been copied with care, and afterwards compared with a rubbing.

† Journal of the British Archæological Association, No. IV., p. 314.

‡ "History and Antiquities of Essex."

§ Salmon.

* Now known as Horndon in the Vale, or low Horndon (I forget exactly which); however, it is expressive of its situation, being at the bottom of the hill on which the church stands.

of the scandalous way in which competitions are conducted, and wondering why architects can be so stupid as to spend their time and talents in such chance-work.

Well, our friend is determined, after leaving Mr. Workallnight, that he will send in for the first church that is advertised for; he does a nice set of drawings; slashing perspective, illuminated writing (which the committee cannot read), gilt frame, plate-glass, and "fair play" for his motto; thinks he *must* get it, but does not; the cheesemongering committee have given the premium and *job* to some builder of the town, and have actually traced all his drawings, and not returned the perspective.

Never mind, I'll send in for the next, he says; this time he *must* get it, but no, he's done again. —— and —— are the lucky ones; *some one* has earwigged the committee, for if it had been all fair, they must have given him the premium. Well, on he goes, sending in for every thing and getting nothing, until at last he is quite sick of competitions.

Hang it, I'll set up a brass-plate he thinks; so gets himself into chambers on some second floor (for *if* any one comes, and will mount one flight of stairs, they would not mind another), and soon a very bright brass-plate glitters in the sun on the newly painted door.

He decorates his room with rubbings of brasses, a few casts, some old chairs, and perspective views of unsuccessful competition designs for churches, lunatic asylums, and cemetery chapels; the room looks well, and highly architectural.

But what, Mr. Editor, is the use of this brass plate? people do not run after an architect as they do after a doctor: a gentleman does not run about the streets for one, or rush into a cab and tell the man to drive as quickly as possible to the nearest architect, as his house requires to be restored, or to have some Italian tower, or Gothic window, or something else erected in some part or other. What is it for? and *what is a young architect to do?* Let him go to the Royal Institute of British Architects, and see if he can get an answer from those who give advice gratis to "the junior members of the profession."

"Young man, you must not expect everything at first." "No, Sir, I do not; for if I had every thing at first I should get nothing afterwards: what I want is to get something."—"Get your friends to give you a job." "But suppose they don't choose to pull their houses down on purpose for me to put them up again, or if they would rather have nothing to do with bricks and mortar, what must I do then?"—"Try your luck again, and compete for the Army and Navy Club; there are a couple of capital premiums, and if you do not get either, why the drawings will be sure to be exhibited, and you may have your designs spoken well of in some of the papers; that will be a *little* consolation for you, will it not?" "To be sure it would; but I should not grow very stout upon it: do you think I should?—"Ah, you must look at architecture 'not as a business, but as a *fine art*.'"

It's all very fine, "but what is a young architect to do, and how is he to get on?"

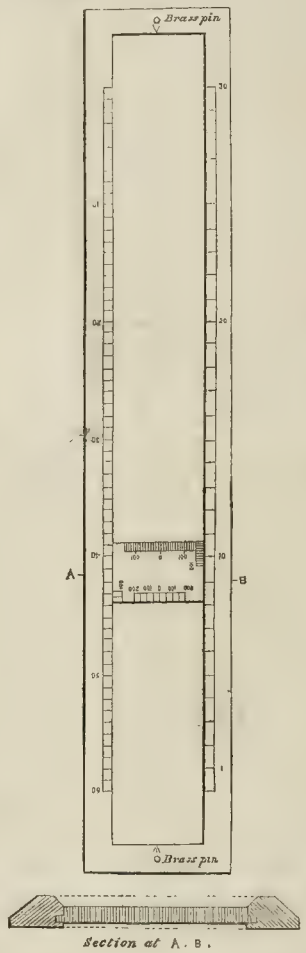
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RYDE ESPLANADE AND PIER-STREET IMPROVEMENT.—Surveying Officers have been sent to Ryde for the purpose of inquiring into the merits of the proposed improvements there. Evidence has been laid and statements made, from which it appears that the plan has in contemplation the removal of the present unsightly houses forming the north side of Pier-street, and the formation of an esplanade at an expense of 15,413*l.*, with buildings of a regular and handsome elevation, fronting the sea, and extending from the pier to, or near to, the battery west of the Royal Victoria Yacht Club-house. The sea wall is to be faced with stone, backed with concrete, and have stone copings. It is to be in width 5 feet 6 inches at bottom, 3 feet 6 inches at top, and 14 feet above the line of the shore. The expense of filling up was estimated by Mr. Gilbert McDougall, who prepared the plans, at 9d. a cubic yard for 20,000 yards. Mr. Thomas Hellyer, architect and surveyor, however, did not agree with the estimates of Mr. McDougall. The filling up of 22,945 cubic yards he estimated to be requisite, at a cost of 2,390*l.* 2s. 1d.; and piles, he considered, would be essential for safety. It is also proposed to improve the drainage.

## NEW PLOTTING SCALE.

SIR,—The circulation which your valuable publication has in almost all the engineers' and surveyors' offices, as well as in the artists' studio, and the operative's sanctum, induces me to send you a drawing of a plotting scale which I have devised, and which I think the profession will find most useful upon adoption. I will state my reasons for preferring this to the present scales.

The method of plotting the field notes from the scales now in use, I have experienced to be not only tedious and awkward, but attended with a great chance of incorrectness. They may be used with much nicety and carefulness, yet the eye cannot and will not be constantly looking at the commencement of the line to which the scale is set, to see if it has shifted itself. Shiftings accordingly often occur, and are not discovered until the offsets are laid down. The draughtsman finds that




*Section at* A. B.

the offsets do not cut the crossings on the base line, when he has to rub out the major part plotted. Again, the offset scale at one end is apt to slip unobserved on to the figured bevel part of the chain scale, causing it to be inclined, and in such a position the offsets are not laid down at right angles with the chain line. This observation to some, perhaps, may appear futile, but it is not so, and the practitioner will confirm what I state. Besides, the offsets ought to be laid down with as much exactness as they are taken, and indeed at times they are of *more* than ordinary importance, and the least inclination of the scale, especially if the offsets approach 100 links, plotted to a "three-chain scale," will throw them out of their relative position ten or fifteen links.

Further, the edges of the present scales are not in the least protected; they get chipped, become "blind scales," and are useless.

The scale which I have devised will prevent these occurrences. The two little brass pins, one at each end of the scale, will keep it in its place. The offset scale works in a groove, and so cannot slip on to the bevel part of the chain scale, and the offsets taken on each side of the line may be plotted without moving the scale.

The divisions on the offset scale, parallel with the chain, will be found quite sufficient, and the figures being marked upon the latter *perpendicularly*, the same may be read off with much more ease and rapidity.

EDWARD C. S. BLAKE,
Architect and Surveyor.
No. 1, Lancaster-place, Waterloo-bridge.

*** The drawing of the scale respesents it half real size. The section is of the full size.

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## THE IRON TRADE.

THE prospect of a *future* rise in the price of iron, with which the iron-masters have been for a long time congratulating themselves, still remains but a future prospect. Or rather, the false glitter of future gold with which it has been attempted to cajole them into an inflation of past and present prices has turned out but a will-o'-the-wisp, which they themselves have now repudiated. "The general impression amongst the great makers [at the late quarterly meetings] seemed to be, that there had been an attempt made to raise prices inconsistent with the legitimate demand for iron." And the secret of the modus operandi has come out, since it has been found that the attempt was somewhat indiscreet, and rather, therefore, to be repudiated than to be taken advantage of, which, no doubt, it would have been, had there been any prospect of maintaining an advance; but "it was the opinion of the meeting, that if they declared an advance, there would be a difficulty in maintaining it, exclusive of the confusion which it would cause in the trade." Therefore it was determined to sacrifice their indiscreet advocate at the Molochite (or the Mammonic) shrine of public opinion, and thus to make a *virtue* of *necessity*. Accordingly "Certain statements, which appeared in a local paper, with the evident intention of writing up high prices, were referred to at that meeting, and such attempts were very generally and very *indignantly repudiated*." The declarations of the heretofore oracle, therefore, were even characterized as "random assertions made by parties either reckless of the statements they publish, or misinformed on the subject on which they profess to enlighten the public." Where are we to look for that light, then, since what was once deemed a truthful leader has turned out but an *ignis fatuus*. At all events, the acknowledgment or declaration quoted in our last note on the quarterly meetings, and which has probably paved the way for the present repudiation,—that all who charge *low* prices are *small* masters,—a very ingenious one, indeed, which merited a better return from the *great* masters than repudiation,—leaves us, who believe a little in the converse at least of the axiom, no reliance on the dictum of the great masters at their quarterly meetings; and therefore we need not quote *their* prices any more unless induced by circumstances so to do. Besides, there being little or no change of previous quotations, in the meantime, there is no reason for quoting the prices of any class at present.

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MANURE COMPANIES.—Inquiries relative to the application of the Metropolian Sewage Manure Company for an Act of Parliament, have been referred by the Commissioners of Woods and Forests to Sir Henry T. de la Beche and Mr. Frederick Luard Wollaston, of the Middle Temple, barrister-at-law; and similar inquiries relative to the London Sewage Chemical Manure Company, to Sir Henry de la Beche, Mr. F. L. Wollaston, and Drs. Richard Phillips, and Lyon Playfair. The latter inquiries are to be entered on 11th February, 10 A.M., and the former on 17th February, 10 A.M., both at the Freemasons Tavern, Great Queen-street; where all interested, and any one else, may be heard, witnesses examined, plans and documents exhibited, &c.

## MEANS ADOPTED TO BUILD ST. PETER'S IN ROME.

PRESERVATION OF MONUMENTS.

A SHORT time ago we gave a translation of the brief by which Leo X appointed Raffaelle architect of the Roman cathedral.* The *Engineer's Journal* for the current month contains the following brief, from the same pope, to facilitate the provision of materials for the same work, and prevent the destruction of ancient monuments:—

"TO RAFFAELLE URBINATE.

As it is most necessary for the construction of the Roman temple of the Prince of Apostles, that stone and marble, of which we ought to have an abundant supply, should be rather procured at home, than be conveyed from abroad; and as it has been ascertained that the ruins of Rome contain a great quantity of these materials, and that all persons who, either in Rome or even in the neighbourhood, intend to build, do appropriate the same to their own use; I make you, whom I use as the master of this said temple, the overseer of all the marbles and stones which, henceforth, may come to light at Rome, or at a distance of ten thousand paces therefrom—for this reason, that you shall purchase for me those which may be proper for the edification of this temple. Therefore, I command all people, middle, highest, lowest, that wherever they shall, hereafter, dig out marbles or other stones, of any kind, within the space assigned by me, that they shall acquaint you, the overseer, forthwith, of the nature or kind of every thing so discovered or excavated. And also, that whoever shall not do so within three days from the time of such discovery, he be fined from 100 to 300 gold coins, as shall appear to you fit. And, moreover, as I have been informed, that much of ancient marble and stone, engraven with inscriptions and other monuments, which monuments often bear some exquisite stamp of art, and ought to be preserved for the cultivation of literature and the improvement of the Roman tongue, are vilely cut up by the marble-workers as building material, and that thus the inscriptions are destroyed, I command all persons who exercise the trade of cutting marble and other stones, that, without your orders or permission, they may not dare to cut or work any inscribed stone,—applying the same fine, as aforesaid, to all who may act otherwise than I command.—Given this sixt Cal. of September. Year three. Rome."

## GERMAN KNIGHT-CASTLES (RITTENBURGEN).

AMONGST the restorations (re-*habilitations!*) recently made, the *Burg* Lichtenstein, near Reutlingen, re-erected by order and under the care of Count William of Würtemberg claims especial note. Above the village of Honau, on a rock 800 feet high, and whose peak rises obelisk-like in the air, Lichtenstein rises free in the skies, its towers being 160 feet high. That same mind, which imparted to this *Burg* its external shape, *picturesque* on all sides, with its walls, and pinnacles, and balconies, and gables, and sollars, and the manifold tiers of stories—has arranged also the inside with poetic feeling, so much so, that the claims, as well of sentimentality, as those of a sociable life, then almost constantly turned for festivity, are equally attended to. There is the entrance hall with its fine sculptures, and cheerful and admonitory inscriptions; the hall of armour, with its seats cut in the main rock of the foundation—the chapel with its mysterious dim; the more homely chase and banqueting-hall (*Jagd und Trink-Stube*), where every utensil reminds of the manly sportiveness and hilarity of a vigorous ancestry! The dwelling-rooms exhibit a vast amount of German mediæval art, or modern science—and the platform of the tower ranges over a sublime view of the Alps, from the Jungfrau to the Zugspitz—views sublime, denied to us northern Cimmerians. Of the ancient pictures preserved at Lichtenstein much might be said—but suffice to redeem from oblivion an old Swabian master, older even than Zeitblom, and whose works seem to have influenced that worthy *picturer*. His forms are very free, his technicism exceedingly perfect, both pointing (as many other works of old German school) to that of the Flanders Eycks.

Near Hechingen, lays Hohenzollern—the cradle of the ancestors of Frederick the Great—yet in its state of grandeose ruination, but the present king has given orders to recall it to pristine beauty.

* Vol. IV., p. 595.

## New Books.

*Punctuation Reduced to a System.* By WILLIAM DAY. Ollivier, Pall Mall. 1847.

A VERY useful little book, and we recommend it to all our readers. Correct punctuation is of great importance, even in the business of every-day life; the want of it often produces annoyance and trouble. For example, "The contract made for lighting the town of Liverpool, during the year 1819, was thrown void by the misplacing of a comma in the advertisements; thus: 'The lamps at present are about 4050, and have in general two spouts each, composed of not less than twenty threads of cotton.' The contractor would have proceeded to furnish each lamp with the said twenty threads; but this being but half the usual quantity, the commissioners discovered that the difference arose from the *comma following*, instead of *preceding*, the word *each*. The parties agreed to annul the contract, and a new one was ordered."

"That the above-named advertisement," says Mr. Day, "was drawn up by the solicitor of the Liverpool commissioners, there is little doubt. It would, therefore, not be punctuated at all, according to the custom of the legal profession. But the printer was not permitted to follow so bad an example. *He* was expected to supply the necessary points, that the notice might appear before the public in a readable state."

He then, with justice, remarks, "*Why* the gentlemen of the legal profession, who take such pains to make their meanings clear, and who employ such a multiplicity of words to effect their object, should deem *pointing* unnecessary, it is difficult to explain. Misconceptions are likely to arise in *all* kinds of composition, when written in a language so equivocal as the English; but, if the aid of points is required in any one kind *more* than in another, it is surely called for in all forms of law. The longest and most tautological writings stand in the greatest need of points. The original copy of a long act of parliament, or a verbose deed of conveyance, or a marriage settlement, engrossed upon many skins of parchment, without a point from the beginning to the end, may be almost unintelligible to a common reader; as nearly so, indeed, as if penned in an unknown tongue. If points were used in such documents, they might be *considerably abridged*, to the manifest advantage of those who pay for them; for, as Mr. Booth tells us, "The conveyancers account for the tautologies which abound in legal deeds, by reason of their being written wholly without points."

*Memoirs of Benvenuto Cellini, written by himself, containing a variety of Information respecting the Arts, and the History, of the Sixteenth Century.* Translated by THOMAS ROSCOE. H. G. Bohn, York street, Covent Garden. 1847.

A MORE curious and vivid piece of autobiography than that of Benvenuto Cellini was never written. Engaged for Francis I., Charles V., Pope Clement VII., and Duke Cosmo of Florence; and intimate with Michæl Angelo, Titian, Giulio Romano, and the other giants who lived at the beginning of the sixteenth century, he brings close before us in his graphic self-willed style (not always to their advantage, by the way, in point of morals), those whom we have long contemplated at a distance and in mist. Though through his self-confident and irritable disposition, he appears to have been constantly engaged in squabbles, and often offended his best friends, admiration of his talents as an artist, and of the real good that was in him as a man, kept them still about him, and enabled him to escape from many difficulties in which his own acts had involved him.

Mr. Bohn has acted wisely in selecting this work for his marvellously cheap "Standard Library;" it can scarcely fail to have a large sale. We may mention, for the advantage of those who are not aware of it, that there are many admirable specimens of the wonderful skill of Cellini, as a worker in metal, in the gold closet at Windsor Castle.

## Correspondence.

WOOD AND IRON BOND.

SIR,—From perusing your leading article of last week, I am induced to offer a few observations upon the subject of wood and iron bond. Having had great experience in practical matters, you will allow me to state that I have always found wood bond alone preferable to either iron hooping, or iron hooping and occasional courses of brick in cement. It is obvious, that iron hooping, of itself, will not prevent irregular settlements, because, by the elasticity of the iron, it will bend to suit such settlements, and, therefore, is of little use without the addition of some other means to counteract that elasticity; for which purpose the laying of courses of brick in cement has been resorted to, and even then, in many instances, I have known it to fail.

If wood bond be thoroughly well tempered and seasoned before using, it will answer in every way the purpose desired, namely, the securing the building from irregular settlements. Of course, I conclude that there has been a thorough good foundation laid before commencing the building, for without that necessary precaution, it is absurd to talk about securement from settling.

I cannot close these remarks without adverting to the present Metropolitan Buildings Act, which, by prohibiting the use of wood bond or plate, has been the cause of so many failures. From the multiplicity of cases which have come under my own observation, I am led to believe, that nearly two-thirds of the buildings erected since the 1st of January, 1845, are badly constructed. I refer chiefly to the private houses in the suburbs of the metropolis, in which I have seen the floor joists with their ends just lodged on a projecting piece of thin stone (hardly worth calling a template), and I am confident that very many of them will not stand twenty years.

I am, Sir, &c., A BUILDER.

26th January, 1847.

MODE OF SELECTING A SURVEYOR FOR LIVERPOOL.

SIR,—I can confirm the statement made in your last number, as to the unfairness with which the election of surveyor for the Borough of Liverpool has been conducted, having received a letter (some days previously to the publication of the number of your journal alluded to), from a gentlemen residing in Manchester, stating, that out of the sixty-three candidates, "five had been *selected*, but that they were all put aside to make room for some one recommended by Mr. Hartley, but who was too diffident to make the application in the usual way," Now, Sir, I think it too bad for the corporation of Liverpool to trifle thus with the public, by advertising for parties to send in testimonials, and when some three-score of gentlemen take the trouble to procure testimonials from their friends, they are all to be set aside for some one "too diffident" to make the application, and who probably had no testimonials, but only a recommendation from Mr. Hartley.

I, for one, have received testimonials from gentlemen standing very high in the profession, and feel that it is in a certain measure an imputation on those who give testimonials, as well as the candidates themselves, to be set aside so easily.

I inclose my card, and shall be happy to produce the testimonials alluded to if the committee will have the courtesy to return them.

I beg to subscribe myself

ONE OF THE CANDIDATES.

29th Jan. 1847.

ARCHITECTURAL COMPETITORS.

SIR,—Permit me to say a few words on the subject which appeared in your last number under the head of "Redress for Competitors." The architect does not sufficiently regard his profession. The solicitor and the physician demand their fees for what they do, and why should not the architect be paid according to

his talents? The power is in his own hands to protect himself, but he will not use it. The moment he sees an advertisement for a plan, and too generally the premium is inconsiderable compared to the professional value of such required plans, he, without first setting down and counting the cost of so great a work, and the risk occasioned by the competitors being numerous, immediately applies for the particulars; and when they are obtained, he devotes all his thoughts to the matter, till his composition is placed on the paper. He then forwards them to the advertising committee; he anxiously waits for the decision day after day, and at last, probably, he receives a note (without any thanks for his production) merely to say that the committee selected a competent person to decide on the best plan for the purposes required, and that Mr. So and So's has been selected. Then the architect begins to reflect; he then estimates the value of his design, and finds his labour has been spent for nought. It is important that each competitor should carefully watch the movements of these committees after the plan is chosen, and ascertain the amount of estimates for the execution of the works from the chosen plans: if the amounts exceed the statements in the advertisement, the contract is then certainly broken by the committee, and he should resort to the course laid down by "Defenso." Also, let the whole matter be brought before the public, by means of your publication, which is found so exceedingly useful in all architectural matters. I trust you will pardon me for thus intruding at such length, but it appears that the unpleasantness which is experienced by us may be much lessened if this course be adopted; and that, instead of spending all our time and abilities for the benefit of others, some return may be obtained for ourselves.

I am, Sir, &c.,
Ramsgate, Feb. 1, 1847. W. E. S.

TENDERS FOR COTTON-MILL AT PLEASLEY.

DEAR SIR,—A paragraph appears in your number of Saturday last, in which our name appears as tendering for a cotton mill, at Nottingham. We have never done so; but it appears one Mr. Thomas Burton tendered on his *own* account, ordering an agent to do so, he never seeing the estimates or drawings before delivery. This agent appears to have made a serious mistake. And Mr. T. B. is as much astonished as your correspondent observes "The natives are." Yours respectfully,

THOS. BURTON AND SONS.

150, Aldersgate-street, Feb. 1st, 1847.

CURVED IRON GIRDERS.

SIR,—Being unable to meet with any formula for determining the strength of curved iron girders, you would oblige me could you, or any of your correspondents, furnish the means of determining the ratio between a flat iron girder and a curved one of the same form and transverse sectional area.

I am, Sir, &c., G. S. P.
Manchester, Jan. 25, 1847.

P.S. Can you inform me also if any experiments have been published? I find that the experiments of Mr. Eaton Hodgkinson treat only of flat girders.

EXPENSE OF PRIVATE BILLS.—It is to be hoped that the evidence on this point, taken before the House of Commons last session, will lead to some change. Mr. Chadwick shewed in the case of an opposed water bill that one-fourth of the money on which the inhabitants would have to pay interest, went for Parliamentary expenses. It is asserted that the money expended in Liverpool for the private Act legislation would have sufficed for the effectual drainage of more than 2,000 houses.

CHICHESTER CATHEDRAL.—A meeting was held in this cathedral on the 14th ult., to take steps for obtaining funds for its much needed restoration. The Duke of Richmond, we are told, gave 500*l.*, and Mr. J. A. Smith, M.P., the same. The dean, who has taken up the matter warmly, proposes to build a new church close to the cathedral, for a congregation which has from time immemorial assembled within the latter; on what sufficient grounds, however, we have not yet heard.

## Miscellanea.

PROJECTED WORKS.—Advertisements have been issued, through the past and previous week, for contract-tenders for erection of cottages at Ashford; station and other works at Hull; tunnel at Woodhead; fence wall at Swinton, with gates, iron-railings, &c., also for 2,500 tons of rails and 750 tons of chairs for Malton and Driffield Railway; the whole works on about 5½ miles and 1,120 yards of Birmingham, Dudley, &c.; a portion of Fleetwood, Preston, and West Riding Junction; 8 miles 1 furlong, 3¾ miles and 7 miles 2½ furlongs of Manchester and Leeds; 6 miles 30 chains of Bristol and Exeter; 3¼ miles and 5¼ miles of Whitehaven and Furness; 21 miles of Glasgow and Carlisle, in two or more divisions, also 4 miles of same; and 3,200 yards of Edinburgh and Bathgate Railways; also repair of Bromyard turnpike trust roads in 8 districts; sewering, making, and macadmizing road at Birkenhead; repairs of roads, wells, &c. and granite chippings, gas fittings, &c. for metropolitan districts; erection of a house and offices at Teignmouth; of farmery at Bury; and five houses at Stafford; razing and rebuilding bridge at Staleybridge, with iron roadway; rebuilding seven bridges in Cardiganshire; taking down and rebuilding bridge at Dalmuir, Scotland, and culvert there; three portions of cutting, embanking, and masonry with sluices, wooden bridges, roads, reservoirs, basins, conduits, &c., at Gorbals water-works, Glasgow; and for 100 cast-iron lamp-posts with wrought-iron lantern frames, pitching-irons, nutts, screws, &c., at Liverpool. By a mischance some of the above were omitted last week, but most of them are still current.

DIMENSIONS OF EUROPEAN CHURCHES.—The *Roman Advertiser* of December 26th, says "those who attended at St. Peter's during the august ceremonies of Christmas-day, might, perhaps, have imagined that temple, in all parts open to the public during the function, as much crowded as possible. To shew the impossibility of St. Peter's being *ever* crowded, we annex the following statistics of its capabilities, as compared with other great churches, allowing four persons to every quadrate meter (square yard):—

| | Persons. | Sq. yds. |
|---|---|---|
| St. Peter's | 54,000 | 13,500 |
| Milan Cathedral | 37,000 | 9,250 |
| St. Paul's, at Rome | 32.000 | 8,000 |
| St. Paul's, at London | 25,600 | 6,400 |
| St. Petronio, at Bologna | 24,400 | 6,100 |
| Florence Cathedral | 24,300 | 6,075 |
| Antwerp Cathedral | 24,000 | 6,000 |
| St. Sophia's, at Constantinople | 23,000 | 5,750 |
| St. John, Lateran | 22,900 | 5,725 |
| Notre Dame, at Paris | 21,000 | 5,250 |
| Pisa Cathedral | 13,000 | 3,250 |
| St. Stephen's, at Vienna | 12,400 | 3,100 |
| St. Dominic's, at Bologna | 12,000 | 3,000 |
| St. Peter's, at Bologna | 11,400 | 2,850 |
| Cathedral of Siena | 11,000 | 2,750 |
| St. Mark's, Venice | 7,000 | 1,750 |

The piazza of St. Peter's, in its widest limits, allowing 12 persons to the quadrate meter, holds 624,000; allowing four to the same, drawn up in military array, 208,000. In its narrower limits, not comprising the porticoes or the paizza rusticci, 474,000 crowded, and 138,000 in military array, to the quadrate meter.

FALL OF CHIMNEY AT WIGAN.—It seems to us of considerable importance that the particulars of the construction of the enormous chimney, which fell the other day, at Mr. Dodd's chemical works, at Wigan, should be known. It has occupied several years in construction, and was 400 feet high. Shortly after its completion an indention of one side near the top was observed, and was watched daily, when, after a further lapse of time, a very apparent deviation from the perpendicular had taken place, and the base slightly parted from the side of the excavation. A further inclination being observed, the advice of Mr. Fairbairn, civil engineer, of Manchester, was obtained, and we believe he recommended a portion of the top being taken down. This was done, and about 80 ft. had been removed when it fell. For some time past a further sinking of the base had been observed, and a series of stays were being constructed to place round it.

## TO CORRESPONDENTS.

"*Jackonoxides.*"—A plate may be used to receive ends of rafters of leanto-roof. Dripping eaves must be made fire-proof. If plate be left exposed, it must be 4½ in. from face of wall. A diagonal arch over a brestsummer is not enforced by the Act.

"*W. O. O.*"—We should claim *all* repairs now necessary.

"*H. J.*" (Walworth.)—We have often pointed out the tendency of the employment of external cement work to induce defective and unsound brickwork.

"*Railway Bridge,*"—A correspondent says, he has invented a wood and iron bridge suitable for bad foundations, and asks how he can make it of service to him. We cannot advise him.

"*A. G.*" (Birmingham.)—Write to Mr. Scott Russell, Secretary Society of Arts, Adelphi. (See our advertising columns.)

"*D. C.*" (Brighton.)—Ditto.

"*W. W.*"—The restoration of old Upston Church, near Slough, was strenuously advocated in our third volume.

"*J. D.*"—We have constant inquiries for the means of preventing what he complains of, namely, the vapour on shop windows when the gas is burning, but can only give a general reply—improve the ventilation. An Arnott's valve in the chimney-flue might be useful.

"*A. J. G.*"—We cannot insert the letter, which is simply an advertisement; nor can we judge of the system without knowing what it is.

"*F. E. S.*"—The following description of a cheap filter was given in our third volume, p. 313:—"On a small scale, an efficient filtering vessel may be formed of a common garden-pot, well burnt, and with holes in the bottom; the lower part to be filled with round pebbles, then some smaller pebbles, then some coarse sand, and finally a stratum of pounded charcoal, three or four inches thick; the use in large filters of broken shells interposed between the gravel and sand, is a great improvement, inasmuch as the fragments being flat, overlap each other, and counteract the tendency of the sand to settle amongst the gravel, thus preserving a free percolation through the lower strata."

*Received.*—"T. S.," "Subscriber," "H.W.," "Bloomsbury," "A Reader," "A Constant Reader," "S. V. C.," "J. Jones," "A." Coxe's "History of the House of Austria," London (H. G. Bohn), 1847; "Dolman's Magazine" for February, 1847; "An Address to the Inhabitants of St. James's, Westminster, on Circumstances Affecting Health," by a Retired Churchwarden (Ridgway).

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

CHEMISTRY as APPLIED to CONSTRUCTION.—The second paper on this important subject will be given next week.

NOTICE.—Covers for Volume IV. of THE BUILDER, may be obtained at the Office, 2, York-street, price 2s.; or the publisher will bind sets at 3s. each.


## ADVERTISEMENTS.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.
Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend the both for security and durability, the edges being shod with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the counters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

PATENT REVOLVING SAFETY SHUTTERS, WITH CONVEX IRON LATHS. PATTEST CORRUGATED WINDOW BLINDS, &c. The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great importance of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, in affording increased security is obvious, and it is only necessary to point out the fact, that the patent convex laths are 12 times stronger than the ordinary flat laths, to insure their general adoption. The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw (worm and wheel), cannot, even by wear, be liable to run down, and entirely avoids the necessity of using the ratchet-wheel; and is at once simple and thoroughly effective, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering the Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters are fixed (as notable other above or below the window or door) or vertically, for which position the greatly increased strength of the convex laths renders peculiarly suitable. THE PATENTEE IS SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Engravings and prospectuses forwarded on application. IMPROVED DRAWN METALLIC SASH BARS, ASTRAGALS, MOULDINGS, STALLBOARD PLATES, &c.—Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 115, Old-street, London.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is simple and durable, and capable of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with flat convex laths.

B. and C.'s manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c. IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Enamelled, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 28, Lombard-street, London; Works, at Deptford, Kent.

Steam-engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

# THE BUILDER.

TO BUILDERS AND CARPENTERS.

**A** Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. B. WILLIAMSON'S Wholesale Ware-house, No 35, Chiswell street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp Nails

| 3d. | 4d. | 6d | 8d | 10d | 20d. |
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| 6d. | 7d. | 8d. | 1s. | 1s 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s 3d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 52s. per cwt.
Best Yellow Brunswick Line

| 1 | 2 | 3 | 4 | 5 | 6 |
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| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d. | 10s | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 9d., 7d., 6d., per inch.
Self acting Kitchen Ranges, with Oven, and Back Boiler
Wrought Bars and Bright Fittings

3 ft., £2. 2s. 2 ft. 6 in., £3. 12s. 6d. 4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

**R.** HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £2. 8s. | £3. 12s. | £3. 16s. | £4. | £4. 10s. |

Healy's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 2 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £3. | £4. 12s. | £4. 16s. | £5. | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do Elliptic do., at 3d., and 4d.
Manufacturer of WOLFENDEN'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

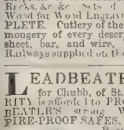
IRON-WORK FOR BAKERS' OVENS

**F.** A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, Keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars. Inside, Outside, and Ash pit, Doors and Frames, Boilers and Frames, Lamps, &c. &c.; all of the best description, at very moderate prices. CAST IRON UPSETS.

**J**OSEPH FENN, 105, Newgate Street, London, Manufacturer of Turning Lathes, Flatting Mills, Stocks and Dies, Circular and other Saw Files, Tools, and Materials for Engravers, Millwrights, Die Sinkers, Tough Nickels, Lockmiths, Lamp Makers, Pianoforte Makers, Plumbers, Wood and Metal Turners, Gun Makers, Engravers, Print-cutters, Watch and Clock Makers, Engravers, Jewellers, Gold and Silversmiths, Saddlers, Carriers, Dentists, Philosophical and Mathematical Instrument Makers, Carpenters, &c.

Amateur Mechanics and others can be supplied with every description of Mechanical Apparatus, viz.:—Wheels and Pinions, Racks, &c. &c. Sets of Mining Tools, Sets of Tools and prepared Wood for Wood Engraving. TOOL CHESTS FITTED UP COMPLETE. Cutlery of the finest quality. Horticultural Tools. Ironmongery of every description. Brass, copper, steel, zinc, &c., in sheet, bar, and wire, Wholesale, Retail, and for Exportation. Railways supplied on the best terms.

**L**EADBEATER, many years manufacturer for Chubb, of St. Paul's Churchyard. PERFECT SECURITY is afforded to PROPERTY of every description by LEAD FLATTES strong Wrought Iron Chests, called FIRE-PROOF SAFES, CHESTS, and BOXES. Doors for Strong Rooms and Party Walls, &c., all of which have the improved Detector Locks, by which the Safes of the most experienced burglars. A large Assortment of Fireproof Safes, &c., on Sale. Made to order at the shortest notice at prices superior to any other house in London, at his Manufactory, 128, Aldersgate-street.





A large FIRE-PROOF REPOSITORY is adapted for Solicitors, to be SOLD a BARGAIN.

Improved Detector Locks and Latches, affording PERFECT SECURITY, for Street and other Doors.

ROBERT STEDALL'S
PATENT SCOLECOTHIC VENTILATOR,
AND CURE FOR SMOKY CHIMNEYS



The most effectual and most ornamental Chimney-pot yet invented, entirely obtaining the objects by which all others are open, namely, that of soon becoming clogged with soot, and, consequently, useless.

A large quantity have been made in various parts of the kingdom, which have given the greatest satisfaction.

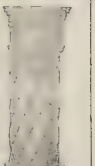
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| Price, Strong Painted Iron | 32s. |
| " Strong Galvanized Iron | 40s. |

To be had of ROBERT STEDALL, 13, Nelson-street, Greenwich.

THE TRADE SUPPLIED.
And also Licenses granted to Manufacturers.

SMOKY CHIMNEYS EFFECTUALLY CURED

WILSON AND CO.'S
PATENT
VENTILATING CHIMNEY POT.



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The trade supplied with them at the Manufactory,
VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licenses granted to Manufacturers.

WILSON'S PATENT
VENTILATING
SPIRAL CHIMNEY POT,



For the cure of smoky chimneys (manufactured by J. PORTER), is the ONLY article for the purpose which assists the draft of the chimney by an external propelling power. Upwards of fifty were fixed last winter on the chimneys of Buckingham Palace, and Windsor Castle, with great success.

This Chimney-pot is not only the best and most effectual ever invented for the purpose named, but stands unrivalled in its ornamental appearance.

The public may be supplied with the above useful article in any of the respectable ironmongers, or at the sole manufactory,

SOUTHWARK-BRIDGE IRON ROOFING WORKS.

TO ARCHITECTS AND BUILDERS.

**D**OOR SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES in Brass and Iron for Doors to open one or both ways, and Rising Hinges for the convenience of Doors opening on Carpets. Likewise swing Centres, with a recoil of a combination of power unrivalled by any made at present. Manufactured by F. W. GERISH, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

**C**HARLES SMITH and SON, 25, GREAT CHARLES-STREET, BIRMINGHAM late STANDLY and SMITH, formerly STANDLY and GALE, Bull-street, Locksmiths, Bell-hangers. Brass-founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS, and ENGINEERS to their inventions for prisons, lunatic asylums, &c

C. S. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar locks, signals, inspection apparatus, chapel door-fastenings, iron frames, hinges, &c. &c., as applied by them at the MODEL PRISON, LONDON, and TWENTY-THREE SIMILAR GAOLS, where they have given entire satisfaction.

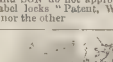
Amongst their testimonials can be shown that of Major Jebb, attesting the efficiency of the labels, &c., invented by them.

The contracts will be executed to the approval of the inspector-general of prisons, and the architects.

C. Smith and Son also are prepared to contract for the supply of the whole of the ironmongery requisite for the residences of the nobility and gentry, churches, banks, barracks, gaols, asylums, and workhouses, including locks, bells, hinges, grates, kitchen ranges, stairrods, gates, park railings, fronts of safes, bookcases, doors, metal sashes of all kinds and every description of ornamental brass and ironwork, light castings, &c

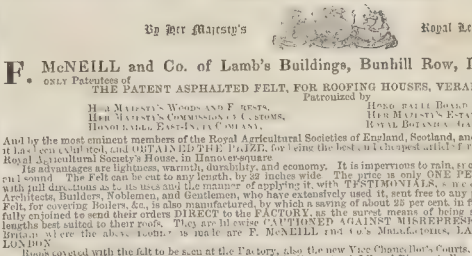
C. S. and Son beg to refer to the extensive works performed by them at Windsor Castle, Northumberland and Sion Houses, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work, in confirmation of which numerous letters from noblemen and gentlemen may be shown.

N.B. C. SMITH and SON do not appropriate inventions or advertisements, nor label locks "Patent, Warranted, Secure," that are neither the one nor the other



TO ENGINEERS AND BOILER MAKERS
LAP WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 12, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boiler without Patentees' consent or the least extra cost or additional trouble or expense.—Address, 62, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames street.



CHEAP AND DURABLE ROOFING.

By Her Majesty's  Royal Letters Patent.

**F.** McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by

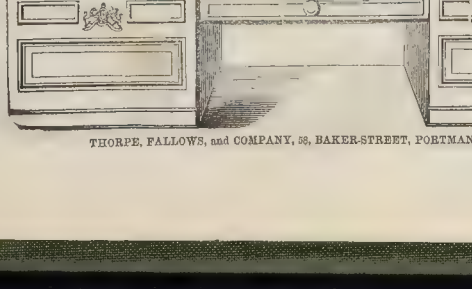
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| Her Majesty's Woods and Forests, | Her Majesty's Board of Ordnance, |
| Her Majesty's Commissioners of Customs, | Her Majesty's Estate, Isle of Wight, |
| Royal Naval Establishments, | Royal Botanical Gardens, Regent's Park. |

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for Roofing, also used for under slates at the Royal Agricultural Society's House, in Hanover-square

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its use, and the manner of applying it, with TESTIMONIALS, some of them from persons of experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as to its being a patent in Great Britain, where the above Trade Mark is made are F. McNEILL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

THE PANKLIBANON IRON WORKS,
WHOLESALE AND RETAIL, 58, BAKER-STREET, PORTMAN-SQUARE.



THORPE, FALLOWS, and COMPANY, 58, BAKER-STREET, PORTMAN-SQUARE, LONDON.

**F**RENCH PAPER HANGINGS.—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers, is at Messrs. MARKS & CO.'S, 20, Princes Street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW SPRING PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

TO BUILDERS, DECORATORS, PAINTERS, &c.

**D**EPOT of FRENCH Paper-Hangings.—M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London on the side of FRENCH PAPER-HANGINGS, from his Manufactory at Paris, and will feel obliged by the inspection of the stock now on hand. The patterns will be found most suitable for this market, and the prices very moderate. 8, BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

PAPER HANGINGS—TO THE TRADE.

**M**ESSRS. HENNELL and CROSBY, Manufacturers of Paperhangings, Queen-street, Southwark-bridge-road, have just completed their New Set of Patterns for 1847, consisting of French Designs cut in Paris, and English Designs by our First Artists, for Style and Workmanship not to be surpassed. Retail Prices. Satins from 8d. per yard; Superior French Flocks from 6d. per yard. A liberal allowance to the Trade. A Large Stock always ready, and orders promptly executed. The Cheapest House in London for Panel Decorations.

By Her Majesty's  Royal Letters Patent

**W**ILKINS'S "SILENT" WATER-CLOSET. To Architects, Surveyors, and Builders

Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and in the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments has long been felt and the object to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour

This Closet is simple in its construction, the whole of the apparatus and that of the trap, being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove in any Closet and by the "Silent" one in its place, without the fixing without the trap which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any offensive smell as to allow of the being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least inconvenience whatever.

May be viewed Daily, and Orders taken at No 26, Gower-place, University College, London, from 8 in the Morning to 9 in the Evening.

CHEAP PAN FOR
WATER-CLOSETS,
With Trap, in One Piece.

DOULTON AND WATTS,
LAMBETH POTTERY, HIGH-STREET,
LAMBETH, LONDON,

Manufacturers of the annexed Superior
GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, on account of their cleanliness and cheapness.

If preferred, they can be had in two parts; the Pan at 4s. 8d., and the Trap at 3s.

N.B. Manufacturers of RAIN-WATER PIPING and Flues.

**A**RCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at the Establishment the most unique and elegant assortment of STOVE-GRATES, Fenders, and Fire-Irons, ever offered to the Public, at prices considerably below the usual charges. The Proprietors at the same time beg to invite attention to their extensive stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Waiters, Table Cutlery, and especially their Sheffield Plate and German Silver Wares, embracing every article suitable for the Table, comprising Dish and Plate Covers, Liquor Frames, Urns, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermic Stove is in daily operation. Also,

KENDYN'S
IMPROVED
HOT-AIR STOVES,
for heating and ventilating rooms.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

**PERSONS** requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £10,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

TO BUILDERS.

**AN** old established Business in a Market Town, about 30 miles from London. TO BE DISPOSED OF. The premises are well adapted, and the rent moderate.—For particulars apply by letter, prepaid, to A. B. Messrs. Huxley, Heriot, & Co., Ironmongers, Castle-street, Long-acre.

**BRICK EARTH,** of most excellent quality, TO LET, close to the Nelson Arms, Cheam.—Apply at the Nelson Arms, or to Mr. THIRK, Copthill, Epsom.

**EXTENSIVE** Manufacturing Premises, between Bond-street and Park lane. TO BE LET, on Lease. Apply to Mr. CUTHELL, 13, Avery row, Lower Brook street.

OLD HOUSES AND GROUND FOR RE BUILDING

**TO BE LET,** on a Building Lease, for 61 Years, Old Houses and Ground in Sea Coal-lane, Skinner-street, City.—For particulars apply to Messrs. GOUGH and ROUMIEU, Architects and Surveyors, No 10, Lancaster place, Strand.

TO BUILDERS AND OTHERS.

**LAND TO BE LET,** on advantageous terms, on Building Leases, at West Ham, Middlesex; Streatham and Carshalton, Surrey; Boxmoor, Herts, and Tunbridge Wells, Kent.—For particulars apply to Messrs. BROOKS and GREEN, Estate Agents, Surveyors, and Auctioneers, 28, Old Bond street.

**REGENT STREET.—Extensive Premises** TO LET, situated a few doors from Regent-street, comprising several ranges of Workshops, Large Yards, a Hot Room, and a Residence. Gas is laid on and there is a Warm-water Apparatus. They are most desirable Premises for a Builder's Joiners, Coach or Cabinet Manufactory, or any business requiring great space.—For particulars, inquire of Messrs. DRUCE and CO., Bazaar, Baker-street

TO TIMBER MERCHANTS, DEALERS, or Commission-Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

**TO BE LET,** on Lease, for 21 Years, Excellent BUSINESS PREMISES, with Residence attached, eligibly situated, No 4, Albion place, on the High-road, Holloway, near the Chapel of Ease. Rent, £70 per annum. Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Jewry, and of Mr. LLOYD, on the premises.

HIGHBURY GROVE, HIGHBURY—BUILDING LAND.

**TO BE LET,** a valuable piece of Building Land, situate on the west side of Highbury Grove, being the most delightful part of Highbury, with beautiful pleasure-grounds in the rear for the erection of a Villa Residence. £600 on each house will be advanced, if required, as the works progress. Term, Ninety-Nine Years from 29th September, 1845; Ground-rent, £12 12s. Particulars may be had of Messrs. OVERTON and HUGHES, Solicitors, 25, Old Jewry, and of Mr. LLOYD, No. 4, Albion-place, Holloway road.

TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's road, Dalston, to Lansdown-place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria-park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

ST. JOHN'S WOOD PARK IN IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation, commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's villas, Avenue-road, Regent's park.

BRICKFIELD.

**TO BE LET,** a snug BRICKFIELD, situate at Hanwell, on the banks of the canal, which enters the Thames at Brentford. The expense to Vauxhall, for freightage, tonnage, and towage, is 3s. 3d. per thousand. A chalk-mill, two small wash mills, and two close kilns capable of containing 50,000 bricks, have been erected on the premises, with a view to the manufacture of white bricks of a superior quality, and the whole may now be procured on very advantageous terms. Apply to Mr. WILLIAM THOS. WOODS, Bedford New-road, Clapham Rise.

FREEHOLD LAND TO BUILDING SOCIETIES, BUILDERS, AND OTHERS.

**TO BE LET,** or SOLD, the remainder of about seven acres of Freehold Land, well adapted for the erection of small respectable dwellings, and situate within 100 yards of the Bedford Arms, Clapham-road, and a 6d. ride of the City. It will be sold in plots of about 21 feet in depth, or let for 99 years at 3s. per foot rental. Bricks will be advanced on security of the property, or sunk at a ground-rent, if required. Apply to Mr. WILLIAM THOS. WOODS, Bedford New-road, Clapham Rise.

**TIMBER SAWING FRAME FOR SALE,** Well Manufactured, and in complete working order, and only sold in consequence of the room being required for other purposes. Apply to W. G. WARDLE, Stangate Saw Mills, Palace-road, Lambeth.

TO CARPENTERS AND BUILDERS.

**MORTICEING MACHINES** are now offered FOR SALE, the first and only ones ever invented that will cut a mortice any depth or width in one minute, through hard or soft wood, warranted to work to the gauge. Expense small, and requires only one man to work it. To be seen at JONES'S, 127, Goswell street, between 10 A.M. and 4 P.M., daily.

TO LEAD MERCHANTS AND PLUMBERS.

**TO BE SOLD,** the Lease and Goodwill, together with the Stock in Trade, of a valuable business in the above line, in the immediate vicinity of Belgrave square and Eaton square, which has been successfully carried on by the present proprietor, and is parted with (but solely on account of his having received an appointment in India).—For further particulars apply to Messrs. FAREBROTHER, CLARK, and LYE, Surveyors and Auctioneers, Lancaster place, Strand, London.

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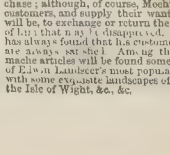
May be viewed, by permission of the respective tenants, and particulars had of Mr. BAILY, Solicitor, Threadneedle-street; Messrs. DONNE and TAYLOR, Solicitors, 28, New Broad-street; at the Mart, and of Messrs. HOGGART and NORTON, 62, Old Broad street, Royal Exchange.

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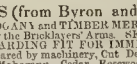
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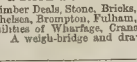
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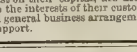
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# The Builder,

A JOURNAL FOR

## The Architect, Engineer, Operative & Artist.

VOL. V.—No. 210. FEBRUARY 13, 1847. Price ..... 3d. Stamped ..... 4d.


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LEWIS J. HERTSLET, Clerk.

Sewers Office, No. 1, Greek-street, Soho-square,
11th February, 1847.

**BUILDERS who may be desirous of CON-** TRACTING for the erection of a Hall, and other buildings, in Pembroke College, Oxford, can inspect the plans and specifications, by applying to the Porter of the College on or after Wednesday the 10th of February. Tenders to be sent in to the Master, on or before the Third of March.

Pembroke College, February 8th, 1847.

TO CARPENTERS AND JOINERS, WOOD CARVERS, AND MASONS.

**THE Committee for the Restoration of the** Interior of St. NEOT'S CHURCH, in the County of Huntingdon, GIVE NOTICE, that they will receive TENDERS for repairing and other works, on or before Thursday the 4th of March next. The Plans and Specifications may be seen on application to Mr. WILLIAM EMERY, St. Neots, one of the churchwardens, and further particulars obtained by applying to the Architect, Mr. JAMES TACY WING, Potter-street, Bedford. The Committee do not pledge themselves to accept the lowest Tender.

St. Neots, February 8th, 1847.

TO BUILDERS

**PARTIES desirous of CONTRACTING** for the ERECTION of the proposed NEW CONGREGATIONAL CHURCH, in Wolverhampton, are hereby informed that the Drawings and Specifications thereof may be inspected on Thursday, the 11th instant, at the office of Mr Banks, architect, Wolverhampton. Tenders, sealed and indorsed "Tender for New Congregational Church," to be delivered on or before Thursday, the 1st of March, to J. BARKER, Esq., Wolverhampton.

*** No pledge is given that the lowest Tender will be accepted.

TO BUILDERS.

**PARTIES desirous of CONTRACTING** for the erection of additions to, and making alterations in the present house, at Spratton, near Northampton, may see the plans and specification at the office of the Architect, Mr. FOWLER JONES, Monkgate, York, on and after the 4th of February next, till TUESDAY 16th, from Ten till Four o'clock; and at the same hours from the 18th to the 23th, at the offices of Mr. MARKHAM, solicitor, Northampton. All tenders must be delivered on or before the 1st of March next, addressed to the architect, as above, of whom any further particulars may be obtained.—The lowest tender may not be accepted.

N.B. As some Builders have expressed a wish that the Quantities of the various works for the above should be taken out and Bills supplied, a competent Surveyor has been employed to do so. It is therefore requested that those parties intending to give in tenders will make application as soon as possible to Mr. W. BACKHOUSE, at Mr. JONES'S office, that Lithographed Copies may be prepared for them; and it is expected that they will be ready by the 16th instant.—York, 8 Feb, 1847.


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TO BUILDERS AND OTHERS.

**TO BE SOLD, on very moderate terms,** situate on a public road, 60 feet wide, in Holloway, two extremely well-built, semi-detached CARCASES, with drains completed, and room by the side of each for coach-house and stable if required. Depth of ground 160 feet, or 360 if wanted. Lease 66 years, direct from the freeholder. The greater part of the purchase money may remain unpaid at interest till the lease is granted. For further particulars apply (if by letter, post-paid) to Mr. PELLING, Builder, Hornsey-road, Holloway

**VOTES for EAST and WEST SURREY.** Three and three-quarter Acres of FREEHOLD LAND at Norwood, Surrey, and Two Acres of Freehold Land at Trumps green, Egham, Surrey, both most delightfully situated, TO BE LET, on Building Leases, for Seventy-five Years, on advantageous terms. Apply, if by letter post-paid, to J. BURGES WATSON, Esq., Architect, 39, Manchester-street, Manchester-square, London.

TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS

**TO LET, a Compact and Convenient Wharf,** between Westminster and Vauxhall Bridges, directly opposite the New Houses of Parliament, well adapted for any of the above Trades, having excellent water and land carriage ways.—For particulars apply to W. G. WARDLE, Stangate Sawing and Planing Mills, Palace-road, Lambeth.

TO TIMBER MERCHANTS, DEALERS, or Commission-Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

**TO BE LET, on Lease, for 21 Years,** Excellent BUSINESS PREMISES, with Residence attached, slightly situated, No. 4, Albion-place, on the High-road, Holloway, near the Chapel of Ease. Rent, £70 per annum.—Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Jewry, and of Mr LLOYD, on the premises.

BUILDING GROUND FOR SHOPS.

**TO BE LET, in One or more Plots, for the** erection of Eight Houses, of a frontage of about eighteen feet each. Ground-rent 3l. 16s. each house: no land-tax; lease 96 years, situated at St. Mary, Islington, in a neighbourhood where shops are much wanted.—Apply by letter, to Mr. WOODS, 35 George-street, Euston-square.

CHELSEA, NEAR THE STEAM BOAT PIER. BUILDING LAND.

**TO BE LET, on advantageous terms, for** the erection of a Public-house, together with several plots for Eight-roomed Houses, which are in great request. The site is situate in the midst of improvements; omnibuses and boats constantly plying to and from the City, and all parts of the metropolis. Leases direct from the freeholder. Term of lease, 97 years.—Apply to Mr. E. HUTCHINSON, Cremorne Field, King's-road, Chelsea, opposite Cremorne Gardens.

TO BUILDERS MATERIALS AND MONEY ADVANCED.

**TO BE LET, on BUILDING LEASES,** for ninety-six years, several very eligible plots of Freehold Building Ground, land-tax redeemed, for fourth-rate houses, situated in streets leading from the Queen's-road, Dalston, to Lansdown place. This is one of the most rapidly improving neighbourhoods near London, and will be the principal thoroughfare from all parts westward to the new Victoria-park, from which it is only a quarter of a mile distant.—Apply to Mr. PALMER, on the premises.

BRICKFIELD.

**TO BE LET, a snug BRICKFIELD,** situate at Hanwell, on the banks of the canal, which enters the Thames at Brentford. The expense to Vauxhall, for freight, tonnage, and towage, is 3s. 3d. per thousand. A chalk-mill, two small wash-mills, and two close kilns, each capable of containing 35,000 bricks, have been erected on the premises, with a view to the manufacture of white bricks of a superior quality, and the whole may now be procured on very advantageous terms. Apply to Mr. WILLIAM THOS. WOODS, Bedford New road, Clapham Rise.

ST. JOHN'S WOOD PARK! IMMEDIATE CONNECTION WITH REGENT'S PARK.

**BUILDING PLOTS TO BE LET** in this most desirable and salubrious situation! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City.—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue road, Regent's-park.

## SALES BY AUCTION.

TO ENGINEERS AND OTHERS.—By

**MR. FULLER, on MONDAY, February** [illegible] and at Eleven, on the premises, Paradise-row, Gravel-lane, Southwark, by direction of Mr. LLOYD, retiring from business, pair of [illegible] horse power condensing Steam Marine Beam Engines, with cast-iron cylinders, [illegible] inches diameter, [illegible]-inch stroke, wrought-iron shafts, paddle wheels, &c., made by the Butterly Iron Company.—To be viewed on FRIDAY and SATURDAY previous to the sale, when catalogues may be had on the premises, and of Mr. FULLER, 13, Billiter-street, City.

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To ENGINEERS, NEWSPAPER PROPRIETORS, and Others.—By Mr. FULLER, on MONDAY, Feb. 22, at Eleven, on the Premises, [illegible]-lane, Southwark.

**A FOUR-CYLINDER PRINTING-MACHINE**, capable of working 4000 to [illegible] copies per hour, [illegible] in construction to those now in use at the "Times" [illegible] Office, [illegible] finished and quite ready for immediate use.—May be viewed on Friday and Saturday previous to the sale, when catalogues may be had on the premises, and of Mr. FULLER, 13, Billiter-street, City.

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To ENGINEERS, MILLWRIGHTS, MACHINISTS, SMITHS, and Others.—By Mr. FULLER, on MONDAY, Feb. 22, and following Days, at Eleven each Day, on the Premises, Paradise-row, Gravel-lane, Southwark, without Reserve, the Premises being Let.

**THE Machinery and Tools of an Engineer,** the property of Mr. LLOYD, retiring from business.—Four steam engines, of 2[illegible], 6, 5, and 4 horse power; rotatory engine, 12 horse power; a very capital 4-cylinder steam printing machine, similar in construction to those used at the "Times" office; [illegible] capable of printing from 4000 to [illegible] per hour; powerful planing machine capable of planing 16 feet by 4 feet 3 inches; and [illegible] by Nasmyth; two capital screw-[illegible] by Fox; nut-shaping machine, with bar; and two sets rings cutting machines, boring machine, with bar; 12 engine turning [illegible] power cylinders; 12 engine turning lathes, from 5 to [illegible] feet long, 20 cwt. steel tools, in bits, stocks, taps, and dies, &c.; 200 feet shafting, 200 rigger and pulley wheels, [illegible] cranes and chains, force pumps, a five-ton [illegible], six tons top, bottom and [illegible] fittings of smiths' shops, six tons chain slings, [illegible] vices and smiths' tools, ten tons iron, two tons chain slings, drawing benches, two new five-feet grindstones, five tons cast-iron, drawing tables, mahogany desks, scales and weights; also a large quantity of [illegible] patterns, and numerous other effects. To be viewed on Friday and Saturday previous to the sale, when catalogues may be had on the premises, and of Mr. FULLER, Billiter-street, City.

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VALUABLE FREEHOLD AND COPYHOLD ESTATES, MIDDLESEX AND ESSEX.

**MESSRS. ROBERTS and ROBY are** instructed to SELL at the Auction Mart, on WEDNESDAY, February 24th, at Twelve, by direction of the Heiress at Law of Mr. William Tr[illegible], deceased, a desirable plot of FREEHOLD BUILDING GROUND, with [illegible] feet frontage on Lamb-street, or [illegible], Bethnal Green; and NINE ACRES OF VALUABLE COPYHOLD PASTURE LAND, situate near the village of Laughton, a short distance from Debden Green, Essex, particularly adapted for Building purposes.—May be [illegible] with plans annexed, had ten days previous to the Sale, of Messrs. WATSON, BROUGHTON and SON, Solicitors, Falcon-square, Aldersgate-street; and at Messrs. ROBERTS and ROBY's Offices, 24, Moorgate-street, Bank.

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EXTENSIVE SALE OF BUILDING MATERIALS, GREENWICH, BY ORDER OF THE COMMISSIONERS OF GREENWICH HOSPITAL.

**MR. GARDINER will SELL by AUCTION**, on the Premises, on TUESDAY, February 23, and following Days, at Twelve each day, the whole of the valuable MATERIALS of FIVE TAVERNS and PUBLIC HOUSES known as the Crown and Anchor, the Chatham Chest, the Red Lion, the Arundel Coffee-house, and the White Horse, together with a great number of dwelling-houses adjoining and forming [illegible] capital bricks [illegible] flooring boards, timbers, joists, sashes, doors, tiles, slates, fixtures, a great quantity of lead gutters, pipes, &c. The whole to be [illegible] improvements about to be made to the Hospital.—May be viewed three days prior to the sale, and catalogues obtained at the Works'-office, Greenwich Hospital; of [illegible] BRIDGE and MACKRELL, solicitors, [illegible], Abingdon-street, Westminster; at the Ship Tavern, Greenwich; the Crown and Anchor, Woolwich; of the auctioneer, 17, Hatton-[illegible].

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BUILDING MATERIALS, WHITTON, NEAR HOUNSLOW AND TWICKENHAM.

**MR. M. ADAMS will SELL by AUCTION**, without reserve, on the Premises, on Tuesday, [illegible], and following days, at eleven o'clock each day [illegible] the number of Lots, all the excellent BUILDING MATERIALS and FITTINGS of a Mansion and [illegible] ARGYLE HOUSE, formerly the seat of Archibald Duke of Argyle, comprising about [illegible] Main and Scotch Birch, 13 tons of Lead, 3,800 feet of York and Portland Paving, Stone Staircases, 53 squares of Slating, 3,000 feet of capital Oak Floor Boards, Elegantly Carved Doors and Mantles, Marble and Portland Vases, beautifully executed Original Casts, Works of the most Eminent Artists, all Royal Academicians, and obtained at a great expense by the late Sir WILLIAM CHAMBERS, [illegible] and Frames elaborately carved, Mantles and Moulded Doors, Marble Chimney Pieces, Register Stoves, Girders, Joists, Oak and Deal Floor Boards, Coppers, Cisterns, Pumps, and the whole of the Valuable Materials.—May be viewed with Catalogues only a week prior to the first day of Sale, the Sunday excepted, and Catalogues had [illegible] fourteen days prior to the Sale, at the Red Lion and White Hart Inns, Whitton; King's Head Inn, Twickenham; George Inn, Hounslow; Chequers, George, and Northumberland Arms Inns, Isleworth; Royal Oak, Worton Lane; at the Office of "The Builder," York-street, Covent Garden; and of the Auctioneer, Mr. Adams, Isleworth.

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[illegible] IMPORTANT SALES, by order of the Assignees of Messrs. [illegible], Morgan, and Co., at the [illegible] Ship Yard, Bristol, and at the Bristol Iron Works, St. Philip's. To be SOLD by AUCTION, by

**MR. EDWIN NAISH, at the SHIP-YARD, MONDAY and TUESDAY, Feb. 22nd and 23rd,** at the IRON WORKS, WEDNESDAY and THURSDAY, Feb. 24th and 25th, the [illegible] Skeleton FRAMES of Two STEAM-SHIPS [illegible] feet between the perpendiculars [illegible] ALSO, the MACHINERY, which was in course of preparation for the same; comprising two pairs of Condensing Engines [illegible] diameter [illegible] the best material and excellent workmanship, being a late improvement [illegible] by the same makers, [illegible] celebrated "Little Western;" together with the [illegible] which have been made for the above engines and [illegible].

A FERRY-BOAT, and Four New Copper-fastened BOATS. [illegible] ENGLISH OAK PLANK [illegible] for the [illegible] purposes; some thousands of feet of prime Yellow and Red Pine, English and American [illegible].

20,000 feet of particularly good ENGLISH OAK TIMBER, of large dimensions [illegible] American Oak, Yellow and Red Pine [illegible] Blocks, [illegible] and Premises.

Mr. NAISH is instructed by the Assignees to the Estate to Advertise that a limited time will be allowed the purchaser or purchasers of the Skeleton Frames to finish the ships on the premises [illegible].

The Shells of the Steamers, Timber, Plank, and Wood-work is [illegible] the Frames [illegible] Iron Works, Bristol [illegible] for the removal of the [illegible] the Great [illegible].

[illegible] may be had on [illegible] Bristol, to Mr. T. R. HUTTON, Official Assignee; or Mr. J. K. HABERFIELD, Solicitor [illegible].

[illegible] Bills will be taken in payment, and the Sale to commence [illegible] at Twelve o'clock each Morning.

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Stock in Trade of a Bankrupt Timber Merchant, comprising Mahogany, Rosewood, [illegible] Sycamore, Maple, Beech, Birch, Deals, Planks, Battens, Boards, and Veneers; a Timber Carriage and Truck.—Store-street, Tottenham-court-road.

**MR. T. TIMS will SELL by AUCTION,** on the Premises, No. 7, Store-street, Tottenham-court-road, on MONDAY, February 15th, at Twelve, the capital seasoned Stock, consisting of Spanish and Honduras mahogany, pencil and Havannah cedar, beech plank and quartering, sycamore, maple, oak staves and planks, Swiss belly wood, dry yellow deals and battens, spruce deals, pine planks, deal quartering; veneers in mahogany, maple, birch, and sycamore; a nearly new light timber-carriage, a truck, and two ladders. May be viewed three days prior to the sale, and Catalogues and Particulars then had, of E. EDWARDS, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; of JOSEPH TURNLEY, Esq., Solicitor, Ludgate-street; and at Mr. TIMS'S Offices, 63, Upper Charlotte-street, Fitzroy-square.

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DAY OF SALE ALTERED, from Monday the 8th, to Tuesday the 16th February, 1847. BUTTERCRAMBE, near YORK. Capital Oak, Ash, Scotch Fir, Sycamore, Birch, and Alder, for SALE BY AUCTION, by

**MR. JAMES WALKER, at the House of** Mr. Wilson, the White Swan Inn, Goodramgate, York, on TUESDAY, Feb. 16th, 1847, about THREE THOUSAND TREES of superior quality and useful dimensions, now standing in the Hedge-rows and Plantations in the Township of Buttercrambe.—For particulars, and to view, apply to Mr. SHARON, Aldby Park. The Sale to commence at Three o'clock in the afternoon, precisely.

CATALOGUE OF TIMBER.

Lot 1.—117 Fine Ash, 9 Alders, 17 Ciphers, on Mr. Rounthwaite's Farm.
Lot 2.—111 Fine Ash, 19 Ciphers, on Mr. Rounthwaithe's Farm.
Lot 3.—91 Fine Ash, on Mr. Dowson's Farm.
Lot 4.—130 Ash, 4 Sycamores, 10 Oaks, 22 Ciphers, on Mr. Smithson's Farm.
Lot 5.—193 Birch, on the right hand of the road leading from Stamford-bridge.
Lot 6.—117 Birch, 2 Poplars, on the left hand of the road leading from Stamford-bridge.
Lot 7.—125 Ash, 15 Oaks, 10 Ciphers, between Beech-lane and road.
Lot 8.—128 Ash, 18 Oaks, 3 Elms, 8 Ciphers, on right of Beech-lane.
Lot 9.—60 Ash, 9 Oaks, 1 Poplar, on Mr. Mills' Farm.
Lot 10.—100 Ash, on Mr. Mill's Farm.
Lot 11.—500 Fine Scotch Fir, in the River Wood, near Stamford-bridge.
Lot 12.—426 Ash, 75 Oaks, 212 Sycamores, 4 Elms, in Bossal Wood.
Lot 13.—148 Ash, 118 Oaks, 108 Sycamores, in Bossal Wood.

Buttercrambe adjoins Stamford-bridge. The Lots are contiguous to the river Derwent, and possess every facility of being conveyed by land or water.

9, Davygate, York, 4th Feb. 1847.

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STONE MERCHANT'S STOCK.

**MR. H. BIERS has received the directions** of Messrs. Mowlem, Freeman, and Burt, to prepare Catalogue for SALE by AUCTION upon their present premises, they being about to remove to No. 13, South Wharf Road. This very Valuable Stock comprises several Thousand Feet of York Paving, Landings, Steps, Kirb, and Coping, Portland, Mansfield, and Bramley Fall, in Block, Slate Steps and Landings, Purbeck, Port[illegible] Sinks of superior quality, Granite Kirb and Spur Stones, a [illegible] Portland Stone Staircase in good condition, a small quantity of Sienna and other Marble, a Powerful Stone Truck with Patent Boxes, capable of carrying Ten Tons, and many useful articles. Catalogues when ready, will be sent post free, to any part of the kingdom, and an unusual facility presents for Water carriage, the stock being close to the Grand Junction Canal. APPROVED BILLS at Three Months where the purchase amounts to [illegible]. Four Months to [illegible].—13, Broad-street, Golden-square.

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BUILDER'S BUSINESS OF FIRST CHARACTER.

**MR. H. BIERS has been instructed to dispose of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST-RATE PRACTICE;** declining health of the proprietor is the sole reason for parting with the same. No consideration required for good-will, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from [illegible] to [illegible]. Further particulars and cards to view may be obtained on application to Mr. H. BIERS, 13, Broad-street, Golden-square, between the hours of One and Three. Written applications cannot be attended to.

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**DESIGNS, DRAWINGS, ESTIMATES, SPECIFICATIONS, and WORKS** executed at one-half the usual charge, by a person of great experience in the profession [illegible] Builders' accounts adjusted [illegible] dilapidations, &c. surveyed, and measurements made on the most reasonable terms.—Address, post-paid, to X. Y., care of Mr. Scrime, Stationer, No. [illegible], Thornhill-place, Caledonian-road, Pentonville.

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**ARTISTS, DESIGNERS, and Amateurs** are informed that the General PRACTICAL SCHOOL OF DESIGN, 18, Maddox-street, Hanover-square, Master, J. M. Leigh, Esq., is open every evening, from Seven till Ten, for the study of Drawing, Painting, Modelling, &c. &c. The Living Model, Male and Female, with Weekly Lectures on Art. Terms, One Guinea per Quarter.

R. W. HERMAN, Hon. Sec.
34, Green-street, Grosvenor-square.

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HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

**THE COMMISSIONERS of SEWERS** for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

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COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

**TO BUILDERS and Others interested in** buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by water-courses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. 3 (chap. 7, local), it is required that, previously to the making of any new sewer, or any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain [illegible] building yard or ground into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and [illegible].

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners [illegible] give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the [illegible] of such buildings.

It is [illegible] to all persons about to purchase or take [illegible] other premises to ascertain whether such premises have separate and distinct [illegible].

All petitions must be delivered at this office at least three clear days before they are presented to the Commissioners, and all such petitions will be called on in the order of the application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, [illegible]) do not supersede the authority of the Commissioners [illegible] but their powers are expressly reserved [illegible] of the Act. The execution of such works under the superintendence of the district surveyor does not therefore warrant the making of any sewers or drains without their permission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

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**MISS BESSEMER, EMBROIDERESS,** 9, JUDD-STREET, Brunswick-square, respectfully solicits orders for the cleaning, repairing, and transferring of ancient Needlework and Tapestry; also for the embroidering of Altar-cloths to new and approved designs; Coats of Arms, Crests, &c. &c., worked in gold or silk. Miss B. is allowed to refer to some of the first houses in the trade as to her care and abilities.

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**SURVEYING. — UNIVERSITY COLLEGE, London.**—During the months of February, March, April, and May, Mr. HARMAN LEWIS, M.A., Professor of Civil Engineering, will conduct an Elementary Course of Theoretical and Practical Surveying, with Field Practice: Tuesday, seven to eight; Thursday, seven to nine; Field Practice at times to be fixed at meetings of the class.—Fee, for students attending the class of Engineering 5*l.*; for others, 6*l.* The course will commence on Tuesday, February 16.

CIVIL ENGINEERING.—Professor Lewis's Course commenced on the 3rd instant.

HENRY MALDEN, Dean of Faculty and Arts.
CHAS. C. ATKINSON, Secretary to the Council.

February 6, 1847.

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**ART-UNION OF LONDON: Incorporated by Royal Charter.**

PRESIDENT—H. R. H. the Duke of CAMBRIDGE.

The list for the current year is now open. Subscribers will receive for each guinea paid, besides the chance of obtaining a work of art at the distribution, a pair of prints, the "Last Embrace," and the "Neapolitan Wedding," engraved by Mr. Charles Rolls and Mr. F. A. Heath respectively, after T. Uwins, R.A., with a set of engravings in outline from seven of the cartoons submitted in competition for the premium of 500*l.* offered by the society for an historical picture.

GEORGE GODWIN, }
LEWIS POCOCK, } Hon. Secs.

4, Trafalgar-square, January 1, 1847.

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**SOCIETY OF ARTS.**

PRESIDENT
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 5th of May, 1847. A List of the subjects for which Premiums amounting to [illegible] Guineas, with 40 Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, John-street, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.

3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.

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**ARNEWAY'S CHARITY.—NOTICE IS HEREBY GIVEN**, that the Trustees of this Charity are enabled to LEND OUT the TRUST MONIES to "Poor Occupiers or Traders resident within the City and Liberty of Westminster, that is to say, within the Parishes of Saint Margaret and Saint John the Evangelist, Saint Anne, Soho, Saint Clement Danes, Saint George, Hanover-square, Saint Martin-in-the-Fields, Saint James, Saint Mary-le-Strand, and Saint Paul, Covent Garden." The amount of each loan is not to exceed [illegible], is to bear interest after the rate of [illegible] per cent. per annum, and is to be secured by the bond of the borrower, with two sureties. Printed forms of application, and all necessary information, may be obtained upon application, between the hours of Ten and Three o'clock in the day, at the office of the Clerk and Solicitor to the Trustees, 12, Great Queen-street, Saint James's-park.—By Order,

EDWARD S. STEPHENSON,
Clerk and Solicitor to the Trustees.

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CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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CAEN STONE DEPOT, NORWAY SUFFERANCE WHARF, GREENWICH.

**W. TUCKWELL, Caen Stone Importer,** informs Architects, Sculptors, Masons, and others, that he has a large stock of superior DRY SEASONED CAEN STONE on his Wharf, imported in July last exclusively from his quarries at Allemagne, which for present uses is superior to any newly imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained. CAEN STONE shipped direct from Caen to any port.

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PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY begs to inform Architects** and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

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**LADYSHORE TERRA COTTA.—The** attention of Architects, Builders, and others engaged in building, is respectfully called to this material, which combines the beauty and durability of the best Freestone at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the entire building of two churches, one in Manchester, and one at Bolton-le-Moors, and a parsonage house and the ornamental parts of a school, also in many other churches and buildings, &c. Its advantages are, that it is not a "Composition," but of the nature of stone, but HARD BURNT CLAY. In ornamental work, its value will be found to be great, being so much cheaper than carved stone or wood, and equally durable.

The principal ornaments manufactured are capitals, trusses, bosses, brackets, royal arms, [illegible] mouldings, panels, panelled [illegible] bench-ends, with poppy heads, pinnacles, [illegible] chimney tops of all sizes, vases, fountains, pedestals, [illegible] pieces, [illegible] tiles and other tiles for churches, halls, &c., and every variety of ornament that is used for building purposes.

This material is warranted to stand the weather. Specimens may be seen, and every information obtained, on application to the Proprietors, F. P. WILCOCK and Co., 10, Exchange Arcade, Manchester.

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**ROYAL POLYTECHNIC INSTITUTION.—CHEMICAL LECTURES** by Dr. Ryan, with brilliant and varied Experiments daily, and on the evenings of Mondays, Wednesdays and Fridays. On the commencement of LENT, Dr. Bachhoffner will deliver a series of Lectures on ASTRONOMY, [illegible] the latest discoveries on the Mornings and Evenings of Mondays, Wednesdays and Fridays, with new and appropriate MUSIC by Dr. Wallis on the alternate Mornings and Evenings. [illegible] lecture on the ELECTRO-MAGNETIC TELEGRAPH, [illegible] the recent Patent of Messrs. Nott and Gamble.—The [illegible] and other Works in the Useful Arts are daily described. The beautiful OPTICAL EFFECTS include the NEW DISSOLVING VIEWS. EXPERIMENTS by the DIVER and DIVING-BELL, &c., &c. Admission, 1s.; Schools, Half-price.

The Builder.

No. CCX.

*SATURDAY, FEBRUARY* 13, 1847.

PEOPLE say architecture is a noble art, and so it truly is: its influence on taste and morals is undeniable, for, as an American writer observes,—"There is a kind of symmetry in the thoughts, feelings, and efforts of the human mind. Its taste, intelligence, affections, and conduct, are so intimately related, that no preconcertion can prevent them from being mutually causes and effects. The first thing powerfully operated on, and, in its turn, proportionally operative, is the taste. The perception of beauty and deformity, of refinement and grossness, of decency and vulgarity, of propriety and indecorum, is the first thing which influences man to attempt an escape from a grovelling, brutish character; a character in which morality is effectually chilled, or absolutely frozen,"—and so on, and so on. Those who profess this noble art should be gentlemen—*must* be gentlemen: men of education and cultivated taste, with more acute perceptions and finer feelings than the multitude. The sense of beauty is necessarily accompanied by a feeling of its superiority over deformity, and may be supposed to confer this superiority on those who possess it over those who do not. To stand under the shadow of a *once* great name,—every one remembers what Vitruvius looks for in the architectural character,—integrity, high feeling, nobleness of heart. For an architect even to solicit employment was an abasement, in the eyes of the accomplished Roman, of both art and artist, not to be endured. And we emphatically say the Roman was right.

So far then our exordium: and now we will just let our readers see what is thought of this noble art, and its high-minded professors, in at all events one district of Great Britain,—the good town of Ipswich.

The committee of the Mechanics' Institution there, proposing to erect a building for the purposes of the society, and desiring to have the best plan, and a choice of plans in order that they may get the best plan, have issued an advertisement to "Architects and *Builders*," stating this desire. They set forth that the building must not have more than 60 feet of frontage, and must comprise,—"A lecture room, about 30 feet high, to accommodate a lecturer and a company from 600 to 800 persons; a library and reading-room, or the two combined; a committee-room, class-room, and a good vestibule entrance; also rooms for the residence of the librarian;" and they say that the whole must not exceed the cost of 1,600*l.*

The plans are to be sent in under a private mark; and, will you believe it? no less a sum than FIVE GUINEAS will actually "be given for the one most approved, if the party be not employed to carry it out." Listen to this, ye Inigos and Christophers of England! Talk no more of want of encouragement, ill-appreciation, insults to art,—but sit ye down to your tables; use the knowledge ye have acquired at so much cost and labour; and respond to this benevolent offer in the way it deserves.

And if you do so, it will be with one universal burst of contemptuous indignation, sufficient to awaken these gentlemen of Ipswich from the ignorance which led to such a proposal, deter other committees from offering a similar insult, and perhaps effect an alteration in the miserable and degrading system altogether.

There is no mistake in the advertisement: it runs clearly, FIVE GUINEAS will be given *for* the one most approved, if the party be not employed to carry it out; goes on to say the institution is open to offers for sites or *premises* that are eligible (in the event of which latter not being found, the plans, of course, will not be carried out by any one), and is signed J. Allen Ransome and Henry Lawrence.

We wonder if Mr. J. Allen Ransome and Mr. Henry Lawrence felt ashamed of the document when they signed it? ashamed of themselves and their colleagues? If they did not, it must have been for want of thought on what they were doing.

If an architect were commissioned by an employer to design and prepare the plans for such a building, five-and-twenty pounds would be a moderate charge for them. And yet in the present case, architects are unblushingly invited to prepare these plans for merely the *chance*, the very remote *chance*, of getting five pounds, five shillings, or one-fifth of what they would be fairly entitled to charge. Apply the invitations, as we have often said, to lawyers, and doctors, butchers, and bakers; and while its absurdity is made manifest, the low and degraded position to which the profession of architecture is reduced also becomes strikingly apparent. Would Messrs. J. Allen Ransome and Henry Lawrence venture to put their names to an advertisement, offering five pounds for the best five-and-twenty pounds' worth of, say mechanism, of no use to any but the advertiser? or if they did, would a mechanic be found, however vain he might be of his skill, and anxious to shew it, who would spend his time on such a losing game, even if certain that the *best* would have the miserable prize (?) which, in the case of the architects, is very far from clear. Or as we inquired when the fishmongers and poulterers advertised for the best plan of an asylum—what would fishmongers and poulterers say if they were asked to obtain and submit some particular kind of game (never called for by their every-day customers) on the *chance* that it would be bought at the ordinary market price? "But then, say the poulterers, *fowls* cost money, and are really worth something, whereas the *designs* you speak of are merely drawings, which, unless we take them, will not realise the cost of the paper they are made upon; so that the cases are not parallel.

Truly the cases are not parallel. An honest, able design represents not merely present time and thought, but a large premium and outlay in other respects, long travel, years of study, and many previous, and unsuccessful attempts. But whatever can be had for nothing is literally worth nothing: and thus it is that architects have lowered the character of their profession, and degraded themselves.*"

The poulterers were bad enough, and we told them so; but the *savans* and wisdom-lovers of Ipswich are a hundred times worse. The former did pledge themselves that the author of the selected design should carry it out, if found to have experience; but the Ipswich philosophers, while they offer to the *successful* candidate half the absurdly small sum which the others gave to the first unsuccessful competitor, do not even hint at employing him, but, indeed, make it as apparent as it can be made without saying so in words, that they do not contemplate any such step.

The question now comes, will architects be found to countenance a system, of which this is so bare-faced and insulting an illustration, by submitting plans on the terms proposed?

Earnestly we hope not, as well for the sake of the art as of the profession; and we trust that some steps will be taken, to let the enlightened committee of the Ipswich Literary Institution know the feeling with which their advertisement is viewed by the profession at large.

* Vol. IV., p. 169.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.

BY PROFESSOR GRIFFITHS.

INTRODUCTORY.*

PROBABLY fifty-five substances must be regarded as *elements* in the present state of chemical science; their names are here subjoined in alphabetical order. Those marked * are combustible and non-metallic; those marked † are incombustible and non-metallic, the others are metallic.

1, aluminum; 2, antimony; 3, arsenicum; 4, barium; 5, bismuth; 6, * boron; 7, † bromine; 8, cadmium; 9, calcium; 10, * carbon; 11, cerium; 12, † chlorine; 13, chromium; 14, cobalt; 15, columbium; 16, copper; 17, † fluorine; 18, glucinum; 19, gold; 20, * hydrogen; 21, † iodine; 22, iridium; 23, iron; 24, lantanum; 25, lead; 26, lithium; 27, magnesium; 28, manganesium; 29, mercury; 30, molybdenum; 31, nickel; 32, † nitrogen; 33, osmium; 34, † oxygen; 35, palladium; 36, * phosphorus; 37, platinum; 38, potassium; 39, rhodium; 40, * selenium; 41, silicium; 42, silver; 43, sodium; 44, strontium; 45, * sulphur; 46, tellurium; 47, thorium; 48, tin; 49, titanium; 50, tungstenum; 51, vanadium; 52, uranium; 53, yttrium; 54, zinc; 55, zirconium.

Of the elements, the following will be most frequently mentioned during these papers on chemistry as applied to construction:—

I. Combustible and non-metallic: carbon, hydrogen, phosphorus, and sulphur.

II. Incombustible, and non-metallic: chlorine, nitrogen, and oxygen.

III. Metallic: aluminum, calcium, iron, magnesium, potassium, silicium, and sodium.

The leading chemical characters of these fourteen elements are as follows:—

*Carbon*, a non-metallic combustible solid, perfectly unalterable by exposure to all vicissitudes of atmospheric temperature, or to the joint agency of air and water; but when its temperature is artificially raised, it burns by combining with oxygen, and produces carbonic acid gas. This compound unites with many metallic oxides to form *carbonates*, and they are of great utility and importance.

*Hydrogen*, a non-metallic gaseous element, eminently combustible, and producing during its combustion *water*, by uniting with the oxygen of the air. Hydrogen also combines with several non-metallic, and a few metallic elements, and it, in common with carbon, is most generally existent in organic bodies.

*Phosphorus*, a non-metallic element, solid, but combustible at a very slight elevation of temperature, and producing, by uniting with the oxygen of the air, *phosphoric* acid; this combines with many metallic oxides, and forms *phosphates*: some of these are important.

*Sulphur*, a non-metallic element, solid and easily combustible, and producing, during its combustion in air, *sulphurous acid*, or by modifying its combustion, in contact with certain compounds containing oxygen, the product is *sulphuric acid* or *oil of vitriol*; this acid combines with the generality of metallic oxides, forming *sulphates*, a very definite and extremely valuable class of compounds.

*Chlorine*, a non-metallic incombustible vapour of a greenish yellow colour, eminently poisonous, but a powerful disinfectant, and destroyer of colouring matters; it combines with the generality of the metallic and non-metallic elements, producing definite compounds, called *Chlorides*, when they are not acid. The great natural source of chlorine is common salt, a binary compound of chlorine and sodium.

*Nitrogen*, a non-metallic incombustible gas, a perfect type of a non-supporter of combustion, existing in a state of uniform mixture with oxygen, carbonic acid, and watery vapour

* See p. 47, *ante*.

to constitute atmospheric air; but when combined with oxygen, forming several compounds, amongst which is *nitric acid* or *aqua fortis;* this combines with most metallic oxides, and forms an important class of compounds called *nitrates*.

*Oxygen*, a non-metallic incombustible gas, but a powerful inducer and supporter of combustion; it is universally present throughout nature, in air, in water, in earth, and most organic bodies. Its compounds with other elements, when not acid, are termed *oxides*, thus, all the substances formerly called earths or calces, are true oxides of metals.

*Aluminum, calcium, magnesium*, and *silicium* are metals obtained from clay, or alumina, lime, and magnesia, and *silica;* they are extremely difficult to procure, on account of their extraordinary affinity for oxygen; hence, in a pure state, they are not practically known, but their compounds are of vast utility and interest.

*Iron*, a metal most abundantly presented throughout nature in a state of combination, and especially with oxygen. It forms two *oxides*, and these are capable of combining with various acids to form compounds, which constitute the basis of many colours and stains: it is a metal having a very extensive and practically valuable range of chemical affinity.

*Potassium* and *sodium* are the metals of the alkalies potash and soda. These metals are difficult to obtain on account of their energetic affinity for oxygen, and they are only of importance in the refined operations of analytical chemistry; but their compounds with oxygen, and of these with other oxides and acids, are of great value in most departments of science, art, and industry.

Many of the metallic elements are employed in a pure or insulated state, as, for example, iron, copper, tin, lead, or zinc; in the form of beams, bars, rods, sheets, tubes, and pipes of all sizes, shapes, diameters, and thicknesses.

The compounds which some of the metals form with each other are technically called *alloys;* these are in universal request in decorative architecture; for example, bronze, and brass; the former a compound of copper and tin; the latter, of copper and zinc. The hard and soft solders, also, used for uniting the several parts of metallic work, are all alloys of various metals. These alloys, generally speaking, are more fusible than the individual metals of which they are composed, and, therefore, admit of being applied with great facility.

The precious metals, gold and silver, are employed in decorative architecture even to a lavish extent. But the great value of these elements would entirely preclude their use if they did not possess the important physical property of malleability, or extension into leaves of extreme tenuity, in a degree superior to all other metals; for as regards gold it may be stated, that a cubic foot of the precious metal admits of being beaten into leaves sufficient to cover nearly one hundred thousand square yards. Then the permanence of gold, and good gilding, is remarkable. It has no affinity for oxygen, or any other substances that are existent in air or in water; it, therefore, preserves its deep orange lustre unimpaired for centuries,—witness, for example, the golden ornaments and the gilding that embellish the cases of Egyptian mummies. Silver, on the other hand, although of a beautifully chaste white lustre, will soon become tarnished or dull. This change is not due to oxidation, but to the action of sulphureous vapours upon the metal, by which a thin scale of sulphuret of silver is formed, and this acts as a shield to the metal beneath. The silver and silvering found in many ancient cathedrals, churches, and abbeys, is frequently thus tarnished, or blackened, and to a very great extent, if in the immediate vicinity of decomposing organic bodies.

The use of silver is almost excluded from theatrical decorations and properties, unless it be strongly lacquered, to keep off the action of the sulphureous compounds which are emitted during the combustion of coal-gas, and very few silversmiths or jewellers can venture to illuminate their shops with coal-gas unless great care has been taken in its purification. It is no easy task to free gas entirely from compounds of sulphur, hence the recent plan of having the gas lamps outside, instead of inside the windows, to exclude the action of sulphur, and also the heat, and watery vapour, resulting from the combustion, all of which conduce to the tarnish.

The chemical habitudes of the metals require much study from the architect, for a metal alone may be extremely permanent, but will often corrode rapidly if in contact with another metal; thus, for example, copper or zinc, alone, will resist oxidation for a great length of time, but let them be rivetted together, and exposed to the vicissitudes of the atmosphere, and the zinc will soon sustain corrosion. The chemist discovers that the mere contact of dissimilar metals disturbs their electrical relations, thus zinc renders copper electro-negative, and in that state it will not suffer chemical change, whilst the zinc becomes electro-positive, and in that state, although capable of protecting the copper, suffers oxidation and corrosion itself.

This fact having been pointed out by the chemist to the architect and builder, we now find when plates or masses of metals are to be employed, care is taken to examine strictly their electro-chemical relations or habitudes, that corrosion may be prevented, though in many cases the fact cannot be conveniently rendered applicable. Look, for example, at railings of cast, but more especially of wrought-iron, when firmly secured into stonework by pouring molten lead around them, how often they decay and dwindle away in some cases to mere wires, especially at their lower parts, immediately in contact with the lead, the iron being rendered electro-positive, and therefore capable of undergoing oxidation by the joint agency of air, water, and the animal fluids that are so commonly voided against corner rails. Although the common metals, *ex. gr.*, tin, copper, lead, iron, &c., are so extremely plentiful and cheap, they are not presented by nature either in purity or quantity adequate to the supply of the enormous demand that is made for them in the arts of life, and as they are all elements, of course the chemist cannot form them artificially. The metals are presented by nature in combination with non-metallic elements, generally oxygen and sulphur, constituting *oxides* and *sulphurets*, or as oxides combined with acids, constituting *carbonates* and *sulphates*; such compounds are known to the chemist under the title of *metallic ores*. Thus the tin ore of Cornwall is an *oxide*, whilst the copper ore of that county is a *sulphuret*, and the iron ore of Staffordshire is a *carbonate*, these are familiarly known as *tin-stone*, *copper pyrites*, and *iron-stone;* they contain the metals, tin, copper, and iron; the art of obtaining such valuable forms of matter is founded upon known laws of chemical affinity, and consists in exposing the respective ores to heat, with some non-metallic element, having a strong affinity for that in the ore, but none for the metal; this operation is called *reduction*, and during its procedure the metal is *not made* or *produced* by the agents employed, but *drawn forth* or *educed* from its natural combination with a non-metallic element.

The following example may serve to explain the theory of the process of reduction. If a piece of charcoal be heated red hot, it will rapidly consume; this is a chemical change and due to the charcoal or its pure *carbon*, exerting affinity for the *oxygen* of the surrounding air, so that the product of the combustion is *carbonic acid gas;* the chemist ascertains by analysis, that the ore of tin consists of the metal and oxygen, and having as in the above simple instance discovered that charcoal at a high temperature has an affinity for oxygen; he mingles charcoal with the ore of tin, and expects upon heating the mixture in a furnace, that the charcoal will burn by attracting the oxygen of the ore, that carbonic acid will be *produced*, and then the metal thus deprived of oxygen or *deoxidated* will be *educed;* the correctness of this reasoning is borne out by experiment, and conducted upon a large scale it furnishes all the commercial demands for the metal tin.

The natural and artificial compounds of oxygen with the metals present a vast mass of useful materials for the purposes of the architect and the builder. All of these have been laboriously and accurately examined by the chemist.

Thus pure white clay, sand, and lime, although commonly called *earths*, are true *metallic oxides*, the constituent metals being so firmly united to oxygen by the power of chemical affinity, that they do not admit of extraction or reduction by ordinary decomposing agents, but by employing such, in conjunction with the action of electricity, three extraordinary metals, viz., *aluminum*, *silicium*, and *calcium*, reward the researches of the experimentalist.

In consequence of clay, sand, and lime, undergoing no reduction to the metallic state by the sole agency of heat, they become eminently fitted for the construction of fire-places and furnaces, not only for the combustion of fuel for warming dwellings, but for that required in the reduction of ordinary metallic ores and the formation of every variety of earthenware, porcelain, glass, and vitrifications, as will be more particularly shewn hereafter. Native compounds, or in some instances, native mixtures, and in others artificial mixtures of these substances with other metallic oxides, constitute all the varieties of granite, slate, terras, puzzolano, and cement. Oxide of iron is most abundantly distributed throughout nature, and more particularly in all common kinds of clay, it has a very intense affinity for the pure white alumina of clay, and the red colour of bricks, tiles, and articles of common pottery is referrible to its presence in a high state of oxidation induced by the heat and air of the clamp or kiln in which such useful materials are burned or baked. Then the chemist by attentively studying the characters of ordinary metallic oxides, finds that they have the power of uniting with those used in the manufacture of earthenware, and of conferring various splendid and highly permanent colours, thus the oxides of chrome, cobalt, and manganese, respectively confer all shades of green, blue, and purple.

The glass employed in window-sashes is a compound of metallic oxides, crown-glass, for instance, consisting of oxide of silicium or *silica*, and oxide of sodium, or *soda;* whilst the softer and more brilliant glass called flint-glass consists of silica oxide, of potassium, or *potash*, with the addition of litharge, or *oxide of lead;* to this its extreme brilliancy and high refractive power are referrible, and hence its admirable adaptation to the splendid cut-glass chandeliers, lustres, &c., which are introduced by the hand of decorative art. All the beautiful varieties of stained glass are compounds of metallic oxides; and seldom, indeed, do we imagine, when gazing upon, and admiring the effect of the beams of rainbow-coloured light that pierce through the party-coloured panes of a magnificent cathedral window, that the glass, under the hands of the chemist, may be caused to reveal more beauties that those immediately apparent to the eye; but such is the case, for the deep ruby red is conferred by gold, the bright yellow by silver or antimony, deep orange by iron, green by iron or copper, blue by cobalt, purple by manganese, and the various shades of colour by the judicious admixture of those metallic preparations with each other in originally colourless glass, the same as various shades may be produced by adding ordinary pigments to white lead upon the palette of the artist,—with this exception only, that vitrified colours will never fade or deteriorate; witness the vitreous relics of Egyptian art.

Pursuing our inquiries regarding "Chemistry as applied to construction," it appears that all kinds of mortar essentially consist of oxide of calcium and oxide of silicium, or, in other words, lime and sand; whilst hydraulic cements, which harden or set under water, contain, in addition, oxide of aluminum, or alumina, and oxide of iron. These latter substances confer the peculiarity belonging to such cements, in consequence of a very powerful and beautiful affinity that is brought into action when they are mingled with the materials of common mortar. This important subject will open a wide field of discussion. Oxide of calcium, or lime, naturally combined with carbonic acid, and in many cases involving other metallic oxides, presents the architect and the builder with every variety of pure white and veined marble, free-stone, Bath-stone, lime-stone, calcareous spar, chalk, and whiting.

In the language of chemistry, the combination of an oxide with an acid is called a *metallic salt*, however it may differ in its character from common salt, which is a binary compound of chloride of sodium.

Alabaster, gypsum, plaster-stone, and plaster of Paris, consist of sulphuric acid and lime, and are more or less pure according as they

are perfectly white, for the red coloured, or veined, specimens contain oxide of iron. In examining these sulphates of lime, the chemist points out how the characters of substances may be disguised by the power of affinity; for sulphuric acid and lime, in a pure or insulated state, are excessively caustic and poisonous, and cannot be exposed to the air without undergoing change; but upon being united they form a compound perfectly neutral, having no poisonous property, and which will endure for ages unchanged, as the sculptured work of many ancient funeral monuments so amply testifies.

Most of the materials employed as paints or colours are salts of metallic oxides. The yellow colour given to old brickwork previous to the operation of pointing, is due to the oxide contained in sulphate of iron or green vitriol, being extracted or precipitated by the greater affinity of lime for the sulphuric acid. White lead is a carbonate of the oxide of lead; blue and green verditter are carbonates of oxide of copper; chrome yellow a compound of chromic acid and oxide of lead, whilst vermilion is a direct compound of sulphur and mercury, or a sulphuret of mercury, and common bronze-powder, a sulphuret of tin.

These examples may suffice to prove how largely the architect, the builder, and the decorative artist draw upon the elementary metals and metallic compounds for materials suited to the pursuit of their respective professions, and that chemistry as applied to construction presents many important and useful facts to their notice. But we can proceed further; let us turn our attention to some of the non-metallic elements and their compounds or mixtures. The basis of all black paints is *carbon*, in various states of mechanical division, known as lamp-black, ivory-black, and vegetable black. The very pencil point with which the design of the palace or the cottage may be traced, although familiarly called "black lead," does not contain a particle of lead; it is a variety of carbon, in a pure and soft state; and the diamond, employed by the artificer to cut the tables of glass, is the same element carbon, absolutely pure, crystalline, and the hardest substance known to the experimentalist.

This same Protean element carbon, as elicited by the decomposition of organic remains, confers the blackness upon the much admired marble called *Lucullite;* and if the chemist cause affinity to ensue between carbon and iron, the result is cast-iron and steel; without the latter compound fashioned into tools, the architect could not have his designs properly and effectually executed.

Another extraordinary element is *hydrogen*. Although never presented pure by nature, it exists in combination with oxygen to constitute water, a liquid of the most universal employment for tempering clay, mixing cement, stains, colours, and for aiding the sawing, grinding, and polishing of marble, stone, glass, metals, and so forth.

But water, thus useful and indispensable, is a natural agent against whose effects it is the constant aim of the architect and builder to be prepared, for it contributes in no small degree both mechanically and chemically to the disintegration and decay of many materials employed in construction.

These may appear perfectly compact, yet close examination proves them to abound in minute pores, which, in virtue of an attraction purely mechanical, called capillary attraction (like that of a sponge), eagerly absorb, and tenaciously retain, water derived from the clouds or from the humid soil of foundations, and thus remain damp; some idea of the extent to which this absorption and retention takes place may be formed from the fact, that a single good and apparently sound stock brick, such as is employed in the generality of metropolitan buildings will absorb and retain upon the average eleven ounces of water.

Accordingly, if mortar or cement be laid on dry bricks, the water is rapidly absorbed, and little or no cementation takes place; hence the utility of soaking the bricks in water, or lime water, to fill the pores, so that the water of the mortar may be not rapidly, but gradually absorbed, as the brickwork dries, supposing always the situation is suitable for the drying to ensue.

If porous brick or stone-work saturated with water be exposed to frost, the water passes from the liquid to the solid state, or in more familiar terms freezes, and in so doing it expands with vast force, a force that the particles of the materials are unable to withstand; accordingly, they are riven asunder, chiefly at the surface, and in the course of time by the alternations of thaw, frost, and heat, a considerable amount of disintegration and decay is the consequence; many public buildings present striking examples of this fact.

Water forms an essential, and, in many cases, a truly definite, constituent of building materials. Thus *slaked* lime, although it may feel perfectly dry, in every 100 parts, contains 25 parts of water, and such lime the chemist terms *hydrate of lime*. The above quantity of water is theoretically required to slake 75 parts of quicklime, although in practice, a larger quantity is generally added; alabaster and gypsum owe their beauty, translucency, and compactness, to the presence of water, chemically combined in the proportion of about 20 per cent., and are *hydrated* or *enhydrous* sulphate of lime, if the water be expelled by the action of heat, they become opaque white, and *anhydrous*.

Thus plaster of Paris is *anhydrous*, and when artificially mixed with water, the well-known property of setting and hardening is due to affinity between the sulphate and the water, by which the latter is solidified.

Water, although so abundant throughout nature, is never chemically pure, or solely consistent of its two elements, hydrogen and oxygen; it contains various saline matters derived from the strata of the earth, and these impurities, however minute in quantity, perfectly interfere with its use in refined experiments; and where they exist in abundance, as in some kinds of river water, or more especially in sea water, they interfere with its employment by the architect and builder. The purity of water employed in mixing clay, mortar, cement, and colours, although a matter of great importance, is but too often neglected by practical men, and the consequence is, that blotches and efflorescences disfigure the work, originally destined to be fair and beautiful.

To those who have not made the science of chemistry a branch of study, the foregoing statements as to the earths and earthy materials (popularly so called), being metallic oxides, may appear extraordinary. If this be the case, how much more extraordinary will appear the ensuing statement,—that all kinds of timber consist of the elements *oxygen*, *hydrogen*, and *carbon!* but such is the chemical fact; and not only consist of these non-metallic and diametrically different elements, but in definite weights, so exactly apportioned, that their individual characters are as perfectly neutralized as in the case of sulphuric acid and lime, when united to form alabaster.

In perfectly good, dry timber, free from any great excess of turpentine, resinous matter, or knots—say, for example, well-dried American pine—the elements, oxygen and hydrogen, are found in the exact proportions requisite to the constitution of *water*, and these combined with an equal weight of the element *carbon*. The accumulation, the, elaboration of these three elements by the vital, or organic powers or functions of the vegetable kingdom is most wonderful, and upon it the chemist reflects and experiments with the full intensity of delight and admiration;—it throws all his limited artificial operations into the shade of insignificance.

Look, for example, at the dry timber of an oak tree, weighing say thirty tons; look at its hardness, its compactness, its strength, its durability, and then reflect for a moment upon the statement that the chemist can make regarding its composition! it will "move our especial wonder."

Who would imagine that the timber of the tree contained, in a solid state, the identical elements of the flowing river upon whose banks it grew and flourished, combined with the elementary matter of the sparkling diamond?

But such is the chemical truth; for in the thirty tons of dry oak timber there are consolidated fifteen tons of *water* and fifteen tons of *carbon*.

Then again, the pure matter of wood, thus constituted, or woody fibre or *lignin*, as it is called, wonderfully elaborated by the hand of nature, chemically the same as that of solid oak, mechanically different in point of aggregation, presents every variety of hemp, flax, and cotton. These valuable organic forms, by artificial processes, are manufactured into canvass, linen, calico, and paper, and all used in construction, either in a plain state as they are sent forth from the loom or paper-machine, or most elaborately or richly adorned with chemical elements or compounds under the hands of the decorative artist, to constitute the magnificent paintings in oil or water colours, or the stained hangings which embellish the walls of a finished edifice.

The very same elements, oxygen, hydrogen, and carbon, in other proportions, and especially with more hydrogen than is essential to the formation of water, constitute the black and solid coal, the white and solid wax, the yellow and liquid oil, which are employed for warming and illuminating our dwellings; and coal, when artificially deprived of oxygen, leaving only hydrogen and carbon in combination, forms the transparent, invisible, inflammable gas, which is rapidly superseding all other materials for artificial illumination. Resins, gums, bitumens, the alcohol, the oils in which they are dissolved to constitute varnish, lacquer, and polish, consist of the three elements, oxygen, hydrogen, and carbon.

But the materials for an edifice would be incomplete without the stores of chemical compounds that abound in the animal kingdom; and in seeking out the ultimate elements of this wonderful and elaborate realm of nature, the chemist arrives at the extraordinary—the inexplicable conclusion, that animal products contain the same elements as those of vegetables, with the addition, in the generality of cases, of the element *nitrogen*.

Glue, size, serum, and albumen of blood, parchment, all used for cements or distemper painting, contain the above four elements, and so likewise the hair, feathers, and down of the luxurious chair or sofa, its silken covering, the silken hangings, the soft deeply piled carpet.

And lastly, when the mineral, vegetable, and animal kingdoms have been each in turn explored and ransacked by the architect and builder for the materials of an edifice, the agency of an imponderable element, by which they are all more or less affected, has to be well and correctly examined,—viz., the universal and all-important agency of *heat*,—or vain will be the attempt to render the edifice a comfortable habitation.

The most general effect of heat upon the three physical states or forms of matter, is to cause their expansion or enlargement of bulk; and amongst solid substances the metals and their alloys are most susceptible of this change. Thus, if a bar of metal be accurately measured in length and diameter at the temperature of 32°, and then exposed to the heat of the sun at 70°, it will be found to have sensibly increased in bulk.

The chemist discovers that all metals will expand by heat, but some do so much more than others; thus lead is the most expansile of the common metals, and platinum the least. This expansion takes place with enormous force, which no mechanical power can restrain.

Native and artificial compounds, such as granite, limestone, marble, wood, brick, plaster, stucco, and so on, also expand by heat, but in a degree vastly inferior to the metals and their alloys; but in all cases the expansion is temporary, and the various substances return to their original dimensions when the heat is withdrawn, or, in other words, when they are cooled to the degree that they had at the outset of their measurement.

In reference to the materials employed in construction, knowledge regarding their expansion by heat and contraction by cold is of the utmost importance to the architect, for their dimensions are constantly undergoing changes by the ordinary fluctuations of atmospheric temperature. Iron, or other tenacious metal, is frequently introduced into stone or brickwork, for the purpose of conferring stability upon a structure; but, if injudiciously employed, becomes the most active agent in promoting its instability. Thus, during a warm day, the metal becomes heated, it expands in all directions,—so does the stone or brickwork, but not to an equal extent; and, therefore, it is thrust out of position, and remains where thrust, so long as the heat of the day continues; but as the cool of night approaches, the metal cools and contracts rapidly to its original dimensions, whilst the contrac-

tion of the stone or brickwork is extremely slow, and never can follow up that of the metal, and, accordingly, is compelled to remain, very nearly where it was thrust or forced by the metal. This operation of expansion and contraction being constantly proceeding, the masonry or brickwork soon become unsteady by detachment from the mortar or cement. Again, if an iron plate be inserted in a wall for giving it support, and then to disguise this it be plastered over, the consequence is, that in a very short time the plaster will be cracked by the expansion of the metal beneath.

The coping stones of walls are frequently but most injudiciously held together by cramps of iron "firmly imbedded in lead," and such pieces of metal, if of cast-iron, which is brittle, often break during the first frost, from a tendency to contract by the cold more than the stonework will permit; or if they be made of wrought-iron, which is tough, then, instead of rupturing, they generally rupture the stonework, and so loosen themselves from their leaded sockets. Then in the construction and setting of iron stoves or fire grates, the expansion and contraction of metal requires to be well investigated, and to be well guarded against, or in a short time the whole arrangement will become ricketty; unsightly gaps and chinks will appear around the metal work, and not unfrequently the marble chimney-piece will be distorted from its true position, or even broken.

These are all instances in which chemistry may be advantageously applied to construction, and the principles of the science likewise demonstrate to the architect and builder that in their attempts to heat edifices by hot air, hot water, or steam, the pipes for the conveyance of such agents should never be rigidly fixed or firmly abutted against the walls or other solid obstacles, lest the pipes in expanding may cause distortion or eventually overthrow, and the same fact is applicable to the employment of iron beams, &c.

The chemical nature of atmospheric air, and its expansions and contractions by heat and cold, most imperatively demand attention from the architect and builder, for this wondrous medium is the very pabulum of all warming and ventilation. Atmospheric air is a *mixture* of the gaseous elements oxygen and nitrogen. Its changes of volume and of levity by alternations of natural or artificial temperature are great and sudden; and, to maintain air of a genial warmth without disturbing the relative proportions or characters of its elements, which would unfit it for the support of life; to give free egress to such portions as become chemically vitiated by respiration and combustion, whilst free ingress of pure air is at the same time abundantly allowed, are matters literally of vital importance, but of extremely difficult practical application.

Absolute ignorance, or wilful neglect of the chemical habitudes of the atmosphere, have opened a vast and fertile scope for quackery, not only as regards the futile attempts at warming and ventilating extensive and costly edifices, but in the construction of flues and chimneys of ordinary dwellings, so that the roofs are disfigured with abortive contrivances in the shape of creaking caps and clattering cowls, "to make the fires draw."

In these two introductory papers, on "Chemistry as applied to Construction," the writer has endeavoured to present a general outline of the nature of the science, the business of the chemist, the nature and properties of elements and compounds, and the extreme importance and utility of such knowledge to the architect and the builder. Having thus in some measure introduced the agents that are to be employed, the reader will be prepared for the particular discussion of the individual materials used in construction, for example, marble, stone, brick, mortar, cement, glass, and other vitrifications, paint and varnish, the metals, iron, copper, zinc, tin, and lead, and their alloys. These will afford a vast fund of useful information, and to them future papers will be devoted.

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Leominster Butter-Cross.—This ancient piece of architecture is now about being removed from its long resting place. A local paper says, "it will be placed on wheels, and moved to where some old houses now stand behind it."

## DECORATIONS AT SIR ROBERT PEEL'S.

The principal staircase of Sir Robert Peel's house, in Whitehall-gardens, has been decorated by Messrs. Collman and Davis in encaustic colours. This staircase is very simply arranged, the walls of the ground-floor being mainly taken up by a simple flight of steps to the principal floor, bearing four lofty panelled walls above; the whole of the ceiling is divided into numerous compartments, filled in with ground-glass, and forms one skylight. In the centre of the four principal panels are introduced, as chief subjects, the four seasons, represented in figures of considerable size, painted in relief on dark grounds. Beneath these are painted, in twelve smaller compartments, figures composed in reference to the principal subjects. Arabesque ornaments surround the centre paintings, and fill in between the others in fanciful devices, and also enrich the upper part and sides of the large panels, which are besides framed by a quietly coloured border connecting the whole. In the architectural members of the walls, cornice, and glazed ceiling, rich colour and gold is introduced to harmonize with the rest. The style of the decoration is of a classical character, in accordance with the architecture.

## PROPOSED ARCHITECTURAL SOCIETY FOR STUDENTS AND DRAUGHTSMEN.

Last week we printed the first part of a paper on the state of architectural education, read by Mr. Kerr, before the Association of Architectural Draughtsmen. This treated of present deficiencies, great and numerous enough! In the second portion of the paper, which we now give, a remedy is suggested.

The School of Design being provided for the preparation, there must now be had some powerful means of study to follow it up, build upon it, perfect, and apply it. And certainly for this period, and for this subject, a very valuable principle indeed is that upon which the system of mutual instruction and collective investigation is founded, which is so well known among us in the form of our many scientific societies. This principle I hold to be more valuably applicable in the early manhood than in any future period of life whatever; for in our every day public associations the main; spring is always in the energy of an enthusiastic few,—apply the principle to youth, and this energy is that of an enthusiastic many—perhaps I might say an enthusiastic all. And even when the principle spreads into debate and controversy, still it is valuable,—perhaps even on this account the more valuable. We differ in opinion; we always have differed,—we always will. And this fact, which the thoughtless will set down as a curse of war lying upon fallen man, is in fact a beautiful scheme in Creation for effecting the grand purpose of Earth's advancement. Were we all of one mind, human nature would settle down and stagnate. But we are more wisely made, and by this very spirit of controversy,

> "Thro' the ages one increasing purpose runs,
> And the thoughts of men are widen'd by the process of the suns."

An Architectural Society for young men, if such could be properly established upon a broad basis, to be secure, its face in the right direction, and with a few good leaders to guide, would be, I confidently believe, a most powerful means of good architectural education. Laying hold of the architect's mind at the best period for the energy and thought required, and providing him with an excellent means of encouragement, the cordial study of the Art would be, I am persuaded, directly and most valuably produced. And particularly am I sanguine of its good effects in view of the peculiarities of our special subject. In the Institute of Architects the principle spoken of must be admitted, in so far as regards any incentive to study and research among its members, to have signally failed. A great cause of this is to be found in the undeniable fact that the younger members of the profession are, to all intents and purposes, completely excluded from any part in its transactions. The principle is applied too late in life: take the architect a few years earlier, when study and research are his element, and your expectation may be a very different result. The study which is demanded must be mainly over before the commencement of practice; complete establishment may be not improperly taken as equivalent to the complete extinction of the spirit.

It has been expressed as a fear that the supply of material—the production of essays and other subjects by the members—would be very likely a difficulty in the society proposed; but I cannot believe that it could fail through want of this support, if once fairly and properly working. My view of it rather is that, with a careful, spirited, liberal guidance at the commencement, and cordial attention on the part of a few leaders, the means of supply for material would soon admit of selection. With a hundred, or even fifty, young men earnestly engaging in such an association, surely the four-and-twenty subjects a year would be obtainable.

This society I would have to embrace the entire class of the young architect, from the Institute down to the youngest pupil. If any one be inclined to demur against his association, as a man in the omega of study, with the mere boy commencing the alpha, I would remind him that such argument would deprive the world of all its great ones—if it were beneath the dignity of a Socrates, or a Buonaparte, or a Washington, to associate with meaner men. Let it embrace the whole class, and upon a liberal spirit even then. For what is wanted is a society for this class, not like what our Institute is to the profession, but like what it ought to be.

The School of Design which I have spoken of would be simple in its nature. A proficient man takes charge of a small class of students for their instruction in Design. There might be several teachers for several branches, and junior classes and senior. The teachers' duty is to appoint subjects for design, and to criticise the designs presented. This is all I would propose as a commencement; but there might be classes for other matters,—construction, for instance, drawing, perspective, painting, practical work,—anything, in short, which might be found desirable. There are also many other amplifications which would fall within the province of architectural education; but a perfect School of Design would be of gradual, perhaps difficult, attainment.

This institution ought certainly to be supported by the Institute; but I fear we cannot expect it; and even if it were to be had, I should be suspicious at present of its government. I would connect it, therefore, with the Architectural Society which I have described. First, there appears no other means of obtaining that necessary support which the School of Design would thus obtain. Secondly, there would be a very valuable aid to the Society itself. Thirdly, I do not know where efficient instructors are at present to be had; and the Society would be, I believe, a speedy means of producing them,—for in six months I would expect a new school of architectural criticism to be established.

I have not been able to devote that careful study to my subject which is requisite, to be able to leave generalities for speciality and detail. My object has been, therefore, more to shew the grounds for the scheme, than to develop the scheme itself. The constitution of the society would have to be arranged carefully and deliberately. I would be exceedingly cautious in proposing at the present any decided principle of detail. But one or two passing observations might be made as a conclusion. The expenses of the Society ought to be as small as possible—the subscription money as nearly nothing as may be. Exclusiveness ought to be avoided carefully. Better to explode through liberality than to fall cold and dead through selfishness and scruple. I would also expect that teachers for the School of Design would be had for generosity and not fee—their trouble being made as small as possible, as much a pleasure as possible, and as much as possible an honour to be desired. Students' fees would be well to be nothing,—instruction free. Secret committee work must be none,—the government must be open, a management by delegates, not a dominion of rulers over subjects.

Now I have said what I have to say. I leave it for consideration and inquiry. For my own part I am only fully convinced that something of the kind I have described might

with great benefit be established; and I hope the moving spirits will be found, to carry it into effect, as a means, not only of the advance of our beautiful Art in the present generation, but also (it may be said without hesitancy) of its regeneration from its present obscurity, confusion, disguise, and error, to its true free height as one of the noblest works of the intellect of man.

## THE BOND QUESTION.

Sir,—Will you allow me space in your publication to add a few words on the subject of *bond in brickwork*, so that your readers may have more views than one before them? In my humble opinion it should be laid down as a fundamental principle, that "no woodwork, either in the shape of bond, plates, or lintels, should be used in brickwork, and that wood bricks and the ends of timbers should be admitted as seldom as possible."

In order to supply the place of wood, I would adopt one or more of the following expedients:—

*For Bond.*

1. The brickwork should be carried up in English bond, in party-walls *at least*.

2. Two or more courses of *stone* or *slate*, set in cement, all the joints broken; this would apply particularly to ashlaring, and might receive the form of stringing courses.

3. Four or more courses of iron-hoop or vat-hoop. It should be an invariable rule, whenever iron is used, either to have it *galvanized, painted, pitched and sanded*, or coated by one of the processes you have mentioned in recent numbers of The Builder.

4. Two or three courses of *tiles* somewhat after the Roman manner, but bedded in cement and the joints broken. The tiles might be made of the width of the wall, of any convenient length,—say from 2 to 3 feet, and from 1 to 2 inches in thickness. Perhaps these might be objected to in the *front* walls of buildings, but at any rate they might be used in the party-walls, or they might be *moulded* so as to form stringing courses, in the same manner as the stone or slate bond, and in that case might be made very ornamental.

5. Two or more courses of bricks formed in lengths of 2 to 3 feet, and the *whole width* of the *wall*. These, if bedded in cement and with all the joints broken, would form a very efficient bond.

*For Plates.*

1. Iron vat hooping or iron bars (*galvanized*) to which the ends of the timbers might be screwed or spiked.*

2. Cast-iron corbel plates, on which the wooden plates would rest.

*For Lintels.*

1. The arches over the external door and window openings might be formed the whole thickness of the wall, in which case no lintels would be required.

2. Wherever lintels were required, bars of iron (galvanized) might be used with discharging arches over them.

*For Wood Bricks.*

I think I have seen it stated either in The Builder or some other publication (but perhaps you or some of your correspondents can refresh my memory on that point), that an *incombustible* substance had been invented which might be very usefully applied in the place of wood bricks, being capable of resisting pressure, and possessing the nature of wood, inasmuch as nails might be driven into it without splitting it.

*Ends of Timbers.*

The use of cast-iron corbels for supporting the plates would get over this difficulty, and a very good tie might be obtained.

I have not said anything on the advantages of excluding a substance that is liable to *decay* and *fire* from brick and stone walls, considering it a self-evident proposition.

I am, Sir, &c., A Builder.

London, Feb. 4th, 1847.

* The contraction and expansion of iron by heat would render the use of bars of any size in brickwork very inexpedient.—Ed.

## A PEEP AT LAHORE.

A recent French traveller describes Lahore, of which we have recently heard so much, as being surrounded by high walls and defended by towers and ravines, and gives a graphic picture of its sanatory state and condition. He says, when seen from a distance, no idea can be formed of the spectacle it presents within. Its present misery is as great as its past splendour. It is nothing but a mass of ruins; every where its noble mansions seem ready to fall to the ground. To adventure on foot through the inextricable maze of tortuous, infectious, dark streets, forming the town, obstructed, as they are too, by ruins, and filled with elephants, horses, and men, is almost impossible for a stranger. The streets are so narrow, that in many you may touch both sides as you pass. The houses, constructed of brick, are so high, so overladen with balconies and occupiers, and in such a state of dilapidation, that a blow would seem sufficient to overturn them, as it would the triumphal gates, under which you pass in going from one quarter of the city to another. To sum up all, the ground, which has never been paved, is a mere open sewer, as horrible to see as to bear; and is pierced here and there by deep holes, which, notwithstanding all the address which is displayed to avoid them, often cause the elephants dangerous falls. We should be glad to obtain the correct average duration of human life in this reeking cesspool, for the advantage of the sanatory agitation now going on in England.

## TRUE FIELD FOR SCHOOLS OF DESIGN.

Sir,—I have just read the letter of "A Student," &c., in The Builder of 30th ult., on the much tortured and, it appears, everlastingly-to-be-misunderstood question of schools of design. The suggestions contained therein are valuable, and worthy of due consideration, but an idiosyncrasy appears to pervade all one meets with or hears on this subject,—it is the perfecting of a School of Design in London alone. Louis XIV. said, "*L'état—c'est moi!*" and the earnest and intelligent advocates of a reform at Somerset House appear to think, that *London is Great Britain and Ireland, with dependencies and colonies.*

Now, Sir, the question of schools of design out of London,—fixed in the great hives of manufacturing industry, is *the* national question; and whatever may be done in London, or however excellently things may be conducted in a school adapted to the wants of the metropolis, the "*pons asinorum*" of the matter has still to be got over—the education, adaptation, and productive powers of provincial schools. Even the committee, now or lately sitting, appear to have altogether neglected this point, and the rule of action appears to be,—"Get a good school in London, and all the rest will follow." This of course is anticipated out of the controlling power to be exercised by the authorities of the central school. It may not be amiss, therefore, to name three or four points for the consideration of all parties interested in the matter.

First. How far the provincial schools of design, placed in the numerous centres of varied manufactures, can possibly be efficiently directed from a necessarily limited sphere of observation like London (as regards their positive wants), even with all its advantages, artistic and mercantile.

Second. That some provincial schools have flourished and done their work satisfactorily, so far as regards the wants of the districts in which they were located, whilst the central school was found to be totally inefficient.

Third. That the unreasonable and untimely interference of the authorities of the central school with efficiently managed provincial ones, has resulted in bringing one of the latter at least, and that too the most important one, to the very unsatisfactory level of the former.

Fourth. That whilst affecting to look to France for a high and potent example, the fact has been overlooked, that the French schools are not necessarily controlled in their action by the metropolitan one,* and that the great School of Design of France is not that of Paris, but of Lyons.

Make the London schools what you like, from an infant drawing academy, up to an university of industrial art; train all the masters and teachers, directors and professors, you may require; drill them by searching examination before making an appointment; but after all, the great field of these operations must be Manchester and Birmingham, Sheffield and Glasgow, Paiseley and the Potteries, or any other place in which positive manufacture is carried out by practical men anxiously waiting for artistic excellence. I am, Sir, &c.,

Manchester, Feb, 4. Geo. Wallis.

* See Mr. Poynter's Report on the French Schools.

## KENSINGTON WORKHOUSE COMPETITION.

Mr. Builder,—Herewith I send you a list of the amounts of tenders for the erection of a new workhouse at Kensington. Much has been said at various times in your paper, respecting the disadvantages arising out of the present mode of competition; a stronger case than the present could not in my opinion be adduced of the necessity of a great alteration in the course pursued both by architects and building committees.

The adopted plan is one of the many sent, in answer to an advertisement limiting the amount to be expended to 9,000*l.*; and it was stated by the architect it could be carried out for 8,700*l.* Tenders were required, and when received they ranged from 14,000*l.* to 18,000*l.* The architect then stated that he had discovered that the person employed to take out the quantities had committed an error, and which occasioned the excess of difference between his statement and the tenders. The board of guardians, at the suggestion of the architect, employed him to take out the quantities anew; his estimate then was 9,800*l.*, and he assured the board that an eminent builder had offered to execute the work for that sum. But what is the result: the tender accepted, although estimated upon the *architect's own quantities*, is 11,020*l.* Comment is altogether unnecessary; I am content to leave the subject to the consideration of your readers, and remain, Mr. Builder,—Yours truly, G. H. S.

| | |
|---|---|
| Cooper and Davies ..... | £12,746 |
| Nicholson..... | 12,442 |
| Jeffries ..... | 12,419 |
| I'Anson ..... | 12,231 |
| Sissons ..... | 12,219 |
| Curtis ..... | 12,134 |
| H. W. Cooper ..... | 11,912 |
| Higgs ..... | 11,326 |
| Trego ..... | 11,289 |
| Willson..... | 10,970 |
| Burton (accepted)..... | 11,020 |

## NEW CORN EXCHANGE, BIRMINGHAM.

It has been determined to erect a new Corn Exchange in Birmingham, immediately behind the St. George's Coach Office, in High-street, between Carr's-lane and Castle-street. The plans have been prepared by Mr. S. Hemming, architect, and the building will consist of a hall, 110 feet long by 40 feet wide, lighted by a semi-circular roof, surmounted by a lantern, extending the whole length of the hall. The room will be about 50 feet in height, and will be divided into side compartments by pilasters, between which stands and tables, intended to be let to farmers and dealers, will be placed. It has a glass roof of semi-circular shape, as the one best suited to admit the greatest quantity of light. According to a local paper, this spacious room will have two doors, one leading from a vestibule, with columns and ornamented ceiling, at the entrance of St. George's-court, in High-street, the other with a still larger vestibule at the Castle-street entrance. A porch, ornamented with pilasters of the Roman Doric order, will form the High-street entrance; that by Castle-street, which will be the principal front, will be enriched with eight columns, and ornamental recesses leading to the vestibule and to the floor beneath, which it is proposed shall be appropriated to the exhibition of agricultural implements. The building is of the Roman Doric order, in cement. The extreme length of the building, including porch, vestibules, and hall, will be 167 feet, the width varying from 37 to 40 feet. The builder is Mr. Briggs, and the cost will be 5,000*l.*, the expense of the land being nearly the same sum.

## CATHEDRAL OF NOTRE DAME, CHALONS-SUR-MARNE.

AS PROPOSED TO BE RESTORED.



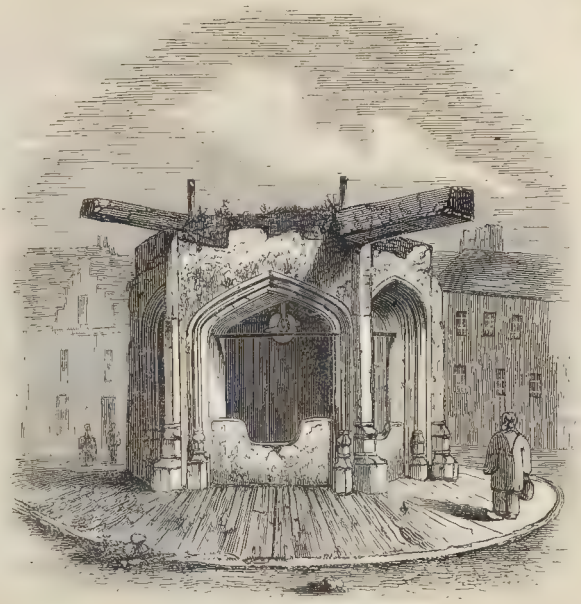
### CHURCH OF NOTRE DAME, CHALONS-SUR-MARNE.

The city of Chalons is situated on a fertile plain, watered by the Marne, the Mau and the Nau. It still retains many features of its ancient strength and importance; and the wall which fortified it during the turbulent middle ages still partially exists. The Hotel de Ville is an attraction to tourists; but the principal feature of the place is the fine Church of Notre Dame, which adorns it, and which, to use the words of the Curé M. Champenois, "for the regularity of its plan, for the purity of its style, for the grace and majesty of its details, takes anhonourable position among the most remarkable edifices in France." This beautiful church, founded in the twelfth century, presents many interesting features of the transition between the circular and pointed styles of architecture, and abounds with beautiful details. The stained-glass windows, executed in 1520, are one of the sights of the place; the rood-loft is also exceedingly beautiful, and the portal is fine. But the great external feature of the church was the four spires, and the pinnacle in the centre of the roof, which were destroyed in the revolution of 1793, only one surviving the ravage. They were covered with lead, and were exceedingly light and elegant in design. The present curé, whose words we have quoted above, with a laudable desire to re-instate its ancient glories, has issued a circular requesting subscriptions towards the restoration of what he justly considers "a monument of the nation's glory." There can be little doubt of the propriety of thus directing attention to the reparation of much that is beautiful in the national monuments of France. Some of the restorations now going on there are worthy examples, which all true lovers of art would be glad to see followed in England as well as in France. Our engraving represents the church as it will appear when restored.

### IMPORTANT CHANGES IN THE ROYAL SOCIETY.

For two years, at intervals, the council of the Royal Society have discussed the desirability of altering the mode of electing fellows, with the view of limiting the number of new members to be annually admitted, and preventing the introduction of persons whose claims are trifling, and they have at last come to the following resolution on the subject. After the commencement of March next, as we understand it, there will be but one election, of fifteen fellows, in the year; the first being in March, 1848. The names of candidates will be suspended the whole year, and just preceding

## GOTHIC WELL, IN GHENT.



the election, a list of all candidates will be sent to every fellow, together with the names of fifteen recommended by the council for election. It remains to be seen whether or not the members generally approve of this plan, or even will acknowledge the right of the council to make this change, without first appealing to a general meeting.

### WHY REMOVE THE STATUE?

This question, long ago answered, is again put, in a four-leaved pamphlet, by one who calls himself a friend of Sir Frederick Trench, and begs the public not to let themselves be bullied out of their opinion by the Academicians. If the writer really wishes an answer to his question, we advise him to look through the last volume of our journal, and if he does not find there sufficient sound reasons for its immediate displacement, we must think he has voluntarily closed his mind against conviction. Reasons for its remaining where it now stands he has none, excepting the assertion which we now unhesitatingly contradict, that the public is *pleased* with its position. The arch spoils the statue, the statue spoils the arch. Singly, each might be made a satisfactory public monument: together, unnaturally conjoined, they disgrace the country and harrow the feelings of every observer who has a just perception of harmony or the want of it. It is to be hoped that, after the present severe weather leaves us, not a week will be suffered to elapse before it is taken down. The western entrance to London has been disfigured through it long enough.

Heat Without Fuel.—Important as cheap fuel may be, to be able to do without it altogether is more important still. A Hungary chemist, perhaps a cold one too, has taken some promising steps towards making this possible. He places in contact two iron and one copper cylindrical plates, highly polished, turning on an axis at the end of a lever, with a balance weight at the other end, to keep the plates in contact, when, by means of very simple apparatus and trifling exertion, a glowing red heat may be produced in five minutes, and maintained with ease. Chalk is nothing to this.

### GOTHIC WELL IN GHENT.

We transfer from our sketch-book the annexed representation of the ancient enclosure surrounding a well, in Ghent, as an instance of the artistic skill exhibited by the old architects in treating even small and unimportant subjects. In its present state of ruin this well forms an exceedingly picturesque and curious object. It is situated in a part of the city little visited by travellers, known as the Old Citadel, where also are the remains of a very curious early church, to which we may refer on some future occasion.

### MODERN WORKS AT THE BRITISH INSTITUTION.

It appears to be generally understood that there is something radically wrong in the proceedings of the British Institution; the government rests in two or three irresponsible hands; injustice is done both in the selection and the hanging; and spiteful acts, as regards sales, are complained of by artists, which are as incomprehensible by those not in the secret as they are disgraceful if true. A reform is anxiously looked for, but whence the worker of it is to come seems as yet a profound mystery: a closer and apparently more impenetrable citadel than that which he would here have to enter can scarcely be conceived. Let us suggest to the directors, that is, to the two or three (if so many) who, according to report, alone take some little part in the affairs of the institution, to begin the change themselves from within, and endeavour to bring the institution into a more healthy state.

To look for a good collection of pictures under present circumstances is vain; and it was with little surprise, therefore, that we found the exhibition, which opened on Monday last, exceedingly unsatisfactory. Many of the elder artists are absent, and the works of the younger ones shew little advance. The want of reading and general knowledge, on the part of the majority of artists, is painfully apparent, and perhaps want of industry not less so. Having been once in any degree successful in the choice or treatment of a subject, they think it unnecessary, if not unwise, to tax their invention or recollection for some years to come, and go on issuing fresh editions of the former work, with constantly diminishing effect; and it is seen that, instead of following an art, they are simply practising a knack.

A true artist is a poet, expressing fine ideas in a fine manner. The thought exhibited in a picture is the first point to be inquired into. That which has cost no thought on the part of the painter will excite none in the spectator. In proportion as the idea developed be lofty and ennobling, so will the character of the picture be high. No skill in painting, no power of execution, will compensate for want of invention, or entitle a mean thought to rank with one that is noble though less well expressed.

We must confine ourselves, at present, to mentioning briefly some of the more prominent pictures in the collection.

1. *A Mountain Road, North Wales*, by J. Linnell, is a highly elaborated landscape which possesses much excellence, and is deserving o examination.

3. *The Lovers' Walk*, F. Danby, a moonlight picture with some of those peculiar effects over which this artist has acquired great control. Though it will not please the majority, it is a work of genius.

6. *The Holy Well*, by F. Goodall, a hackneied subject treated with great feeling. 23, *Irish Courtship*, a larger picture by the same artist is a charming work, though it displays no advance on former works by the same able hand. The girl's face is a perfect sunbeam, gladdening all who look on it, and the contrast between the two suitors is so forcibly expressed, as to suggest a story for the picture and lead one to speculate on their future.

13. *Hatton Forge, a scene on the River Lune*, by W. Linton, is a fine bit of nature.

21. *A Venetian Letter-writer*, by J. Inskipp, represents two girls, the size of life, dictating a reply to a scribe, and notwithstanding that the costume scarcely bears out the title, has high qualities as a picture. 53, *Spring-tide*, and 239, *Fruit- girl*, both by the same painter, will not be passed unnoticed. The directors have not treated Mr. Inskipp well. They ought to make much of him.

30. *Market-place, Coutances*, the only picture exhibited by D. Roberts, R.A., though very charming, is scarcely up to this excellent artist's own mark.

58. *The approaching Footstep*, by F. Stone, consists simply of the figure of a girl (often painted before by Mr. Stone, or we mistake) leaning against a bank, in expectation. The start of a spaniel, she holds in her arms, gives token of the approaching comer. It is a covetable work.

66. *Morning*, by J. Sant, represents a youth, of life size, on the summit of a hill, with a lark, "the herald of the morn," above his head. It possesses considerable merit and entitles its author to commendation. 170. *Evening*, and 185, a reclining female figure under an artificial light, are both large pictures by the same gentleman, and shew a considerable advance.

67. *Welch Mountain Scene, autumnal cloudy weather*, by H. Bright,—a repetition of his *chef-d'œuvre:* very excellent. He has also some smaller landscapes of considerable excellence.

83. *The celebrated Oak in Polstead Park;* 162, *An old Avenue* (once more); 180, *The Cottage under the Hill;* 442, *Landscape with Figures and Cattle in a Boat;* are all by F. R. Lee, R.A.

150. *Rizpah watching the dead Sons of Saul*, by J. C. Hook, is a meritorious attempt in a high walk. The indications it gives of study lead us to augur well for Mr. Hook's future progress.

148, 184, 340, 350, and 432, representations of fruit and still-life, by G. Lance, are quite perfect in their class.

214. *Bianca Capello*, by A. Elmore, A.R.A., deserved a better place than it has; and the same may be said of 244, *Study of a Head*, by C. Baxter; 379, *The Campagna, Rome*, by W. Linton, a capital picture; and 443, *Scene from Shakspeare's Henry IV.*, by F. R. Pickersgill. Indeed, the hanging altogether is most discreditable.

259. *The frugal Meal*, by J. F. Herring (three horses' heads) is capitally painted.

267. *Glen Falloch, from above Inverranan*, by J. D. Harding, is a charming little landscape, full of beauty.

295. *The Death — Stag Hunt in the olden Time*, by R. Ansdell. A powerful representation of the stag's last struggle with the dogs, calculated to maintain the reputation Mr. Ansdell acquired in London by his pictures of last year. The stag and dogs are full of vigour.

303. *Reposing after Bathing*, by W. Etty, R.A. Mr. Etty is unquestionably a great master, and has much advanced the art. Although this is but a small sketch, when viewed at its proper distance it is a perfect blaze of colour. Two other pictures by the same painter are less striking.

359. *A Break in the River*, by T. Creswick, we seem to recognise as an old acquaintance, and a pleasant one.

365. *The last Moments of Mary Queen of Scots*, by Alex. Fraser, stands prominently out in the company that surrounds it, as one of the very, very, few historical pictures to be found in the gallery.

438. *Morning, the arrival of a Greenland Ship, Shields Harbour*, by J. W. Carmichael, is a capitally painted sea-piece, with much life.

451. *Frost Scene*, by C. Branwhite, though scarcely so good as similar works last year, is nevertheless a well-painted picture calling for commendation. We cannot say so much for his other picture, 260.

478. *Mary at the Sepulchre*, by H. O'Neil, has poetry, as well as skill, in it, and should have been better placed.

485. *The First Death*, by E. B. Morris, is a large picture, with figures the size of life, commendable for its intention.

J. Holland has some brilliant pieces of colour; and J. D. Wingfield, G. E. Hering, G. C. Stanfield, Jun., A. Gilbert, H. Jutsum, and others, exhibit some very nice landscapes.

We have only space to say further, that the exhibition consists of 543 paintings, and 18 pieces of sculpture; and that 400 pictures were returned for want of room. Is it possible these were all worse than the majority of those now exhibiting?

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GLASS.—A patent has just been taken out by Mr. Parkes, of Peckham, Surrey, for making coffins of glass by a mould, or of thick plates of china joined together by a durable cement, or of wooden cases lined with plates of glass, united by a mixture of fused glass and borax.

## NOTES IN THE PROVINCES.

THE commissioners or surveying officers appointed to visit Colchester relative to the expediency of the Improvement Bill applied for, in opening the business of the commission, stated, that their inquiries also bore reference to the question of the sanatory condition of towns in general, upon which information was required to enable Parliament to pass some general measure. It was stated in evidence, that all the drainage of Colchester might be concentrated in the river; that there were eighty to ninety streets, alleys, and courts, in the town; that the drainage is very imperfect, particularly as regards cesspools; and that at Chelmsford the water used to rise 3 feet on the Chelmer meadows, but that since the bridge was built by the Eastern Counties Railway Company it has risen 8 feet. A clause was proposed to give the Channel Commissioners power to make a sufficient bridge in case the company should not do so. It was also stated in evidence, that nearly ten miles of gas mains have been laid through eight miles of streets and roads. Cesspools at the end of the drains where they emptied themselves into the river, so that the sediment could be cleaned out by the farmers and used as manure, were proposed for adoption in the bill, and were admitted by the officers to be worthy of consideration.——The town council of Colchester have resolved that it is expedient to join the county justices in the erection of a pauper lunatic asylum.——A fund for the erection of Pawnbrokers' Almshouses at Stratford, Essex, has been already realized to the extent of 3,000*l.*, and ground has been purchased for a site.——The new Ordnance map of Southampton, which is just completed, will, it is said, be one of the most valuable articles of property in the possession of the municipal authorities. It is drawn up on a scale of 60 inches to the mile,—the scale of the General Ordnance Survey of the Empire being 6 inches.——The Castle-gate Chapel, at Nottingham, the oldest dissenting chapel in the town, is to be enlarged.——Part of one of the pinnacles of St. Thomas's Church, Dudley, was recently blown off by the wind, and broken to pieces during divine service.——The church at Soberton has been restored and re-opened. The gallery has been removed, three fine arches again brought into view, and this ancient edifice has been restored to something like its former state.——The parish church of Bebington has been re-opened after being extensively embellished and repaired.——It has been determined to postpone the Bristol Improvements till June 1848.——The Bath town-council mean to apply to the Treasury for a confirmation of the grant of a piece of ground in front of St. James's Church, for the improvement and enlargement of that edifice, on a plan proposed by the rector, and approved by the parish.——The bill proposed for the improvement of Taunton contains 300 clauses!——It is intended to erect a new church at Rowbarton, near Taunton, from a design by Mr. William B. Gingell, architect, of that town. The new edifice is to be in the pointed style of the time of Henry III., with a broach spire, open timber roofs, &c.——The repair and restoration of the parish church of West Lavington, Wilts, is talked of.——The munificent sum of 1,000*l.* has been offered by Mr. R. Richards, of Tregadwgan, towards the rebuilding of a new church in the parish of Llanfihangel Abergowin, the present church being very inconveniently situated.——The Royal Consorts have each given 20*l.*, and the Queen Dowager 10*l.*, towards the establishment of new public baths and washhouses for the poor at Liverpool. The Green-lane Water-works there are now completed, with an engine filling the cooling ponds at the rate of 900 gallons per minute. The Kensington reservoir, which will hold 10,000,000 gallons, was expected to be filled in a few days, when not only will there be a constant supply of water in the warehouse and other districts of the town, but from the height of the reservoir (170 feet above the level of the Exchange) fire-engines now will be often unnecessary in suppressing fires. The sewers, too, will be scoured out whenever they require it, and the streets in summer will be effectually watered.——The first stone of a new church to be built at Hagbergham Eaves, near Burnley, was laid on New Year's day. It is to be in the early decorated style, with a tower and broach spire, and open benches for 500 persons. Messrs. Weightman and Hadfield, of Sheffield, are the architects. Messrs. J. P. Kay, Shuttleworth, and W. Dugdale are the chief benefactors of the work.——A new iron-foundry for casting is about to be erected near Chesterfield. The proprietors are said to have already contracted for a portion of the chairs and rails for the Ambergate, Nottingham, and Boston Railway.——A new opposition to the new town-hall and market scheme has lately sprung up at Doncaster.——The first stone of the chapel of St. Michael, at Carleton, near Pontefract, was laid on Tuesday week.——Upwards of 2,000*l.*, it is said, have been subscribed towards the erection of a new church in the populous district of Cookley, in the parish of Wolverley, near Kidderminster.——The Newark Mechanics' Institution expect to have a building of their own erected by subscription.——An astronomical observatory is about to be erected by Mr. Edward John Collingwood, at Lilburn Tower, near Wooler. Elevational and sectional plans have been prepared by Mr. James Moffat, formerly pupil of Mr. Dobson, architect, of Newcastle. The dome is to slide round on friction wheels.——The parish church at Wolsingham is to be partly rebuilt, and new schools are to be erected at Towlaw. Tenders have been called for in both cases.——The Gateshead new Mechanics' Institute is to be erected in West-street, where the borough is otherwise extending.——In the Edinburgh town council the state of the Greyfriars burying-ground has been brought under notice. It appears to be far too small for the crowds who are there interred. The Greyfriars' is the only burying-ground in the city for the poor, and the idea was thrown out that the duty of interring the poor should devolve upon the parochial board, and that a new burying-ground for that purpose was indispensably necessary.——From the statement of the Prime Minister, it appears that in Ireland the Government are giving employment to 500,000 men, who are supposed to represent, with their wives and children, upwards of 2,000,000 of the population. These 500,000 men include a staff of 11,587 officers, chief clerks, check clerks, pay clerks, &c. The expenditure upon these officers, clerks, and labourers is 172,000*l.* weekly. This is, as near as possible, at the rate of 7,000,000*l.* per annum.——According to the *Daily News*, a new trade is about to originate in Galway, which, if well worked, would afford employment to great numbers of the poor. The new enterprise consists in supplying broken granite for the formation of roads in and about London. The granite procured from Guernsey at present costs 11s. 3d. a ton, which covers all charges, including the actual freight of the vessel for the special purpose. Now the Galway people believe, according to our contemporary, they could undersell Guernsey by at least the difference in the freight, as numbers of vessels sail from that port to London in ballast.——Among other presentments passed at the city of Waterford presentment sessions, was one of 1,000*l.* for a public garden.

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## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Bad Prospects for German Railroads.*—It is stated that there are some proposals making at the German Diet—to place, in case of war, all the lines under the *control* of a *military* commission, presided over by an Austrian general. Prussia, however, has protested against this encroachment on the freedom of public traffic.

*A Humanitarian Club*—has been established at Brunswick, whose aim it is to devise means how the impediments to man's welfare could be best removed, and the feelings of true humanity fostered amongst the working classes.

*The King of Bavaria*—outstripping even the speed of the press, has just resolved on erecting statues of two ladies, one from the ranks of the people,—Maria of Brabant, and Agnes Bernauer; these monuments are to be placed on the craggy castle of Donauwörth and the bridge of Straubing.

*Embellishments of Paris.*—Mr. the Préfet de la Seine has addressed to the Home Secretary, for the approval of government, a plan for the alignment of the Place St. Michel, at Paris, near which a prolongation of the Rue

Soufflet is to be effected, which will extend up to the Palace of Luxembourg, on the side of the Rue d'Enfer. The iron railing, which has been already carried up to this point, will be extended to the present point of junction.

*Prizes to Fire-brigade Men at Paris.*—On the 1st of this month all the detachments of the above corps (*Sapeurs-pompiers*) assembled in the barracks of the Rue Culture Sainte Catherine, in complete parade order—to witness the distribution of medals to those men who had, during the last half-year, most distinguished themselves in affording relief in cases of fire. After a short address of the commandant, five medals were distributed—one to an officer, and four to men of the rank and file.

*Enlargement of Prisons and Penitentiaries in Austria.*—The provincial house of correction and the foundling-house have to be increased at Prague—while the number of paupers, and the unwillingness of the inhabitants to support them, are also on the rise.

*Terrible State of the Public Roads in the South of France.*—The late inundations, conjointly with the carriage of an unusual quantity of bread, have ruined the public roads of Marseilles, Avignon, and Arles. That from Avignon to Arles is completely relinquished, and no vehicle can pass it without great risk. Orders have been sent for the immediate reparation of these lines of communication.

*Chinese Samples of Industry.*—The Secretary of State for Commerce and Agriculture has forwarded to the different chambers of commerce in the provinces, copies of the reports of the commissioners sent to China for the purpose of studying their state of industry. These reports, accompanied by original samples, will guide the French manufacturers to what will be best calculated for the China market.

*New System of French Penitentiaries.*—As it had been at first found, that the prison of the Rue de la Roquette (conducted on the exclusion system) exhibited a great proportion of young people dying under this treatment, a number of ingeniously planned walking spaces (*promé-noirs*) have been constructed to the effect, that every one of the 480 prisoners are now taking an hour's exercise every day, without, however, being able to meet each other. Since these *promé-noirs* have been erected, the mortality has decreased in the proportion of 3½ : 1.

## DRAINAGE OF IPSWICH.

The council met a short time since, to appoint a committee to consider the propriety of proceeding with a proper system of drainage for the town to be provided for by a sufficient rate, without waiting till forced by Government into a probably more expensive measure, for which loans at 4 per cent. interest would be requisite. The mayor introduced the subject of plans made out by Mr. Fleury, architect, for the consideration of the council, according to which, a sufficient system of drainage might be effected at an expense of about 10,000*l.*; whereas it appeared probable that grants from Government to an extent of 20,000*l.* to 30,000*l.* would be necessary, without a special rate and a previous well-economized system, to cover the heavy expense of a commission of inquiry and a system of drainage forced upon them. A report by Mr. Fleury was read, in which it was pointed out that the fall or declination of the town was much superior to that of London in the main, and would admit of considerable economy in the size of sewers. Drain pipes, however, were recommended in certain circumstances as less expensive than brick sewers. Strong 9-inch, 12-inch, and 18-inch drain-pipes might in many cases supersede the necessity of building brick drains. Where these latter were necessary, sewers of an oval form, with the lower part semi-elliptical and the upper semi-circular, were recommended as best for affording depth of current favourable to good flushing. And besides, the oval sewer giving a sectional area leaving a higher ratio to its periphery than any other figure does to its boundary line, the circle excepted, there is much economy of materials in the construction of oval sewers. Radiated bricks would be a further saving in work, mortar, and consequently expense. The lower bed of the sewer should be built with sharp sand and stone lime, to save cement in the lower joints. The smallest size recommended would be 1 foot 9 inches, by 2 feet 6 inches clear; the largest 3 feet 3 inches by 2 feet 2 inches, the latter with man-holes. Effluvium traps, flushing-doors, &c., were also of course attended to in the report, and it was hinted that a question might arise as to saving the sewerage for agricultural purposes. The town clerk recommended that nothing should be done without previous acquaintance with the Government plan. The committee for consideration of the subject was then appointed to report their opinion to a future meeting of the council.

## DEATH IN ST. JAMES'S.

"A retired churchwarden,"—report says the Hon. Frederick Byng,—has issued "An Address to the Inhabitants of St. James's, Westminster," on various local circumstances affecting the health of rich and poor, and which ought to have a powerful effect. If such a list of abominations as he points out is to be found in the parish "where the court is held, where palaces, and palatial club-houses, and the mansions of the great, the rich, and the powerful are situated, where the bishop of the diocese and a large staff of the clergy reside," what must be the state of things in other parishes evidently much less favoured.

The drainage the writer considers bad, for "It would appear that the greater portion of the sewers may be compared to an elongated cesspool! For the advantage of living over, and inhaling the noxious exhalations from this wide flat-bottomed cesspool, the inhabitants of the district have been taxed, in the course of the last 22 years, to the extent of 565,000*l.*, exclusive of the enormous outlay of upwards of one million, calculated to have been expended by private individuals, in new sewers and drains. Scarcely credible as this statement may seem, not the less startling is the fact, that simply to correct the errors of construction, on which such sums have been lavished, a rate must forthwith be levied to produce 40,000*l.*, and a like rate continue to be levied for several years. Nothing can shew more clearly the mal-construction of the sewers in question, than the fact, that upon examination of the deposit of soil and filth accumulated in them, the lowest calculation of the sullage amounted to 2,500,000 cubic feet. The sewer water also, mixed with the exudations from cesspools, is represented as filtering through the porous walls of the sewers, —percolating the earth,—sapping the foundations of the houses,—rising in the lower walls,—and tainting the atmosphere with gaseous fumes of the most noxious description.

Until recently, though heavily taxed in common with their neighbours, the inhabitants of St. James's Place have had to put up with a sewer so utterly inadequate as to render cesspools absolutely necessary. In excavating for the new sewer, besides five others in its line, no less than three cesspools were discovered in a single house. Though fresh air might enter during the day, in what state must this house have been during the night, with every modern contrivance to exclude ventilation, and the vapours from these poison-pits ascending and vitiating the air of the whole interior. Before 1841, the greater part of Piccadilly was without a sewer at all! These facts are cited, because, if this has been the state of things in two such respectable localities, it is easy to imagine the neglected condition of less important parts of the parish."

The state of some of the cow-sheds and slaughter-houses in this parish is abominable, and some of the close courts and alleys present such scenes as defy description. The simple fact, that in one district, St. James's-square, the proportion of deaths to population is one in ninety; while in another, and not the worst, the Berwick-street district, it is one in forty-two, speaks volumes. We shall be glad to see in every parish throughout the metropolis, some other "retired churchwarden" making a similar examination and exposure. "If without health, the rich man is poor, what must the poor man be?"

The Academy Gold Medal, and the Discourses of Reynolds and West will be given for the best "design for a Gothic church;" the whole comprised in one general and regular composition. The design is to be as large as an entire sheet of double elephant will admit, and to consist of a plan, elevation, section, and perspective view. A silver medal will be given for the best figured drawing of the "Entrance and interior of the Temple Church."

## RAILWAY JOTTINGS.

Deposits for the present session to the amount of 4,200,000*l.* have been placed, in compliance with the standing orders, to the credit of the Accountant-general of the Court of Chancery. More than half of this sum consists of stock and exchequer bills in nearly equal amounts. Several of the companies, it is understood, will be large losers by their recent Exchequer bill investments.——The Eastern Counties Company are enlarging their goods depôt at Bethnal Green to nearly three times its original extent. To make way for new warehouses a number of miserable thoroughfares crowded with wretched dwelling-houses have been of late demolished. The application of this company to Parliament for an extension to Guildford-street, appears to have led in some way to the mistaken idea that a terminus has been already formed in Gray's-inn-lane, out of a prison.——Since a new town has sprung up around the Paddington station of the Great Western Railway, extending to the Birmingham line at Kilburn, a subscription has been set on foot for the means of erecting another new church. The new church in Hamilton-place, about the centre of this new district, is about finished, and will be consecrated during the present month. Some difficulties have arisen between the builder and the architect. Another new church is to be erected adjacent to the Regent's-park, where the Commissioners of Woods and Forests have set apart a site for the purpose.——In the sinking of shafts at Birmingham, for the opening of the tunnel to the intended central station in New-street there, one of the superintendents was nearly suffocated at the bottom of a shaft, by inhaling the sulphur from a blast of gunpowder, and unfortunately, while being hastily withdrawn, fell midway from the top, and was frightfully injured. Some other *test* than the presence of a human being ought, in the first place, to be applied in such cases, as it easily could be, by transmission to the bottom of the shaft, and withdrawal for examination, ere a human life should be needlessly risked. The gaseous results of the explosion of gun cotton might perhaps be found to be more easily dissipated than those of gunpowder, and hence less dangerous.——The tunnel at Dorchester is progressing under disadvantages of no ordinary kind. The sub-contractor, after laying out some thousands, it is said, beyond the amount of his undertaking, has been obliged to throw up his contract. One great shaft is alleged, "by no incompetent judges," to have been quite unnecessarily sunk, and two almshouses, at the rear of which another "immense shaft" has been opened, have themselves, too, quite as unnecessarily sunk—"from the treacherous nature of the soil underneath," it is said, but primarily and more correctly, as it probably should have been said,—from the treacherous undermining of the "immense shaft in their rear."—— The South Wales Company, like another of whom we had lately occasion to speak, are urging on their contractor, and affording him too good an after excuse for defective works and probable disaster, by the temptation of "a large premium" for the completion of the works still earlier than the limits of the period which even the interests of all concerned must have originally prompted them to limit already, as far as possible, and perhaps further than prudence, if not also further than true interest, would have prompted.——The area of the central terminus at Bedford has been staked out by Messrs. Tattersall and Walker, C.E., and according to the *Bedford Times* "will be of most extraordinary extent. The Company," it adds, "have probably purchased sufficient experience to understand the meaning of 'come first, served first,' and it needs but little foresight to predict that many of us will see a larger town the other side of the Ouse, than 'Poor old Bedford.'"——It is expected that henceforth "one of the greatest boons a railway could confer" on Bedford, will be the reduction of the price of coals, at one sweep, from 1s. 9d. per cwt. down to 11d. Messrs. Stephenson and Co. appear to have been prepared beforehand to confer on the inhabitants a graceful foretaste of this future benefit, and to prove to all, whether interested *pro* or *con*, that such was one determinate end to be thus at once accomplished. They had 1,000 tons of coal at Fenny Stratford, ready to pour into

Bedford so soon as the way was clear.——Great part of the wooden viaduct in course of erection at Denby Dale, on the Sheffield and Huddersfield Junction Line, has been literally blown down by the wind; and such was the depth which the supporters (twenty-seven in number) had to fall (namely 100 feet), that the strongest were broken to splinters. The damage is estimated at about 5,000*l.*——Another insatiable bog near Bingley, described by the *Globe*, is at present hungrily at work, devouring "sixty tons of earth and stones every hour of the day,"—a liberal contribution, in the thankless administration of which, notwithstanding previous experience and advice, and in spite of the discouraging fact that "all is swallowed up every morning," men and horses are engaged, as well as steam, and all to no end, of course, as heretofore. "It is a question at what time it will be completely filled up," which had better be asked at Stowmarket or Chat Moss, where, as our readers, at least, well know, heavy matters of a similar sort were, in like manner, at first so industriously poured into the insatiable gulph, and where, as in the present instance, the inevitable consequence was merely this, that the heavy matter thrown in sunk down to the bottom, forcing up the lighter bog above it, to a higher and still higher level, in exact proportion to the quantity of stones and earth thrown in. And this the bog would probably in every case continue to do, were the accumulations of heavy matter continued to a sufficient extent, until its equilibrium would be overturned, when, of course, it would become one of those fearful and strange phenomena, a moving bog, spreading itself abroad, and swallowing up every thing in its way, until it attained to another settled level.——The South-Western Scottish line,—the Glasgow, Dumfries, and Carlisle,—is making rapid progress in Ayrshire. The centres of the great bridge over the Ayr are now in, and give a good idea of what this great structure will be, as they are seen towering far above the tops of the highest trees which grow at the top of rocks 160 feet in height.——An abuse in the treatment and disposal of tenders for 8,000 tons of railway iron, by a German company, to the prejudice of three parties in England tendering, was exposed by the *Times* in its City article the other day, as one which, on national grounds, requires immediate publicity. The prices stated by the English parties, on special request, were 10*l.* 10s., 10*l.* 5s., and 10*l.*, per ton; but the directors of the German company, instead of completing the contract with the English party offering at the lowest price, only made use of that offer to induce the agent of another party to reduce the amount of his tender by 7s. 6d. per ton, thus bringing it 2s. 6d. below the 10*l.*, and upon this adroitly concluded an agreement, which is likely to injure German companies themselves in future as well as English ones at present.

## STOCKPORT IMPROVEMENT BILL.

Two surveying officers, an architect, and a barrister-at-law, have been sent by the Woods and Forests to Stockport, where they have made preliminary inquiries relative to the improvements there contemplated, which, according to the *Stockport Mercury*, comprise four bridges with streets connected, to cost 19,072*l.*; widening, and otherwise improving streets and opening new ones, and roads, 20,101*l.*; besides which it is proposed to supply a deficiency in the quantity and quality of water by an arrangement between the corporation and the Manchester and Salford Water Works Company on the one hand, and the Manchester, Sheffield, and Lincolnshire Railway Company on the other; the latter to supply surplus water from extensive localities in Derbyshire and North Cheshire, and the former from their reservoirs, fed from their sources in Lyme Park. Evidence was led to shew that by the present company, whose supply is chiefly from artesian springs and bore holes, only 4,000 out of 12,000 houses had a limited supply, out of 259,863 gallons a day; whereas, for a population of 61,000, twenty gallons a day on an average, for each individual, or 1,220,000 gallons a day in all, are requisite for sanatory and other purposes. The immense difference is accounted for, partly by the deficiency of supply and partly by the irregular and expensive addition to that supply from other sources than those of the company. A clause in the proposed bill, prohibitive of smoke, was also discussed.

## THE PROVINCIAL GAS MOVEMENT.

The expiry of another week brings with it another series of notes to chronicle on a subject which appears to be exciting an interest surprisingly general, and a determination as remarkably unanimous in favour both of the establishment of gas-light where it has not hitherto been, and of the thorough reformation of the quality, the quantity, and the expense of it where it hitherto has been, long a source of enjoyment or annoyance, or both combined.——Arrangements are in progress at Birmingham for the lighting of that part of the parish of Edgbaston which is within the boundary of the parliamentary borough.——Two commissioners have been at Runcorn making preliminary inquiries as to the gas company's bill for the supply of additional townships in this "main outlet of the internal navigation of the country." There, at present, forty-two streets and courts are partially lighted with gas, both within and without, at 7s. 6d.—or, for 130,000 feet upwards, at 4s. 6d—per 1,000 feet.——The Liverpool (incipient) Guardian Gas Company are exhibiting, just now, a gas-meter said to be so simply constructed, that any consumer can check the quantity consumed without official interference.——The impurity and feebleness of the gas-light at Wakefield, as well as its high price, and its deficient quantity, have at length aroused the inhabitants to a determination to support the bill of the proposed new company there, in preference to that of the old, also applied for. They very naturally think that from the local situation of Wakefield, in the very midst of an excellent coal-field, gas ought to be as low, if not lower, in price, and as good, if not better, in quality there as any where else. The grievance at Newcastle, however, as well as there and elsewhere, appears to shew the fact, at least, if not the inference, to be the very reverse.——The Wakefield parish church clock is lighted with gas at the expense of the drapers' apprentices and assistants there.——The surveying officers have made the inquiries at Shipley and Bingley, already referred to in our previous notes. Bingley, with 5,000 inhabitants, has its gas yet to come, as Shipley with 3,000 also has; and strong cases were made out in favour of the passing of the proposed bills for both these thriving districts.——At Cockermouth a public vestry has voted 200*l.* for lighting the town for the next twelve-months.——The Gas Committee at Newcastle, it appears, lately proposed to purchase the present company's works at 50 per cent. advance on their original property, but fortunately the company rejected the offer; since which the committee has found that new works can be provided for about one-half the sum thus offered. A correspondent of the *Gateshead Observer* states, that one reason why the gas is so bad in such a locality appears to be the improvidence of the company, in not supplying themselves with a stock of good coals when the collieries, as they usually do, cease working for a time at the close of the year; so that they are compelled to use all sorts of inferior rubbish! The vulgar but shrewd and truthful adage, that "the shoemaker's wife is ever ill shod," was never perhaps more curiously illustrated than in the present instance. In Edinburgh, where the gas is made from this very coal, the gas is so pure, that it may be burnt in every room of a house—and indeed is frequently used even in bed-rooms. Many houses, even of the lower orders there, and at Glasgow, having one or more (some all) of their rooms fitted up with gas burners, for the sake of economy as well as of improvement.

Master Carpenters and New Buildings Bill.—On Thursday, the 4th inst., a very full meeting of the committee upon the intended New Buildings Bill was held at the Freemasons Tavern, Mr. H. Biers in the chair, when the present Bill up to Section 20 was discussed, and such alterations made therein as appeared to the committee necessary to amend it. The committee adjourned to Tuesday the 16th inst.

## MOSAIC WORK, ANCIENT AND MODERN.

At a meeting of the Society of Arts on the 3rd inst., Mr. W. F. Cooke, V.P., in the chair; Mr. Digby Wyatt read an essay "On the Art of Mosaic, Ancient and Modern." The author commenced by stating, that the most cursory glance at the subject must convince that this art, taking the form of either pavement or mural decoration, has been connected with most of the noblest efforts of architectural genius in all ages; and as it is the wish of many at the present time to effect the revival of this art, he would endeavour to convey as clear an idea as possible of the nature, history, and condition of this graceful handmaid to the science of decoration. The first positive notice of the existence of such an art occurs in the sixth verse of the first chapter of the book of Esther, wherein an account of the riches and luxury of the Palace of Ahasuerus is mentioned, and that passage clearly establishes the fact, that the Persians were acquainted with the art, and it is supposed communicated it to the Greeks, from whom the Romans obtained their first specimens. Ciampini divides the art into four principal varieties called tesselatum, sectile, figlinum, and vermiculatum. The first, the opus tesselatum, probably the most ancient; this kind of mosaic consisted of small cubes of marble, seldom averaging more than three-quarters of an inch square; the best specimens of this description of tessela occur at Pompeii, and in the Vatican. The second division of the art, the opus sectile, was also applied to pavements, and it is in this description of mosaic that the simple, yet magnificent pavement of the pantheon at Rome is executed. This variety of mosaic was formed of thin slices of different coloured marbles cut into slabs of a given form. The opus figlinum was more generally employed in mural decoration, and, according to Pliny, was first used in the decoration of the baths of Agrippa behind the pantheon; it consisted of figures, fruits, ornaments, &c., formed by means of small cubes of vitreous composition, composed of allumini and some metallic oxide to colour it; no specimen of this description of mosaic has ever been discovered in England. The fourth description of mosaic, or opus vermiculatum, is subdivided by Ciampini into three varieties. The opus major, generally employed in large pavements or ceilings, to represent the figures of gods, centaurs, &c. The opus medium was a much finer kind of work, and was generally applicable to walls. The third division, opus minor, or opus vermiculatum, was the finest and most elaborate of all the ancient Roman mosaics, and consisted of the most delicate pictures, formed entirely by minute pieces of marble and fictile work, many of the stripes being only the twentieth of an inch across. The most beautiful specimen that has been preserved to us is the one usually known by the name of Pliny's Doves, a copy of which in mosaics was exhibited. There is one kind of mosaic which the author had observed at Pompeii, and which he considers may not be inaptly termed the opus incertum of mosaics, composed of all sorts and kinds of marbles put together in irregular shapes, and when united into a mass with cement, and laid on the floor prepared to receive it, it is reduced to a polished face by friction. In completing the sketch of this art under the Romans, the author stated that the preparation ordinarily made by them for the reception of the mosaics consisted in their first placing a layer of large stones or flints, but with very little cement, on the ground. Upon this was placed a course of concrete, composed of smaller stones, and lime beaten and rammed with great care; upon this a third layer of cement was placed; the tesseræ or mosaics were then placed; and over the whole was poured liquid cement, so as to perfectly fill up the interstices between the cubes. During the reigns of the twelve Cæsars this art rose to an unexampled popularity. During the reign of Hadrian (A.D. 138) to that of Caracalla, the art appears to have lost in quality. After the year 220 it became obscured by the clouds which swept the Roman empire. From the time of Constantine three varieties arose, which obtained universally in Italy from the fourth to the fourteenth century, and during nearly 1,000 years changed but little either in principle or design. The emperor, Alexander Severus (A.D. 222 to 235) brought with him from Alexandria great quan-

tities of porphyry and serpentine, which he caused to be worked into small squares and triangles, and variously combined, thereby laying the foundation of this art, which formed the pavement of all the rich Italian churches. We have an interesting specimen in Westminster Abbey, referred to the year 1260.

The author, after tracing the history on to its decline, and giving some account of the encaustic tiles, proceeded to state the circumstances which had of late years led to its partial revival. He also gave a detailed description of the process of manufacture employed by Messrs. Singer and Pether, and Messrs. Minton and Co., and concluded by urging on architects, and the public generally, the applicability of the manufacture to the purposes of decoration.

## INSTITUTION OF CIVIL ENGINEERS.

On the 2nd instant, the society met for the first time in the new theatre, and a paper by Mr. W. E. Newton was read, giving a description of the method employed by Mr. Herron for the construction of the permanent way of the Philadelphia and Reading, and other railways in the United States. The method was a deviation both from the systems of the longitudinal and the transverse sleepers, crossing each other and spiked together at the intersections with wooden trenails or iron pins, according to circumstances, forming an extended platform, upon which their longitudinal bearers were laid, supporting bridge-shaped rails with wrought-iron chairs. The paper gave an account of several deviations from the general system, such as making the trellis-work of iron laid in bitumen, &c., and also a detail of the amount of traffic conveyed along the railway; whence it appeared, that within one year and five days from its being opened for general use, one million four hundred thousand tons of goods had been conveyed along it, without any prejudicial effect, and, in fact, with less wear and tear than was usual upon railways in the States. The cost of a single line of permanent way was about 850*l.* per mile. From the discussion that ensued, it appeared to be the opinion, that although the system might succeed in a country where timber abounded, it was inapplicable for English railroads; and exceptions were taken to the general features of the construction for high speed, as the rails, which weighed only forty-four pounds per yard, and were of a bridge form, could not resist the impact of the wheels at great velocity: the junction of the diagonally laid sleepers would become loosened, and there would be too much deflection between the bearing points.

## Correspondence.

### URBAN BURIAL.

Sir,—I trust you will kindly give admission to a few very concise remarks from a former correspondent, whose experience, brought to bear on the above subject, has certainly been of use, and had a degree of usefulness felt, if not acknowledged, in conclusions drawn as to the general necessity of a novel and substantially ameliorated system.

For, while several have given sketches, or filled up representations of individual "horrors,"—in *your pages alone* has appeared an orderly systematic notice of London churchyard deficiencies, caused by the utter disproportion of room to population; also some suggestions for "joint parochial cemeteries;"—the two having been, at any rate, and claiming a humble merit, *useful* in the reception of any comprehensive general design.

Whilst the grand abuses have been sufficiently dilated upon, the grief to private Christian and human feeling, owing to the miserable and disturbed wretched places in which survivors are compelled to leave a loved corpse, has certainly not had the mention (though it may have been thought of), which might have been expected or wished.

The writer would be the last to forward any *Gallo-Mania*, but will submit that, as in *Abattoirs*, and extra urban markets, preventing a *load* of cruelty and insalubrity, seen and unknown, so in sepulture; Paris having in three grounds, full *four hundred* acres for one million inhabitants, and London (besides new cemeteries, which are not compulsive) *one hundred* for *two millions*. They "manage these things better in France."—I am, Sir, &c.,

Feb. 8th, 1847. J. D. Parry.

### STATE OF THE TEMPLE CHURCH.

Sir,—I attended the morning service at the Temple Church yesterday, and was rather surprised and sorry, considering how lately it had been restored, to see the serious effect produced by the thrust of the groining, on the two opposite piers nearest the altar; especially the one immediately behind the pulpit, which appeared to me to sway from the perpendicular to the extent of at least 6 inches. I should feel obliged by your informing me whether this has been noticed, and whether any precautions are being taken to arrest the mischief.

I am, Sir, &c., F. C.

P.S. For your satisfaction, I inclose my card.

London, Feb. 8, 1847,

## Miscellanea.

Chalk Fuel.—The original paragraph, quoted from our columns by the press throughout the country, on the subject of the use of chalk, surrounded by coal, in producing intense heat at a small expense, has led to various experiments as well as considerable discussion, in the latter of which Dr. Murray, of Hull, has thought it advisable,—and very properly too, as a mere precaution, but not as a prohibition,—to object to the use of chalk for fuel from the liberation of carbonic acid gas during combustion. This, it is obvious, would form a fatal objection to its use in aboriginal huts where no proper means of ventilation are provided; but, as observed by the *Cambridge Advertiser*, which has ably advocated its use, or at least the trial of its quality, chalk would not be one jot or tittle more dangerous than charcoal, which, as our readers all know very well, can be, and constantly is, burned, without any danger, if proper precautions are observed.

Metropolitan Sewage Manure Company.—At a special meeting of this company, held last week to receive the draft of a bill for altering the line of their works, it appeared that it was proposed to construct an aqueduct in the parish of St. George, Hanover-square, near Skew-bridge, on the King's Scholars' Pond sewer, in the Vauxhall-bridge-road, and terminating at or near the Broadway in Hammersmith, together with the necessary works by which the aqueduct or conduit would pass through the parishes of St. Luke Chelsea, St. Mary Abbot's Kensington, through Fulham and Hammersmith. The tunnel here proposed was stated by their engineer to be preferable to iron, and would remove the opposition that existed to the erection of steam works in the metropolis. 30,000*l.* is the sum intended to be applied to the construction of the works.

Projected Works.—Advertisements have been issued during the past week for tenders for the erection of a large dwelling-house in Ipswich; and of new schools at Towlaw; for partly taking down and rebuilding the parish church of Wolsingham; for the excavation for and construction of sewers in the parish of St. Luke's, Chelsea; for best Guernsey granite, flints, and pit ballast for St. James's, Clerkenwell; for the regular supply of cliff stone at Hull; for the working of limestone and other quarries, or hauling stone for the repair of roads in Herefordshire; and for masons', carpenters', plasterers', slaters', plumbers', smiths', glaziers' and painters' works for three years at the fortifications, barracks, and other buildings at Edinburgh Castle, Leith Fort, Piershill, Queensberry, Greenlaw, and Blackness Castle.

French Plate-glass.—We have lately seen specimens of French plate-glass, at the Soho warehouse, in Soho-square, of great brilliancy and beautiful colour. The price is about the same as that of English glass. We are not anxious to recommend foreign productions over those of our own country, but as our plate-glass manufacturers shew little desire to improve, or to let the public have all the advantages which the reduction of duty should bring, a little competition will perhaps be serviceable. Plate-glass ought to be cheaper in England than it is.

Mr. Kearns Deane, Architect.—This gentleman, who, in connection with Sir Thomas Deane, his brother, has executed many works in Ireland which are well spoken of, expired in the prime of life, on the 30th ultimo. The *Cork Examiner* says, "Architecture, in the South of Ireland, has lost in him one of her most gifted exponents, one of her most enthusiastic upholders. His sorrowing friends justly attribute his death, in the maturity of manhood, to that spirit of zeal and unwearying devotion with which he toiled at his profession—wasting those precious hours that exhausted nature requires for her restoration, in incessant toil." The bow should not be always bent.

Competition.—Plans have been called for, by advertisement in the current newspapers, for a Fever Hospital at Bedford.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, Feb. 15.—Statistical Society, 12, St. James's-square, 8 P.M.

Tuesday, 16th.—Institute of Civil Engineers, 25, Great George-street, 8½ P.M.

Wednesday, 17th.—Society of Arts, Adelphi, 8 P.M.; Association of Architectural Draughtsmen, 33, Southampton-street.

Thursday, 18th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*Water Wheels.*"—A correspondent asks—"What power of water is necessary to carry a wheel for grinding corn and threshing, &c. from four to six-horse power; and the fall necessary to obtain a sufficient amount of water for a breast or over-shot wheel."

"*L. J. K.*"—Yes. Ask for the last editions.

"*Veritas.*"—We will examine the work in question. We have a different account of it from another quarter.

"*Ties.*"—A correspondent wishes to know "where he can obtain tiles that represent brickwork, to cover vertical timber work."

"*Peckham Investment Company.*"—The name of the lowest contractor is Pettipher, and the amount £1,983, not £1,943, as stated.

"*Architectural Roofing Tiles.*"—We advise "T." to call on Mr. Hughes, at the Company's office, 158, Strand, who will give all information that may be required. They have a very good appearance.

"*Kensington Workhouse Competition.*"—Correspondents must bide their time. We will review this matter presently. We insert one letter elsewhere.

*Received.*—"E. D." (Pimlico), "J. J.," "W. C." (Smethwick), "H. D. G.," "W. B." "Report of Mr. Henry Austin, C.E., on the Sanatory Condition of the City of Worcester," with an Appendix; by Mr. Edwin Chadwick. "The Antiquary and Geologist's Companion; by Mr. W. Downing Bruce, F.S.A. (Longman, 1847). "A Collection of Useful Tables, compiled from good authorities."

Note.—A number of correspondents must excuse us till next week.

Erratum.—In letter respecting mill at Picasley, p. 68, for *one* Mr. Burton, read *our* Mr. Burton.

NOTICE.—Covers for Volume IV. of The Builder, may be obtained at the Office, 2, York-street, price 2s.; or the publisher will bind sets at 3s. each.—A few volumes for 1846 remain on sale, price 21s.

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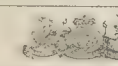
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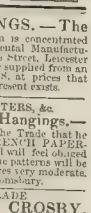
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| White Hard Spirit Varnish, for Cabinet Work ..... | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods .. | 20 |
| Rather longer drying than the above. | |
| Mastic Varnish, pale, for Pictures.... | 24 |
| Turpentine Varnish..... | 5 |
| French Polish ..... | 16 |
| Naptha ..... | 15 |
| Patent Liquid Wood Notting ..... | 16 |

Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order

LEAD WORKS, HAMMERSMITH, AND AT READING, BERKS.

**C. H. and F. CLARK** beg to inform Plumbers, Builders, and others, they may be supplied with Goods of best manufacture at the following net prices, for cash:—

| | | | |
|---|---|---|---|
| Sheet Lead.... | per cwt., 19s. 6d. | Genuine White Lead, | |
| Pipe ..... | " 19s. 6d. | warranted .. per cwt., | 26s. 6d. |
| Pumps..... | " 20s. 6d. | Second ditto.. " | 24s. 6d. |
| | | Third ditto.. " | 22s. 6d. |

Lift Pumps, Water-closets, Cocks, and Brass-work of every description; Crown and Sheet Glass for Building and Horticultural purposes. Oils, Colours, and Varnishes of first-rate quality.

Old Lead bought or exchanged.—Credit given upon receipt of satisfactory references.

January 23rd, 1847.

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square.—Terms, Cash only.

**SOHO SLATE GLASS WAREHOUSE,** 26, Soho-square, depot for the sale of the slate glass manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands unrivalled for brilliancy of colour, superiority of substance and polish, and possesses almost double the quality of Thin Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

**CROWN GLASS,** in Crates of Eighteen Tables, at the following low prices, for ready money:—

| | £. s. d. | | |
|---|---|---|---|
| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds .... 4 4 0 | Squares of Small Crown Glass, at 1d | |
| | Fourths .... 3 10 0 | | |
| | C.C..... 2 10 0 | 1½d., 2d. and 2½d. per foot. | |
| | C.C.C..... 2 8 0 | | |

SHEET GLASS of all descriptions equally low—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 36, West Smithfield, London.

N.B. Sashes glazed at 4½ and 5d. per foot.

SASHES PRIMED, GLAZED, and sent to any part of London at 5d. per foot

**BUILDERS, PAINTERS, GLAZIERS,** and others, supplied with every article used in the trade upon the best wholesale terms.

FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.

Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, shew-cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.

Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted

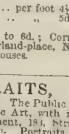
VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 22s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

For complete Lists, priced—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

**HERRING'S PATENT SAFETY WINDOW.**—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; pay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is an full operation (four different ways), forms a complete ventilator and sunblind; all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kinggate-street, London.

CHAS. WM. WATERLOW,
MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.





ZINC WORK.

**MESSRS. F. and J. HENLAND** beg to call the attention of Builders and others to the following list of prices, for cash:—

| | | | |
|---|---|---|---|
| 2-inch Pipe ..... | per foot 3d. | 3-inch Gutter... | per foot 4½d. |
| 2½ ditto ..... | " 4d. | 4-inch ditto ..... | " 5d. |

Including Fixing

Flats Covered and Cisterns Lined from 4½d. to 8d.; Cornice Gutters, 5d. to 7d., per foot superficial.—3, Cumberland-place, Newington, Surrey, opposite the Ironmongers' Alms-houses.

N B Orders by Post punctually attended to.

**PHOTOGRAPHIC PORTRAITS,** at HALF PRICE, COLOURED or PLAIN The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 184, Strand (between Norfolk street and St Clement's Church). Portraits, including case, from 10s. Satisfactory ones guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvass, combining the truth of the daguerreotype with artistic skill. Hours from Ten to Four.

**WALLIS'S PATENT LIQUID WOOD KNOTTING.**—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important quantification of effectually stopping Knots in Wood, however bad, and preventing them entire through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 54, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Foreing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with white-lead it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

TO PLASTERERS.

**LIME FOR PLASTERING,** that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORREST'S WHARF, Earl-street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

TO BUILDERS AND OTHERS.

**MESSRS. H. G. and E. ROSHER,** having closed their Lime Wharf at Montague Close, Southwark, have removed their business to Albion Wharf, Holland street, Bankside, where they intend keeping a constant supply of Greystone, Flame-burnt, and Plasterers' Lime, Sand, Cement, Bricks, Tiles, Chimney Pots, Fire Bricks, Lumps, Fire Clay, and other building materials. Messrs. ROSHER have also Lime Wharfs at Limehouse, Millbank-street, Westminster, and Kingsland Basin, Kingsland road

** Ground Lime for Concrete.

**ENCAUSTIC, VENETIAN, and other** PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON and Co.'s warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge.—J. M. BLASHFIELD, Agent. The above tiles have lately been considerably reduced in price.

N.B. An assortment of plain and ornamental door furniture, slabs, and tiles for fire-places, &c.

**WORCESTER ENCAUSTIC TILES.** Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. GRILPIN and GRELLIER, Mark's wharf, Belvidere-road, Waterloo-bridge, or at the Encaustic Tile Works of Messrs. F. ST JOHN G. BARR, and Co., Worcester.

PATENT ARCHITECTURAL ROOFING TILES.

**ARCHITECTS,** Builders, and Others, may now be supplied with these ornamental Tiles, which for security, beauty, and effect, surpass every other kind of roofing, whilst their cost but little exceeds the covering with common pantiles, and their superiority over slating is at once apparent.

For prospectuses and full particulars, apply to Mr. J. G. HUDELESTON, at the Company's Offices, 158, Strand.

Price, from 16s. to 22s. per square.



**HOWARD'S TRANSPARENT TRACING PAPER** combines the several requisites desired by Architects, Engineers, &c., toughness of substance, the capability of retaining ink or colour undisturbed on its surface, a high degree of transparency, and evenness of quality from the finest tissue to the thickest drawing paper. Prices low. Books containing nine samples, with sizes and prices, sent per post to any part of the kingdom.—23, GREAT RUSSELL-STREET, BLOOMSBURY.

**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, PATENTEE OF BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD. N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

**OFFICE for PATENTS of INVENTIONS and REGISTRATIONS of DESIGNS.** Full Information on the subject of PATENTS for the United Kingdom or Foreign Countries may be obtained (gratis) on application either personally or by letter, to JOHN GEDGE, British and Foreign Patent Agent, 4, Wellington-street South, Strand. MM. les Etrangers sont invités à écrire pour l'information nécessaires sur les formalités requises et les démarches à suivre pour obtenir des Brevets d'Invention.

# THE BUILDER.

PREPARED FLOORING BOARDS.

**ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¾ inch to 1¼ inch thick.**
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico late C. Moore and Son), and Great Smith-street, Westminster.

**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately executed.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.—Parties desirous of** delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham street, Pimlico.

N.B. Estimates given for Sawing and Planing.

**SILCOCK and Co.'s PATENT PLANES** may be had at the following places:—
Archer, 45, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cook, 424, Oxford-street; Dean, 46, King William-street; Fenn, 106, Newgate-street; Holtzapffel and Co., 64, Charing-cross; and of all ironmongers and tool dealers in the United Kingdom.

**PORTLAND CEMENT.—The peculiar** property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.
J. B. WHITE and SONS, Millbank-street, Westminster.

**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the skill of Richardson or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, in its application, for which purposes it obeys the progress of Fire and the attacks of Vermin

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Steel street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface, which may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 126, DRURY LANE.

Agent for Liverpool and Manchester, Mr. H. FART, 98, Canning-place, Liverpool.

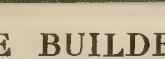
TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND OTHERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never crack, blister, nor green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used in the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the Office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall free against weather, and imparting a finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

By Her Majesty's  Royal Letters Patent

**WILKINS'S "SILENT" WATER-CLOSET.**—To Architects, Surveyors, and Builders.

Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets. It does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

This Closet is simple in its construction, the whole of the apparatus including the trap, being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any noisy Closet and fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.

May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS,** and WRITERS to the Trade only,
63, WATERLOO-BRIDGE-ROAD.

An Apprentice wanted, to board and lodge with his friends. Premium, £30.

IMPORTANT TO BUILDERS.

**THE ARCHITECTURAL CARVING** COMPANY (Irvine's Patent), beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston-place, Pimlico, leading out of Ebury-street, Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

**CARVINGS IN WOOD.—The unrivalled** perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal enrichments—thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.

Specimens may be seen and Drawings obtained at the Patent Wood Carving Offices, 441, West Strand, or at the Works, Ranelagh-road, Thames-bank.



CHEAP PAN FOR
WATER-CLOSETS,
With Trap, in One Piece
DOULTON AND WATTS,
LAMBETH POTTERY, HIGH-STREET, LAMBETH, LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended in preference to iron, on account of their cleanliness and cheapness.

If preferred, they can be had in two parts, the Pan at 4s. 6d., and the Trap at 3s.

N.B. Manufacturers of RAIN-WATER PIPING for houses.

**JAMES BARKER, SASH MAKER and JOINER to the TRADE, 83, Theobald's-road,** Bedford-row, respectfully invites the attention of Builders and gentlemen building to the subjoined list of prices for joiners' work, prepared from the very best materials, in a most superior manner, for ready money.

SASHES, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo | 0 | 4½ |
| 2 Ditto | 0 | 5 |
| 2 Lamb's Tongue, or Gothic | 0 | 5½ |
| 2½ Shop Front | 0 | 6½ |
| 1¼ Green-house, or Skylights | 0 | 4 |
| 2 Ditto | 0 | 4½ |
| French Casements, Sash doors, Fan-lights, and Circular Sashes, made to order at proportionate prices. | | |

SASHES WITH FRAMES, per Superficial Foot

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo, sashes and frames | 0 | 9 |
| 1¼ Ditto, both sashes to hang | 0 | 10 |
| 2 Ovolo, sashes and frames | 0 | 11 |
| 2 Ditto, both sashes to hang | 1 | 0 |
| 2 Lamb's Tongue, or Gothic, ditto | 1 | 0½ |

Gothic Frames and Sashes, Mullin Windows, Wainscot and Mahogany Sashes.

SHUTTERS, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Square Sliding Shutters | 0 | 6½ |
| 1¼ Ditto, moulded one side | 0 | 7½ |
| 1¼ Moulded, head and butt back | 0 | 8½ |
| 1¼ Boxing Shutters, with front moulded, and back, with 1 inch back flaps, head and butt | 0 | 8 |
| 1¼ Shutters and back flaps, moulded front and head, and butt back | 0 | 9 |

DOORS, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Dwarf square | 0 | 6½ |
| 1¼ Ditto, moulded front | 0 | 7½ |
| 1¼ Four panel square | 0 | 7 |
| 1¼ Ditto, moulded front | 0 | 8 |
| 1¼ Ditto, square | 0 | 8 |
| 1¼ Moulded one side | 0 | 9 |
| 1¼ Ditto, both sides | 0 | 11 |
| 1¼ Ditto, head, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ditto, head, flush, and ditto | 0 | 11 |
| 1¼ Ditto, ditto, and moulded back | 1 | 0 |
| 1¼ Six panel square | 0 | 9 |
| 1¼ Ditto, moulded one side | 0 | 10 |
| 1¼ Ditto, ditto both sides | 1 | 0½ |
| 2 Four panel square | 0 | 10 |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto ditto, both sides | 1 | 0 |
| 2 Ditto, head, butt, and square | 0 | 11½ |
| 2 Ditto, bead, flush, and square | 1 | 0½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2 |
| 2 Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
| 2 Ditto ditto, both sides | 1 | 2 |
| 2 Ditto, bead, butt, and square | 1 | 2 |
| 2 Ditto, bead, flush, and square | 1 | 2 |

French, jib, and covered doors, to any design.

Prices for Architraves, Base Mouldings, &c.; and all kinds of Joiners' Work in Wainscot or Mahogany.
TO BE HAD ON APPLICATION.

**SEYSSEL ASPHALTE COMPANY.**

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London

**THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the** following useful purposes:—

Foot Pavements.
Kitchen Floors (particularly where it is essential to keep damps from rising).
Garden Walks and Terraces.
Carriage Drives.
Coach-houses and Stabling.
Dog-kennels.
Barn Floors.
Granaries.
Tun-room Floors.
Malt-house Floors.
Piggeries, &c. &c.
Covering of Railroad and other Arches.
The only effectual mode to prevent the percolation of water,

which also renders it very appropriate for the Lining of Tanks, Fish-ponds, &c. &c.

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent with the greatest promptitude.

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to this Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained as to all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

L. FARRELL, Secretary.
Seyssel Asphalte Company, Stangate, London.

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Pembroke College, February 5th, 1847.

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TO ARCHITECTS.

THE Special Commissioners of the Town of Yeovil are about to erect a Town Hall, and other buildings, and are desirous of receiving PLANS from various architects. The persons whose plans may be approved shall be employed to carry out the same. GIVE NOTICE, that they require Front and Back Elevations, Sections, and Plans of the whole of the buildings, to be delivered to the Clerk to the Commissioners, on or before the 1st day of May next, for the purpose of COMPETITION, upon the following terms:—

That a Premium of 50l. shall be awarded to the Architect who shall supply the plan which shall be considered the best in all respects to be the most eligible; such plan to comprise the elevation and interior design, with sections and specifications; and if the author of such plan shall not be employed to carry the same into effect he shall nevertheless be entitled to the said premium of 50l. And the Commissioners shall require for the said premium the exclusive right of using the said plan for the purposes of the said buildings, but shall not be bound to employ the author of such plan to superintend the execution of the works.

A Lithographed Plan, and admeasurement of the ground, will be supplied to any architect applying for the same, by letter, post paid, addressed to the Clerk to the Commissioners, at his office in Yeovil.

All plans to be delivered, packed on rollers, as before mentioned, addressed to the Clerk to the Commissioners, at his office in Yeovil, and to be forwarded, on or before the first day of June next.

Architects are requested to furnish their names, in detail, with such mode of reference as may identify them with the respective plans.

The means at the disposal of the Committee are calculated at 800l.

### ARCHITECTS.—NOTICE IS HEREBY

GIVEN, that the Trustees appointed by Sir JOHN SOANE will meet at the Museum, No. 13, Lincoln's Inn Fields, on Wednesday, the 24th March, at Three o'Clock in the afternoon precisely, to distribute the dividends which shall have accrued during the preceding year from the sum of 5000l. reduced 3 per cent Bank Annuities, invested by the late Sir John Soane, among distressed Architects, and the Widows and Children of deceased Architects left in destitute or distressed circumstances.

Forms of Application may be had at the Museum, and must be filled up and delivered there on or before Saturday, the 13th of March, after which day no application can be received

### ARNEWAY'S CHARITY.—NOTICE

IS HEREBY GIVEN, that the Trustees of this Charity are enabled to LEND OUT the TRUST MONIES to "Poor Occupiers of Tasters resident within the City and Liberty of Westminster that is to say, within the Parishes of Saint Margaret and Saint John the Evangelist, Saint Anne, Soho, Saint Clement Danes, Saint George, Hanover-square, Saint Martin-in-the Fields, Saint James, Saint Marylebone, and Saint Paul, Covent-garden." The amount of each loan not to exceed 10l., to bear interest after the rate of 5l. per cent. per annum, and not to be secured by the bond of the borrower, with two sureties.—Printed forms of application, and all necessary information, may be obtained upon application, between the hours of Ten and Three o'clock in the day, at the office of the Clerk and Solicitor to the Trustees, 12, Great Queen-street, Saint James's-park. By Order,

EDWARD S. STEPHENSON,
Clerk and Solicitor to the Trustees

### PUBLICATIONS.


CIVIL ENGINEERING.

On Wednesday next will be published, in the large Volume, 8vo., uniform with Messrs. Longman and Co.'s Series of "One-Volume Travel-guides."

AN ENCYCLOPÆDIA of CIVIL ENGINEERING, Historical, Theoretical, and Practical. By EDWARD CRESY, F.S.A., C.E.

Illustrated by above Three Thousand Engravings on Wood, by R. Branston, explanatory of the Principles, Machinery, and Constructions, which come under the direction of the Civil Engineer. London: LONGMAN, BROWN, GREEN, and LONGMANS.

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On the 1st of March ready with the Magazines will be published, No. I of

A TREATISE on MECHANICS, by J. F. HEATHER, B.A., of the Royal Military Academy, Woolwich: late Scholar of St. Peter's College, Cambridge

In this Work, the writer will endeavour to emulate the elegance of diction and perspicuity of arrangement, for which the celebrated work of Poisson is remarkable; while, by avoiding some fundamental errors into which this writer has fallen, and which have been pointed out, in some cases exaggerated by his followers, and by giving clearer definitions and enunciations of the principles of this beautiful science, he hopes to give his readers a more comprehensive view of those principles, and to lead them up, by one unbroken chain of reasoning, from the first definitions and assumptions, to the sublime heights from which they may grasp at one view the wondrous works of the Creator. The work, when complete, will form two handsome volumes in royal octavo; but to suit the convenience of all parties, it will be published separately in Parts, which will appear in Numbers at 2s. 6d. each. Thus the two First Numbers will form the First Part of Statics; so that, for Five Shillings, a better book upon this subject for the generality of readers can be obtained than at present exists.

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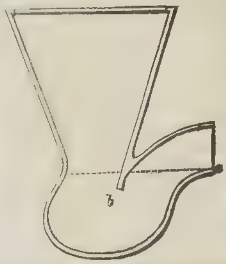
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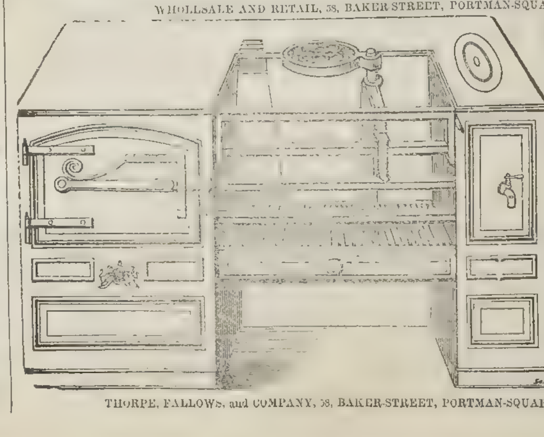
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The Builder.

No. CCXI.

SATURDAY, FEBRUARY 20, 1847.

HOW best to construct a THEATRE where the largest number of persons may sit most at their ease, be most secure, and see and hear most perfectly, is still a question, and probably will long remain so. The form, arrangement, best materials in respect of the transmission of sound, and mode of obtaining security from fire and completeness of the approaches, must be investigated by every architect for himself, when about to design a theatre for dramatic representations, as points unsettled. More than one of the latest erected theatres in London, so far from being superior to those which preceded them, and giving evidence of greater knowledge of the subject, are positive retrogressions. In many of the seats, seeing and hearing are quite out of the question; the ventilation is abominable, draughts universal; and if the occurrence of fire, or any other cause of alarm, should lead to a hasty attempt, on the part of the audience, to escape from the house, the consequences could not fail to be dreadful.

We may have occasion to speak more fully on this subject before long: the inquiry suggested is full of interest to a large class of persons; and, moreover, would apply to many other structures besides theatres. As regards the arrangement of apartments with reference to the laws of sound, all are avowedly ignorant, and are unable to obtain with certainty any desired result. Some notes under this head will be found on another page in the present number of our journal, and may be referred to in connection with this remark.

At the present moment too, when a new theatre is about to be erected in London, and one of the "royal" houses is undergoing alterations little short, in extent, of an entire reconstruction, this subject would seem to have more than ordinary claims to notice.

This consideration, with others, leads us to place before our readers the plan of the "Théâtre Montpensier,"* just now completed in Paris, and a view of the entrance front on the *Boulevard du Temple*, together with some particulars, for which we are chiefly indebted to an ably-conducted French journal, known as *L' Illustration*.

Most of our readers are aware that the privilege of erecting this theatre was obtained by M. Alexandre Dumas, through the Duke de Montpensier, a staunch friend of that distinguished and most prolific writer. A company was formed to build the theatre, and by them the ancient *Hotel Foullon*, and land whereon it stood, were purchased for 24,000*l.* sterling. For a long time expectation has been on tiptoe in Paris concerning the new theatre, and the most marvellous stories have been circulated concerning the arrangements, fittings, and decorations; almost sufficient, indeed, to ensure disappointment when opened. Whether or not, however, this has been the case, we have yet to learn.

An examination of the plan† shews, that the site was an awkward one, and called for the exercise of skill in adapting it to the required purpose. This and another circumstance tramelled the architects considerably, and materially influenced the arrangement of the theatre. The circumstance alluded to was the necessity of providing for the accommodation of two widely differing audiences, and this is dwelt on by the French journalists as a matter of greater difficulty than it seems to be to us. The audience of the theatres of the boulevard ("that dramatic Acropolis so picturesquely termed the Boulevard of Crime") is of a peculiar, well-known, and fixed character, while the directors of the new theatre (the popular theatre, too, *par excellence*), looked to the most brilliant society of Paris as its patrons, in consequence of the peculiar circumstances under which it was erected. What was desired, therefore, was a building so arranged, that the *élite* of Parisian society might find in it every provision for their comfort without in any way trenching upon that of the ordinary public of the theatres of the boulevard. To obtain this, the directors associated with M. de Dreux,—who had obtained the chief prize for architecture in the Academy of Beaux-Arts, and had been sent to Rome by that body,—M. Séchan, an eminent painter of architectural scenery; and committed into their hands the entire direction of the works.

Provision for the inferior audience mentioned appears to have been made by two large amphitheatres, or, as we should term them, galleries, extending behind the second and third tiers of boxes; one of these is shewn on the plan, and is marked D.

The form of the house is that of an ellipse, and differs from most modern theatres in having the transverse axis, like Palladio's theatre at Vicenza, parallel with the scene, that is so far as relates to the principal part of the audience. The longest diameter, from the back of the boxes to the back of the boxes, is about 65 feet; the shorter, to the front of the stage, is 52 feet. The opening of the stage is about 36 feet.

It is laid down by B. Wyatt, in "Observations on the Principles of a Design for a Theatre," that as the reach of the human voice, when moderately exerted, is about two-ninths further in a direct front line than laterally, and the voice being distinctly audible on each side of the speaker at a distance of 75 feet, it will be as plainly heard at a distance of 92 feet in front of him, therefore, "that the geometrical figure which comes nearest to the extreme limits of this natural expansion of the voice is a semicircle of 75 feet radius, or 150 feet in diameter, continued on each side to the extent of 17 feet, or in the proportion of about two-ninths of its lateral expansion beyond the limits of the semicircle, and then converging suddenly until the two lines meet behind the back of the speaker." There are many reasons, however, why a theatre of this extent should not be erected.

"Taking 75 feet (says Mr. Gwilt, commenting on this passage) for the distance at which the voice can be heard laterally, as the space between the front line of the stage and its immediately opposite boxes may occasionally be in the lateral direction of the voice, the greatest distance from the front wall of the stage to the back wall of the boxes opposite the stage should not exceed 75 feet, the limit of the voice in its lateral direction, because of the turns of the head which the actor must often make for the business of the scene, when that which was opposite might become lateral; and thus those persons sitting in the opposite boxes would be 92—75=17 feet beyond the reach of the voice.

The use of a semicircle, without a modification would, however, involve the extension of the stage opening to an inconvenient width; and Mr. Wyatt very properly considers that the whole area of a theatre should contain little more than one-third of the space over which the voice can reach; "the one," he says, "being (independently of the space behind the back of the speaker) a superficies of 11,385 feet, and the other of 4,003." This, he thinks, will compensate for the absorption of sound consequent on the number of the audience, the woollen garments they wear, and the state of the atmosphere, and would insure a good hearing in every part of the house.

According to the author's statement, he recommends that the distance from the front of the stage to the back wall immediately opposite should be about 54 feet; in the old Drury-lane it was 74 feet, and in the old Covent-garden, built about 1730, it was 54 feet 6 inches. In the Opera House, built by Vanbrugh, it was 66 feet. At Milan it is 78 feet. At the old San Carlos, at Naples, 73 feet; and at Bologna, 74 feet.*

This, however, given for the reader's consideration, is leaving the Théâtre Montpensier, where it will be observed a large proportion of the audience are brought very close to the stage. The arrangement here adopted has the effect of reducing in appearance the size of the house; but those who have been into it assert there is no place in it, whether it be in front or at the sides, in the boxes or the amphitheatre, where the whole scene is not distinctly visible.

The front of the boxes is white, with continued garlands of fruit, flowers, and foliage, painted on it. The front of what we should call the dress-circle is a balustrade. The proscenium and curtain are very elegant.

The number of persons the house is said to contain is 2,000. We may mention, that instead of one central chandelier, which would have interfered with the view from the galleries, constructed as they are, there are two, one on each side, by which means inconvenience is avoided.

The frontage on the Boulevard is very small,—not more than 26 feet, and gave little opportunity for display. The arrangement of this front, as shewn by our engraving,† is not unlike that of the Adelphi Theatre, although the details are widely different. The cariatides on the ground story represent Tragedy and Comedy; the upper groups, supported on brackets represent, on the right hand, Hamlet and Ophelia, and on the other side the Cid and *Chimène*. The central figure, for the admission of which the circular pediment is inexcusably broken, represents the genius of modern art. The whole of the sculpture is the work of M. Klagmann, and is said to be well executed.

The total cost of the building and fittings is stated at 32,000*l.*

* We use the name by which it has been known up to this time. What it will, after all, be called, we cannot say with certainty at this moment.

† See p. 87.

## STOPPAGE OF THE WORKS IN WELLS CATHEDRAL.

WE much regret to find that the restoration of Wells Cathedral, to which we alluded some time ago, has been brought prematurely to a close. The alleged excuse for suspension, with the dean, is this, "When I have *all the money requisite* to carry out the projected works, then we may proceed." To this doctrine all who *really* feel a desire for the restorations object, and truly say, let us spend all we have WELL, and let the blame rest with the county gentlemen and public, if by their failing in subscriptions we cannot go further.

The nave is thoroughly cleansed and restored, and the ancient painting on the groining renewed: the beautiful vaulting of the choir is still choked by whitewash. The intention was to take on the scaffolding to the choir, and by gilding the bosses and cleansing the choir, &c., at least to secure a harmonious effect from east to west. For this there was abundant money; but the new dean, giving

* Encyclopædia of Architecture, p. 805.

† See p. 86.

the reason before stated, has ordered all the scaffolding away, and the men who had just got into the spirit for their work were dispersed. The cost of scaffolding, &c., for such an undertaking is not small, and this must be entirely re-erected if ever the works go forward.

An encaustic tile floor is about to be put down in the Ladye Chapel, at some considerable cost.

## THE INTERIOR FORMS OF BUILDING, WITH REFERENCE TO THE LAWS OF SOUND.

A MEETING of the Institute of Architects was held on Monday, the 8th instant, Mr. Bellamy in the chair, when a paper on the above subject was read by Mr. Scott Russell.

Mr. Russell, in commencing his remarks, said, in excuse for interfering with what might be considered not his province, that although extreme division of labour might, and did, carry science forward, yet, by confining particular departments to classes, it induced narrow views. He thought good resulted from the professors of different sciences mixing together and interchanging opinions. It was difficult to excel in more than one, still there were many examples of those who had done so,—as Michael Angelo, Leonardo da Vinci, and others. If in any thing extra-professional aid was needed by architects, it was in the arrangement of buildings with reference to the transmission of sound, where all were avowedly at fault. All architects admitted that nothing was more difficult. Mathematicians, when applied to, gave widely different forms as the best. Even an ear-trumpet was no better made by the most profound mathematician than by the merest rule of thumb; and if it were so difficult to arrange an instrument by which sound might, with every advantage, be conveyed to one individual, how much more must it be to arrange a room so that every one in it might hear what was said. The problem was to enable 1 or 1,000 to hear equally well. The waves of sound were generally thought to be like the waves of water: he had been led to investigate the latter, and in so doing, had arrived at some conclusions not generally entertained. He proposed to divide the subject into five parts. The first principle to be mentioned was this, that sound travels in straight lines: light and sound are the same in this respect. Sound does not easily go round a corner; and this should be remembered in arranging buildings. The question was how to make the greatest number hear and see well. In the theatre of the Royal Institution in Albermarle street this had been successfully worked out: he thought that from every seat in it the lecturer could be most distinctly seen and heard. This was arranged by Count Rumford and Sir Humphrey Davy.* The human voice, the lecturer remarked, could be heard 500 feet with ease; and he believed that a building might be arranged to seat 20,000 persons where all would hear: the fact that Wesley, preaching in a natural amphitheatre of hills, was heard by that number of persons justified his opinion. He had noticed that a reader in the choir of Canterbury Cathedral could be heard 200 feet off distinctly, and afterwards making the experiment himself with a friend, had found that he could be heard that distance when he spoke in a clear whisper.

Mr. Russell then proceeded to explain a curve which he had discovered, and recommended for the sectional arrangement of the seats, and the mode of obtaining it, but which we find it difficult to convey without diagrams. It was first necessary to fix the position of the speaker, and to decide how much of the voice and sight of the speaker each auditor should have: he thought an area 18 inches high and 3 feet broad sufficient. Drawing then a series of radial lines from the mouth of the lecturer to points decided by these dimensions, a curve was obtained for the rise of the seats, which was found in practice of good effect.†

The second principle he would allude to was the spontaneous oscillation of air in a chamber, which was the source of much trouble, but might be turned to good account. A long chamber of air, if caused to oscillate, continued to do so, and would produce a tone depending on the length,—as in an organ-pipe. Thus a gallery, 64 feet long, would produce the note C; and if 32 feet long, it would be an octave higher. Every chamber, in short, has a voice. A speaker should find out the key-note of the room, and speak in it if possible. This fact opened the question whether we could improve rooms for hearing by attention to the dimensions and proportions. Length, breadth, and height should be in harmonious proportions, or the sounds produced would jar: there was a more intimate connection between music and architecture than is now generally admitted. Simple multiples for the proportions were desirable; as, for example, 48 feet long, 24 feet wide, and 16 feet high, and so on.* Incongruous sounds, he said, neutralize each other, and produce dead points, or points where the speaker would not be heard. Care was necessary in this respect.

Harmonious arrangement of an apartment might sometimes be obtained by means of pilasters, or partition with doors. The choirs of our cathedrals usually approximated to simple multiples in their proportions, and bore out his view, he thought, by their effects. Incongruous forms made the worst apartments for hearing. The lecturer was then proceeding to speak of the third division of his subject, reflection of sound, but was invited to postpone the consideration of it till the next meeting.

* Mr. Godwin remarked, after the reading of the paper, that the arrangement of this theatre was usually attributed to the late Mr. Webster, the geologist, who built it, being then an architect.

† This was published by Mr. R. some years ago, and is illustrated in Gwilt's "Encyclopædia."

## AWARDS OF OFFICIAL REFEREES.

### RIGHT TO INTERFERE WITH ADJOINING BUILDINGS.

A WAREHOUSE, situate No. 21, Bermondsey wall (call it A), consisting of two square stories and one in the roof, which was curbed, having been in a great measure destroyed by fire, and the warehouse adjoining (call this B) being of a greater height, with *dripping eaves all round*, it was desired to rebuild or reinstate the first-mentioned warehouse, A.

The front and rear walls had been entirely rebuilt, and new floors and roof formed, except the first or ground-floor, and part of the second or one-pair floor. Under the schedule C, part 4, the district surveyor required that the curbed roof should be replaced by a square story; and under schedule D, part 3, required that the party-wall should be carried up three feet above the gutter. Under sec. 31, he was of opinion that the wall was sufficiently secure to allow it to be raised.

The adjoining owner maintained that schedule D, before mentioned, did not justify interfering with an old adjoining building, which is not out of repair; that the form of notice, schedule M, No. 8, shews that it was not the intention of the law that a wall should be condemned on account of its being insufficient for a building owner, and that the previous section, 26, is the only one under which the building owner could proceed; that the common-law prescriptive right of possession for a sufficient number of years cannot be set aside, excepting by the express words of the statute ("Wells and Ody") and that the present words do not justify the claim.

Further, that section 31 does not enable a building owner to do all that is necessary to raise a building, but only to do so if he has the assent of the district surveyor, and can do it without interfering with the adjoining owner's property; this intention is clearly shewn by his being authorized to do it without any notice.

The official referees were therefore requested to determine,

"1stly. Whether the warehouse A has been, in the intention of the Act, rebuilt, or has been only reinstated or altered.

2ndly. Whether the party-wall is required to be raised above the gutters of the adjoining building B, and can be so raised by the building owner without the consent of the adjoining owner, all notices and formal proceedings being supposed to have been taken.

And 3rdly. Whether the building owner or adjoining owner should be at the expense of forming the lead gutter, and making good the roof of the adjoining owner's building."

The referees determined "that the warehouse (A) has been rebuilt within the meaning of the first-mentioned Metropolitan Buildings Act, and that the party-wall in question is by the said Act required to be raised above the gutter of the adjoining building (B), and that subject to the proceedings directed and required by the said Act to be taken in that behalf, such wall can be so raised by the building owner without the consent of the adjoining owner; and that the wooden plate, and eaves upon the said party-wall are, so far as they go, of the nature of a party timber partition, and subject to the provisions of the said Act in respect thereof, and that such timber should be removed, and, the party-wall, being otherwise sufficient, should be raised at the joint expense of the building owner and of the adjoining owner, but that the required new gutter, and making good the roof of the adjoining owner's building, must be made and done at the sole expense of the *adjoining* owner."

### PROJECTION OF SHOP-FRONTS.

In the case of a proposed addition to a shop-front in Upper Baker-street, Pentonville, on which an award had been made, the building-owner thought, on considering the award, that the proposed projections might be made to the extent required, provided they consisted of fire-proof materials. He thought his opinion was confirmed by the latter part of the clause in schedule E, headed, "Projections from face-walls, &c.," and remarked, that in his opinion a fence-wall, inclosing the present garden of the said house, and standing before the line of fronts to the extent of the line of the proposed projections, would invite nuisance, and be a much more objectionable projection than the proposed shop possibly could be. He proposed, therefore, to construct the said projections with fire-proof materials. It must be added, that he had the written approbation of the owner of the adjoining house in Upper Baker-street.

The district-surveyor (of Clerkenwell) considered that it would be contrary to the said Act to build the said shop-front to the extent proposed, and the question was sent to the referees.

The award was,—"that inasmuch as the extent proposed for the projection of the shop-fronts (namely, the line of the fence-wall inclosing the garden of the house in question) would exceed the ordinary and reasonable width of stall-boards to shops similar to the proposed shop, and such projection would be an extension of the shop, and not the mere addition of a shop-front before the line of the present external wall of the house, it will be contrary to the Metropolitan Buildings Act to build the shop-fronts, or any of them, in the line proposed, or to make any such projection, whether the same be or be not of fire-proof materials; but that if such front be formed of fire-proof materials, and do not exceed in projection the ordinary and reasonable width of stall-boards to shops similar to the proposed shop,—which width is, in our opinion, not more than two feet,—and if no extension of the shop, as distinguished from the shop-front, be made beyond the present line of the front wall of the house, then it will not be contrary to the said Act to erect the same."

* See paper on this subject, p. 2, *ante*.

## ARTIFICIAL LIGHT FOR PAINTING.

IT is well known, that ordinary artificial light, such as that obtained by the combustion of wax, tallow, oil, or carburetted hydrogen gas from coal, produces a tinge of colour very different from that produced by the white light of the sun. This very much affects the appearance of colours exposed to artificial light, and prevents the continuance of some operations after the sun has gone down. For artists it would be especially important to obtain light free from this tinge: and we therefore think it desirable to point attention to a paper on this subject, by Mr. Tait, a vice-president of the Scottish Society of Arts, published in the *Edinburgh New Philosophical Journal* for January.

The writer remarks,—"The sensation of colours is caused by objects reflecting or transmitting colours produced by the rays of light to which they are exposed. There are three primary colours, yellow, red, and blue; of two, or all of which, combined in various ratios, all other colours are composed. Light, with very rare exceptions, is compound or heterogeneous, producing two or all of the primary colours. The pure light of the sun produces them in

such ratio, that when wholly or proportionally reflected or transmitted, they neutralize each other, and produce white or neutral grey (which is merely a shade of white, having no predominant colour); and light producing them in such ratio is often called shortly *white* or *neutral light*. In 100 parts of white, there appear to be about 18 parts of yellow, 32 of red, and 50 of blue, all of equal intensity, or nearly as 3, 5, 8. When two only of the primary colours occur, yellow and red, yellow and blue, or red and blue, they form the secondary colours, orange, green, or purple; and when they occur in the ratio in which they are produced by white light, they form perfect or normal secondaries. The colour of those objects which are called coloured, is caused by their having the quality, from their peculiar structure, or otherwise, of reflecting or transmitting different parts of the rays forming the compound light to which they are exposed, the remainder being absorbed and extinguished."

In ordinary artificial light, the rays producing red and yellow appear to occur nearly in the same ratio in which they occur in white light. "And as there is an excess of them over the rays producing blue, all that is necessary, in order to produce white light, is to interpose a transparent medium of such a depth of blue as to absorb that excess, allowing such a portion of them to pass as is necessary to neutralize the rays producing blue, all of which have been allowed to pass. It appears that that excess may be best absorbed by interposing coloured glass, of a proper depth of blue, according to the ratio of orange in the flame. It ought to be 'coloured' glass, that is, coloured in the melting-pot. Glass 'stained' blue, that is, partially coloured by applying the colouring matter to the surface, and fixing it by a heat sufficient to soften the glass, but not to melt it, is not transparent; in which respect, blue differs from other stained colours in general."

"The artificial light is to be inclosed in a box or lantern of a suitable size and construction, or otherwise, as circumstances may require, and in such manner that none of it may escape by the openings for admitting and discharging air or otherwise, except what is modified by passing through the coloured medium."

The paper shews how best to adjust the depth of tint of the glass. In obtaining white light by the method proposed, there is of course a loss of a large portion of the artificial light, and a corresponding increase of expense; but it appears that the objection on this ground is not so great as might be anticipated. "Dr. Fyfe states the following among the results of observations made by him with regard to the expense of a variety of materials for producing light, taking as the unit the expense of good coal gas, yielding 12 per cent. of matter condensible by chlorine: — Gas argand, 1·00; gas swallow-tail, 1·40; solar oil in solar lamp, 2·00; solar oil in common argand lamp, 3·98; whale oil in ditto, 5·00; sperm in ditto, 8·00; moulded candles (short sixes), with two wicks, 12·70, with one wick, 13·50; wax candles, 25·90; spermaceti and composition candles, 29·20. So that, supposing the expense of white light to be six times that of ordinary artificial light, it may be produced by a gas argand lamp for little more than the expense of the same quantity of orange light from common whale oil in an argand lamp, for about half the expense of tallow candles, and for less than a fourth part of the expense of wax candles; and if gas cannot be obtained, the solar lamp may be used, which will produce white light at the same expense as orange light from tallow candles, and at less than half the expense of wax candles, independently of the diminution of the ratio of orange, in consequence of the great brightness of the flame of that lamp."

We look upon these hints by Mr. Tait, for the production of artificial daylight, as likely to prove of considerable value.

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GROSVENOR-SQUARE.—A resident in Grosvenor-square implores us to urge the importance of completing the sewers in that neighbourhood, which have long kept the inhabitants in a state of great discomfort. In cases of this sort every effort should be made to get the works completed with the utmost rapidity, whereas it would seem here that those engaged are in no hurry to get done. Who is to blame?

## THE NEW HOUSES OF PARLIAMENT AND PROGRESSIVE RISE OF THE RIVER.

SIR,—As you inserted a paper of mine in yours of the 9th of January ult. (and to which I now refer), on the effect of the rise of the river Thames, I take the liberty of submitting my opinion as to the cause of such an interesting hydrographical consequence.

The basin of the river Thames is considered to comprise an area of about 5,500 square miles. The bed of the upper part of the river probably is not much altered, owing to the descent there; it being computed, that the fall from Oxford to Maidenhead is about 25 feet per ten miles, from Maidenhead to Chertsey about 22 feet, from Chertsey to Mortlake about 16 feet; and from Mortlake to London about one foot per mile.

Rivers occupy the lowest part of the valleys through which they run, and when rivers are large, the declivities are generally small, and the downward impetus, when diminished, and particularly when opposed by a flood or returning tide, produces a considerable *deposit of sediment*. At the mouth, or more correctly speaking, the *end* of the Thames, the river being so wide there, it will be found, by comparison of the level of the upper surface of the adjacent marshes, that the deposit is less in depth in that part of the river, owing probably to its being more diffused. The narrower part of the river, such as between Sea Reach and Wandsworth, has the most to do in this business; and *there*, affected by the flood tides, is the greatest deposit. This, I have calculated, may amount to a rise of from 18 to 24 inches in each century. Upon this principle, I imagine that the bed of the river Thames, many centuries ago, was much lower than it is at present; and that all the marshes at that time, and also the ground at Millbank, &c., were above high-water level. The water of the Thames in the part alluded to is frequently so turbid as to resemble in colour and consistence thin pea-soup; this matter cannot return and ascend the river, where is no returning tide, but only obeys a downward stream, and the sea appears inclined to reject it, and therefore much of it remains and disfigures the river. I have no doubt the quantity of this stuff is greater now than it was formerly, owing to the very increased extent of the metropolis, and the consequent greater discharge from its sewers.

*As the bed of a river becomes higher*, the whole body of the water must rise in a proportionate degree;—for the river acts as a gutter, and it must be evident, that if a gutter has a certain quantity of work to perform, and the lower part be loaded with sand and dirt, the upper surface of the travelling water must be higher. I am confident that there can be no objection to my theory on account of a supposed level of the tidal wave, because the same is not uniform: for instance, the difference between low water and high water is great at Guernsey, and but small at Weymouth.

To revert to an early period, I have seen at low ebbs, a little above Rainham Ferry-house, the remains of large trees in position, with their roots. These are *not in a fossil state*; they are black, and like soft charcoal. This soddened decomposed wood is frequently found in the river, and is called by the fishermen and sandmen "moor logs." The same occurred at Greenwich at about the same level, and occasioned much inconvenience as to the driving of the piles for the pier there. It is probable that these woods were in existence about our Saviour's time. I should observe, that my attention was at first attracted only to the question as to the origin of the formation of the marsh walls; I afterwards referred to ancient buildings to support the position I had taken. These marsh walls have hitherto been attributed to the Romans, probably under the idea that no other people in this country could have undertaken a work of such great labour as the *recovery* of so much land, many feet below the ordinary level of high water. In 1734 a breach occurred in the marsh wall at Dagenham, and as the repair of it cost 25,000*l*., how is it possible that the whole marsh wall on both sides of the river could have been made by any nation at one time? It appears evident to me, that when the bed of the river became so elevated that the rise of the upper surface of the water began to injure the marshes, that the *walls were then commenced*; and this at first, being a work of comparatively slight labour, was not noticed by historians, any more than the first formation of roads in a country when nearly uninclosed would be. In my time, I remember additions in the height of the marsh wall at many places after high tides.

Another proof of the alteration of the upper surface of the river is in respect of St. George's-fields, where the Romans, it is said, had an important station. This has been disputed by modern historians, who have considered that place to have been a swamp, owing to its being now a little below the present line of high water.

My attention has been particularly called to this point, because I have seen, on excavations being made in the New Cut, and in several parts of St. George's-fields, that within about a foot of the present surface there was *clean bright gravel*, from which it is evident that that neighbourhood had never been subject to inundations.

Three years ago they were digging a section from the deeply-situated sewer at Westminster-bridge (the northern boundary of Thorney Island) to low water mark. The progressive deposit of the river was here evident; they came at last to a floor of sand, which I have every reason to consider was the shore when Westminster was selected as the site for the royal palace. The sands on the shores of the Thames have been decreasing, from what I have seen, during the last fifty years, for which I can give many proofs. (I may perhaps be allowed to mention, that I am descended from a family that was occupied at least two centuries in the Thames sand trade).

Even the gravelly portion of the bed of the river is not a permanent floor, for it is continually shifting in every direction. The material brought up from the bed of the river by the ballast engines is invariably *soiled river deposit*. In the Tunnel Report, March 7, 1843, it is stated that the ground excavated there varied greatly, being sometimes merely a loose river deposit. The Duke of Buccleuch's causeway, and that at King's-Arms-stairs, opposite, are now buried several feet in the mud, and have disappeared.

As my theory has hitherto been met by universal contradiction, I beg to add, that I have recently ascertained that the waters of the river Po have risen, owing to that stream carrying down and depositing so much mud and gravel; and that, consequently, the embankments there have from time to time been raised; and that they are now at least 22 feet higher than the general level of the adjacent plains. And I have just read in the Rev. Dr. Russell's "Egypt" (1832), that the river Nile has risen about 41 feet in 4,000 years.

I regret that my attention was only lately directed to the subject of the palatial Houses of Parliament.

February, 1847. T. HIGGS.

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## FOX-HUNTERS AND SANATORY REFORM.

IT was a striking and gratifying sign of the times to find Lord Lyttleton, the Lord-lieutenant of Worcester, at a fox-hunting dinner the other day, calling the attention of the company to the importance of sanatory reform. It speaks volumes for the cause, and more so still that the subject was actually received with "cheers" by the assembled fox-hunters! However strange it may appear, such was the fact. The remarks of the chairman were in allusion to Mr. Austin's recent report on the sanatory condition of the city of Worcester. "He (Lord Lyttelton) was most anxious to express his sense of its value, and hoped most sincerely that the mayor and all other authorities of the city would apply their very best energies to the recommendations of that report." * * * "He (Lord L.) felt deeply impressed with the subject, and therefore he had been anxious to take the first opportunity of introducing it." (Cheers.)

Imagine the puzzled look of the fox-hunters of the last generation on being so addressed! And that their successors in the field should actually cheer such an intrusion over their wine, was enough to disturb them in their very graves! But all honour to the men of high birth who, like Lord Lyttelton, shew their true nobility in efforts and examples such as this, for the welfare and improvement of their fellow-creatures!

## THE BOND QUESTION.

Mr. Editor,—In The Builder of the 23rd ult. are some observations on "hoop-iron bond," and a recommendation that it "should be strained tightly the whole length of each wall in one piece, if possible, and secured at the end by turning it up at right angles, and lapping it over the upper courses."

Now, Sir, although it is known well enough that, with the exception of water, all bodies are expanded by heat, I beg to remind your readers that bodies of a *different* nature are *not equally* expanded by an *equal* increase of the degree of it. This is strikingly demonstrated by Wedgwood's pyrometer,—an instrument formed of clay for ascertaining high temperatures by measuring in its gauge the expansion of metallic rods previously submitted to the temperature required to be known; and also by the fact which every architectural draughtsman must have observed, of the different expansion, in hot and damp weather, between his wooden or ivory rules, and his drawing paper.

Since, therefore, brickwork cannot be lengthened by heat or contracted by cold, precisely in the same degree as iron is, it seems to me that unless dry brickwork be compressible,—or unless (which I much doubt) iron be elastic, *i.e.*, capable of itself resuming its pristine dimensions after any casual extending force may have been removed from it,—it seems to me, I say, that all courses of brickwork, however tightly bonded with iron in the first instance, will only remain effectually so when the atmosphere possesses that precise temperature which it had when the brickwork was originally bound; and that in extraordinary hot weather the restraining power of the iron for keeping the brickwork in its intended situation will cease to act, and the iron thus become detached and useless,—iron being much more expansible than brickwork.

This, then, is a very important question that should be forthwith experimentally answered, and which might easily be done by any of your practical readers, when they may have occasion next to build a common garden wall, or some such like unroofed and untied structure.

I am, Sir, &c., W. Bromet.

February 3, 1847.

P.S. Since writing the above I have seen, in your number of the 6th instant, a letter, in which "elasticity of iron" is spoken of as a fact proved by "great experience." But this is rather flexibility, and not *true* elasticity, being merely such mechanical and permanent extension or stretching of its particles, as a blacksmith gives to iron by his hammer, and not the elasticity caused by a "*vis insita*," like that possessed by India-rubber. The iron, however, of whatever size, would still retain its susceptibility to change by the influence of heat and cold, and, therefore, would be liable to the objections of your last correspondent on this subject, unless such change (but which I hold to be impossible) were "by some means counteracted;" and would, moreover, as I have before said, cease to bind, because it would loosen itself not only at its "ends," but throughout its "whole length."

P.P.S. Feb. 12.—Some gentlemen may suppose that, when iron is enveloped by thick walls, it would be protected from the temperature of the circumambient air. But this I doubt; because Heat, although conducted at a comparatively slow rate by brick or stonework, is an all-pervading agent, and exists often in a latent state, undiscoverable either by our sense of touch, or by thermometers.

It has been inferred that, if iron-hoop bond be bedded in cement, it cannot move. But, supposing this to be a just inference (although I believe that in no possible circumstance is the natural expansion of iron by heat controllable), I beg to ask whether any such power as could prevent this expansion would not, *à fortiori*, act as a sufficient binder, and so render useless any iron applied for that purpose?

If iron be ever employed for binding stonework, it should, I think, be employed as at Dover, where, in the construction of the new sea-wall, a stout iron chain has been laid, but without straining it, over one of the central grouted courses of the large unwrought boulderstones with which the wall is made.

What, however, will be the effect of this chain bond, we must wait for old Neptune, some stormy day, to discover. W. B.

## ART IN MONTREAL AND QUEBEC.

A correspondent writes us that art is beginning to bud in these provinces. The booksellers' shop windows shew some of the best London and Paris prints exposed for sale. On the 6th of January an exhibition of paintings by artists living in Montreal was opened, and though they were mostly copies from modern artists in Europe, and some very bad copies too, the exhibition, as a whole, was better than might have been expected. Numbers of very bad imitations of our favourite artists, and copies of their works, are brought in from the States, and sold at high prices. The London Art-Union has honorary secretaries in Montreal, Quebec, Toronto, and Kingston, who have sent a fair list of subscribers.

## CONSTRUCTION OF BATHS.

Sir,—The Public Baths and Washhouses Act has been adopted, it is said, by the metropolitan parishes of St. Martin-in-the Fields, St. Mary-le-bone, St. James, Piccadilly, and St. Margaret and St. John, Westminster, and by the boroughs of Leeds, Birmingham, Stockport, Bath, Newcastle-on-Tyne, Plymouth, Bristol, Worcester, &c. These make but a beginning. Still they create a new demand for an article of manufacture to which sufficient attention has not hitherto been paid. I allude to the baths with which they are to be fitted up.

There are two most important requisites for those baths. 1. Durability. 2. Cleanliness. There is a third, though of less importance. 3. Beauty.

Allow me to suggest, in your columns, that attention should be paid to the manufacture of baths, and to give a few hints.

1. Durability. Where baths are to be kept in constant use, it is of great importance that they should not be liable to oxidation or corrosion; that they should not be brittle; and that when they are formed of several pieces, their joints should not be liable to "weep." Zinc, galvanized iron, copper, lead, marble, varnished wood, and slate, among others, are deficient in durability; for as a part of durability, the preservation of a polished surface is to be considered.

2. Cleanliness. Where a bath is to be used frequently in the same day, it is essential that it should be capable of being easily and rapidly cleaned. A bath which can be cleaned by merely passing a mop over its surface and dashing two or three pails of water on it, is infinitely better adapted for a public establishment than one which needs the friction of a scrubbing brush or sand-paper to keep its surface bright. All metal baths, at least, will require considerable scrubbing to make them bright or attractively clean.

3. Beauty. A dull-coloured bath will give a dull hue to the water it contains, and will render it less easy to detect any want of clearness in the water itself. Baths of zinc, lead, and slate are particularly open to this objection.

I understand that the Parent Baths and Washhouses' Committee are having some cast-iron baths enamelled for their model establishment at Goulstone-square, Whitechapel; and that they are having some of their baths of white porcelain tiles. The chief objection to tiles seems to be, that the joints between them must present a rough surface, which will "catch the dirt." If the enamelled baths can be made at a reasonable cost, they may probably answer well, as combining the three points to which I have alluded. But, Sir, however earnest a committee may be in their endeavours to obtain a thoroughly good article, there must be a far larger amount of inventive talent among our manufacturers than any committee can possess; and I shall be glad if my hints may be the means of inducing some of your readers to turn their attention to a subject which involves the two points, essential to the success of commercial enterprise, public good, and private emolument.

Your subscriber, N. R.

London, February 13, 1847.

Water.—According to the *Gloucestershire Chronicle*, the Gloucester Water Company have determined to give the city the benefit of a constant instead of intermittent supply of water. We hope to find this example followed.

## THE GAS MOVEMENT.

Rays of light occasionally interfere with each other's progress towards their respective destinations, and the result is a diminution of light for the time being instead of an increase. The mutual interference of old and new gas companies, in their Parliamentary and other struggles for supremacy, is here and there producing,—negatively, at least, by prevention of intended increase and improvement,—just such a temporary "darkness from excess of light." So is it, for instance, at the present moment, in the city of Worcester, where obstacles in the way of an intended increase of light have arisen in consequence of Parliamentary proceedings between the old and new dispensers of the light. The new have promised to reduce the charges of the old by no less than 20 per cent., although the latter do not exceed 6s. per 1,000 cubic feet of gas. And the old, in order not to be outdone by the new, now offer to light the public lamps at as low a charge as that of the new. The public are thus, at all events, likely, in the long run, to benefit, as usual, by the "fair competition" of the caterers for its staple requirements; and the only limit to one's reasonable satisfaction with a consummation so desirable would be the every way unprofitable conversion of such fair and profitable emulation into "ruinous competition." But we are probably a long way off such a limit to the benefits to be derived from cheap and good gas light. —— The variation of the price of gas in various localities is very great. This probably in part arises from the variation in the expense of coals; but that is by no means sufficient in many cases to account for the differences. At Salisbury the price is 10s. per 1,000 cubic feet, and at Romsey it is even 12s. 6d., while at Southampton it is only 6s. 6d., and, at Liverpool, as already noted, 4s. 6d., with the immediate prospect of a reduction to 3s. 8d.; nay, from the extraordinary evidence of Mr. Cox, *a practical gas producer*, on his examination, lately, before the Commissioners of Inquiry there, as to the cheapness with which the article can be supplied in connection with the sale of the coke, it appears that companies might sell gas with a profit at 2s. 8d. per 1,000 cubic feet! and moreover that in one manufactory at Bristol it actually costs less than nothing! It is quite clear, in short, that dust has been already thrown into the eyes of the public far too long for patient endurance:—Witness the fruits of competition at North Shields.—"In 1843," says the *Gateshead Observer*, "the improvement commissioners, thinking 52s. per street lamp too much, offered 45s. The terms were rejected:—'45s. could not possibly pay.' Both parties were stiff, and the town went one whole winter unlighted. A new company was formed, and contracted to supply the lamps with gas of the best quality at 17s. per annum! In the first year the shareholders divided 3 per cent.; in the second, 5 per cent.; and in the third it continues to prosper. The supply from both companies is abundant and good. On the other side of the Tyne—at South Shields—there being only one company, 5s. 9d. is charged for what only costs 3s. 9d. in North Shields."—The Sunderland Corporation Gas Works were scarcely finished, the other day, when all the leading plumbers in the town were almost constantly engaged in fitting up new meters and new service pipes, and the quality of the article is so superior to that of the old company, that nearly all who are not personally interested in upholding the latter are said to be applying for the new article, which is found at length to obviate the chief objection hitherto to the introduction of gas into private dwellings,—a circumstance which will in all probability lead to a very great increase of general consumption there. In the benevolent aspiration of the *Gateshead Observer* we most cordially concur: "May the successful example of Sunderland stimulate other towns to secure for themselves the twofold advantage of cheap and pure gas." The new works at Sunderland have, it is said, a handsome exterior. The front is of freestone, 246 feet long; breadth of whole 117 feet. The retort-house has a cast-iron roof, made by Messrs. Burlinson, of Sunderland, and contains sixteen ovens, with five retorts each, made of fire clay for expeditious production and saving of fuel, as well as comfort to the workmen.

The whole work was contrived by the engineer, Mr. Forest. The masonwork was done chiefly by Messrs. Steel and Appleby, of Newcastle. The ironwork was supplied by Messrs. Vernon and Son, and Messrs. Simpson and Co., of Aberdeen.——The official inquiry at Liverpool is going on. The most interesting portion of the evidence, hitherto lead, is that of Mr. Cox, the engineer of the new Guardian Gas Company, to which we have just alluded, and from which it appears that by means of the profit arising from the preparation and sale of coke, gas, in some circumstances, can be reduced in cost to little or nothing: that in fact gas manufactories ought to be really if not ostensibly coke manufactories. It is under a patent, however, "for the creation of heat," that Mr. Cox proposes to form his coke; and he declares that he has supplied the Great Western Railway Company at Swindon with gas "at 1s. 8d. per 1,000 feet, and did not lose by it!" The patented process he observed is peculiarly applicable to every place where there is a large demand for coke; and at Liverpool there is one firm who would purchase double the quantity which the new company could make, although they calculated on supplying 100,000,000 cubic feet of gas a year. That firm, he added, is at present selling the coke made by the patent process; and he has a tender from them to deliver coal to the works at 8s. 6d. a ton, and to take back the coke, after the gas of course is got out of it, at 13s. 2d. a ton, for sale at 23s. 6d. a ton! Why gas, it would appear, even taking such evidence *cum nota* as the lawyers say, should be sold for nothing at least, if not for "less than nothing," in order to get rid of it as a nuisance in the profitable manufacture of coke! There are financial wonders here, it would appear, to be opened up to us, nearly akin to, and no less astonishing than, those statistical and economical subversions of all common notions that are thought to be on the eve of realization, by chemical and other companies, for the profitable disposal of the old and venerable nuisance of sewage and manure. Mr. Cox, as incidentally observed, has literally declared in his evidence, that "at one manufactory at Bristol, they made their gas for *less than nothing*." This evidence has very considerably astonished and enlightened the natives of Liverpool, and no wonder.

## RAILWAY JOTTINGS.

The new system of propulsion advocated by M. Andraud, an antithesis of the atmospheric, in which air, compressed by a single atmosphere, is said to be sufficient to propel trains at the rate of fifteen to fifty miles an hour, or more, if requisite, has been tried, successfully, it is said, at Paris, on 100 yards of line laid down for the purpose. The train is impelled by means of a tube in the middle of the road, with a pipe by the side which keeps up the motive power. The cost of working is said to be no more than a tenth of that of the atmospheric, and a half of that of the locomotive, means having at length been devised for the compression of the air at a very small cost. Besides the safety and smoothness of transit, this system is said to possess all the other advantages of the exhaustive or common atmospheric system without any of its disadvantages, and to cost, in formation, as well as in working, a comparatively very small expenditure. We shall see.——Colonel Sibthorpe, who declares that "he would rather see a highwayman or a burglar on his premises than an engineer," has given notice in the Commons, that if no more competent member bring in a bill for the better regulation of railways, he himself will, on an early day, move for leave to bring in a bill to compel railway companies to give ample compensation to the survivors of those persons who may have lost their lives by accidents on railways.——Mr. Henry Booth, says the *Manchester Advertiser*, has addressed the chairman of the railway commissioners on the inconvenience experienced by travellers, post-office keepers, and railway managers, from the differences of time, caused, of course, by the differences of places in longitude; and he strongly urges the adoption of a uniform time for all England. At present, the difference of time between Liverpool and Manchester, not to speak of Leeds and Hull, produces many troublesome miscalculations, unless persons are at the trouble of altering their watches when they reach the different towns.—If proprietors of railways, highways, &c., says the *Hereford Times*, "were to plant a small sweetbriar at every yard amongst the thorns when planting hedges, how delightful they would be in the summer months to travellers. If they were but to sow a few pounds of mignonette and white clover-seed on the slopes and banks every year, how fragrant and refreshing they would be. In a few years, too, they would become naturalized and sow themselves. The weaker they grow the sweeter they are."——A chemical alarum, or whistle, invented by Mr. Mowbray, chemist, of Paternoster-row, was lately inspected by Captain Coddington on the atmospheric line at New Cross. The *Morning Post* describes it as consisting of a copper cylinder, with the usual whistle at the top, and a stone funnel within, giving the interior a sectional form, somewhat like the letter V standing within the letter U. At the bottom, or bason of the U, is placed a piece of marble (carbonate of lime), and muriatic acid is then poured into the funnel, or V, which, as it flows on the marble, liberates the carbonic acid gas, or fixed air, which forces back the remaining acid into the funnel, and thereby suspends all further chemical change, even for months, if necessary, till the charge of gas already accumulated is let off to sound the whistle, when immediately the charge of gas is replaced, so that the sound may be repeated even so rapidly as once in every fifth second, if the instrument be set to that precise effect. The sound is said to have been distinctly audible at the distance of half a mile. The weight of the instrument may be reduced to thirty pounds without diminution of power, so that it may be readily lifted off and on the carriages or engines.——The London and York Company have become their own iron-founders at Lincoln.——The Great Western have instructed their engineers to institute a series of experiments with a view to discover, if possible, a more perfect mode of welding, by which the tiers may be perfectly of welding, by which the tiers may be perfectly secure from accident in breaking either by rapidity of motion or changes in the weather.——The directors of this company have made arrangements for letting all their servants have coals carriage free, by which means those in their employment will be able to buy Welsh coals at 15s. per ton, or 9d. per cwt. They have also granted an additional allowance of 10*l.* per annum to their clerks while engaged in night duty. It is further intended to give premiums for good conduct to all who have served satisfactorily during five years and upwards. Such consideration, on the part of the directors, cannot fail to strengthen the ties between the employers and employed.——There are now 500 masons employed by the contractors for raising the piers for the Britannia iron-tunnel bridge over the Menai straits on the Chester and Holyhead line. These men are earning 5s. to 6s. a day.——The first bar of American railway iron was forged in 1844, and there are now 16 to 18 foundries, making 120,000 tons of the same per annum. An American paper also states that there are now in operation, throughout the United States, 11,000 miles of railway, laid down at one-twentieth of the cost per mile of the English lines, and with fares one-fifth lower than those charged for passengers and parcels in this country.——Improvements in the electrical telegraph are said to have been effected, by the American inventor, Professor Morse, by which communications are impressed on paper at the rate of 50 letters per minute.——Messrs. Brett and Little, of High Holborn, have patented an improvement called the electro-telegraphic converser, from the alleged facilities which it affords to the means of conversation between parties distant from each other in space. Moderate expense, great simplicity, freedom from vibration, and non-liability to derangement from atmospheric influences, are enumerated amongst the more obvious advantages of this invention over those at present in use. The patentees propose to lay down at their own cost any portion of line that may be required to convince railway companies and other public bodies of its unquestionable superiority to every other. Freedom from the influence of thunder-storms would be a decided improvement, as the needles of the telegraph, even on short lines, are then violently affected, while the bells are kept incessantly ringing.

## ANCIENT IRONWORK IN WESTMINSTER ABBEY.

At a meeting of the Freemasons of the Church on the 9th, Mr. French in the chair. Lord Hastings exhibited a curious bronze spur of the 14th century, engraved with foliage and a lion's head, and having in the incisions remains of gilding. Mr. C. R. Cockerell, R.A., and Mr. J. B. Papworth were elected honorary fellows. Mr. Isaacs contributed two singular coffers of early date; in doing so, he said it may not be generally known that there is a class of coffers denominated BOUGE, BOULGE, BOUGETTE, BOULGETTE, terms signifying in the 17th century, any small trunk, but applied at an earlier period exclusively to those in which ladies carried their jewels and trinkets when travelling.

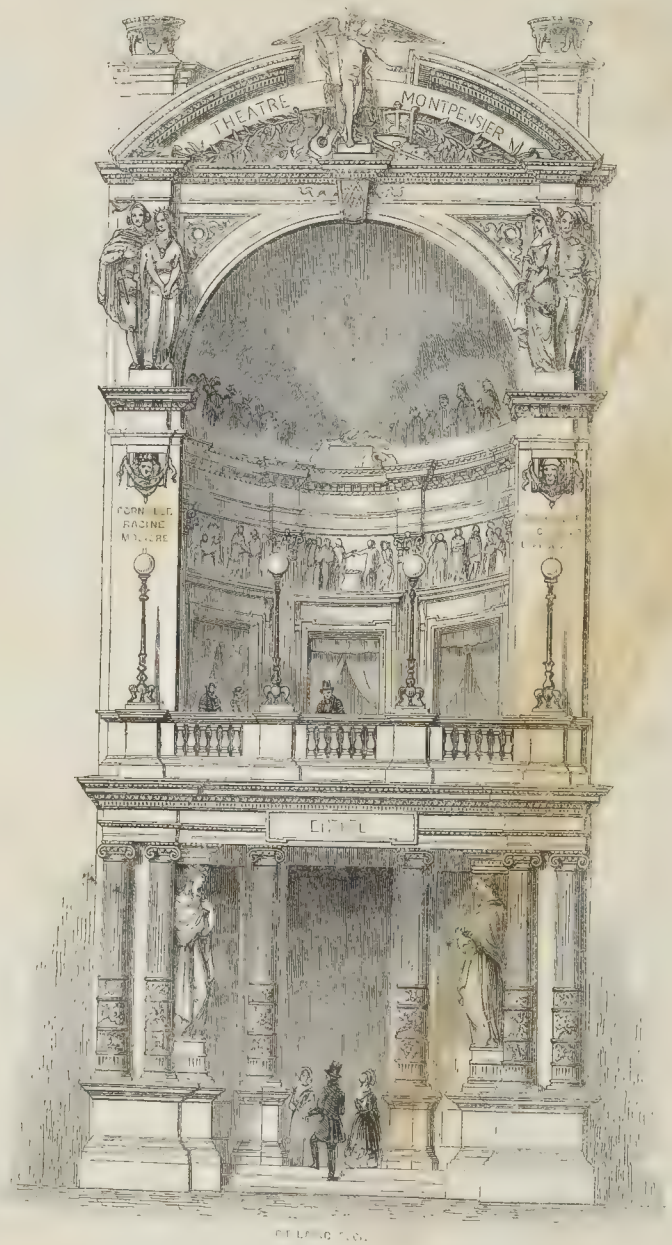
A paper was then read by Mr. John Brown upon the mediæval ironwork existing in Westminster Abbey. Mr. Brown stated, that in the Blaize chapel, in the Abbey, is deposited the iron canopy which formerly surmounted the beautiful tomb of Queen Eleanor. The queen's effigy (a cast of which was exhibited), would lead any one to expect that the adornments should be in proportionate taste, and it so happens there is no disappointment on viewing this curious specimen of ancient art. Neale, in his "History of Westminster," mentions that "since the coronation, a considerable improvement has been effected in the interior appearance of the Abbey Church, by a general cleaning of the monuments and the removal of the iron-work which screened them;" now, at this coronation, which must have been that of George the Fourth, the iron-work not only of the tomb of Queen Eleanor, but that of Henry V., were placed in the dark recesses of the Blaize chapel, where they have been seldom viewed by parties who have visited the Abbey. This is to be regretted when we consider the scarcity of remains of ironwork of this period, particularly as it is desirable to have authenticated specimens of such work. The canopy of Queen Eleanor's tomb is about 15 feet long, and is divided into various compartments, each of a different pattern, which are designed and executed with the greatest skill. Mr. Brown was of opinion that it is not generally known, the ironwork of Henry Fifth's tomb is in existence; however, in this chapel nearly the whole of it may be found. The tomb of Henry V. is at the east end of the confessor's chapel: the head of the king, which the vergers say was made of silver, was taken away in the time of the troubles. Neale says "*all the damage in the Abbey was not done in the time of the troubles.*."

In the tenth volume of Rymer's "Fœdera" is the copy of an order for the payment of 12*l.* to John Ardum, clerk of the works, for thirty-six tons of Caen stone by him purchased, to make the king's tomb, and 23*l.* 6s. 8d. for making the tomb. This order bears date in the first year of Henry VI. In the same volume is also an agreement with Roger Johnson, smith, of London, for executing the ironwork of Henry Fifth's tomb. The recess in which the tomb is placed is nearly a square, inclosed by iron gates, which open under a fine pointed arch of stone, surmounted by an elegant arrangement of canopied niches, turreted, including statues and other ornaments, and flanked by octagonal towers. The general pattern of the open work of the gates consists of small squares, each containing four trefoils; their imposts and fascia are divided into thirteen compartments, which have been painted alternately blue and red; on each blue space are placed three gilt fleur-de-lis, and on each red space, three gilt lions. Below these, near the middle of the gates, were fixed alternate rows of swans and antelopes, and only one swan and two antelopes are now remaining. Mr. Brown concluded by expressing a hope that these valuable lessons in art might be placed in some position where they would be useful to students.

"A colloquial lecture on the architectural remains of London," and a paper "On the antiquities of Scotland," were announced for March 9th.

PRINCIPLES OF ENGINEERING.—The council of University College, London, has instituted a professorship of the mechanical principles of engineering, and appointed Mr. Eaton Hodgkinson to the chair.

## ENTRANCE FRONT OF THE "THEATRE MONTPENSIER," PARIS.*




### MR. EASTLAKE AND THE NATIONAL GALLERY.

THE minutes of the trustees of the National Gallery, moved for by Mr. Hume, and printed by order of the House of Commons, afford a triumphant reply to Mr. Eastlake's accusers, or rather abusers. Mr. Mulready, Mr. Etty, Mr. Uwins, Mr. Edwin Landseer, Mr. Stanfield, and others, bear willing witness to the judicious manner in which the pictures (spoken of as ruined) have been cleaned, and the absence of any foundation for the charges brought against Mr. Eastlake.

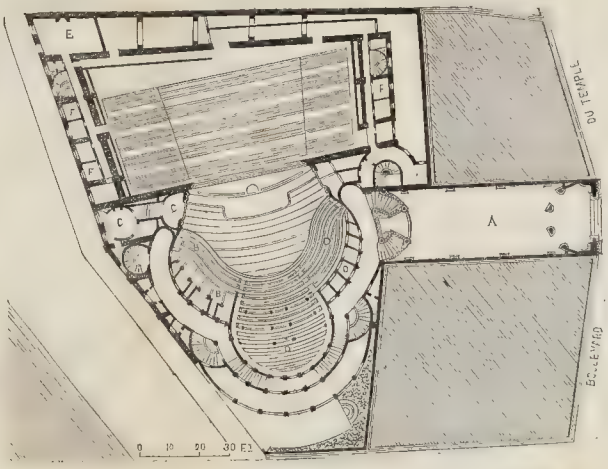
The minutes point out another circumstance requiring immediate remedy, which is, that many pictures are annually lost to the nation through want of a place to put them into. The list of gifts declined is a long one, and has led to the following resolution on the part of the trustees:—

"That considering the limited space which it is possible to appropriate to the exhibition of new pictures or works of art that may be presented to, or acquired by, the directors o the Royal National Gallery, it is desirable to stipulate, in the case of pictures or sculpture gratuitously offered to the directors, that the directors shall be at liberty to appropriate them, if they shall think fit, to the use of public museums that may be now or hereafter established in different parts of the United Kingdom."

This, however, will not remove the necessity which exists for enlarging the National Gallery, as urged by us long ago.

* see page 81 in present number.

## PLAN OF THE "THEATRE MONTPENSIER."




REFERENCES.

A Vestibule, forming the entrance: over it, on the first-floor, a saloon.
B Dress-circle.
C The box of the Duke de Montpensier, and circular saloon adjoining.
D The upper boxes and one of the galleries.
E Green-room.
F Actors' rooms.

## CANOPY AND STATUE AT COLOGNE.

During the middle ages the struggle between the nobility and the merchants for power ended in a rivalry of state between the latter bodies and the former; and the Hotels de Ville, and other buildings connected with trade, in many instances eclipsed the private mansions of the nobility. The wealth of the merchantmen of the low countries enabled them to erect edifices that, as works of Art, are the admiration of their posterity. The utmost elaboration of ornament and costliness of decoration were indulged in, and even the store-houses of the cities came in for some share of ornament. From the year 1260, when Cologne, uniting with Lubeck, Danzig, and Bruges, became one of the principal of the Hans towns, its traders enjoyed, for a long period, the exclusive privilege of supplying the growing wants and rising luxuries of that portion of the world. The advantages afforded by the Rhine, and the central situation of the city in the western part of Germany, secured a monopoly of trade, and an abundance of wealth, which did not decrease until the interference of the clergy (rendered powerful and wealthy by rich endowments and by the celebrity of the relics contained in its many churches, which brought pilgrims from all parts of Europe), occasioned the banishment of the Jews in 1425, and of the Protestants in 1618. This occasioned the loss of upwards of 1,400 of the most opulent families, who, settling in other and less bigotted towns, became destructive rivals to the commerce and wealth of Cologne, which gradually sank into comparative decay. The subject of our cut is a relic of its ancient glories,—it is a statue and canopy over one of the doors of the Store-house. The statue is of freestone, and much decayed, but the canopy is in a less ruinous state. The tracery is of lead-work, in the *flamboyant* style, and is rich in its detail.

Oxford Diocesan Society for Building Churches and Parsonage Houses.—On the 8th inst. a numerous meeting was held in Oxford to establish a diocesan society for building churches and parsonage houses. The Earl of Abingdon presided; and the Bishop of Oxford, Mr. G. Harcourt, M.P., and others, stated the scheme, and moved resolutions establishing the society, which were carried unanimously. In making grants, the merits of the plans proposed are to be considered: in cases of doubt, the opinion of an architect on the plans may be taken, provided that not more than two guineas be required for that opinion.

## ANCIENT GOTHIC LEADWORK.



## NOTES IN THE PROVINCES.

THERE is a spirit of life and progress at work in Nottingham, where new streets and public buildings, such as a post-office and corn exchange, mechanics' institute or theatre are talked of and planned, at least, if not fully determined on. Designs have been lately prepared for a new street (originally proposed some years since) from the market-place by Peter's-square to Lister-gate, and communicating directly with the railway-station and Carrington-street. Public buildings, such as a mechanics' institute, theatre, or hotel, post-office, corn exchange, tontine, &c., are proposed to be included in the details of the design, which has been prepared by Messrs. Surplice and Son, architects, in accordance with the previously talked-of project, which was originally suggested in preference to the intended expenditure of a considerable sum in widening Wheeler-gate. The town council have, in the meantime, however, given their approval to the erection of one, at least, of the public buildings proposed to be included in the more comprehensive project, namely, a post-office, in the new street near the bottom of Castle-street. The *Nottingham Review* is of opinion that this is a very improper site.——The foundation-stone of the new town-hall at Doncaster was to be laid on Monday last, on the site of the Old Angel premises in Frenchgate. The new opposition to the locality of the new edifice will thus be nipped in the bud. The foundations will be formed of Hexthorpe stone. The material of the other portions of the stonework will, it is said, be of Darfield stone. The column blocks, which will be in three pieces, will weigh about six tons each. The capitals will each be in one block, 5 feet square. One of the Darfield quarries is the property of one of the contractors; the other belongs to Earl Fitzwilliam. The brickwork is said to have been relet by the contractors for the stone portion of the edifice to parties resident in Doncaster. About 300,000 bricks have been supplied by the Old Angel premises; and the additional number required will amount to about 400,000. Earl Fitzwilliam and almost all the gentry about Doncaster, in a memorial to the town council, have expressed their earnest wish that the ruins of St. Mary Magdalene may be preserved from further demolition. "As a specimen of ecclesiastical architecture in an early and interesting period of the art," they observe, "we consider the preservation of these remains to be very desirable. The art itself is now in the course of revival, and the need of it has never been felt more than at present. Together with a want of new churches, there is a growing desire to build them on principles of a correctly-informed taste. But as they whose genius as well as piety raised our noble cathedrals and parish churches, have not left behind them any precepts for our guidance, it is only by observing their works, as we see them entire or in ruins, that we can gain the knowledge which is necessary for a successful imitation. And, therefore, every relic that can be saved, be its merits as a specimen of the art more or less excellent, is so far valuable as adding to the store of ancient examples, and supplying the scholar in ecclesiastical architecture with the wider means of comparison and study. * * * May we therefore, gentlemen, be allowed to hope that you will take into your favourable consideration the propriety of sparing them? In this hope we are encouraged by the precedent shewn to us by the metropolis of this great county, and by several other places in the kingdom, where similar ruins, having been brought out of obscurity and neglect, have been carefully preserved, and now afford an object of attraction to the antiquary the architectural student and the ordinary visitor seeking intellectual gratification." An address from the Archæological Institute was also read to the council, but the earnest and even pathetic prayer of the memorialists in favour of the interesting but condemned relic was unheeded; "public utility" being held to be a thing of more moment than mere public taste and public feeling. The sorrowing petitioners, however, were consoled with the promise that "pictorial and architectural drawings" of the doomed object of their regards would be "furnished by draughtsmen of acknowledged ability," and "deposited with the muniments of the corporation."——At Keighley, where fevers have prevailed in some districts, along with nuisances obviously occasioning them, the Improvement Act Commissioners and the district magistrates have determined to carry out the powers conferred by the Act with vigour, for the suppression of all such nuisances.——In Birkenhead, last week, a sale of ground was effected at 25s. a yard, which so lately as October last would not have realized 18s.——The subscription for new schools at Liscard, for which the site offered by the Rev. Mr. Mainwaring, at New Brighton, has been accepted, amounts now to about 900*l.* According to the plans, by Mr. Charles Reed, architect, which have been approved of, these schools are to be in the old English style, with quaint-looking porches, seated within, and roofs of open framing stained oak.——It has been decided not to remove the ancient town hall of Leominster, as was formerly rumoured or intended. This interesting old building, which is cotemporary with the market houses of Hereford, Weoble, Hay, Kington, and Brecon, and was built by John Abel, the architect, was thoroughly repaired at great expense, and the carriage way round it widened, during the present century.——The Guildhall Assembly Room at Worcester is to be improved by raising the ceiling and taking away the columns at the ends so as to admit of altering the circular extremities to a square form; by which means also accommodation will be obtained for the Harmonic Institution or Society.——The Lye church, near Stourbridge, enlarged so as to afford 200 additional seats for adults and 400 for children, was re-opened on Wednesday week.——The newly erected church of St. Luke, at Cradley Heath, parish of Reddall Hill, is to be consecrated on the 22nd instant. It has accommodation for 1,216 persons.——The Board of Ordnance, says a Southampton paper, have sold twenty-one houses at Broad-street, Point, for demolition, to make way for the new Royal Artillery Barracks there.——The committee formed to raise funds for a new church at Deal, having obtained promises to the amount of 2,000*l.*, have determined to proceed with the building. The site is not yet decided upon, but it is to be somewhere at the north end of the town.

## KENSINGTON WORKHOUSE COMPETITION.

SIR,—Your publication contains so much really valuable matter, that few of its readers will desire the pages occupied with professional bickerings, and perhaps as far as I am concerned, it might be wise to allow the gentlemen who have honoured me by their attacks to pass unnoticed; for who cares to know if I am immaculate in the matter of Kensington Workhouse competition? Who on earth cares to sift the truth from the falsehood? Who would cross the road to clear it up, or who, in fact, feels the slightest interest in the affair, save and except those who, with vague insinuations and deductions, keep up, like hungry curs, their perpetual bark, in the individual hope of picking up the bone for themselves. Should there be, contrary to my expectations, some with so much virtuous jealousy for the *honour* of the profession as will stimulate them to present their cards at my office, I pledge myself to send them back perfectly satisfied that it has not suffered in my keeping.

If a man lurking behind a mask strikes down and destroys another, whom he has just before left with expressions of amity, he is justly execrated as a cowardly assassin, and declared unfit to live in any community. I see little difference between this and the moral assassin, who, willing to strike, shrinks with dastard cunning from the responsibility of his malignant efforts. Your correspondent, "G. H. S.," has, with a lively imagination, drawn (what we will call for politeness' sake) the line of beauty over the straight line of truth.

I declared the quantities false before, and not after, the opening of the first tender. I offered to prove them so, and I did, and can do so again if required. The present quantities are not mine, but taken by a respectable surveyor, and having tested them, I believe them correct. The assertion that I declared an eminent builder would take the contract at 9,800*l.* has just as much truth in it as the rest. The tender accepted is 10,645*l.*, and not 11,020*l.*, which includes large additions and part of fittings.

But I am ashamed to take up your space with a subject which can scarcely be interesting to the general reader.—I am, Sir, &c.,

T. ALLOM.

P.S. Since writing the above, I have found out your worthy correspondent G. H. S. (one in authority), who some days since acquiesced in, and applauded, a considerable addition to the building; and a few hours before communicating with you, actually offered to bear a share in the extra expense which he thus assisted in swelling. In his own words I say, "Comment is altogether unnecessary; I am content to leave the subject to the consideration of your readers."

### ERRORS IN QUANTITIES FOR ESTIMATES.—KENSINGTON WORKHOUSE COMPETITION.

SIR,—Allusions have been made, in several communications to your valuable publication, to the Kensington workhouse competition, and in your last number I see a letter on the subject containing the list of tenders last delivered. In that letter it is said (and it had been before stated, though not quite so broadly), that upon the delivery of the first tenders, and their being found to be so much beyond the architect's report (a usual thing in competition matters) that the architect accounted for the difference by a discovery he had made of an error or errors on the part of the person taking out the quantities. Now, Sir, this is a charge of a serious nature, and which I think should not be passed over lightly. I would ask by whom was this "person" employed to take out the quantities, whether by the architect or the builder; by what means the error was discovered; and whether it has been proved that there were errors of such magnitude as to warrant the whole affair being gone into "*de novo*." If not, what recompense has this person, whoever he may be, for his labour in the first instance, and for being publicly accused of inaccuracy afterwards, an accusation which, if not refuted, must be of serious consequence to any man who values his professional character. I presume that the plans have been altered since the first estimates were made, but looking at the difference in both cases between the architect's reports and the estimates delivered, it must be confessed that he, at least, is liable to error, and that any charge of error on the part of others does not come from him with a particularly good grace. On the whole, Sir, it appears to me to be another specimen of the unhappy results of competition designs, a system which, as at present managed, leads to all sorts of injustice and ill feeling. I would add, in conclusion, that I think the principle of an architect furnishing his own quantities is one by no means to be encouraged, and which no architect who wishes to preserve his independence would adopt.—Apologising for this hasty letter,

I am Sir, &c., A SURVEYOR.

Feb. 12th, 1847.

*** We have seen a letter from a highly respectable surveyor, employed to examine the first quantities, confirming the statement that they were grossly inaccurate.

FALL OF TWO OLD HOUSES IN LONG-ACRE.—Two of the old buildings requiring to be demolished to make way for the improvements connected chiefly with the opening of a principal thoroughfare between High Holborn and the Strand, gave way on Tuesday week, and were further levelled immediately thereafter. It is rather curious that the intended improvements have for some time remained in abeyance in consequence of the determination of the proprietor of one of these very houses, the George Inn, rather to perish in the fall of his house than surrender without what he considered adequate compensation. The district surveyor, a few evenings previous to his declaration to this effect, had pointed out to him the danger to which his determination subjected him and his household and customers, and recommended the adoption of precautionary measures, but without avail until a few moments before the fall, when he intimated to his inmates that they had better evacuate the premises. A way has thus been opened, sooner than would have otherwise happened, for the advancement of the improvements further contemplated.

## THE NEW ENTRANCE TO THE GREEN PARK.

The gateway to the park, recently formed in Grosvenor-place, though too unpresuming to call for criticism, seems to us to display inattention which ought not in such a position to be visible. It is a simple rusticated gateway, of stone, with a cornice and blocking course (surmounted by a lamp in the centre), let into the existing brick wall; but instead of projecting, even a couple of inches before the face of the wall, which (without opening the door for any inconvenience) would have sufficed to shew the outline of the plinth, rustics, &c., it is actually placed rather behind it, and so has a very unfinished and inartificial appearance. A little thought would have made it much more satisfactory.

## INSTITUTION OF CIVIL ENGINEERS.

### THE HELDER CANAL.

At a meeting on the 9th inst., the president in the chair, a paper was read on the "Helder or Great North Holland Canal," by Mr. G. B. W. Jackson, Associate. This canal was constructed by the late Mr. J. Blanken, engineer, during the six years between 1819 and 1825, for the passage of frigates and first-class merchantmen, and extends from Amsterdam to Nieuwediep in the Texel. The state of the navigation through the Zuyder Sea, in the early part of the 17th century, having become so defective, in consequence of accumulated sand-banks and shoals, that camels were necessarily made use of to lift the vessels over the shallows at Pampas, thereby incurring both extreme loss of time and inconvenience, the Dutch Government deemed it necessary to consult Mr. Blanken on the possibility of remedying the evil. That engineer accordingly projected the above canal, which has three divisions, the summit level being only 3 feet 8 inches above the outlets. Its length is fifty-one miles. It is 123 feet 7 inches broad at top, 30 feet 10 inches at bottom, and 20 feet 6 inches deep. The pile-driving and boring experiment undertaken by him to ascertain the probability of success, shew that the original sea shore, being the only really hard ground in the north of Holland, is to be met with at 43 feet under the present surface of the ground; and as the foundations of the locks were laid nearly at that depth, the result of the experiments was considered to afford sufficient guarantee for the stability of the works. The character of the soil in that part of Holland is exceedingly treacherous, and it reflects great credit on our foreign neighbours that they were able to overcome the various difficulties with which they had to contend.

The constructions generally consist of floating and swingbridges, tide-locks, passage-locks, &c. The floating bridges are peculiar on account of their flexibility, consisting of two platforms, one fixed to each shore on piles, the end of each of which is worked by sets of double levers and resting on two boats, so that when the bridge is required to be opened, both boats are withdrawn, one towards each shore. The Willem lock is 297 feet 8 inches long, 51 feet 5 inches wide; the height of the lock walls being 32 feet 6 inches, and the gates being each 29 feet 5 inches by 29 feet 4 inches.

The total cost amounted to one million and a half pounds sterling. The time required by vessels to make the passage from Amsterdam to the Helder varies according to their size, and the means of haulage; fly-boats, with six relay of four horses each, making it in ten hours, whilst large East-Indiamen require two, three, and four days, according to the wind. The details of construction of the whole of the works were given very freely and with illustrative drawings. In the discussion which ensued, it was stated that the canal in this country which could be contrasted with that of the Helder, was the Caledonian Canal, which was projected upon a report by Watt, commenced by Jessop, and in a great part constructed by Telford, a few years previously to the Helder canal. The principal difference between the two consisted in the nature of the ground through which they were cut, the former being excavated entirely out of alluvial deposit, whilst the latter had to be cut out of hard gravel, and in some cases rock. An interesting account was given of the mode of forming the spot for the entrance-lock at the Inverness end of the Caledonian canal. The object was to carry the work out into deep water. A large mass of earth was deposited in the sea to the full extent intended. Upon this mound, a heavy load of material was laid to consolidate the mass. After settling for a considerable time, the upper mass was removed, the excavation was made for the lock-pit, and the construction was effected with comparative facility, and had endured much rough weather since, without any symptoms of failure. The superincumbent weight which was removed, being greater than any subsequent strain, there was no danger of the lock ever sinking.

On the 16th inst., this paper was continued, and treated principally of the art of building with fascine work, as practised in Holland and Germany.

The usual construction of these dykes was described to be, by sinking successive layers or beds of fascines or faggots of almost 30 inches thick by from 8 to 16 yards in width, and of proportionate length, weighted with gravel and stones mingled with clay, sea-weed, and silt. These layers were continued until they reached above the sea level, when the top was constructed of more solid materials and sometimes capped with brickwork, as the public roads were formed upon them.

The slopes of the faces of the dykes vary considerably: some of the low dykes are in section of the form of an arc of a circle of 6 to 10 feet chord and 10 inches to 1 foot versed sine, covered with fascine matting, staked down upon a clay-bed. Others have a base of 19 feet wide and 5 feet of a triangular section, also made up of fascines and stakes, secured by hurdles and wattling, with clay, peat, sea-shells, and sand, well rammed in, and then covered with turf. Others are formed with rows of piles, 16 feet long, with their heads 6 or 7 feet above the shore, joined longitudinally and laterally by waling timber, filled in and around with fascine beds and weighted with stone. Baskets filled with sand are also used in certain situations, as well as various modifications of all these kinds of protections. It was stated that these constructions were found to succeed better and last as long as stone, being at the same time about half the cost.

## THE IPSWICH COMPETITION.

Sir,—The profession owe you many thanks for your excellent remarks in last week's Builder; I trust they will have due effect. The insertion of the following, sent by me to the *Ipswich Express*, may be useful.

I am, Sir, &c., A. B. C.

Sir,—Your worthy London contemporary The Builder, has, to my great satisfaction, been pleased to notice the *very liberal premium* offered by the Mechanics' Institution of this town for a design for a new building suitable to their purposes. Now, Sir, if you allow me, I would add one or two words to his excellent remarks, which, in my humble opinion, every one of the committee ought to be made to learn by heart.

In the first place let me dismiss the premium. *Five guineas* for a design. Well, we will reckon the architect or builder, for they are not particular which (in fact, for my own part, I don't believe they know the difference), sends in a design, comprising elevations, plans, sections, and perspective view. I will defy any one person to get them up under a fortnight. Now, allowing a sovereign for papers, colours, &c., there is 2*l.* a week for the architect's remuneration—a sum that I have no hesitation in saying many of Messrs. Ransome's men are realizing. So much for the professional man's pay.

Again, they want a piece of ground 100 feet by 60 feet, covered for what? why for 1,600*l.*!! Now, the contents of that piece of land are nearly 670 yards, and at 30 feet high (the height required) I will defy the most speculating builder to erect a house of the commonest description under 5*l.* a yard. Thus we see *it is impossible to build an edifice any thing like the size they require under* 3,000*l.*

Cheadle Church.—In reply to an inquiry for views of this church, we have pleasure in pointing attention to a series of very good illustrations of it, from drawings by Mr. J. L. Williams in *The Illustrated News* of the 9th ultimo. They include an exterior and interior view, the rood-loft, brass screen, &c.

## NOTICES OF IRON BRIDGES.*

The introduction of cast-iron for the construction of bridges commenced about the year 1779, when that over the Severn, near Coalbrook Dale, by Darby, was the first. It consists of a circular arch 100 feet span, and a versed sine of 45 feet, approaching nearly to a semi-circle. The height of the springing is 10 feet above low water, and the total height to the underside of the soffit is 55 feet. The banks of the Severn being high, this form accords well with them. It is formed by five ribs of cast-iron, with perpendicular spandril pieces, resting upon them to support the roadway. This, for a first attempt, is well adapted to the situation, and has answered the purpose. This was followed by the bridge over the Wear, at Sunderland. The design for this was said originally to have been made by Thomas Paine, the well-known political writer, and was cast at Rotherham, being intended for erection in America; but the materials were subsequently employed in constructing Sunderland Bridge, under the direction of Wilson, in 1796, the idea having been suggested by Rowland Burdon. The curve of the arch is that of a segment of a circle. The length of the chord or span is 200 feet, and the versed sine or rise 30 feet. The total height from low water to the underside of the soffit of the arch is nearly 100 feet. It consists of six ribs, each composed of 105 cast-iron radiating pieces, connected at the top and bottom by the circular pieces which form the curve of the arch; these ribs are united in their transverse direction by tie-pieces; the spandrils are filled in with cast-iron circles, touching each other at their circumferences, and supporting the roadway, which consists of a strong frame of timber, planked over and covered with a cement of tar and chalk, upon which a layer of marl lime-stone and gravel is placed. The centre deserves notice on account of the difficulty and confined nature of the situation, which rendered it necessary to preserve a constant passage for ships with their standing rigging; this was effected by a perpendicular framing resting upon piles in the bed of the river, with a sufficient opening on each side for the vessels. Upon the top of this perpendicular framing, the transverse framing or centre for supporting the arch was fixed, and answered its purpose well. Some time after the removal of the centre, the arch was observed to swerve bodily in a horizontal direction to the eastward, forming a curve having a versed sine of about 12 or 18 inches; if this had continued to increase, it would no doubt have soon occasioned the downfal of the structure; it was, however, very skilfully remedied by the introduction of transverse and diagonal tie-bars and braces, assisted by wedges and screws, so that ultimately the whole was brought back and secured in its original form and position, where it has since remained in a substantial state without alteration. The width of the bridge is 30 feet; the abutments are of stone, founded on rock; they are 24 feet thick, and from 42 feet to 37 feet wide. This bridge, for boldness of the design and construction, as well as for its elegance and lightness, must be considered a work of peculiar merit; particularly if the period in which it was constructed be remembered.

About the same time the bridge at Buildwas, across the Severn, by Telford, was erected. It consists of a single arch, segment of a circle, whose chord or span is 130 feet, and versed sine or rise 27 feet, the depth of the iron frame forming the arch being 3 feet 10 inches; it consists of three ribs, 18 feet wide from out to out, connected together in their transverse direction by tie-bars. The spandrils for supporting the roadway consist of vertical pieces, resting upon the segments forming the arch; the abutments are of stone. There is a novelty in the construction of this bridge worthy of remark. The two outer ribs consist of two segments of circles each struck from different centres, the crown of one terminating immediately below the roadway, the other at the top of the parapet, so that the platform forming the roadway is both suspended and insistent; the object of this being, it is presumed, to increase the depth of the truss supporting the roadway, and thus to add to the strength of the bridge; but it was un-

* From Sir John Rennie's address to the Engineers.

necessary, and does not appear to have been adopted in any of Telford's subsequent designs, which are numerous. Amongst them may be mentioned that of Bonar, Tewkesbury bridge over the Severn, also that over the Dee, near Corwen, &c. Bristol bridge over the Avon, by Jessop, is a neat simple structure. Boston bridge, by Rennie, over the Witham, of 100 feet span, with a versed sine of 4 feet, is remarkable for its boldness and lightness. The principle of construction resembles that of Sunderland, but is an improvement upon it, in having a better system of transverse and diagonal braces, and the spandrils consisting of vertical instead of circular pieces. All these have, however, been far exceeded by the Southwark bridge over the Thames, by Rennie. This consists of three arches, all segments of the same circle; the centre arch is 240 feet span, with a versed sine or rise of 24 feet, and the two side arches are 210 feet span each, with a versed sine or rise of 18 feet 10 inches each. The arches are formed by eight solid ribs in each, and each rib consisting of fifteen pieces, 6 feet deep at the crown of the arch, increasing to 8 feet deep at the springing, 2½ inches thick in the middle, and 4½ at the top and bottom: these ribs are connected together in their transverse direction by cast-iron tie braces of the same depth as the ribs, but open in the centre, and in the diagonal direction by another series of ribs. The whole of the segmental pieces forming the arch, as well as the transverse and diagonal tie braces, are kept in their places by dovetailed sockets and long cast-iron wedges, so that bolts for holding the several pieces together are unnecessary, although they were used during the construction of the bridge to keep the pieces in their places until the wedges had been driven. Thus the ribs formed, as it were, a series of hollow masses or voussoirs similar to those of stone, a principle which, it is believed, is new in the construction of cast-iron bridges, but it has succeeded so well, that it is worthy of adoption elsewhere. The spandrils are composed of cast-iron diagonal pieces, connected together in a similar manner, and the roadway is formed by solid plates of cast iron resting upon the spandrils, and joined together by iron cement. The piers and abutments are of stone, founded upon timber platforms, resting upon bearing piles, and surrounded by sheathing piles, driven sufficiently deep below the bed of the river. The masonry is tied throughout by vertical and horizontal bond stones, so that the whole acts as one mass in the best position to resist the horizontal thrust. The ribs forming the arches were commenced in the centre, and were continued regularly on each side towards the piers and abutments, upon which a cast-iron bed and connecting-plate were laid, nicely let into the masonry to receive the ribs forming the arches. When the last segment of each rib was fixed in its place, three cast-iron wedges, each 9 feet long and 9 inches wide, were placed behind each rib, and nicely adjusted and fitted to them; these having a very slight taper, were driven simultaneously by heavy hammers, and thus the arches were nearly lifted from the centres, so that the wooden wedges upon which the segment pieces rested were easily removed by a few blows of a hammer; the arches were thus relieved from the centres in a very simple and efficient manner. The whole of the ironwork had been so well put together by Messrs. Walker, of Rotherham, the founders, and the masonry by the contractors, Messrs. Jolliffe and Banks, that when the work was finished scarcely any sinking was discernible in the arches. During the progress of the work, some experiments were made, in order to ascertain the extent of the expansion and contraction between the extreme range of winter and summer temperature, and upon taking the average of numerous trials by different gauges, it was found that the crown of the arch rose in the summer about an inch to an inch and a half. The work was commenced in 1813, and the bridge was opened in 1819.

Whilst upon the subject of cast-iron bridges, we must not omit the swivel or turning bridge. The invention, if it may be so termed, is, it is believed, due to England, and one was first made of iron about the year 1810. They are now almost universally adopted over locks, to the extent of fifty feet span, in preference to the old lifting bridge. Since the introduction of the railway system, cast-iron bridges have become very general, and have been particularly serviceable, being formed of girders, where the height was too limited to admit of the arch principle being adopted. Experience of the value of wrought iron in roofs and for other building purposes has induced R. Stephenson to propose that material for constructing the bridge to carry the Chester and Holyhead Railway across the Menai Straits. His design consists of a close wrought-iron tunnel or tube, 14 feet wide, 30 feet deep, and 1,500 feet long, supported in the middle by a stone pier built upon a rock in the middle of the straits, with two other piers at the low-water mark on either side, leaving four openings, two of them 460 feet, and two of 230 feet each, and 100 feet above high water, so as to admit of masted vessels sailing under it. Cubitt has also proposed to adopt wrought-iron on a great scale, for constructing landing platforms at Liverpool, where the difficulty of building docks or quays, which large steam-vessels can approach at all times of tide, render works of this kind necessary to accommodate the immense traffic frequenting Liverpool. The landing platform designed by Cubitt, and now in course of construction, consists of a wooden frame, 500 feet long by 80 feet wide, floated upon a number of wrought-iron pontoons, each 80 feet long, 10 feet wide, and 6 feet deep; it is connected with the shore by two bridges, each formed of two hollow wrought-iron beams, 150 feet long, carrying the platform of the bridge. The attachment with the shore and the stage is so made as to admit of motion, both vertically and horizontally, to accommodate itself to the rising, falling, ebbing, and flowing of the tide, which there rises about thirty feet.

## VALUE OF LAND.

The following proposals, recently submitted to the Court of Aldermen, for the sale of not less than five acres of freehold ground for the site of the proposed House of Correction, in reply to an advertisement, serve to shew the value put upon land in two or three localities:—

Nine acres at Tuffnell-park, Holloway, the same being leasehold, 416 years unexpired, at 5,000 guineas, or for any portion thereof, not less than three acres, at 700 guineas per acre.

Thirteen acres of grass land at Holloway, near Hornsey-lane, being copyhold, at 7,000*l.*, leaving the purchaser to enfranchise the same, if he desires so to do, at an expense of about 3,600*l.*—total, 10,600*l.*

Eleven or twelve acres of freehold ground in Tollington-lane, Upper Highbury, at 1,000*l.* per acre.

Fourteen acres, two roods, twenty-two perches of freehold ground, part of the late Lord Thurlow's property, on the road from Camberwell-green to Norwood, at 400*l.* per acre; the land-tax redeemed.

6¼ acres of freehold ground at Central-hill, Norwood, for the sum of 2,000*l.* This is near the Annerly station on the Croydon Railway.

## PENALTIES TO SECURE PUNCTUALITY IN THE EXECUTION OF BUILDING CONTRACTS.

Penalties for delay in the execution of contracts are, it is well known, with rare exceptions, mere moonshine. The following plan has been acted on recently in some important transactions. The tender, for instance, is to complete the works, by a given day, for 10,000*l.* The contract signed is to pay 8,000*l.* at all events, but to pay 10,000*l.* if the works are completed by the given day. If they are completed by that day, according to the tender, the 10,000*l.* must be paid; but if that day passes without their completion, the contractor has no remedy except for the 8,000*l.* The legal difficulties attending the enforcement of penalties are thus avoided.

The Whittington Club, founded to give increased facilities for moral and intellectual education, and for refined social intercourse, to classes hitherto debarred from their enjoyment, held their first *soirée*, on Wednesday evening, at the City of London Tavern. Douglas Jerrold took the chair, and an immense crowd enjoyed a pleasant evening.

## Correspondence.

### STATE OF THE ROADS IN NEW QUARTERS.

Sir,—The sanatory state of the metropolis has so often engaged your attention, and is a matter in which the public are so much interested, that perhaps no apology is necessary in troubling you with a few remarks the subject has suggested. I propose to allude to the very unwholesome state of some of the streets and thoroughfares in the remoter parts of the town. In many instances the houses have been finished and inhabited for years, while the carriage-way remains in an impassable state, with deep ruts and pools of green and stagnant water standing in all directions.

Of course, during the greater part of the year nothing can pass off these streets: there they remain the receptacle of decaying vegetables and other abominations exhaling a damp and pestilential air. And where, as in some instances, the sewers have been made, how can the superfluous water ever reach the gratings, or heavy falls of rain scour the road, and put it into a healthy state?

In Liverpool and elsewhere, I believe, it has been proved, that by paving or otherwise making hard and compact the surface of certain courts and lanes, which had always been the abodes of fever and ague, in their former state, such places have been rendered healthy, becoming soon dry, after the heaviest rains scouring off all impurities. How far disease is prevalent in the localities I have alluded to, I am not competent to assert; but to a casual observer the abodes on the borders of such bogs and quagmires must be any thing than healthy, and, in a moral point of view, any thing than conducive to cleanliness and comfort. If the abodes of our middling and lower classes should be made as clean and respectable as circumstances will admit of, it is very important that the approaches to such abodes should be passable, hard, and easy of access,—easier by any carriage heavier than a wheelbarrow, which such streets are not at present, except on the footpaths.

That the facts are not overstated, any inhabitant of Pentonville, Bethnal Green, &c., I think, would affirm; and in the hope that these few remarks may tend to some improvement, your insertion of them will much oblige,

yours, &c., A Subscriber.

Islington, 16 Feb. 1847.

### EXPENSE OF PRIVATE BILLS. SEWERS, &c., FOR VENTNOR.

Sir,—Seeing in a recent number of The Builder your remarks on the great expense of obtaining private bills, I would state as an instance, that through a factitious opposition, the expenses in obtaining an Act for sewering, lighting, and improving this place, were *two-fifths* of the amount of money empowered to be raised for these purposes, and from this circumstance they cannot be carried out but very partially. It is time some change was made.—I am, Sir, &c., T. P.

Ventnor, Isle of Wight, Feb. 13th, 1847.

Proposed Great Public Building at Sheffield.—Plans have been prepared by Messrs. Flockton, Lee, and Flockton, architects, of "a most extensive edifice, which would be distinguished as the building of the borough," and which appears to be at present under consideration of the council. The *Iris* and the *Times* calls it a "mansion-house and public buildings," or a "council-hall." It is proposed to erect it as a detached edifice, on a very central site, comprising a large area between Bank-street and Hartshead. The purposes to which it is proposed to devote it are manifold, comprehending, in fact, "all public purposes;" but it is chiefly to consist of a hall, with standing room for 10,000 people, a council-hall, &c., a court of bankruptcy, stock-exchange, school of design, museum of arts, mechanics' institute and athenæum, literary and philosophical, and various other societies' rooms, banqueting-room, and numerous other rooms for public institutions. Other towns must look out.

Fruits of Camdenism.—According to a local paper, the architect employed to build the Protestant Church at Leeds, to which Mr. Haigh was to give ten thousand pounds, has followed the example of Mr. Haigh, and been received into the Roman Catholic Church.

## Miscellanea.

Projected Works.—There are advertisements in the current newspapers for contract-tenders for the erection of a union workhouse at Calne; church at Alderney; national school and master's house in Derbyshire; lock-up houses at Chesham and Slough; new banking-office and manager's house, with other premises at Inverness; three double goods' warehouses at Nottingham station; cast-iron bridge, two stone land piers, and two aqueducts, on Matlock, Buxton, and Manchester Railway; for rebuilding six bridges in Cardiganshire; repairing North Quay, extending shed, and erecting ten-ton power crane at Glasgow; extending steamer jetty eighty feet, at Kircudbright; 'restoring, repewing, &c., interior of St. Neot's Church; altering and adding to Manchester Exchange; taking down and rebuilding about 140 feet in length of agricultural buildings, with slating and repairing near Manningtree; altering and improving almshouse at Wells; excavating, forming, and completing 880 yards of tunnel with four shafts and approaches, also embankments, at Cromford, and executing the whole of the railway works, except bridges, on two miles eight chains of Manchester, Buxton, and Matlock; nine miles of North Western; nine miles of Newport and Hereford; nineteen miles of Malton and Driffield, and five miles and six miles of Bristol and South Wales (extension of time); also for vans, trucks, boxes, and waggons for Leeds, Dewsbury, and Manchester, and eleven cranes for East Lancashire Railway; for boring on line of water-works tunnel, near Glasgow; paving jail at Bury St. Edmunds; repairing pavements of town of Portsea for five years; making 550 yards of road at Carlisle; putting up 700 feet of fencing near Southampton; building 160 feet of sewer in the Strand; and executing various usual works at Bristol barracks.

The Liverpool Surveyor.—We find that although there appears to have been some ground for "the talk," that, notwithstanding the application of so many candidates, according to a requisition, a suitable engineer had been elsewhere sought; and although a discussion, indeed, took place in the council on an amendment to the effect "that the report of the Health Committee be referred back to the committee, with an instruction to place themselves in communication with Mr. Hawkesley [the other suitable engineer supposed to have been referred to], and to ascertain upon what terms his services could be secured," it has been finally decided, by a majority of 9, that Mr. James Newland, the gentleman selected by the committee out of the original list, be elected as the most eligible to discharge the duties of the office.

St. George's Hall, Liverpool.—At a meeting of the town-council, held last week, on a question as to deferring the erection of the organ until the completion of St. George's Hall, it was stated that the architect is still kept back because Dr. Reid has not furnished his plans for ventilating the building. Mr. S. Holme said some ill feeling had been produced, and he thought it requisite that some practical man should inspect the building, for it had been cut, and hacked, and altered by Dr. Reid with his tinkering. He censured Dr. Reid for his plan of making flues for the purpose of ventilating the building, which he declared was, in consequence, not properly tied together.

Lord Northampton's Conversazione.—Lord Northampton's first *conversazione*, on the 13th inst., was attended by a numerous and brilliant party, including his Royal Highness Prince Albert and many of the *corps-diplomatique*. The interest manifested by the prince in all matters of art, science, and literature, makes us hopeful for the future. All are not aware of the proceedings of the prince in this respect,—proceedings which shew how narrowly he watches what is going on, and how well disposed to aid where necessary.

Electric Telegraph in Paris.—A system of electro-telegraphic communication is being formed round Paris, between each of the octroi stations (where the city dues are collected), at the several barriers; thus establishing between them all a much more rapid and direct correspondence than has hitherto existed.

Fall of a Stone Granary.—A large portion of an extensive granary, at Port Dundas, the principal harbour on the Glasgow terminus of the Forth and Clyde Canal, fell down last week. According to the *Gloucester Chronicle*, it is a stone building from 70 to 80 feet in length, and six stories in height. On the day in question one or two cracks were heard proceeding from the building, while it was seen that the centre of the front facing the street was slowly making its way outwards, and after a lapse of three or four minutes, about three-fourths in length of the building came down with a crash resembling thunder. For about 50 feet of the length of the building, the whole five floors had fallen simultaneously, tearing the heavy beams from their sockets in the eastern gable, and snapping them through at the iron pillars, about 20 feet from the west gable,—the walls, pillars and floors to the westward being unaffected by the shock. The cross-beams were also snapped through a few feet from the north wall, leaving the staircase for the whole height of the building untouched. In a case of this sort, the public safety demands that a strict investigation of the cause of the disaster should be made. The thickness and arrangement of the walls, the size and position of the timbers, and the *quantity of grain* in store at the time, ought to be correctly known. The weight of grain is often too little considered.

Open Drains in Oxford.—A committee of medical men have reported their opinion, that the open drains and ditches in and about Oxford are a principal cause of disease. Mortality in Oxford has greatly increased lately, and attention is being directed to it with a view to discover a remedy. At the last meeting of the town council, Alderman Butler gave notice of his intention to move for a survey and report on the sewerage, drainage, scavenging, and water supply of the city. He said he had received a letter from a very eminent individual, who, out of regard for the city of Oxford, had offered to make the survey, stating that if his expenses out of pocket were paid, he would not ask for any thing beyond that.

The State of the Temple Church.—In consequence of an inquiry on this subject which appeared in our pages a short time since, we have received a letter from a party connected with the church, stating "that the columns have not moved since the restoration, having plumbed them once every year since. I have done so this morning, and find them incline 2¼ inches to the south and 2¾ inches to the north. The four columns on the north and south aisle have the same inclination, but when they first became so no person knows."

Royal Academy Gold Medal.—In reply to more than half-a-dozen letters of inquiry now before us, competitors for this medal *must* be students in the Academy. The subject, as stated in the printed notice issued by the Secretary, is "A Design for a *Cathedral* Church,"—style is not mentioned. Candidates must declare their intention, by letter, to the keeper, on or before the 1st of October. The designs are to be delivered on the 1st of November.

Compressed Peat-Charcoal.—Mr. Jasper W. Rogers proposes to cut up the peaty superstratum of the Irish bog-land into portions, subject these to hydraulic or other pressure, and then convert them into charcoal; thus affording employment to multitudes, preparing the land for useful purposes, and affording the means of smelting British iron into material equivalent to that of Sweden. Turf, too, at 5s. a ton, will produce as much steam as Scotch coal at 10s. a ton.

Church at Alexandria.—The building of the Protestant church at Alexandria, illustrated by us sometime since, has been brought to a stand, the funds being exhausted.

The Society of British Artists.—The charter of incorporation sought for by this society has received the great seal.

### MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, Feb. 22nd.—Institute of British Architects, 16, Grosvenor-street, 8 P.M.

Tuesday, 23rd.—Institution of Civil Engineers, 25, Great George-street, 8½ P.M.

Wednesday, 24th.—Society of Arts, Adelphi, 8 P.M.

Thursday, 25th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

Friday, 26th.—Archæological Association, Sackville-street, 8½ P.M.

### TENDERS

Delivered for additional buildings to the Hackney Union; from quantities given by the architect, February 17, 1847.

| | |
|---|---|
| Mansfield | £5,500 |
| Wilson | 5,340 |
| Jeffrey | 5,220 |
| Hicks | 5,157 |
| Yeoman | 5,145 |
| Elston, Wormwood-street | 5,100 |
| Walker and Soper | 5,060 |
| Hill and Son | 4,987 |
| Curtis, Stratford | 4,884 |
| Trego, Coleman-street | 4,698 |
| Cooper and Davies, Southwark | 4,548 |
| Crook and Son, Hackney | 4,487 |
| Norris, Hackney | 4,437 |
| Hawk, City | 4,123 |

### TO CORRESPONDENTS.

"H. C. T."—We cannot give an opinion as to his plan for opening carriage-gates without seeing it.

"T. C."—The ordinary "sound-boarding and pugging," if carefully done, will prevent the noise of feet from being heard. Felt might be introduced usefully.

"J. M." next week.

"A Carpenter."—We cannot furnish valuations, unless applied to professionally.

"G. R."—We accidentally omitted to state some time since, that the Mr. Jackson named is not the party he supposes.

"A. F."—To become a member of the Master Carpenters' Society he must have in his employ journeymen carpenters at weekly wages. The subscription is two guineas annually. Write to Mr. H. Biers, 13, Carlton Villas, Edgware-road.

*Vertical Tiling.*—The correspondent who inquired for the *tiles* to represent brickwork upon timber framing may obtain them from Messrs. Norman, Ottford, Kent.

"A Subscriber" (York).—Write for full particulars to "The Secretary of Society of Arts, Adelphi, London."

"Subscriber."—Our volumes are out of print. An advertisement would perhaps obtain them.

"W. J. L."—The conditions to which our correspondent objects were not unusual.

"Subscriber from the first."—There are, we believe, both a Clerks' Provident Society, and a Guarantee Society, but we cannot give the addresses.

"W. M."—We are glad to find that our excellent correspondent reads us so closely.

*Received.*—"G. R. W.;" "R. M. P.;" Subscriber" (Leeds), "Spectator," "A Londoner," "H. H. R." "Mr. Gale," "E. R.," "Constant Reader," "A Subscriber" (London), "A Pupil," "G. H." (Leicester), "J. L. Y.," "G. E. M.," "J. K.," "T. W.," "B. A." "Josephus," new translation, by Dr. Traill. Illustrated. Part II. (Houlston and Stoneman, London.)

*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.


### ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION. CHEMICAL LECTURES by Dr. Ryan, with brilliant and varied Experiments daily, and on the evenings of Mondays, Wednesdays, and Fridays. Dr. Lankester and Dr. Bachhoffner will deliver a series of Lectures on ASTRONOMY, exhibiting the latest discoveries, on the Mornings and Evenings of Mondays, Wednesdays, and Fridays, with new and appropriate MUSIC by Dr. Wallis. On the alternate Mornings and Evenings he will lecture on the ELECTRO-MAGNETIC TELEGRAPH, including the recent Patent of Messrs. Nott and Gamble. The Models and other Works on the Useful Arts are daily described. The beautiful OPTICAL EFFECTS include the NEW DISSOLVING VIEWS. EXPERIMENTS by the DIVER and DIVING-BELL, &c., &c.—Admission, 1s.; Schools, Half price.

TO BUILDERS, CARPENTERS, &c.

THE following are the present Prices, for Cash, of Ironmongery at W. YOUNG and Co.'s, 194, Oxford-street:—3-inch Cast Butts, 1s. 1d. Doz.; 3½ Do., 1s. 6d. Doz.; 3-inch, 2s. 1d. Doz.; 1¼ Iron Sash Pullies, 11d. Doz.; 1½ Do., 1s. 3d. Doz.; 1½ Brass Do., 2s. 6d.; 1¼ Do., 3s.; 18inch Weights, 2s. 6d. Cwt.; Sash Lines, 6s. 6d. Doz.; 3½ Rain Pipe, 1s. 7d. Yard; 3-inch Do., 1s. 10d.; Mortise Locks, 38s. Doz.

TO ARCHITECTS, ENGINEERS, AND OTHERS.

THE above or such Persons as may require assistance can have Drawings of any sort traced and coloured; Plans enlarged and copied, and every description of Builder's dimensions and quantities squared and abstracted with dispatch by the Advertiser on very moderate terms.

N.B. Drawings of residences furnished complete. Address, prepaid, to A. M., 38, Dartmouth-street, Westminster.

PHOTOGRAPHIC PORTRAITS, at HALF PRICE, COLOURED or PLAIN. The Public are invited to inspect the specimens of Photographic Art, with new improvements, at the Photographic Establishment, 189, Strand (between Norfolk-street and St. Clement's Church). Portraits, including case, from 1s. Satisfactory ones guaranteed. Likenesses by this system can be finished in oil or water colours by a sitting of less than a minute, on card, ivory, or canvas, combining the truth of the daguerreotype with artistic skill. Hours from Ten to Four.

SURVEYING, Levelling, Engineering, Architecture, Building, Draughting, Measuring, and Valuing of Land, Timber, Buildings, Architects' Work, &c., TAUGHT on the NEW SYSTEM in a short course of practical lessons, by Messrs. SMITH & LEWIS, Civil Engineers, Architects, Surveyors, &c., of extensive practice, who are now preparing gentlemen for Engineers, Surveyors, Levellers, Architects, Builders, Draughtsmen, &c. Terms moderate. For prospectuses, &c., apply at the Offices, 4, Harper-street, Theobald's road, Holborn, London. N.B. Pupils on completing the course may be introduced to employment from £5 to £10 per week.

SOVEREIGN LIFE ASSURANCE COMPANY, No. 5, St. James-street, London.

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Assurances on the lives of persons in every station of life and every part of the world, granted on a plan which combines the utmost amount of benefit to the family of the assured AT DEATH, with every attainable advantage DURING LIFE, which the system of Life Assurance is capable of affording.

ANNUITIES, ENDOWMENTS, ADVANCES, and LOANS, on liberal terms.

Prospectuses, Forms of Proposal, and every information, may be had on application, either personally or by letter, at the Company's Offices.

The usual commission to Solicitors and Agents.

H. D. DAVENPORT, Secretary.

TO PLASTERERS.

**LIME FOR PLASTERING, that may be** used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORREST'S WHARF, Earl-street, Blackfriars. Sheds for the slacking and mixing of lime. Accommodation for loading and landing bricks, sand, ballast, &c.

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**ARCHITECTS, BUILDERS, and the** Trade in general, are informed they can be supplied with Cement and Plaster Ornaments of first rate quality, consisting of chimney shafts in the Elizabethan and other styles, trusses, bed [illegible], balusters, vases, capitals, centre flowers, soffits, bed mouldings, &c., &c., on the most reasonable terms, by JNO. HERBERT and SON, Modellers, &c., 4, Parker-street, Drury-lane. Modelling executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 33 per cent. cheaper than papier maché.

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TO ARCHITECTS, BUILDERS, PLASTERERS, & OTHERS.

**W. HUGHES & Co., ORNAMENTAL** PLASTERERS, &c., having purchased a large quantity of Moulds, Patterns, &c., the original Stock of Mr. G. BARTLETT, late of Islington, consisting of a great variety of Ornamental Chimney Shafts, Pilaster Caps, Vases, Pediment Scrolls, Trusses, Cantilevers, Animal, and other figures for external uses; Centre Flowers, Soffites, Bedmolds, Brackets, &c., for inside work, which being added to a former collection, they are enabled to supply any description of Ornamental Castings in Cement or Plaster, at reasonable prices, on the shortest notice. Modelling executed with strict attention to Drawings. Address, No. 9, Rufford's-row, Upper-street, Islington. Workshops at No. 1, Brewer-street, near Sadler's Wells, St. John-street Road, Clerkenwell, where specimens can be seen.

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**PORTLAND CEMENT.—The peculiar** property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank-street, Westminster.

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**KEENE'S PATENT MARBLE CEMENT** forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

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**GREAVE'S LIAS CEMENT, stone**-colour, free from vegetation, does not crack, and is well adapted for every description of modelling and casting.]

GROUND LIAS LIME, for concrete, or as mortar for sewers, dock-walls, and hydraulic works generally; is superior to any other lime or cement.—Office, 2, South Wharf, Paddington, and Stratford-on Avon.

Agent for Liverpool—Mr. Wylie, 56, Gloster-street.
Ditto, Manchester—Mr. J. Thompson, Back King street.
Ditto, Chester—Mr. J. Harrison, Linen Hall-street.
N.B. Marble Floors. A large quantity of Vein and Black Marble on sale at reduced prices.

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MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

**CAUTION.—Messrs. STEVENS and SON,** Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical [illegible] with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses.

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (when [illegible] may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

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TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

**JOHN'S and CO.'S PATENT STUCCO** CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced. It will effectually resist Damp. It will never vegetate, nor turn green [illegible]. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to [illegible] It [illegible] to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement [illegible] for export. It is the only Cement that can be used with confidence by the [illegible]. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry [illegible] than any other Cement. It matures [illegible] and becomes perfect when other Cements [illegible] perish. It may be worked through the Winter, as frost has no effect upon it. It [illegible] inner Walls of new Houses [illegible] painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material [illegible] with all the [illegible] advantages, [illegible]

Architects and Builders who have used this Cement have declared that it [illegible] preferred.

Specimens [illegible] with Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application [illegible] and of MANN and Co., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London, of whom [illegible] may be had.

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT expressly intended for Painting over Cement Walls of Houses that [illegible] Roman or other Cements, and [illegible]. It is in every way better [illegible] than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT [illegible] thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, produceable by no other Paint whatever. It is [illegible] and may be used by any Painter [illegible] exposed Marine situations.

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**GAS.—The Introduction of Gas into pri**vate dwellings is rapidly increasing; it is therefore of the greatest importance not only to the consumer but to the gas company and gas fitter, that the most secure and simple means of regulating it be applied. The patentees of CARTER'S SAFETY GAS VALVE can from many years' experience [illegible] persons interested in gas lighting [illegible] and in every respect superior to the old taper cocks so frequently leaky [illegible] corrosion. It has the advantage of being inexpensive and easily adapted to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe W[orks], New-cut, near the Blackfriars-road.

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PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assort**ment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from [illegible] to 1½ inch thick.

TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVES' Timber Yard, Wilton-road, Pimlico, late C. Moore and Son, and Great Smith-street, Westminster.

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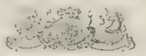
**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

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**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

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MUIR'S PATENT  PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
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N.B. Estimates given for Sawing and Planing.

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TIMBER AND DEAL SAWING AND PLANING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that their system of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or grooving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

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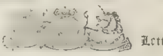
DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.—Parties desirous of** delivering Timber Deals Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

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**PORTER'S CORRUGATED and PA**TENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual. The Trade Supplied.

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By Her Majesty's  Royal Letters Patent.

**MOREWOOD and ROGER'S PATENT** GALVANIZED TINNED METAL. This article was at first sold under the name of Galvanised Tin Plates, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal has thereby suffered in many, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGERS' PATENT GALVANIZED TINNED IRON. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanized Iron has a plain, zinc-like appearance, while M. and R.'s Patent Galvanized Tinned Iron has a smooth crystalline surface.

MOREWOOD and ROGERS' PATENT GALVANIZED TINNED IRON, Patronized by the Admiralty, and the Honourable Board of Ordnance, being extensively used in her Majesty's Dockyards, at the Tower, and elsewhere, for every variety of Roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience that the article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, its contraction and expansion, [illegible] change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is therefore obviously well adapted for all the purposes above-named, and most importantly so where there is the possibility of fire. It is also peculiarly suitable for chimney tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is the most economical metal roofing that can be obtained, [illegible] its strength, as it may be laid without boards, and upon the lightest rafters.

This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, [illegible], Gracechurch-street.

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**DEANE'S TWO-HOLE BLACK PENS,** which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, as also several of her Majesty's offices, the most eminent counsel and the reverend the clergy. Their cheapness and popularity have induced many unprincipled people to put forth imitations of the genuine article, which are generally useless to the purchaser, and disgraceful to the vendor. The public are therefore cautioned and respectfully requested not to purchase any as DEANE'S GENUINE TWO HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

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**BUILDERS AND IRONMONGERS are** requested, when writing for JENNINGS'S SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters RIGHT OR LEFT, as they face the front.

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**JENNINGS'S SHUTTER FASTENER.** Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

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SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.
Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

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**REVOLVING SAFETY SHUTTERS,**
WITH PATENT CONVEX IRON LATHS.
PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great importance of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, in attaining increased security is obvious, and it is only necessary to point out the fact, that the patent convex laths are 12 times stronger than the ordinary flat laths, to insure their general adoption.

The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw (worm and wheel) cannot, even by wear, be liable to run down, and entirely avoids the necessity of using the ratchet-wheel; and is at once simple and thoroughly effective, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters are fixed horizontally (either above or below the window or door) or vertically, for which position the greatly increased strength of the convex laths renders them peculiarly suitable. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Engravings and prospectuses forwarded on application. IMPROVED DRAWN METALLIC SASH BARS, ASTRIGALS, MOULDINGS, STALL-BOARD PLATES, &c.—Patentee and Manufacturer, JOHN HARCOURT QUINCEY, 113, [illegible]-street, London.

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INJUNCTION.

**BUNNETT and CORPE'S Patent RE**VOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

Metal Drawing and Stamping for the Trade.

Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.

Steam engines, Sawing, Planing, and Moulding, Cutting machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

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A General Meeting will be held on Thursday, 25th February, in the Theatre of the Marylebone Literary and Scientific Institute, Edward street, Portman-square, to enrol Members and receive Subscriptions.

NOTICE.—Attendance will be given three hours previous to the Meeting to answer inquiries, &c. Extended advantages of Building Societies. Immediate Advances made to Members on eligible Property they may be desirous of purchasing, to the full extent of its value, including all expenses, &c.—Vide the Rules.

**THE HYDE-PARK MUTUAL ACCU**MULATING FUND ASSOCIATION, Central Office, 195, Oxford-street. Branch Offices in all parts of the Metropolis, and various parts of the Kingdom.

Shares £120 each; number limited; great part already taken. Present Entrance 2s. 6d.

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N.B.—Persons desirous of being appointed Agents must apply immediately to the Manager. Commission, 1s. per share.

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Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. GRIEVE and GRILLIER, Marble wharf, Belvidere road, Waterloo bridge, at the Encaustic Tile Works of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

**ENCAUSTIC, VENETIAN, and other** PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON and Co.'s warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge.—J. M. BLASHFIELD, Agent. The above tiles have lately been successfully introduced in this place.

N.B. An assortment of plain and ornamental door furniture, stair-rods, and tiles for fire-places, &c.

**FRENCH PAPER HANGINGS.—The** ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufactories, is at Messrs. MARKS & CO'S, 39, Princes Street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW and ELEGANT PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

TO BUILDERS, DECORATORS, PAINTERS, &c.

**DEPOT of FRENCH Paper-Hangings.—** M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory at Rouen, and will be obliged by the inspection of the Trade to his Warehouse, which is now open for their inspection, at No. 7, Cranbourn-street, Leicester Square, established 1832, where the Trade may be supplied from an Immense Stock of NEW and ELEGANT PATTERNS, at prices that will DEFY the GARBLED PIRACY that at present exists.

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CHEAP PAPERHANGINGS.

**C. LEE** begs to inform Builders and the Trade in general that he has an immense stock of genuine French and English PAPERHANGINGS, of every description, at the lowest possible prices, for Cash. To avoid all doubt of a spurious imitation, C. LEE's genuine Patterns are to be had only at MABRUN, of Paris, Warehouse, 36, Cranbourn-street, and 13, St. Martin's-court, Leicester-square.

N.B. The Trade supplied with Canvass, Lining Paper, Tin Tacks, Brown Paper, &c.

PAPER HANGINGS—TO THE TRADE.

**MESSRS. HENNELL and CROSBY,** Manufacturers of Paperhangings, Queen-street, Southwark-bridge-road, have just completed their New Set of Patterns for 1847, consisting of French Designs cut in Paris, and English Designs by our First Artists, Flowers, and Ornamental Paper, not to be surpassed. Retail Prices. Satins from 3d. per yard; Superior French Flocks from 6d. per yard. A liberal allowance to the Trade. A Large Stock always ready, and orders punctually executed. The Cheap Stock is now laid out in Panel Decorations.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots with a Knot, and preventing them from ever after rising and becoming unsightly.

Many substances have been tried in much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public with the utmost confidence

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Oil Colour Manufacturers, No. 64, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, MILE END, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hoarding, Fencing, Roofing, and Shipping. It adheres as well to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation, and on old buildings, sets it not affected by any of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of covering is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and I one with oil and no drops and a house mixture. Blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most precious, being perfectly inodorous.

**STEPHENS'S PROCESS for DYEING** OR STAINING WOOD, as a substitute for Paint. The natural grain of wood, and its beauties, are not hid by paint, but the imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To avoid this sameness, and to produce a variety in staining, the grain is the object of the process, which, consists in, without any loss in appearance, while at the same time it is so economical that the whole manner of staining which would take a month or six weeks to paint, is done in a few hours. Cabinet-work is much improved by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 64, Stamford-street, Blackfriars-road; sold also at the office of "The Builder," 2, York-street, Covent Garden, Black-boy Ingram, Widemarsh-street, Hereford; R. Sutton, "Review office," Nottingham; H. Wills, 39, High-street, Lynn; and in Manchester at Messrs. Marsh Walker, Bell, and Co.'s. In this dye all the colours are used in the form of powder, and the black colour is obtained in powder, as well as paint, which also lies in water to form the liquid, and on paint will it stain and dry of stain. N.B. The Trade supplied.

By Her Majesty's Royal Letters Patent

**WILKINSON'S "SILENT" WATER-CLOSET.**—To Architects, Surveyors, and Builders.

Gentlemen,—In your attention to every thing really valuable in a "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and most perfect in any situation placed in a House, with the least communicating the sound of a Water-closet to any of the adjoining Apartments, while it retains all that is useful in the ordinary Closets, it does away with the Ball Cock, Valve, and Plug Work, which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the interior parts of Private Houses and other Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of Water, is sufficiently obvious to render unnecessary any lengthened comment in its favour.

This Closet is simple in its construction, the whole of the apparatus (including the trap, being completed between the floor of the room and the seat of the Closet, the only touching it is to easy to remove any noisy Closet and fix the "Silent" one in its place, without disturbing without the trap, which is specially embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, quite free from any effluvia, as follow of its being fixed in any bed-room where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least trouble, smell, or dirt whatever.

May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

DUTY OFF ORNAMENTAL WINDOW GLASS.

**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, Kingstreet, Portman-square. Terms, Cash only.

**SOHO PLATE GLASS WAREHOUSE,** 27, Soho-square, dep't for the sale of the plate glass manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade are called, particularly to a good to the part of the roof stands unrivalled for brilliancy of colour, superiority of substance and polish, and possesses almost faultless quality. The Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

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**CROWN GLASS,** in Crates of Eighteen Tables, at the following low prices, for ready money:—

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| Crown Glass cut to size from one foot superficial, at 4d. per foot. | Thirds .... | 4 4 0 | Squares of Small Crown Glass, at 1l. 10s., 2l., and 2l. 2s. per box. | |
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SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Wholesale Glass, Lead, Oil, and Colour Warehouse, 20, West Smithfield, London.

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SASHES PRIMED, GLAZED, and sent to any part of London at 3d. per foot.

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Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for shop fronts, show-cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.

Dry and ground Colours of the best quality, Brushes, Dryers, and every article used in the trade, wholesale.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS, 28s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.

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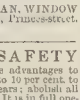
**HERRING'S PATENT SAFETY** WINDOW.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sun-blind; all simple, cheap, and effective.—Apply for licenses and to inspect its testimonials to HERRING'S Patent Sash and Blind Manufactory, 14, Kingsgate-street, London.

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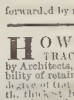
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Beg to inform the Trade, and the Building Public in general, that they have a large number of Sashes and Frames, Doors, and all other kinds of Joiner's work, on the premises, ready for use, in the best manner; French polished, and oil only, ready for the country. A full list of prices forwarded by return of post, to any part of the country.



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**MESSRS. F. and J. HARLAND** beg to call the attention of Builders and others to the following list of prices:—Cash.—

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| 2-inch Pipe ... per foot lin. | 4-inch Gutter... per foot lin. | | |
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Flats Covered and Cisterns Lined from 4½d. to 6d. per foot superficial; Cornice Gutters, 6d. to 7d.—No. 3, Cumberland-place, Newington-causeway, and 21, Southampton-buildings, Chancery-lane.

N.B. Orders by Post punctually attended to.

**PATENT VULCANIZED INDIA-RUBBER.** CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS.—The distinguishing properties of the PATENT VULCANIZED INDIA RUBBER are—its uniform elasticity in various temperatures; it does not become hard by exposure to cold. Its great strength and less bulk, in regard to that of the native Gum India-rubber. Its insoluble in essential oils. It resists the effects of oil and grease in all such degrees according to the purposes for which it is made. Manufactured Vulcanized India-Rubber Bands are used for Washers for Joints in Water, Gas, and Steam Pipes, and for the Flap and Foot Valves, &c., of Steam Engines; and it may be used with equal facility as a substitute in hydraulic or common gutta-percha and in the grooves of flooring boards.

The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

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**THE ARCHITECTURAL CARVING** COMPANY (Messrs. Patent), begs to inform Builders, that they are now manufacturing their splendid ornamented chimney pieces, which are unrivalled in most points, as will appear by Specimens they have now at their works in Lisle-street, Leicester-square, leading out of Hi-street, Soho, and in addition executed to any pattern, at exceedingly low prices.

**CARVINGS IN WOOD.—The unrivalled** process of Patent Carving, effected by the Patent process of Carving, enables the proprietors to offer to the public an extensively reduced Price, on a peculiarly prepared Wood for external and internal purposes, thus substituting the genuine material for the cheap imitations which have invariably been found fragile and unsatisfactory.

Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney Pieces, and every description of Gothic or Elizabethan Furniture.

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**PUMPS of Superior CONSTRUCTION,** bored perfectly true by improved machinery, in various Patterns and Improvements for Collieries, Squares, Market Places, Ponds, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wood and Iron. HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for hire.

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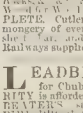
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A Model Machine Shop can be supplied with every description of Machinery, viz.:—Wheels and Pinions, Rack and Pinion, Screws, Lathe Beds, Planing and Screwing Work, Drilling, Tooth Chisels, Planing Tools, Fitting up Complete Factory of the finest quality. Horizontal Tools, Ironmongery of every description, Brass, copper, steel, wire, &c., in sheet, bar, and rolls. Wheels, Retail, and for Exportation or Railways supplied on the best terms.

**LEADBEATER,** many years manufacturer for Chubb, of St. Paul's Churchyard.—PERFECT SECURITY is afforded to PROPERTY of every description by LEADBEATER'S new Wrought Iron, Fire and Damp tight FILE PROOF SAFES, CHESTS, and DOORS. Proof to Strong Boxes and Plate Warehouses, &c.



all secured by the improved detector Locks and Latches, which defy the skill of the most experienced Thief. A large assortment of Fire-proof Safes always on Sale. Made to order on the shortest notice, and warranted to stand the test of time in London, at his Manufactory, 32 and 33, Long-lane, Smithfield.



A large FIRE-PROOF REPOSITORY well adapted for Solicitors, to be SOLD at BARGAIN.

Improved Detector Locks and Latches, affording PERFECT SECURITY, for Street and other Doors.

CAEN STONE DEPOT, NORWAY SUFFRANCE WHARF, GREENWICH.

**P. FORNARD and W. TUCKWELL,** Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf imported duly last, exclusively from their quarries at Allemagne, which, for present uses, is superior to any other stone imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. ATTIFHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.

Caen Stone shipped direct to any part by Monsieur Fornard, at Caen.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

**LUARD and BEEDHAM** beg to inform Architects, Surveyors, Builders, and others, that they have received on Norway Wharf, Greenwich, the whole of their Caen Stone Stock, to the above extensive premises, where a large stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GAPES, 18, Southwark-square, Borough, S.E.

Orders shipped direct from Caen to any port.

They have also made steps and paths at Lovelace Pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

**SAMUEL CUNDY** begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Masons' work, also Paving, Kerbing, and Flagging, can be executed by the Country Trade at Town or Stock prices. ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings, in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and Masons can obtain every description of Stone in the London Market, either in the rough block, or cut to stret from the saw, or prepared ready for fixing or fixed, avoiding either waste in carriage or workmanship.

Estimates given for any quantity of Stone, or for the whole of the Stone Work required in any new building.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney Pieces and Paving.

Estimates given for building generally.

**LADYSHORE TERRA COTTA.—The** attention of Architects, Builders, and others engaged in building is directed to this durable and beautiful material for the enrichment of the best Fire-stone, at half the cost. Its colour is of a rich warm yellow stone tint. This material has been used in the Houses of Parliament, Buckingham Palace, Windsor Castle, and other Royal Palaces, and in numerous new and the ornamental portions of London, and many other towns and buildings, &c. Its advantages are, that it is not a "Composition," nor of the nature of Stucco, but HARD BURNT CLAY. In rich ornamental work, its sharpness will be found to be great, being also much cheaper than carved stone or wood, and equally durable.

The following are a few of the many uses to which it is applicable:—Cornices, cornices, trusses, bosses, brackets, panel panels, Elizabethan mouldings, panels, panelled bench-ends, with poppy heads; pinnacles, finials, chimney-tops of all sizes, sizes, for fixing on panel heads, chimney-pieces, finished tiles and other tiles, and other ornamental work, and every variety of enamelled Quarry and Encaustic Tiles for the purpose.

This material is warranted to stand the weather. Specimens may be seen, and every information obtained, on application to the Proprietors, E. P. WILLCOCK and Co., 10, Exchange Arcade, Manchester.

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PRESIDENT.
H.R.H. PRINCE ALBERT, K.G., F.R.S., &c.

PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be awarded in June, amounting to Fifty Pounds, will be given. Lists will be sent by Post to all persons who send their Names and Addresses to the Secretary, 18, John-street, Adelphi, London.

An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards for admission may be obtained from Members of the Society.

A NATIONAL GALLERY OF BRITISH ART to be formed by public subscription, the details of this laudable project will be published in a few days, and may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.

TO BRICKMAKERS.

WANTED, a large supply of Stock Bricks, to be delivered at Cowes, Isle of Wight. Terms addressed to Mr. GILHAM, House Decorator, No. 268, Tottenham-court-road, will meet early attention.

WANTED, in the vicinity of Oxford-street, to rent or purchase, a piece of Ground or Premises capable of being converted for building purposes, to be of the extent of 100 feet by 50, or thereabouts. A frontage next a thoroughfare would be preferred.—Apply to D. M., by letter, p. p., stating particulars, at Messrs. BOTTOM and CRASKER, No. 84, Oxford-street.

A MANUFACTORY, with Coach-houses and Stabling, TO LET, near Soho-square.—Apply at J. T. MORROCK and Co.'s, 21, New Oxford-street.

TO RAILWAY COMPANIES.

TO LET, in Little Queen-street, near Storey's Gate, some PREMISES, well adapted for offices. Enquire at 23, next door.

GRAY'S INN ROAD.

FREEHOLD BUILDING GROUND, in this vicinity, TO LET, for Third and Fourth-rate Houses.—Terms and Particulars may be had of Mr. WATSON, 126, Wood-street, Cheapside.

BATTERSEA PARK.

MOST eligible Freehold Building Land TO BE LET, in the immediate neighbourhood of the proposed New Park.—Apply to Mr. P. P. THOMPSON, Surveyor, &c., 2, Water Works, Chambers, Orange-street, Trafalgar square, where Plans may be seen, and Particulars had.

UPPER PART of a HOUSE TO LET, unfurnished, Burlington street, Regent-street, with superior entrance and convenient suite, adapted to business. Apply to Messrs. RUSHWORTH and JARVIS, Saville-row.

TO LET, Extensive Premises situate in Burlington-street, Regent-street, convertible into the most desirable premises, at the West-End, either for a bank offices, show rooms, &c., &c. The upper part may be let separate. For particulars and plans apply to Messrs. RUSHWORTH and JARVIS, Saville-row.

TO TIMBER MERCHANTS, DEALERS, or Commission Agents for the Sale of Timber, Lime, Cement, Coal, Slate, &c.

TO BE LET, on Lease, for 21 Years, Excellent BUSINESS PREMISES, with Residence attached, eligibly situate No. 4, Old-palace, on the High-road, Hollaway, near the Chapel of Ease. Rent, £70 per annum. Further particulars may be had of Messrs. OVERTON and HUGHES, 25, Old Change, and of Mr. LLOYD, on the premises.

CHELSEA, NEAR THE STEAM-BOAT PIER.
BUILDING LAND.

TO BE LET, on advantageous terms, for the erection of a Public house, together with several plots for Building Houses with Gardens in front and back. The site is situate in the midst of improvements, continuous and intense with the neighbourhood of the Pier, and all parts of the property has Long Common Leases, about 70 years. Apply to Mr. E. HUTCHINSON, Cremorne Field, King's-road, Chelsea, opposite Lime-house Lane.

TO BUILDERS.—MATERIALS AND MONEY ADVANCED.

TO BE LET, on BUILDING LEASES, for such Terms as may be agreed on, eligible plots of Fresh Building Ground, Lambeth, adjoining Kennington-road, Nos. 1 and 2, Bath-place, and Nos. 1 and 2, Bath-terrace, Belvidere-road, Lambeth, and Nos. 1 and 2, Bath-terrace, Westminster-bridge-road, Lambeth. The Plots are level, and part of the Ground is applicable to Mr. H. L. KENDALL, Jun., Architect, Lambeth-terrace, Kennington.

ST. JOHN'S WOOD PARK, IMMEDIATE CONNEXION WITH REGENT'S PARK.

BUILDING PLOTS TO BE LET in this most desirable and salubrious situation, commanding picturesque views of the SURROUNDING HEIGHTS of HAMPSTEAD, HIGHGATE, and FORTY HILL, and forming the most eligible and fashionable Residential Estate in the West of London. The Roads are made, and greatest facilities of access to all the fashionable Squares, Streets, and Public Offices. For Plans, Terms, &c., apply to Mr. W. H. TWENTYMAN, Estate Agent, Arundel-street, Strand.

TIMBER SAWING FRAME FOR SALE, Well Named, and in complete working order, and the Machinery of the Premises to match; to be Sold by Auction, by W. G. WARDLE, Surveyor, Saw Mills, Peterborough, Northamptonshire.

TO CARPENTERS AND BUILDERS.

MORTICING MACHINES are now offered FOR SALE, the first and only ones ever invented that will cut a mortice of any depth or width, more suitable, though Hand-wood, warranted to work true to the gauge. Expense small and economical. To be seen at work at the Invention Office of JONES'S, 127, Gosswell-street, between 10 A.M. and 4 P.M., daily.

TO LEAD MERCHANTS AND PLUMBERS.

TO BE SOLD, the Lease and Goodwill, of a Lead Manufactory, with Dwelling-house in front, situate in the Borough of Southwark, in the occupation of Mr. Richard Sharp, who has carried on the business upwards of 20 years, and is retiring from the same. The Premises are held for a long Term of Years at a low Rent, and are well adapted for the business. Apply to Messrs. FARTHING, CLARK, and DALE, Surveyors, Lancaster-place, Strand, London.

FIRE BRICKS.—WARD & HART, Blonderus Wharf, Bankside, Manufacturers and Exporters of every Sort of Fire Bricks, Lumps, Tiles, Clay, &c. Builders, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to Patterns at a short notice. Patent Loam Bonding Malm or Tile. Lime, Sand, Gravel, Bricks, and Tiles, of every description.


## SALES BY AUCTION.

TIMBER SALE, ON THE WYTHAM ESTATE, near Oxford, will take place on Tuesday, the 23rd of February, having been deferred from the 16th on account of the snow, viz.:—

MR. FISHER will SELL by AUCTION, at the Bear and Ragged Staff, Cumnor, at Twelve o'clock, about 60 fine Maiden Elms and Ash, standing on the farms at Botley, Wytham, Cumnor, and Whitley, well situated for carriage, and within a short distance of Oxford. Catalogues may be had of Jas. Watkin, the woodman, who will show the lots; at the place of sale, and Lion, Cumnor; Carpenters' Arms, Botley; Swan, Botley; and all the inns and public houses in the neighbourhood; and of the auctioneer, Littlegate, Oxford. Credit will be given on approved security.

VALUABLE FREEHOLD PROPERTY, situate in the midst of the improvements now taking place in the neighbourhood north of Farringdon-street.

MESSRS. BULLOCK are instructed to SELL by AUCTION, at the Mart, near the Bank of England, on TUESDAY next, Feb. 24, at Twelve, an important PLOT of GROUND, having nine brick-built houses and other premises thereon, situate between Sharp's-alley, Cow-cross, West Smithfield, and the new street north of Farringdon-street, named Victoria-street, suitable for any large building, or a trade requiring considerable space; or for the formation of back premises to the houses when built in the new street.—Printed particulars and plans may be had of Mr. DODS, 102, St. Martin's-lane; Mr. DUPLIN, 61, Lincoln's-Inn Fields; Mr. SMITH, Barnard's-Inn, Solicitor; at the Mart; and of Messrs. BULLOCK, 211, High Holborn.

KENNINGTON-ROAD, opposite Walcot-place, LAMBETH.—Valuable Leasehold Estate, desirable for Occupation or Investment.—By

MESSRS. BLAKE, at Garraway's Coffee-house, on FRIDAY, March 12th, at Twelve o'clock, a very neat, genteel RESIDENCE of Five Stories, and containing Ten commodious Living Rooms, besides other conveniencies; having a spacious fore court, and deep walled garden, with an outlet in the rear (in hand), being No. 19, East-place, a fine open situation, where the road and footways are particularly wide, forming one of a handsome and well-occupied row of houses facing the east. The premises are in good order, and are held for an unexpired term of 30 years from Midsummer last, at a ground-rent of 4l. 6s. 8d. per annum.—May be viewed by leave of the tenant, and by application at the premises, where particulars may be had; also of CHARLES FORD, Esq., Stock-st., No. 5, Bloomsbury-square, at Garraway's Coffee-house, Change-alley, at the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

TOOTING, SURREY.—Timber Merchants and Builders' Stock in Trade, the property of Messrs. HICKS, relinquishing business at that place.—By

MESSRS. BLAKE, on the Premises, on WEDNESDAY, March 10th, and following day, at Eleven for Twelve o'clock, the Stock in Trade, Implements, &c., of the above old-established Firm, consisting of oak, elm, and other round timber, oak plank, scantling, and fence stuff, fir timber and quarter-ing, wheel-deals, scant, deals, various, boat boards, stocks of cedar boards, and the usual variety of carpenter's converted stuff; a good assortment of nails, and carpenter's ironmongery. The implements embrace timber carriages, trucks, chains, carts, harness, capital scaffolding, ladders, gin poles, jacks, and timber gear; work-benches, bricklayers' utensils and building materials of every description; large stone landings, some marble chimney-pieces, a pair of handsome wrought-iron gates and piers, suitable for a church or lodge-entrance; a large well-constructed Barn Building, a compact Granary on piers, and several tiled Sheds; iron hurdles, rick and stump of meadow hay, &c. &c.—May be viewed three days prior to the sale, and Catalogues had on the premises; at the Castle Inn, Tooting; Plough, Clapham; Spread Eagle, Wandsworth; Bells, Putney; Crown, Kingston; Spread Eagle, Epsom, Greyhound, Sutton; Red Lion, Dorking; White Hart, Reigate; Greyhound, Streatham; Moon and Stars, Nicholas-lane, Lombard-street, and Stanaite; at Garraway's; the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

EXTENSIVE SALE OF BUILDING MATERIALS, GREENWICH.—BY ORDER OF THE COMMISSIONERS OF GREENWICH HOSPITAL.

MR. GARDINER will SELL by AUCTION, on the Premises, on TUESDAY, February 23, and following Days, at Twelve each day, the valuable BUILDING MATERIALS of FIVE TAVERNS and PUBLIC HOUSES, known as the Crown and Anchor, the Chatham Chest, the Red Lion, the Anchor and Hope, and the White Hart, together with a great number of dwelling-houses, adjoining and forming the w. side of Park-lane, and the south side of Nelson-street, and comprehending a large quantity of capital bricks, flooring boards, timbers, joists, sashes, doors, tiles, slates, fixtures, a great quantity of lead gutters, pipes, &c. The whole to be immediately cleared for the improvements about to be made to the Hospital.—May be viewed three days prior to the sale, and catalogues obtained at the Works' office, Greenwich Hospital; of Messrs. LEVERIDGE and MACKRILL, solicitors, 25, Abingdon street, Westminster; at the Three Tuns, Greenwich; the Crown and Anchor, Woolwich; of the auctioneer, 17, Hatton-garden.

BUILDING MATERIALS, WHITTON, NEAR HOUNSLOW AND TWICKENHAM.

MR. M. ADAMS will SELL by AUCTION, without reserve, on the Premises, on Tuesday, March 2, 1847, and two following days, at eleven o'clock each day precisely, on account of the number of Lots, all the excellent BUILDING MATERIALS and FITTINGS of a Mansion and Offices, distinguished as ARGYLE HOUSE; formerly the seat of Archibald, Duke of Argyle, comprising about 450,000 excellent Malm and Stock Bricks, 11 tons of Lead, 4 lots of York and Portland Landings, 40 squares of Slating, 4 lots of Timber, 4 capital lots of Boards, Elegantly Carved Doors and Mantels, Marble and Painted Vases, beautifully executed Original Casts, Works of the most Eminent Artists, all Royal Academicians, and obtained at a great expense by the late Sir WILLIAM CHAMBERS, round Sashes and Frames, richly Carved Mantles and Moulded Doors, Marble Chimney Pieces, Register Stoves, Gilt-iron Joists, Oak and Pine Floor Boards, Coppers, Cisterns, Pumps, and Lead and other Valuable Materials. May be viewed, with Catalogues only, a week prior to the first day of Sale, the Sunday excepted, and Cards for that day will be issued on the Premises of Sale, at the Red Lion and White Hart Inns, Whitton; King's Head Inn, Isleworth; George Inn, Hounslow; Chequers, George, and Northumberland Arms Inns, Isleworth; Royal Oak, Worton Lane; at the Office of "The Builder," York-street, Covent Garden; and of the Auctioneer, Mr. Adams, Isleworth.

STONE MERCHANT'S STOCK.

MR. H. BIERS has received the directions of Messrs. Mowlem, Freeman, and Burt, to prepare Catalogues for SALE by AUCTION upon their present premises, they having sold the same to No. 75, South-Wharf Road. This very VALUABLE STOCK COMPRISES UPWARDS OF THOUSAND FEET OF YORK PAVING, LANDINGS, STEPS, KERB, and COPING, Portland, Manshall, and Bramley Fall, in Block, Slab, Steps, and Landings, Purbeck, Port-land Sinks of superior quality, Granite Kirb and Spur Stones, a Portland Stone Staircase in good condition, a small quantity of Sienna and other Marble; a Powerful Stone Truck with Patent Break capable of Carrying Ten Tons, and many useful articles.—Catalogues when ready, will be sent post free, to any part of the kingdom; and an unusual facility presents for Watercarriage, the premises close to the Grand Junction Canal. APPROVED BILLS at Three and Four Months to sell. 75, Broad-street, Golden square.

BUILDERS' BUSINESS OF FIRST CHARACTER.

MR. H. BIERS has been instructed to dispose of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST-RATE PRACTICE; declining health of the proprietor is the sole reason for parting with the same. No consideration required for good-will, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from 1,500l. to 2,000l. Further particulars and cards to view may be obtained on application to Mr. H. BIERS, 13, Broad-street, Golden-square, between the hours of One and Three. Written applications cannot be attended to.


TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS, and WRITERS to the Trade only,
37, WATERLOO-BRIDGE-ROAD.
An Apprentice wanted (a country lad would be preferred).


## PUBLICATIONS.

DECORATIVE ART SOCIETY.
Shortly will be published, price 6d., separate from the general

AN ADDRESS, together with the several Papers read by Mr. CRABB, Y.P., at the meetings, 20, Upper Belgrave-place.

NEW WORKS BY THE ETCHING CLUB.

GRAY'S ELEGY, illustrated by the ETCHING CLUB, will be published in a few weeks.

MILTON'S L'ALLEGRO and IL PENSEROSO, which have been some time in progress, in the course of the year.
7, Hyde Park-gate, South Kensington.

For 1846.

KELLY'S PRACTICAL BUILDER'S PRICE BOOK, or Safe Guide to the Valuation of all kinds of Artificers' Work; with the Modern Practice of Measuring, and an Abstract of the New Building Act for regulating the Construction of Buildings. Revised and corrected by New Calculations upon the Present Value of Materials and Labour. Arranged by an architect of eminence, assisted by several experienced measuring surveyors. Illustrated and exemplified by steel Engravings, and numerous Woodcuts. Royal 8vo., price 8s., neatly bound.
London: published by E. KELLY, Paternoster-row; SIMPKIN and MARSHALL; and may be had of all Booksellers.

TO ARCHITECTS, BUILDERS, &c.
Just published, price 7s. 6d.

A SERIES of EIGHT DESIGNS for SHOP-FRONTS, in the Elizabethan, French, and Italian Styles.
By GEO. JACKSON and SON,
Papier Maché Works, and 80, Rathbone-place, London.
G. J. and Sons solicit the attention of Builders and the Trade in general to their extensive assortment of enrichments, executed in the highest style of art, and with the strictest integrity to the beautiful characteristics of each period. The quality of their works they trust will afford that satisfaction it has been their pleasure to realize for now near half a century. Advancing with the times, their extensive operations and facilities of machinery enable them to state a scale of charges quite removed from the antiquated estimate of decorated works.
Designs furnished for general interior finishings. Nos. 1 and 2 of their goods, suitable for the upholsterer and glider, are ready for sale.

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SKETCHES, GRAPHIC and DESCRIPTIVE, for a History of the Decorative Painting applied to English Architecture during the Middle Ages.
By E. L. BLACKBURNE, F.S.A., Architect.
Each Part will contain six Illuminated Plates, exemplifying Ceilings, Screens, Monuments, Walls, Furniture, and other Architectural Accessories, with a Practical Essay on this "Ancient Art and Mystery."
Part I. will appear 1st of March.
On the completion of the Work, the price will be raised, and the Plates destroyed.
Just Published in 1 Vol. Impl. 4to. 30 Plates, Price 28s.
SKETCHES for COTTAGE VILLAS, COUNTRY RESIDENCES, PARSONAGE HOUSES, LODGES, &c., with details designed with special reference to convenience of arrangement and economy.
By WM. PATTISSON, Architect, Woodbridge.
Publishing Monthly, Price 3s. to Subscribers.
CITY, TOWN, AND COUNTRY ARCHITECTURE, by R. H. BROOKS, Architect, Author of Cottage and Villa Architecture, &c.
Four Parts Published. Parts V. and VI., will contain a Design for a Club House as proposed to be erected in London, with Plans, Elevations, and Interior Views of the Chief Apartments.
JOHN WILLIAMS, and Co., 198, Strand.


SECOND EDITION.

THE BUILDER'S FRIEND, Price ONE SHILLING.
By HENRY FITZ-GERALD.
Sold at the Office of "The Builder," York-street, Covent-garden; MILNER and POWELL, 5, Whitehall; and Mrs. HARVEY, Romford; Mrs. GOMERFORD, 114, High-street, Portsmouth; Mr. KING, 1, North-street and 44, East-street, Brighton; Mr. PURDAY, Guild-street, Yarmouth; and all respectable Booksellers.

"The Builder," Nov. 7, 1846.

THE BUILDER'S FRIEND, with this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices plank, deals, battens, and timber, bear to each other, from 36l. to 46l. the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. The information is given in a concise form, so as to fit the pocket-book.

"Herapath's Journal," Nov. 28th, 1846.

THE BUILDER'S FRIEND.—We have received a copy of a useful little Manual, under this title, that ought to be in the hands of every one in the building business. It shews at one view the relative prices of planks, battens, and timber bear to each other, and will save an immensity of calculation.

"Sunday Times." Dec. 6th, 1846.

This is a very concise but useful work; it shows in one line the relative prices of planks, battens, and timber. The author has certainly contrived to put the greatest amount of information in the smallest possible space.

CARPENTRY.—It is intended to Publish in Monthly Parts, a most Comprehensive, Elementary, and Practical Work on Carpentry and Joinery, in all its appliances; Ancient and Modern, Foreign and English, Domestic and Ecclesiastical; to contain 160 Engravings, with a Practically described Text, and Illustrations.

1. The well-known work of PETER NICHOLSON'S CARPENTERS' NEW GUIDE, being a complete Book of Lines for Carpentry and Joinery; 84 Plates with Additions and Improvements to the present time.
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3. SUPPLEMENT B.—Ancient Carpentry of England. Specimens of Open Roofs and Timber Works, Stan lards, Staircases, Panels, &c., &c. By an Architect.
4. SUPPLEMENT C.—Modern Carpentry of England, France, and Italy. By an Architect.
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6. SUPPLEMENT E.—Modern Fronts with Plans of the London Club-houses, Institutions, Shops of Various Trades, Professional Places of Business, and Private Mansions.

All will be amplified with Measured Details and Dimensions to them. The whole of these numerous and valuable additions will be of a nature to Instruct and Elevate the Genius of the London and Country Workman, by placing before him Examples which hitherto have been inaccessible, and at a convenient cost of 2s. 6d. each Part with Light well executed Engravings and Text, and Published Monthly. To be completed in Twenty Parts.
Persons desirous of having the work direct as published, will be pleased to forward their names to the Editor and Publisher, JOHN WEALE, 59, High Holborn. Canvassers and the Trade in the Country and Canvass their Counties, will be liberally treated with.—Prospectuses's ready with the First Part, May 1st, and the publication continued every month till completed.


LONDON: Printed by CHARLES WYMAN, of 49, Cumming-street, Pentonville, in the County of Middlesex, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen-street, Lincoln's-Inn Fields, in the Parish of St. Giles-in-the-Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, February 28, 1847.

# The Builder.

A JOURNAL FOR

The Architect, Engineer, Operative & Artist.

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### ADVERTISEMENTS.


WANTED, a Town Traveller: one who is acquainted with the Building Trade.—Address, post-paid, to A. B., at the office of "The Builder."

TO BUILDERS, SURVEYORS.

WANTED the Occasional Assistance of a thoroughly experienced person to take out quantities and Estimate, particularly Stone work. Apply, by letter only, to A.B., No. 8, Vine-street, Regent-street.

WANTED by a Steady, Active, and Respectable Man, a Situation as Shop Foreman to a Builder, or to conduct as General Foreman to a Job, either in town or country. Highly respectable references as to the ability and character. Address, W. T., Mr. Alley, 89, Chiswell-street.

WANTED, by an experienced and steady Person, a Situation as Shop Foreman, or to conduct as General Foreman to a Builder. Can measure and make out work. Mr. Hawkes, Bricklayer, 3, Marsham-street, Horseferry-road, Westminster.

WANTED, by a Young Man, who has had Seven Years' practical acquaintance with the Building Trade, and considerable experience in working and drawing plans, a situation in a Builders' Office. Reference kindly permitted to Mr. R. SYMN, Builder, St. Giles's, Oxford.—Address, T. E., 4, Park-place, St. Giles's, Oxford.

TO ARCHITECTS, BUILDERS, &c.

WANTED by a Person of Considerable Experience, a Situation as Foreman of Bricklayers. He is well acquainted with Drawings and setting out Buildings, and has had great practice in cutting angled work. Satisfactory references can be given. Direct A.B., Hance's Library, King's-road, Chelsea.

TO BUILDERS, &c.

WANTED, by a Young Man of respectability, who has been engaged in a Builder's Office, a similar SITUATION. He would make himself generally useful, and would require but small remuneration. Respectable reference.—Address, A. Y., office of "The Builder," 2, York-street, Covent-garden.

WANTED, Employment as Clerk, Timekeeper, or in any other capacity in which he can make himself useful, in Town or Country, a Middle-aged Man, who can have an unimpeachable character from his present employer. Is experienced in builder's accounts, and has been clerk at a wharf.—Address, prepaid, to J. H., 23, Baltic-street, St. Luke's, London.

TO ENGINEERS, MACHINISTS, AND BUILDERS' SMITHS.

PARTNERSHIP.—Wanted a Partner, having the command of 3,000l. to 5,000l., to join the advertiser in working more extensively a most valuable patent connected with buildings in conjunction with an old manufacturing business in which he has been engaged for many years. Part of the capital had of Messrs. HINDMAN and STOWARD, Solicitors, 20, Lincoln's-inn-fields, of whom the undersigned can be treated with. Address, prepaid, to F., Post-office, Bolton.

CLERK OF WORKS.

A RESPECTABLE, spirited, and efficient Person, who has filled a situation as above for the last four years and a half, is desirous of meeting with a similar engagement. He is competent to measure work, and make working drawings; can have the highest testimonials from the gentleman with whom he has been employed. Apply by letter, to E. F., Post-office, Bolton.

TO ARCHITECTURAL DRAUGHTSMEN

AN Architect of extensive practice in Gloucestershire is in immediate want of an Assistant. He must be a clever draughtsman, well practised in the specification and details of Gothic Architecture. As a good salary will be given, and the situation is a desirable one, with the management of the premises, satisfactory references will be required, and none but good draughtsmen need apply.—Direct to A. Z., Post-office, Gloucester, stating terms, &c.

TO ARCHITECTS.

SOME Temporary Assistance is required by an Architect, upon terms proportionate to the abilities of applicants.—Applications to be made to G. S., 166, Friar-street, Reading.

A VERY desirable Plot of Building Ground TO LET, for Fourth-rate Houses, at Islington, 70 feet deep. The Houses let as soon as finished; sewerage complete; Lease 97 years, at low ground-rent.—For particulars, apply to Mr. F. W. LANKSTON, Architect and Surveyor, 38, Upper Seymour-street, Euston-square.

TO YOUNG ARCHITECTS

A PRACTICAL ARCHITECT is desirous of engaging, at a moderate salary, the services of a Young Man who has completed his articles in a good office, to carry on the works under him at a church now in progress at some distance from London. He must be in possession of competent practical knowledge of Masonry and Carpentry, be of Active Industrious Habits, zealously inclined to the pursuit of professional knowledge, and of irreproachable character. To any young man earnestly desirous of improving himself in practical knowledge this opportunity is an advantageous one.—Address C, Swale's Library, Great Russell-street.

ROYAL INSTITUTE of BRITISH ARCHITECTS. The Council having reported to the Members at the General Meeting, on Monday, the 22nd instant, that a decision relative to the Designs and Essays made the subject for the Royal Medal, and the Medals of the Institute, for the year 1846, COMPETITORS are hereby informed that the Report is open to their inspection in the Library of the Institute, on Mondays, Thursdays, and Fridays, between the hours of 10 a.m. and 5 p.m., and that the Drawings and Essays to which the Select Letters of unsuccessful Competitors, will be delivered to them on application to the Librarian.

No. 18, Grosvenor-street, 24th February, 1847.

TO ARCHITECTS

GLAMORGANSHIRE—TOWN OF CARDIFF.

THE Committee appointed to superintend the building of a COUNTY HALL, to consist of a Crown Court, Nisi Prius Court, and a Police Court, with their requisite concomitant Offices, in the above town, GIVE NOTICE, that they are desirous to receive DESIGNS for the foregoing purpose by COMPETITION upon the following terms:—

That a Premium of 50l. shall be awarded to the Architect who shall supply the plan which the Committee may consider in all respects to be the most eligible; such plan to comprise the elevation and interior design, with sections and specifications; and if the architect who shall furnish such most approved plan shall be elected and agree to superintend the execution of the works, the premium shall merge in the usual commission upon the outlay. That a premium of 20l. shall be awarded to the projector of the plan which may in like manner be considered the next eligible with a view of merit. That such plans shall, upon payment of the premium, become the property of the Committee. That the Committee shall have the option of purchasing any of the other plans which may be delivered, for either of which they shall not be required to pay more than 20l.

A Lithographed Plan, and admeasurement of the ground, will be supplied, with such further information as may be required for the guidance of architects desirous of competing, upon application, by letter, to CHARLES CROFTS WILLIAMS, Esq., Chairman of the Committee, Cardiff, whom all communications are to be forwarded, on or before the first day of June next.

Architects are requested to furnish their names, under seal, with such motto or reference as may identify them with their respective plans.

The means at the disposal of the Committee are calculated at 8,000l.

BRICK EARTH, of most excellent quality, TO LET, close to the Nelson Arms, Cheam.—Apply at the Nelson Arms, or to Mr THIRK, Copthill, Epsom.

FOLKESTONE, KENT

SEVERAL Plots of most Valuable Freehold Building Ground, laid out for the erection of villas, and which may be completed by the spring. TO BE SOLD.—Application to be made to JOSEPH CLARKE, Esq., No. 1, Lincoln's-inn-fields, London.

BATTERSEA PARK

MOST eligible Freehold Building Land TO BE LET, in the immediate neighbourhood of the proposed New Park.—Apply to Mr. F. P. THOMPSON, Surveyor, &c., Water Works, Chambers, Orange-street, Trafalgar-square, where Plans may be seen and particulars obtained.

BEDFORD NEW TOWN, NEAR EUSTON SQUARE

BUILDING PLOTS TO BE LET in this desirable locality. The sewers are made, vaults turned, and foundations taken out, thus affording great facility to builders and others willing to take immediate advantage of the season. No charge for road and paving. Responsible parties will be treated with liberally. For plans and particulars, apply to Mr. ALLEN, 3, Bedford-street, Upper Seymour-street, Euston-square.

TO BUILDERS

THE Owner of Freehold Property about 10 miles from London (in Middlesex), and very near a Railway Station, is willing TO LET by on Building Lease, on very reasonable terms. It comprises a genteel Cottage Residence, Coach-house, Stabling, and large Garden, having a long building frontage, and two small Cottages adjoining. As the principal object of the owner is to avoid trouble, as he is living at a distance, he is willing to accept a Rent of 32l. 15s. 8d. for the whole. It would suit a retired Tradesman. Apply to Mr. BUTLER, No. 5, John's-terrace, Hackney Road.

BUILDER'S BUSINESS OF FIRST CHARACTER

MR. H. BIERS has been instructed to dispose of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST RATE PRACTICE; declining health of the proprietor is the sole reason for parting with the same. No consideration required for good-will, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from 1,500l. to 2,000l. Further particulars and cards to view may be obtained on application to Mr. H. BIERS, 14, Broad-street, Golden-square, between the hours of One and Three. Written applications cannot be attended to.

FREEHOLD BUILDING GROUND, NEAR TO KENSINGTON GARDENS

TO BE LET, on Building Leases, several Acres of Land Victoria-road, Kensington, for the erection of Villas or Cottages. Plans and particulars apply to Messrs. GODWIN and SON, Architects, 24, Sloane-square, Brompton, or to Messrs. WATKINS and HOOPER, 11, Sackville-street, Piccadilly.

VOTES for EAST and WEST SURREY.

Three and three-quarter Acres of FREEHOLD LAND at Norwood, Surrey, and Five Acres of Fresh Hill Land at Trumps green, Egham, Surrey both most delightfully situated, TO BE LET, on Building Leases, for such terms as may be agreed upon.

Apply, if by letter post-paid, to J. BURGES WATSON, Esq., Architect, 19, Manchester-street, Manchester-square, London.


### CONTRACTS.


TO BUILDERS WALWORTH LITERARY AND SCIENTIFIC INSTITUTION

PARTIES desirous of sending in Tenders for the contract of the above building, may see the plans and specifications at the office of Mr. G. JORDAN, the architect, No. 12, John-street, Walworth, on TUESDAY next, March 2nd, and the following day. Tenders to be delivered on or before the 9th March next. No tender can be taken that the lowest tender will be accepted.

PHŒNIX GAS-LIGHT AND COKE COMPANY—BREEZE FOR BRICKMAKING.

THE Phœnix Gas-light and Coke Company are ready to receive TENDERS for taking the Breeze made at their Works at Banks-de during the next twelve months, the quantity will be about 2,500 Chaldrons. The Contractor will be required to enter into an agreement under a penalty not to leave more than two Chaldrons on the Works at any one time, and to pay for the same quarterly. The Tender is to state the price per Chaldron of 40 Bushels delivered into craft alongside or Lorrie, and to be marked with the words "Tender for Breeze" on the cover, and to be delivered at their office at Bankside, on or before Twelve o'clock on Wednesday, the 10th March.

Office, Bankside, CHARLES PRIDDEN, Secretary.
Feb 25, 1847

TO BUILDERS—CALNE UNION NEW WORKHOUSE.—EXTENSION OF TIME FOR TENDERS

THE Guardians of the Calne Union HEREBY GIVE NOTICE that they will receive TENDERS for the erection of a new workhouse, on WEDNESDAY, the 10th day of March next, at Twelve o'clock, at the Union Room. The drawings specification, and conditions may be seen, and the quantities obtained at any time on or after the 4th of March; or they may be viewed personally by applying at the office of Mr. ALLOM, the architect, 14, Hart-street, Bloomsbury, London. The Guardians require Tenders to be given in one sum for the whole work, and do not pledge themselves to accept the lowest estimate.

H. S. HEATH, Clerk to the Union.

Calne, Feb. 17th, 1847.

TO BUILDERS

PARTIES desirous of TENDERING for the Erection of Archbishop Parker's Grammar Schools, on Sparrow Hill, Rochdale, are informed that the Plans and Specifications may be seen at the Counting-house of Mr. ABRAHAM BRIERELEY, Town Meadows, Rochdale, from Wednesday, the 3rd of March. The Tenders, endorsed as the corner, are to be delivered, post paid, on or before Wednesday, the 17th day of March, addressed to Mr. JOSEPH CLARKE, Architect, No. 1, Lincoln's-Inn Fields, London. The parties Tendering will be required to take out their own quantities, as the Committee do not bind themselves to accept the lowest Tender. Further information may be obtained on application to Mr. CLARKE.

TO BUILDERS AND OTHERS

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for Holborn and Finsbury Division, Mr. Bevis, will meet at their office, in Hatton-garden, on FRIDAY, the 12th day of March next, at One o'clock in the afternoon precisely, to receive TENDERS in writing for building a sewer in Bayham-street, Camden Town, for a length of 850 feet, conformably to a plan and specification, which may be inspected daily between the hours of Nine and Three. The parties offering must attend at the time of opening with their tenders sealed up, which will be in the presence of the Surveyor of the Division for the execution of the works. The Commissioners will not consider themselves bound to accept the lowest tender.

By the Court,

STABLE and LUSH, Clerks.

Office of Sewers, Hatton-garden, 2nd February, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS—COURT OF SEWERS, TOWER HAMLETS.

NOTICE IS HEREBY GIVEN, that the Commissioners of Sewers for the Tower Hamlets' excluded Sewerage District, and Richard Walsh, at the meeting to be held at WHITNEY'S, on Tuesday, the 9th March, at Three o'clock in the afternoon precisely, at the Office of Sewers, No. 18, Great Alie-street, Goodman's-fields, will be ready to receive Tenders from any persons willing to enter into contract for the execution of the said works, by extending the sewer from Glass House-street along New Martin-street and Blue Anchor-yard, being in length of 600 feet or thereabouts, and also in Lambeth-street, across Hooper's-square to Leman-street, being a length of 700 feet or thereabouts, in the parish of Saint Mary Whitechapel. Plans and specifications of the said several works, with the forms of Tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. Separate contracts will be required for each of the said works respectively. The contractor will be required to sign provisional agreements to secure the due execution of the works, and to enter into the usual sureties for the due performance of the same, and also to enter into a bond for the completion of the same. The expense of the deeds will be borne by the Contractors to whom the Tender will be accepted after the hour of such meeting as aforesaid. No Tender will be received after the hour of such meeting as aforesaid. Forms of Tender may be had at the Office of Sewers, and Tenders will be received only from such persons as shall be approved, attend on his behalf to answer when called upon.—Dated this 25th day of February, 1847.

JOHN WILLIAM INWIN, Clerk to the Commissioners.

N.B. The Commissioners do not intend by the above Notice to accept the Lowest Tender.

NOTICE IS HEREBY GIVEN, that a Special General Meeting of Members of the INSTITUTION OF BUILDERS' FOREMEN will take place on WEDNESDAY evening next, March 3, at the Sans [illegible], [illegible] street, Strand, to elect a Board of Directors, and make other arrangements for carrying out the benevolent intentions of the Institution.

W. ALLARD, Secretary.

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HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained gratis by persons desirous to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

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TO OWNERS OF HOUSES IN COURTS, ALLEYS, AND OTHER CONFINED LOCALITIES.

HER MAJESTY'S JUSTICES and COMMISSIONERS of SEWERS for the City and Liberty of WESTMINSTER, and part of Middlesex, HEREBY GIVE NOTICE that they have [illegible] a plan [illegible] drainage [illegible] the [illegible] there are sewers [illegible]. The plans and sections may be seen at the office of the Commissioners, No. 1, Greek-street, Soho.

LEWIS C. HERTSLET,
Clerk to the Commission.

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TO PLASTERERS.

LIME FOR PLASTERING, that may be used immediately without risk of blistering, manufactured expressly for Plastering, and sold at the usual price, at FORREST'S WHARF, Earl-street, Blackfriars. Sheds for the [illegible] ing and [illegible] Lime. Accommodation for loading and landing bricks, sand, ballast, &c.

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ARCHITECTS, BUILDERS, and the Trade in general, are informed that they can be supplied with Cement and Plaster Ornaments of first-rate quality, consisting of chimney shafts in the Elizabethan and other styles, trusses, balusters, vases, capitals, centre flowers, soffits, and mouldings, &c. on the most reasonable terms by JNO. HERBERT and SON, Modellers, &c., 12, Parker-street, Drury-lane. Models to be executed for the Trade.

A first-rate assortment of shop-front trusses ready for fixing.—Centre flowers fixed complete 25 per cent. cheaper than paper maché.

---

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable class. Consumers should see that the standard size cask is 24 inches long [illegible] inside measure. Any workman with a rule in his pocket can ascertain this.

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ATKINSON'S CEMENT. — WILLIAM WOOD, Jun., Sole Consignee, CHURCH-STREET, ROTHERHITHE.

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PORTLAND CEMENT.—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either in bricklaying or [illegible] the factory [illegible] J. B. WHITE and SONS, Millbank-street, Westminster.

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KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or [illegible] imitation of stone, by the addition of Portland or other cement.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

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MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against [illegible] this invaluable Cement with others [illegible] themselves that MARTIN'S CEMENT is totally dissimilar in its composition and manufacture from every other, and being a neutral compound, is not only free from chemical action upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. [illegible]
3. Its surface [illegible] may be made equal to that of the finest marble, NEVER THROWS OUT ANY SALT, and will receive paint in four days [illegible].

It is peculiarly [illegible] skirtings, architraves [illegible] purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability [illegible] economical. [illegible] Plaster of Paris and Cement Manufacturers, 186, DRURY-LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 2, Canning-place, Liverpool.

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TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every other [illegible]. It will effectually resist Damp. It will never [illegible] green, nor otherwise discolour. It [illegible] peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in [illegible] any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. [illegible] the cost of the material does not exceed that of the cheapest Cement now in use; but with all the above-named [illegible] valuable advantages, nothing can approach it in point of economy.

Architects and builders who have used the Cement have declared [illegible] preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials [illegible] application at the offices [illegible] SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London.

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT [illegible] finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used [illegible].

---

FRENCH PAPER HANGINGS.—The ONLY WHOLESALE DEPOT wherein is concentrated ALL the choicest productions of all the Continental Manufacturers is at Messrs. MARKS & CO.'S, 59, Princes Street, Leicester Square, established 1836, where the Trade may be supplied from an [illegible] NEW SPRING PATTERNS, at prices that will DEFY the GREATEST CHEAPNESS that at present exists.

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TO BUILDERS, DECORATORS, PAINTERS, &c.

DEPOT of FRENCH Paper-Hangings.—M. JULES RIOTTOT begs to inform the Trade that he has opened a Depot in London for the sale of FRENCH PAPER-HANGINGS, from his Manufactory in Paris [illegible] by the [illegible] found most suitable for [illegible] market, and the prices very moderate. S. BARLOW, Agent, 71, Great Russell-street, Bloomsbury.

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PAPER HANGINGS—TO THE TRADE.

MESSRS. HENNELL and CROSBY, Manufacturers of Paperhangings, Queen-street, Southwark [illegible] 1817 [illegible] French Designs [illegible] workmanship [illegible] Superior French Papers [illegible] A liberal [illegible] to the Trade. A Large Stock always ready, and orders promptly executed. The Cheapest House in London for Panel Decorations.

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DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial, and borders from 9d. per foot run; and [illegible] the largest kilns in London, is enabled [illegible] with unprecedented dispatch.—1, King-street, Portman-square. Terms Cash only.

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SOHO PLATE GLASS WAREHOUSE, 23, SOHO SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, [illegible] the attention of Architects, Builders, and the Trade [illegible] this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 23, Soho-square.

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TO PLUMBERS, PAINTERS, AND GLAZIERS.

CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

| | | £ s. d. | |
|---|---|---|---|
| Crown Glass, in [illegible] | Thirds | 4 4 0 | Squares of Small |
| [illegible] | Fourths | 3 10 0 | Crown Glass, at 1d. |
| upwards, [illegible] | [illegible] | 2 10 0 | 1½d., 2d. and 2½d. per |
| foot | [illegible] | 2 2 0 | foot. |

SHEET GLASS of all descriptions equally low. White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

N.B. Sashes primed and glazed at 4½ and 5d. per foot.

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SASHES PRIMED, GLAZED, and sent to any part of London at 5½d. per foot.

BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon [illegible]

FOREIGN SHEET — BRITISH SHEET
BRITISH CROWN — PROPAGATING GLASSES

[illegible] Crown and Sheet Plate, [illegible] HORTICULTURAL PURPOSES.

Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade, warranted.

VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS [illegible] per cwt. [illegible] used by Plumbers.

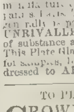
[illegible] Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 6, Princes street, Leicester square, London.

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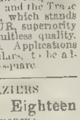
HERRING'S PATENT SAFETY WINDOW.—No invention ever offered the advantages to builders and the public, it will [illegible] cent to [illegible] HERRING'S Patent Steam Bed Feather Factory, 14, Kingsgate-street, London.

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CHAS. WM. WATERLOW,



MANUFACTURER of Sashes and Frames, and Joinery to the Trade, 21, Bunhill row, Finsbury square.—Well-seasoned materials, superior workmanship, lowest prices. Upwards of [illegible] DOORS, and a large variety of Sashes and Frames always ready. Glazed goods securely packed for the country. Steam-struck Mouldings [illegible]. N.B. This Establishment [illegible].



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GAS.—The Introduction of Gas into private dwellings is rapidly increasing; it is therefore of the greatest importance [illegible] GAS VALVE, can from many years' experience and the high testimonials they are daily receiving, confidently recommend it to all [illegible] T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, 30, New-cut, near the Blackfriars-road.

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LEAD WORKS, HAMMERSMITH, AND AT READING, BERKS.

C. H. and F. CLARK beg to inform Plumbers, Builders, and others, they may be supplied with Goods of best manufacture at the following net prices, for cash:—

| | | | | | |
|---|---|---|---|---|---|
| Sheet Lead | per cwt., | 19s. 6d. | Genuine White Lead, | | |
| Pipe | „ | 19s. 6d. | warranted | per cwt., | 26s. 6d. |
| Pumps | „ | 20s. 6d. | Second ditto | „ | 24s. 6d. |
| | | | Third ditto | „ | 22s. 6d. |

A Crate of Crown Glass, 18 Tables, 2l. 2s.

Lift Pumps, Water-closets, Cocks, and Brass-work of every description, Crown and Sheet Glass for Building and Horticultural purposes, Oils, Colours, and Varnishes of first-rate quality.

Old Lead bought or exchanged. Credit given upon receipt of satisfactory references.

January 23rd, 1847.

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BUILDERS AND IRONMONGERS are requested, when writing for JENNINGS'S SHOP SHUTTER SHOE AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters (RIGHT OR LEFT), as they face the front.

---

JENNINGS'S SHUTTER FASTENER. Shop Fronts are more damaged and disfigured by the Shutter Bar than by any other cause. Bars are a trouble to put up and take down, and trouble me when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the invention, and the testimonials of their ease and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 24s., or a new front shoe and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte street, Blackfriars road, or of any respectable ironmonger.

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SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.

Manufactory, 96, Regent street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that [illegible] can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot [illegible] order, and are safer [illegible] shutters [illegible] any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

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REVOLVING SAFETY SHUTTERS, WITH PATENT CONVEX IRON LATHS. PATENT CORRUGATED WINDOW BLINDS, &c.

The attention of Architects, Builders, and Blind-makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection invited at the manufactory. The great [illegible] REVOLVING IRON SHUTTERS [illegible] and it is only necessary to point out the fact, that the patent [illegible] insure their general adoption.

The patentee invites attention to his greatly improved gearing [illegible] which, possessing all the advantages of the endless screw (worm and wheel) cannot, even by wear [illegible] sity of using the ratchet-wheel; and is at once simple and thoroughly effective, and is SAFER and MORE DURABLE than [illegible] SAFEST and MOST EFFECTIVE [illegible] THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS WITH CONVEX IRON LATHS [illegible] IMPROVED DRAWN METALLIC SASH BARS, ASTRAGALS, MOULDINGS, STALLBOARD PLATES, &c. Patent and Manufactory, JOHN HARCOURT QUINCEY, 115, Old street, London.

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INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, [illegible] tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with [illegible] The worm and wheel motion for raising and lowering revolving iron shutters, as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any other [illegible].

[illegible] REVOLVING WOOD SHUTTERS [illegible] metallic hinges, without which no shutter can be safe [illegible].

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH BARS, MOULDINGS, &c. IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop-fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall and Pilasters, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.

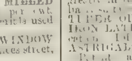
Metal Drawing and Stamping for the Trade.

Offices at No. 26, Lombard street, London; Works, at Deptford, Kent.

Steam engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans especially adapted for Builders' purposes, may be seen in operation at the Works.

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SEYSSEL ASPHALTE COMPANY.

CLARIDGE'S  PATENT.

Established March, 1838, for working the Mineral Asphalte Rock of Pyrimont Seyssel, a Bituminous Rock, situate on the Eastern side of the Jura.

Principal Depots, ROUEN, MARSEILLES, and STANGATE, Surrey side of Westminster-bridge, London.

THE ASPHALTE of SEYSSEL has been extensively used since March, 1838, for the following useful purposes:—

| | | | |
|---|---|---|---|
| Foot Pavements. | Coach-houses and Stabling. | Piggeries, &c. &c. | which also renders it very appropriate for the |
| Kitchen Floors, particularly where it is essential to keep damp from rising | Dog-kennels | Covering of Railroad and other Arches. | Lining of Tanks, Fish-ponds, &c. &c. |
| | Barn Floors. | The only effectual mode to prevent the percolation of water, | |
| | Granaries. | | |
| Garden Walks and Terraces. | Tap-room Floors. | | |
| Carriage Drives. | Malt-house Floors. | | |

The attention of RAILWAY ENGINEERS, ARCHITECTS, and CONTRACTORS is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE.

The arrangements of the SEYSSEL ASPHALTE COMPANY, CLARIDGE'S PATENT, enable it to execute Works of any extent [illegible].

In order to guard against the use of spurious materials, it is important that all applications for Works to be executed, be made direct to the Company; and as a further protection, it is suggested that Engineers, Architects, and Contractors should require a CERTIFICATE from the Company that the proper description of material has been used.

Information may be obtained of all Works which have been executed by the Company since its establishment in 1838, which will prove that the failure of many Works represented to have been done with the genuine material, has resulted from the substitution of a spurious one.

J. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

The Builder.

No. CCXII.

SATURDAY, FEBRUARY 27, 1847.

A FEW days ago we looked down, through a clear sky, on the mighty world of London from the top of Wren's noblest work, St. Paul's Cathedral. In truth, it is an extraordinary sight, and is felt to be so more and more on each succeeding visit. We counsel those of our readers who have not yet enjoyed it; when they are seeking instructive, mind-developing recreation, to wend their way to the "golden gallery" on the summit of the dome, whence they may note, to use a phrase of Leland, "a whole world of things *very* memorable. Look which way they will,—

> "Ten thousand objects hurtle into view,
> Of interest wonderful;"

filling the mind with thought,—almost oppressing it indeed by a multitude of absorbing associations. Provided always, however, that the view be looked upon *with the understanding*. To the barren all things are barren. The mere sight-seer, the gazer with the eye only, will be struck by its immensity, gratified by the novelty and beauty it presents. But those to whom we speak would have in addition a higher enjoyment than this, bounded only by the extent of the knowledge that is within them. No one denies that, "To him who is of a mind rightly framed, the world is a thousand times more populous, than to the man to whom every thing that is not flesh and blood is nothing." A building, which by one visitor may be glanced at and forgotten, inciting no inquiry, inducing no recollections,—will in another, differently instructed, lead to long trains of thought, exercise the mind, strengthen or question previous conclusions, and so carry forward his education.

The extent of modern London is astounding. Towards the east flow out streets, scarcely known to the denizens of the west, seemingly interminable, although the wealth and power of the metropolis are marching westward, as they have always done, and are raising masses of new palatial edifices, far away from the point on which we are now standing. A few centuries ago the Tower of London was a royal residence, and our nobles were clustered about it. Then the river banks,—naturally called the Strand,—became a fashionable site; but these shortly after gave place to localities farther and farther west, and soon, the only lord to be found in the city was the lord mayor.

Contrast the London of to-day with London as it appeared in Queen Elizabeth's time, represented in a well-known old map; and if the difference be not sufficiently striking, endeavour to realize London in the time of the Romans, when (even at the close of their long and prosperous settlement here), it extended only from Blackfriars to the Tower in length, and from the Thames to Moorfields in width. It is curious to trace its progress, still more so to watch the changes in the habits and manners of its occupants which have succeeded one another. Roman London lies below us; in places, many feet; its boundaries defined; the state of the arts therein tolerably well understood; the coins, dresses, and ornaments used by the people, known;—and all owing to the exertions of a once ill-understood and much laughed-at class of men, the "musty" antiquaries. If you know where to look for it, you may still trace the outline of the city as it was when under Roman dominion; you may see some of the walls they raised, the pavements they formed; and people its streets with the men and women of that day. This was long ago; and yet not long enough to destroy the characteristics of a simple tuft of moss, placed in a Roman vase, as a cover probably to bones and ashes, and found in Lothbury only a few years since! The incident seems to us a pretty one, and worth a thought.*

The number of churches clustered together within the limits of the city (seventy-five!), as compared with the parts beyond, is very observable from the position we have taken up. Many of them are full of interest, and well deserve a visit if you have not seen them. Several of them date long before the great fire of 1666, the ravages of which they escaped, and have long stories hanging to them (as have others of more recent date), that throw an additional charm over the time honoured structures. There, for example, in Smithfield (that blot on the modern city shield) close at your feet, is the church of St. Bartholomew the Great, the major part of which belongs to the twelfth century. St. Andrew's Undershaft, in Leadenhall-street, with its tale of evil May-day and the Cornhill shaft, is the resting place of poor John Stow, the chronicler of London; and St. Catherine's Cree-church, where some of the earliest "mysteries," or holy plays, were performed, was rebuilt with a curious mixture of styles, as some writers say, by Inigo Jones.

Allhallows, Barking, in Tower-street, is a very interesting old church; and, going a little farther east, there is the miniature church of St. Peter *ad vincula*, in the Tower, built in the time of Edward I., which furnishes a sad confirmation of many disgraceful chapters in English history.

St. Giles's, Cripplegate, is the burial place of three noted Johns,—John Fox, John Speed, and John Milton. In the church-yard, is a portion of old London wall. Bow church was the scene of most singular events; and indeed there is scarcely one church in the city that is not for some cause noticeable. We must pass them by, only stopping to mention St. Edmund's, Lombard street, because in the church formerly on this site, John Shute, "painter-stainer and architect," who published one of the earliest practical works on the art, called "The First and Chief Groundes of Architecture," was buried. Stow says his epitaph commenced thus:—

> "This monument declares, that here the corps doe lye,
> Of him that sought in science sight to publish prudently,
> (Among the rest of things, the which he put in ure.)
> That ancient practice and profound, that hight of architecture.
> A knowledge meet for those, that buildings doe erect,
> As by his workes, at large set forth, is shewne the full effect.

The observer, situated where we have placed him, will find matter, too, for ample reflection in the works of Wren, which there come prominently forward; and if he be himself an architect, may find consolation under many difficulties in the remembrance of the treatment received by that great artist. The steeples of the city attest Wren's powers as a designer in a remarkable manner. Note their extraordinary variety; the difficulty with which a spire can be made a part of the style in which he designed; the elegance of their proportions; the skill displayed in their construction; and an acknowledgment of the power of the master cannot be refused.

The city, as all know, was greatly improved in consequence of the Great Fire, but would have been much more so if its re-arrangement had been confided to Wren. Look, now, upon its tangled streets, and the pile of ill-constructed and decaying buildings. One might be excused for wishing for a second fire to clear away the seats of ill-health, moral degradation, and consequent crime and misery, which are seen on every side. Ignorance is the fruitful parent of all evil. Let us all steadily aid in the endeavour to dispel it.

We have but touched our subject, not exhausted it. If our readers rebel not against such gossip,—gossip, nevertheless, which has a good intention, we may return on another bright day to the top of St. Paul's.

* Those who would know more of Roman London should read some interesting papers on the subject by Mr. Roach Smith, published in "The Archæologia."

## THE ROYAL MEDAL FOR ARCHITECTURE.

*Report of the Council of the Royal Institute of British Architects to the General Meeting of the Members, on the designs offered in Competition for the Royal Medal of the Institute, for the Soane Medallion, and on the Essays submitted for the Medals of the Institute for the year* 1846.

The Council have to report that, for the royal medal, the subject being a building suitable for the purposes of the Royal Institute of British Architects, eleven designs have been received.

The council deem it proper, in the first instance, to advert to the printed conditions prepared for the guidance of the competitors, and which were issued in May last, as follows:—

"Royal Institute of British Architects,
16, Grosvenor-street, London, 26th May, 1846.

Her Majesty the Queen having been graciously pleased to grant to the Institute an annual medal for the promotion of Architecture, it has been resolved, that it shall be applied to the encouragement of the junior members of the profession by a competition in designs, composed in a style calculated to promote the study of Grecian, Roman, and Italian architecture, and further, that the designs shall be judged of, not only with reference to their merits as works of art, but likewise as to the knowledge of construction they may exhibit.

In order to secure, as far as possible, uniformity in the conditions under which the designs are submitted in competition for the royal medal, it has been determined that the age of the competitor shall be limited to twenty-five years, and that with this limitation the competition shall be open to the profession in general.

The successful competitor will be further entitled to draw upon the treasurer of the Institute for the sum of 50*l.* after his arrival in Rome in the pursuit of his professional studies, at any period within five years from the time of the medal having been awarded to him, upon sending to the Institute a satisfactory study of some existing building, either ancient or modern.

The royal gold medal for the year 1846 will be awarded to the best design for a building suitable to the purposes of the Royal Institute of British Architects; comprising a room for general meetings and lectures, with seats for 350 persons, arranged with a view to the reading of papers, the exhibition of drawings and diagrams explanatory thereof, and for facility of discussion; a council-room for twenty-five members; a library for 10,000 volumes, with suitable depositories for drawings, prints, medals, &c.; a gallery for models, casts, fragments, &c.; an exhibition-room for architectural subjects, and suitable residences for a secretary and a curator.

The cost of the building not to exceed 20,000*l.*

The design to comprise not less than one plan of each story,—two elevations, two sections, and a perspective view.

The scale of the drawings to be one-eighth of an inch to the foot, and to be tinted with Indian ink or sepia only.

DIRECTIONS FOR CANDIDATES.

Each set of drawings is to be accompanied by a sealed letter, containing the name of the competitor

within, and on the outside the same motto as that attached to the drawings; this is to be inclosed in a sealed envelope, containing an address, to which a communication may be sent of the decision of the Institute, and directed, "To the honorary Secretaries of the Royal Institute of British Architects. Design for royal medal (motto).

The drawings to be delivered at the rooms of the Institute, on or before Thursday, the 31st December, 1846.

The Council will not consider themselves called upon to adjudge the medal, unless the designs and drawings be of sufficient merit to deserve that distinction.

GEORGE BAILEY, J. J. SCOLES. } Honorary Secretaries."

In detailing thus minutely the accommodation to be provided in the building, to render it suitable for the purposes specified, and by fixing a limit to the proposed expenditure, it was obviously intended by the Institute to impress the candidates with a feeling that in forming their designs they were expected to treat the subject practically, and direct their efforts to the production of a design adapted to the requirements of an existing working Institution.

They observe with much regret that the well-considered and clearly-expressed conditions of the Institute have been almost entirely disregarded, and that in consequence of the uncalled for magnitude of the rooms, halls, staircases, and other approaches, together with the lavish and injudicious introduction of columnar and other extraneous decoration (in some instances actually unfitting the rooms for the purposes demanded), not more than one of the designs, possessing the slightest pretension to consideration as an architectural composition, could be properly executed for less than double the sum specified.

When the council reflect on the enormous amount of injury occasioned to the public and to the profession from competitors so frequently disregarding the conditions given with respect to the proposed expense of an intended structure, and consequently presenting designs of much higher pretension than could be produced with an honest and conscientious adherence thereto; and when they likewise reflect on the strong reprobation the Institute has had occasion more than once to express on this most irregular and improper practice, they feel that it would ill become the council to recommend to their fellow-members of the Institute to countenance such dereliction from honorable professional practice, even in a competition like the present one, where the public interests are not directly affected. The fact being so apparent entirely precludes the council from recommending to the members of the Institute the awarding of the Royal Medal to either of the designs presented this year.

They regret to be compelled, on grounds which they consider too important to be disregarded, to come to this decision, especially on the first occasion of a competition for so high a distinction as the Royal Medal, and the more so, since the design marked "Quanto rectius hic qui nil molitur inepte," possesses a high degree of merit, and displays much taste and artistic talent.

The Soane Medallion, for the year 1846, was offered for "The best design for an edifice, suitable to the congregational worship of the Church of England, and capable of accommodating one thousand persons, without galleries. The design to be Roman or Italian, expressive of its purpose both internally and externally, presenting as little obstruction to sight as possible. The chancel to be properly marked in plan and decoration, with reference to its Protestant uses. All the windows to be charged with stained glass. There must be a conspicuous belfry, but the body of the church is not to be surmounted by a dome. The drawings of the elevations and two sections to be to a scale of one-quarter of an inch to a foot,—the plans and perspective view to one-eighth of an inch to a foot, and tinted with Indian ink or sepia only."

It was further notified that the competition is not confined to members of the Institute, and that the council will not consider themselves called upon to adjudge a premium, unless the drawings be of sufficient merit to deserve that distinction."

Two designs have been received, No. 1, marked "Utile dulci." 2, bearing the device of a Scale and pair of Compasses.

With respect to these two designs, the council most reluctantly observe that they do not consider either of them as deserving of the reward offered.

Three Essays have been received "On the adaptation and modification of the orders of the Greeks by the Romans and Moderns."

No. 1, with two drawings—motto—"Hæ tibi erunt artes." 2. Device "⊕." 3. "Entablature."

The council are of opinion that the essay marked by the motto "Hæ tibi erunt artes," is distinguished by considerable research and knowledge of the subject; the style is clear and unaffected, and the reasoning good. The council consider that the treatment of the subject is somewhat too historical, and that not sufficient attention has been paid to the various social causes which operated in effecting the modifications of the orders. The council are of opinion that this essay stands first in the order of merit, and is well deserving of the medal of the Institute.

The essay marked "⊕" evinces considerable study and able treatment of the subject,—the council therefore recommend that a medal of merit be awarded to this production.

For the medal offered by the Institute for the best essay on drainage, viz.:—

"On the best system to be adopted with regard to the arrangements for the thorough drainage of a town house, and of a nobleman's mansion and offices in the country, respectively. Comprising the general arrangement for carrying off the waters and sewage, the sizes and most convenient forms for the drains or conduits, the requisite fall, the description of material to be employed, and the several precautions for the prevention of damp, smell, and passage of vermin;—to be accompanied by block plans and details,"—

One essay, accompanied by two plans, marked "Hygeia," has been received.

On a careful perusal of the essay, it appears that the author has not treated the subject in the terms of the programme; that he has neglected the main subject proposed, and altogether omitted those details to which his attention was directed by the published particulars. The writer has shewn much diligence, and some knowledge of the matter on which he has treated, but this also is in too general a manner, and upon points not properly within the scope proposed by the Institute.

Under these circumstances the council cannot recommend the medal to be awarded to this production.

February 22nd, 1847.

## INSTITUTE OF BRITISH ARCHITECTS.

### ADAPTATION OF THE ORDERS OF THE GREEKS BY THE ROMANS.

At an ordinary meeting, held on the 22nd inst., Mr. S. Angell, vice-president, in the chair, various donations of books and prints were acknowledged, and the Foreign Secretary read a letter from Signor Bolsato, of Venice, containing some remarks on the state of architecture there. The writer said that, surrounded as they were by the works of celebrated architects of past time, their chief efforts were directed to the maintenance and restoration of those monuments. The new constructions, instead of aspiring to rival the existing buildings, displayed a simplicity and nudity characteristic of the age; and he remarked, that such was the meanness of employers, that architects were sometimes *obliged to imitate the works of the middle ages:* generally, however, he was glad to say the works of pure Italian architecture were adopted as models.

This remark seems to us not uninstructive when properly reflected on.

The chairman having adverted to the completion of the catalogue of the books and works of art belonging to the Institute, a vote of thanks to the honorary secretaries, for the care they had bestowed on the preparation of it, was passed.

The foregoing report of the council on the designs submitted in competition for the medals offered by the Institute, was then read. The sealed letters which accompanied the successful essays, on the adaptation of the orders of the Greeks by the Romans, being opened, the author of the first was found to be Mr. J. W. Papworth, and of the second Mr. James Bell.

Dr. Bromet, in a letter to the honorary secretary, gave an account of certain vases inserted in the thickness of the walls, and the quadripartite groined vaulting, of the Choir of St. Martin's Church, at Angers, and supposed by the architects of that city to have been employed for increasing the sonorous property of the choir, in a similar manner as the "Echeia," described by Vitruvius, are said to have increased the sound of theatres.

These vases were described as of grey baked earth (still in sonorous condition) 12 inches deep, 10 inches in extreme diameter, and from 1 to 3 inches at top and bottom. Their mouths are flush with the face of the walls and vaulting, so that when seen from below they appear to be nothing more than small holes for ventilating purposes. There are three in each cell of the vaulting, and these are placed as if at the points of a triangle having its apex towards the intersection of the groining, while the vases in the side walls are in a horizontal line—all being at some feet from one another.

Mr. Donaldson remarked, that when he was abroad he had taken much pains to find remains of the vases described by Vitruvius, but did not succeed in doing so in any one case. Mr. Banks discovered them in one instance, but he was not aware that any one else had done so.

Mr. Russell, who was to have completed his paper on the acoustic arrangement of rooms, not being present, Mr. Papworth read the essay to which the medal of the Institute had been awarded.

Mr. Papworth commenced his paper by arguing that Hellenic art when introduced by Cossutius at Rome was corrupted by the influence of a previous style, in the same manner as the architecture of Alberti was degraded through a Gothic feeling into the Elizabethan, the Renaissance, and the Tedesche variations. He then treated of the remains of the Etruscans in art, repudiating the testimony of their vases, and holding that they exercised little influence on the early style of the Romans, which he considered to be Alban or Latin: he used that term to denote the simplest order of classic architecture, gradually superseded in Rome by the Ionic and triglyphed Doric. In justification of a table which dictated the employment of Corinthian columns only for a height of 50 feet, and gave average heights to each order, ending with only 11 feet allowed to the Latin Tuscan, the author appealed to several tables of calculations, which showed that, according to his formula, passages of equal widths between pairs of columns of each order of one diameter, demanded lengths of architraves not exceeding the powers of simplest mechanical construction, and greatest when capping highest columns; whereas the usual acceptation of the directions of Vitruvius absurdly tended to shew, that greatest lengths of architraves would seem most consistent with lowest columns, although the ancients always expected narrowness of intercolumniation and slimness of pillar to accompany each other.

The most important modifications made by the Romans, while retaining the scientific conventionalities of the Greeks, were in the proportions of their plans, and in the arrangement of their columns, in the proportions of their entablatures, and in the contour of the moldings, in the use of square columns often allowed to be predominant, and in debasing the circular pillar to a mere pilaster, and in the practice of supercolumniation: and they adopted the Eustyle intercolumniation, and the pseudodipteral and hypæthral arrangements.

Reference was made to a drawing exhibiting a moiety of the same building in each style, entering into a comparison of the different results accompanying various coincidences; and stress was laid upon the sentiment of a rectangular and statuesque simplicity visible in nearly all Greek edifices, in opposition to that of curved and picturesque grouping in the enlarged sphere of action of the Roman imperial artists.

The author defended the revivalists for establishing a standard for each order, on the ground that they were justified in suspecting all the antiques (of which they really saw very little) to be barbarous, and in trying to bring them to a correspondence with Vitruvius; each publishing his own idea of perfection, in which the great masters were wonderfully agreed; and he exposed the fault of making their illustrations formulæ, to be applied without change on any occasion, at any height, in any situation, for any purpose. He examined the practice of

he great masters and the pupils in the several nodern schools, and mentioned, in a list of heir additions to the store of the architect, he use of the niche, of pedestals, of balusrades, of sculpture (of all sorts), as mere deoration; of the aræostyle disposition of the asement and attic stories as features, of spires, nd steeples, and bell towers, and of an extraordinary luxury of internal and external architecture.

The paper closed with the observation that, vith Chambers, Mylne, Dance, Holland, and Soane expired the race of architects in one tyle only, but in a style of which they were nasters; their successors being condemned to xposure to the caprice of patronage for a comnand, to summon up the resources of any tyle to clothe even an impracticable idea; and hat the current of taste was undeniably tendng toward an art altogether different from that of Greece in its construction, or else to that of Palladio and Chambers.

## CHEMISTRY AS APPLIED TO CONSTRUCTION.*

BY PROFESSOR GRIFFITHS.

From the dawn of experimental chemistry o the year 1808, lime was regarded as a simple or elementary earth. Sir Humphry Davy hen suspected that it might contain a *metal*, or be a *metallic oxide*, and the manner in which he proceeded to verify this suspicion by the est of experiment presents an admirable speimen of his philosophical skill. It was as follows:—

The metal *mercury*, is *fluid* at all ordinary anges of atmospheric temperature, and in such state it is capable of exerting affinity for several metals that are *solid*,—silver, tin, and ead, for example,—in forming *compounds* vith these, it loses its fluidity. The results are extremely soft, unctuous solids, technically called *amalgams*. Mercury can be boiled or listilled by heat, with nearly the same facility as water can be so treated; and when the metal is *pure*, like pure water, it leaves no residue in the vessels employed during the experiments; but the metals silver, tin, and lead cannot be boiled or distilled at the same heat as mercury, or in other words, whilst it is *volatile*, they remain *fixed*.

Accordingly, if an amalgam of mercury with silver be placed in a distillatory apparatus, a moderate heat will *volatilize* the mercury, whilst the silver will remain *fixed*, and thus an analysis, or a separation of the compound into its two elementary constituents, will be effected.

A *metallic oxide* will not form an amalgam with mercury; but the powerful agency of *electricity* is capable of *reducing* an oxide, or of eliciting its elementary *metal*, which then, in the generality of cases, *can* combine, or form an amalgam with mercury.

All these facts had been ascertained previous to the year 1808, and, therefore, Sir Humphry, in the true spirit of "inductive philosophy," proceeded from the *known* to the *unknown*, with the view of effecting the decomposition of lime.

He selected a piece of pure *lime*, and made in its centre a small cavity to hold a globule of pure *mercury*; he then placed the lime in connection with the positive pole of a voltaic battery, and the mercury in connection with the negative pole, to complete the electrical circuit. In this arrangement the mercury gradually lost its fluidity, as though it were amalgamated with a known metal, but no such element being present, the phenomenon of amalgamation could only result from the elimination of an *unknown* metal from the lime.

The new amalgam was then carefully removed into a small distillatory apparatus, constructed of a glass tube, filled with the vapour of pure *naphtha*, a substance containing no oxygen, and which experiments, with potassium and sodium,—the metals of the alkalies potassa and soda,—had taught Sir Humphry would protect or varnish such readily oxidizable elements from the action of the atmosphere, and some other sources of oxygen.

Upon the application of heat to the part of the apparatus containing the amalgam, the mercury volatilized or distilled, whilst a fixed substance, having a silvery lustre, remained;

* See p. 69, *ante*.

in fact, it was a *true metal*, evidently *educed* from the *lime*; for when heated in the air, it instantly kindled, and the *result* of the combustion was pure *lime*, *produced* by the union of such metal with the oxygen of the surrounding air.

The new metal was accordingly named *calcium*, in allusion to its source (*calx*), and *lime* was named *oxide of calcium*, as, during the formation of the amalgam, oxygen had evidently been expelled from the lime by the agency of the voltaic battery; and the newly-educed substance, when heated in contact with *oxygen*, produced *lime*, chemically the same as that in which for ages it had remained concealed.

It is probably correct to state that no experimenters excepting Sir Humphry Davy and his assistants, at the Royal Institution of Great Britain, ever saw *calcium*, and this on account of the great difficulty and expense attendant upon the process for its eduction, but all chemists agree in regarding *lime* as its *oxide*, because the above direct evidence of the existence of calcium was followed up and corroborated by indirect evidence of the most satisfactory nature: this fortunately admits of explanation in a very few words.

All pure metals have an affinity for the non-metallic element *chlorine*; the resulting compounds are termed *chlorides*, and it is found upon presenting the *generality of metallic oxides* of known composition to *chlorine* that they are decomposed, *oxygen* is expelled from them, and *chlorides* of their respective *metals* are *indirectly* produced, exactly similar in their chemical properties to those which are *directly* produced, by the presentation of the pure metals to pure chlorine.

*Lime*, or *oxide of calcium*, acts, with *chlorine*, in conformity with this general law, *oxygen* being expelled in true and definite weight, whilst the *chlorine* combines in its stead with the *metal*, producing *chloride of calcium*.

It would be pedantic, and also inconvenient not only for the chemist, but for the architect, the builder, and every practical man, to speak in strict accordance with chemical nomenclature, and say *oxide of calcium*; accordingly those who work in the laboratory, and those who design and construct its walls invariably call the extraordinary compound by its universally known name of *lime*. For the sake of euphony in chemical language, the term *calcia* might be adopted, the terminal letter *a*, as in the case of potass*a*, sod*a*, alumin*a*, silic*a*, bary*ta*, strontia, magnesia, and lithia, implying the fact of oxidation: but leaving opinions regarding names, and proceeding to experiments upon things, it is an established truth, that twenty parts by weight of *calcium* and eight parts by weight of *oxygen*, are found in twenty-eight parts by weight of *lime*, and it is a substance of inestimable value to the chemist, architect, engineer, operative, and artist.

*Lime*, *quicklime*, or *live lime*, is seldom if ever presented by nature, excepting in volcanic districts, and there only in very small quantity, apparently resulting from the action of volcanic heat upon limestone, or other calcareous compounds, or probably from the combustion of the metal calcium in subterranean recesses.

There are many kinds of limestone, and by submitting these to a strong artificial heat, as in the common process of "lime burning,"—the theory of which will be examined in the sequel—abundance of lime, sufficiently pure for all practical purposes, may be obtained: therefore an examination of its leading chemical characters may now be entered upon.

For all practical purposes, the weight of a cubic foot of pure water at the temperature of 62 degrees may be taken at 1,000 ounces avoirdupois. This is the standard to which the weight of a similar bulk of any other liquid or solid substance can be referred; and in the case of *lime*, a cubic foot of it will generally weigh 2,300 ounces, so that it is nearly twice as heavy as water or the fact may be expressed thus, the inherent particular weight or *specific gravity* of *water* being = 1,000, that of *lime* is = 2,300.

There is no mystery whatever regarding the subject of *specific gravity*; on the contrary, it simply consists in ascertaining the weights of equal bulks of different liquid and solid substances, in reference to water as a standard of *unity*. This is extremely important in most branches of practical science, and in many instances, when accurate tables of specific gravities are once constructed, the deviation of a substance from the exact specific gravity that it should possess, immediately points out to the experimenter, that it is not absolutely or chemically pure.

Lime is excessively infusible, it shews no tendency to pass from the solid to the fluid state in the most intense heat of a furnace fire; if it be subjected to the far superior heat of the voltaic flame, it then slowly and imperfectly melts, so that for all practical purposes, lime may be regarded as infusible when heated *per se*. If lime be mixed with other substances that are popularly called *earths*, then upon exposure to the heat of a furnace, it facilitates their fusion in a very remarkable manner, it combines with them forming vitrifiable compounds, hence the extreme utility of lime as a cheap and powerful *flux* in many operations of practical chemistry, but particularly in the operation which relates to the reduction of iron from the clay iron-stone.

This ore contains clay, and other earthy matters, in combination with carbonate of oxide of iron; it is therefore first of all heated to redness, or "roasted," to expel the carbonic acid, and leave an oxide of iron; this is mingled in due proportions with coke and limestone, and then subjected to the intense heat of a "blast furnace." The carbon of the coke exerts affinity for the oxygen of the oxide, and the iron is liberated or educed; but this iron would immediately burn, or return into the state of oxide, by combining with a portion of the oxygen of the blast of air, so that the operation would be futile, did not the lime of the limestone at the same time combine with the clay and other earthy matters, to form an extremely fusible glass, which envelopes and protects the globules of newly reduced iron from the oxygen of the blast, and permits them to sink down and accumulate in the lower part or hearth of the furnace, from whence at due intervals the molten iron is run off into moulds.

The scoria, or "slag," produced by the lime when withdrawn from the furnace and cooled, is of very little value, excepting for the construction of rude fences, and for repairing roads; but as it has an exceedingly sharp vitreous fracture, it is scarcely admissible for the latter purpose.

When a fragment of lime is held in the pale flame of a spirit lamp, or, better still, in the pale flame resulting from the rapid combustion of oxygen and hydrogen gases; as the lime becomes highly heated, an intense white light is evolved; but the lime undergoes no chemical change in this experiment, it merely volatilizes or *sublimes* to a slight extent, and its vapour, when condensed upon a cold surface, forms a white solid *sublimate*, which is identical in composition with the fragment of lime from whence it ascended. The experiment presents an example of the phenomenon called *ignition*, which, chemically defined, implies the evolution of light from a solid substance when its temperature is raised, and its chemical nature unchanged.

The light evolved by the *ignition* of lime rivals that of the sun in its intensity and purity; it admits of refraction by a glass prism into the seven primary, or prismatic colours of solar light, and in the "lime light," as it is now popularly called, there is no excess of the yellow ray, consequently, it is admirably adapted for artificial illumination, whilst the artificial light, derived from the more ordinary sources of oil, wax, tallow, spermaceti, and gas, contains a considerable excess of the yellow ray. Thus an apartment exquisitely finished in the beautiful colours of decorative art displays them all during the day time as they were intended to be displayed by the artist, but upon artificially illuminating the apartment, an effect that he never contemplated is very frequently produced by the yellow ray changing, or modifying, all the colours, and especially some of the blue colours to various shades of green.

Water is a compound of oxygen and hydrogen gases, and in a small quantity it admits of ready decomposition by voltaic electricity, so that both these gases may be collected and burned to reproduce water. Now, if it were possible to decompose a large quantity of water at a cheaper rate than by electricity, the *combustion* of its gaseous elements, conjoined with the *ignition* of lime, would probably supersede most methods of artificial illumination; for

the "lime light" is so pure and intense, that all common flames placed in its rays are thrown as dark *shadows* upon surrounding objects.

If a given weight of lime be placed in a glazed earthen plate, and set under shelter from rain, yet freely exposed to the air for a few days, and then replaced in the balance, it will manifest a considerable increase of weight; and if it be afterwards transferred into a clean dry Florence flask, and then its bulb gently heated over the flame of a lamp, an appearance like dew will be observed in the upper part, or neck, of the flask: the theory of this experiment is readily explained.

Even in the driest weather the air contains the vapour of water, and for it, lime has a strong chemical attraction, consequently, increases in weight by exposure; then upon subsequently heating the lime the water vaporizes and condenses into the liquid form within the upper, and colder part, of the flask.

If the lime be exposed to the air for many days it will increase in weight from another cause,—this will demand future attention,—but the above simple experimental fact of the absorption of water, points out to the architect and builder the necessity of placing lime in perfectly closed vessels, if it be required to remain as "*quick*-lime."

If the bulb of a mercurial thermometer having a long range of scale or graduated to 620 degrees be thrust into a heap of quicklime, it will indicate a certain temperature which for the sake of example may be 60 degrees; if the instrument be removed, its bulb carefully wiped and then plunged into a bucket full of water, it will indicate the same temperature. Let the water be suddenly thrown upon the lime, which will rapidly imbibe it by capillary attraction, and then in the course of a few seconds the individual lumps of lime will swell, crack, and crumble asunder, whilst a copious volume of vapour arises from the *slaking heap*, and now upon thrusting in the bulb of the thermometer, it will probably indicate a temperature not far below 500 degrees. The operation of "slaking lime" is so very common, that it rarely excites attention, but its close examination by the chemist reveals an extremely curious and important fact.

Why should two substances of the same moderate temperature, or familiarly speaking, *cold* become *hot* when mixed together?

Many practical men, if they happen to condescend an answer to such an apparently simple or trivial question, will say, "because the lime has been well burnt, and has plenty of fire in it." But this will not satisfy a chemist, and it is only after a variety of accurate experiments that he can give a true explanation of the phenomenon, for it is a phenomenon, although the term may be deemed too grandiloquent when applied to such an everyday occurrence. Divested as far as possible of technicalities, the explanation runs thus:—Water in its ordinary liquid state contains a certain amount of heat, which being inappreciable by the thermometer, is called *latent heat*, and when water changes from the liquid to the *solid* state, as, for example, in freezing, this *latent heat* being no longer required to maintain the new physical state of *ice*, is therefore expelled, or becomes *sensible heat*.

When water is suddenly thrown upon lime, its immediate disappearance within the lumps of lime is due to an attraction purely mechanical, or the capillary attraction of their pores, The two substances being thus brought into close contact, then chemical attraction or affinity commences between them, and during their combination the lime actually *solidifies* the water, whose *latent heat* of original liquidity being no longer required, escapes as *sensible heat*, which even raises a certain portion of the water in the form of vapour, or steam.

The lime thus *slaked* or *hydrated* is materially increased in bulk and weight, but feels perfectly *dry*, for the water is only *solidified* by being deprived of heat, it is *not decomposed*, and if a portion of this slaked lime be heated in a flask as already directed, the chemical affinity between the two substances will be overcome, the solid water will gain heat to assume the *liquid* state, this will gain more heat to assume the *vaporous* state and ascend to the upper part of the flask, which being cold, will deprive the vapour of part of its heat or condense it into the state of liquid water containing a definite amount of *latent heat*, and if this liquid water be again solidified the *latent heat* will be expelled as *sensible heat*.

All practical men are aware that it is rather dangerous to slake large quantities of lime near wooden sheds, stacks of timber, or heaps of shavings, for the evolved heat may become sufficiently intense to cause the inflammation of these combustible materials, and if the lime be extremely "quick" it is occasionally dangerous to stand near the slaking heap, for the rising steam carries up an acrid dust of lime which is extremely irritating to the lungs, whilst very frequently particles of lime are violently projected from the expansive force of the steam within the heap: such particles striking the eye might deprive it of sight, not only by mechanical force, but by chemical action on the cornea, for lime exerts a caustic or corroding power upon most organic bodies.

The heat evolved during the slaking of lime in closed iron cylinders, has been proposed and even introduced for warming apartments and cooking food, but very little can be said in praise of such *calcareous* warmth and *al fresco* cookery.

The addition of more water to lime than is absolutely essential to the formation of its definite *hydrate*, produces a semi-fluid, practically known as *cream* or *milk of lime*. This chiefly consists of lime in a state of mechanical suspension throughout the water, and upon leaving such mixture at rest for a short time, the lime will precipitate to the bottom of the vessel in which the experiment is conducted, whilst a perfectly transparent, colourless liquid, will occupy the upper part. This liquid is not pure water, but an aqueous solution of lime, commonly called *lime-water*, and although containing only a very small quantity of lime, it exerts a powerful alkaline action upon the generality of organic matters, and there is a very curious chemical fact, presented during the formation of "lime-water," namely, that the *colder* the water the *more* lime will it actually dissolve: thus water at 33 degrees, or near the freezing point, will dissolve exactly twice as much lime as water will do at 212 degrees, or its ordinary boiling point.

Lime-water for experimental purposes is always formed and kept in green-glass bottles accurately stoppered, and it will remain transparent and colourless as water. Let a portion of it, say a quarter of a pint, be decanted into a perfectly clean and dry Florence flask, the neck of which must then be closed by a perfectly clean cork, having a slit or groove cut from its upper to its lower part, large enough for a small crow-quill to pass through; fold a strip of woollen cloth four or five times around the neck of the flask, to form a non-conducting handle, by which it may be held over the flame of a spirit or argand lamp; or suspend it in such position by a wire, without the cloth if more convenient; allow the bulb of the flask to warm gradually, the lime-water will soon boil, steam will rapidly escape through the groove in the cork, and the originally transparent colourless lime-water will become milk-white from the deposition of lime, thus illustrating the fact of that substance being less soluble in hot than in cold water.

Reference will be made, in the course of a few more paragraphs, to lime-water, and a change that it undergoes without the application of heat; therefore the uses of "cream of lime," which consists of mechanically suspended and chemically dissolved lime, may be now detailed. When "cream of lime" is kept of an uniform degree of semi-fluidity by constant stirring or "rousing," it is an invaluable "wash" for old walls, as, on account of its causticity, it effectually dissolves, or destroys, all organic filth that may be adherent to them; at the same time a peculiar odour, somewhat resembling that of impure "hartshorn," is very frequently exhaled from the walls thus "lime whited." Old walls, especially of stabling, contain a large proportion of ammoniacal compounds. *Ammonia* consists of nitrogen and hydrogen gases; organic matters, especially those of the animal kingdom, contain the same gases, generally in addition to oxygen gas, and the element carbon.

When organic matters, so constituted, run into putrefaction, a portion of the nitrogen and hydrogen assume new affinity, and produce *ammonia*, at the same time a portion of the oxygen and carbon produce *carbonic acid;* these newly formed compounds then unite to produce *carbonate of ammonia*, or "volatile salt," which the walls receive; and when they are lime-whited, the lime, by its superior affinity for the carbonic acid, unites with it to produce *carbonate of lime*, whilst the ammonia is expelled as a pungent vapour, having the odour of "hartshorn," because it is actually existent in that well-known stimulant. For the cream of lime to be active in destroying organic filth, and decomposing ammoniacal compounds, it must be formed of *quick-lime*, and applied to the walls immediately. One simple test of its fitness is to place a slice of the yellow turmeric root in a portion of it: the yellow should become reddish brown, Another, and a better test, is to pour a wine-glass full of the "cream of lime" into an ale glass containing half a fluid ounce of "spirit of salt" (hydrochloric acid), diluted with an equal quantity of water; and if no effervescence, like that produced by "soda-water powders," appear, the cream of lime may be deemed fit for use. Generally speaking, workmen are extremely reluctant in applying "lime white" to walls, because it corrodes their brushes (this is a test of its goodness); and for it they will gladly substitute "white-wash." This dries beautifully white, certainly; but old walls, so treated, must be regarded as mere "whited walls, or whited sepulchres," their filth being merely bidden, and not destroyed, by the purity of their coating; because "white-wash" is made of *carbonate of lime*, or *whiting*,—a neutral compound, having no causticity.

In addition to oxygen and nitrogen gases, carbonic acid is invariably present throughout the atmosphere. Now lime, either hydrated, diffused, or dissolved in water, has a strong attraction for carbonic acid, and will soon change into carbonate of lime; this is the cause of the increase of weight, as already noticed, that lime acquires after a protracted exposure to the atmosphere, the first action being its conversion into hydrate, by the absorption of watery vapour, the second action being the combination of the lime of such hydrate, with carbonic acid, to form *carbonate of lime*.

This is also the reason that quick lime, cream of lime, and lime water, all require to be kept out of the contact of air, or they will soon become carbonated, and then instead of remaining or quietly dissolving in dilute hydrochloric acid, they will effervesce, like "soda-water" from the expulsion of the *carbonic acid*. The thin white pellicle or film that forms upon the surface of lime water or cream of lime, when exposed to the air, announces the transition of the caustic lime into the inert carbonate.

## CURRENT COMPETITIONS.

We have received information from parties in whom we have confidence, that the invitation to compete for the fever hospital at Bedford is a mere cloak, a London architect having sent in plans and estimates for it, which have been approved by *most* of the committee.

We shall be glad to find that our informants are in error: the result will shew. If, unhappily, the statement be correct, the committee shall hear from us.

Relative to the Army and Navy Club-house competition, several correspondents have directed our attention to a plan which has been circulated of the site of the intended new edifice, on which is marked certain dimensions of "limited" and "unlimited heights," having reference to "rights of light." One says:—"The law on the subject we all know is quite undefined, but in reference to the particular building in question, it may so happen, that from local knowledge, or other means, certain parties may be more in the secret of these rights than the majority of their architectural brethren; allow me therefore to suggest through the medium of your paper, that in the present case, and in others of a like nature, the Institute of Architects should appoint some surveyor to prepare a proper plan, with all particulars in reference to the site of such intended new building, and have the same lithographed for distribution among its members. The successful architect to reimburse the Institute for the cost of the plan."

We should be sorry to see the Institute engaged on any such profitless work. As to the lights, competitors must use their own judgment; the committee, by drawing attention to them, have done perhaps as much as could be expected from them. In connection with

this competition, we have been officially requested to contradict a report that the committee have already fixed upon an architect to be employed. Some members of the committee manifest a great desire that this competition should be conducted and decided in the fairest and most satisfactory manner. Let us urge upon them two important points:—First, that they exhibit the designs for a certain time *before* coming to a decision, and, secondly, that one or more professional men of ability and integrity be called in to assist them in the examination and selection.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Excavations for Antiquities figuring on the French Budget.*—The Home Minister at Paris has issued a decision to the effect, that excavations, made for the sake of searching after ancient ruins, are to be henceforth classed amongst the works of *communal utility*, and be, therefore, defrayed (assisted) from the fund of four millions of francs, which the minister is charged to distribute amongst the parishes (*communes*), which will have provided workshops, or other establishments, for the occupation of poor people. In consequence thereof, some excavations have been recently made at Limny, near Serrière (*Loire*), when, at a depth of only 60 centimètres, a splendid public road, and three deep artificial wells were found; the waters of which, however, had dried up, and been diverted by the lapse of twenty centuries. Other proprietors, also, intend to dig at a place where a large *souterain* bids fair for further discoveries. On the making of a new road, two bronze statuettes have been found, which were bought by a Lyons antiquary for 1,800 francs. Numerous silver coins, also, here found, promise a new mine of antiquarian treasure.

*Oil Lighting of Paris.*—It would seem incredible, but is still so, that only from the 1st of March next, all the public thoroughfares of Paris will be lighted with gas. In the Quartier St. Joseph, for example, oil is still the lighting medium.

*The Gothic Church of Ste. Clotilde, at Paris.—Contest between two Systems of Architecture.*—Although the love for the structures of the *latter* part of the middle ages is decidedly on the wane in France—those giants of the twelfth, thirteenth, and fourteenth centuries are, deservedly, retaining a large portion of art-favour; a fact best proved by the erection of the above cathedral, decreed by the municipality of Paris, to whom, certainly (with Mr. Arago at their head) retrograde principles cannot be reproached. At this the *Academy* seems to have taken a little umbrage, as will appear from the following utterance, made through the medium of their *Secrétaire perpetuel*, Mr. Raoul Rochette:—"If Gothic architecture—*conjointly* with painting and sculpture, as necessary assistants, under those previous circumstances which have created this *style*—has found its death (?); shall we attempt, in our days, to resuscitate what has ceased to exist for the last four centuries? But, we ask, where are the elements of such unheard-of, in the annals of art resuscitation? Where is, amidst the conditions and circumstances of our present social life, any ground or necessity for so doing? Where is that mighty arm, which may pull back a whole nation to the state of four hundred years previous existence? The Academy cannot believe in those miracles of human will, which would have to triumph over the whole nature of things—and necessarily encroach upon all the æsthetic wants, usages, and impulses of society. She may well admit that a Gothic church or castle may be built for whim or *ennui's* sake, although an *administrative* predilection of the kind would be always a hazardous experiment; firmly convinced, moreover, that a reversion to antiquated types would remain effectless as it is groundless. The Academy think that the *new Gothic*, which has to be as much as possible adapted to the taste of the day—will never exercise the effect of the ancient and real Gothic, sprung from other circumstances, art-wants, and art-tendencies; and that the people, however affectionate to the former, would remain always cold and feelingless, at the sight of these plagiates and counterfeits of something quite antiquated and exploded."

*Monument to the Viceroy of Hungary.*—The members of Parliament for the county of Pesth have met, and unanimously voted the erection of a monument to H. R. H. the late Prince Joseph—the founder of the Hungarian Museum, the Academy of Sciences, &c. Mr. Kossuth, the leader of opposition, was the mover, and alluded to the difficult task the late Viceroy had to effect any desired improvement.

*Work on the Wallhalla.*—The large printing firm of Messrs. Cotta, at Munich, have undertaken a work, shortly to be published, which will comprise exact copies of those marble busts and statues of great Germans, contained in the above building, on the banks of the Danube. The images of those great men (some of them of colossal size) may be considered the most authentic, as in cases, where no coeval pictures were at hand, even the seals appended to charters, &c., were called into aid. Where even these were wanting, a tablet was, of course, the only thing available to preserve a great memory. It is known that the Wallhalla was one of the objects which occupied even the youthful years of King Louis of Bavaria, on which account he corresponded with Mr. Johannes Müller and others. It is to be regretted, that the illustrations are to be merely on wood, distributed within the pages of the text.

*The Winckelmann Monument—Programme.*—The great merits of this original and striking art-critic are being every day more appreciated in Germany, as well as in France—and a committee has been formed at Berlin, to erect a statue at his native place Stendal. It comprises the names of Tölken, Olfers (director-general of the Royal Museums), Professor Rauch and Professor Wichman, whose model of the statue attracted much attention at the late art-exhibition at Berlin, and who has made a present of it to the committee, and H. M. the King, has ordered that the metal for the founding should be supplied from the stores of state. The programme says— that "the committee appeal to the public (*Welt*) *instructed* by Winckelmann's *reforms* in the whole province of art-science, and by his then untried and unequalled introduction of *spirit* and mind in the viewing and appreciating of all the relics of classic antiquity."

*Murillo's paralytic at the Piscina.*—Field Marshall Soult has sold this splendid specimen of art, being one of the great collection he *made* in Spain, for the sum of 160,000 fr., it is said to some English collector. The French duly blame the general for this questionable deed, reminding him, that he did surely not give so *much* for it, and that it would have been better to leave a picture acquired by dint of national prowess to the National Gallery of his country.

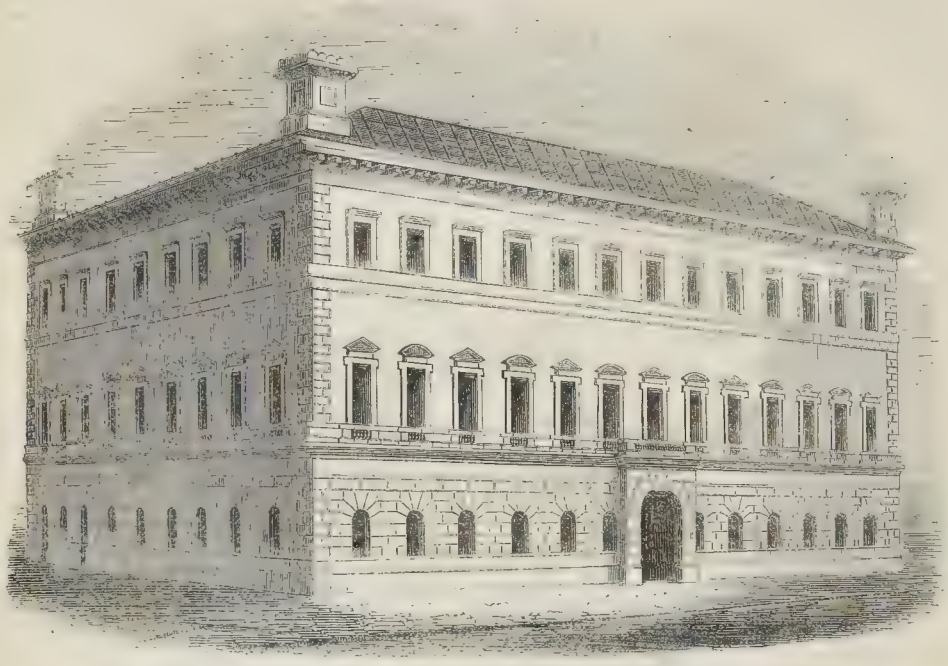
## NOTES IN THE PROVINCES.

Plans and specifications have been ordered to be prepared for the erection of a new barrack adjoining Haslar Hospital, at Gosport, for occupation by the Portsmouth Division of the Royal Marines.——The new public bridge to cross the river Thames at Ashton-under-Lyne has been let,—the stone-work to Mr. Lawton, and the iron-work to Messrs. Gimson, Yates, and Ainsworth, of Staley. The bridge will be 50 feet span, and 30 feet wide, and will have two ornamental lamps.——The new church erected at Cradley heath, near Dudley, was to be consecrated on the 22nd instant.——For a new church at Lytham, Mr. Talbot Clifton has given the site, with 500*l.* towards the erection.——Another experiment to prove the possibility of extinguishing fires by means of jets of water from street mains without the aid of fire-engines has been tried at Liverpool by the Harrington Water-works Company, in presence of the Government Commissioners of Inquiry relative to the supply of water to the town. The result is said to have been highly satisfactory. "The spot selected," says the *Mail*, "was by no means the most favourable—being at the top of Lord-street, and close to the east end of St. George's Church, a site of considerably more elevation than many of the mercantile portions of the town. Short lengths of hose, with pipes of 7-8ths of an inch in the nozzle, were attached to a stand pipe from the main, and from one up to four of these branches were played for upwards of an hour, the addition of one, two, or three, to the first, appearing to make little or no difference in the respective power of any of them. The quantity of water which they projected was very great and continuous. It completely lashed the east end of the church, and not only went clear over the blockings above the cornice, and on to the roof in heavy volume, but at times ascended to the top of the flag-staff, a height, we should think, little, if at all, short of eighty feet. A great number of persons were gratified by witnessing the experiment, albeit many of them were pretty well drenched by the respective jets being dashed into heavy showers by the force of a strongish northerly wind, which was rather against the experiment. One of the pipes also played clear over a lofty house on the south side of Lord-street. The plan, which combines hydraulic pressure with engine power, is decidedly much more effective than hand-worked engines, and if adopted will afford great and rapid protection to property in cases of fire—especially the lower parts of the town, and that, too, with a large saving of expense."——The Canbley National Schools, says the *Doncaster Gazette*, are nearly completed. The whole erections are in the Tudor style of architecture, and in the shape of the letter T. The exterior is built of Everton brick and white stock brick from Newport. The windows have stone mullions with diamond panes, while portions of the exterior walls are ornamented with black headers; and the roof is covered with blue slate. The schools are capable of accommodating nearly 200 scholars. The length within the walls is 90 feet 9 inches, and the width 20 feet, with a partition between the boys' school and that of the girls. These are approached by separate porches, containing closets for cloaks and coats. There are dwelling-houses on each side of the building for the master and the mistress, and built in a corresponding style with other portions of the edifice. The architect is Mr. S. S. Teulon, of London; and the builders Messrs. Lister and Son, of Doncaster.—— The foundation-stone of the new townhall of Doncaster was laid, in French-gate, on the day appointed, namely, Monday week.——The bridge across the Tees, at Stockton, is to be widened, both carriage road and footpath being too narrow. The fund to be raised for the purpose appears to amount to 1,400*l.*——The surveying officers have made their inquiries at Wakefield as to the proposed new market bill. The design is not so much to erect expensive buildings as to open up a central area in "one of the most disgraceful and filthy" parts of the town, full of pig-styes, slaughter-houses, chandlers' factories, &c., and notoriously unhealthy. The expense of substituting such a paved area with sheds, for the present merely four-pillared market cross, with drainage, is estimated at 16,000*l.* The surveyors, however, thought that sufficient provision was not made, or regard had, to sanative improvements in such a locality, which they had examined, and found to be exceedingly ill-drained and ventilated. It was therefore very properly suggested, that further attention should be given to this important subject. The Exchange Buildings in the middle of the town at present form the focus of the corn trade ——A number of turn-out sawyers, lately in the employment of Messrs. Birtwistle, joiners and builders at Bury, in Lancashire, last week waited upon that firm, and made the following proposal:—They would return to their work if Messrs. Birtwistle would discharge all the new hands, and pay 5*l.* to the sawyer's union for using a quantity of saw-mill timber.—The proposal was declined. A saw-mill has been purchased at Birkenhead, and as soon as the weather will permit, preparations will be commenced for the necessary buildings.——The town council of Newcastle have determined on erecting baths and washhouses for the poor of that town. See also "The Gas Movement."

Ventilation of Stables.—Horses are liable to consumption when kept in badly-ventilated stables; and we are informed by Mr. Edwin Chadwick that a discovery was only lately made as to the effect of effective ventilation on the cavalry horses in some of the Government barracks in England; and it is stated that a saving of several thousand pounds per annum was effected by an easy improvement of the ventilation of the barracks near the metropolis.

## THE BRITISH AMBASSADOR'S HOUSE, IN CONSTANTINOPLE.

MR. W. J. SMITH, ARCHITECT.



### THE BRITISH EMBASSY AT CONSTANTINOPLE.

THE palace for the British ambassador in Constantinople, of which the annexed engraving is a representation, was erected from the designs of Mr. W. J. Smith, architect to the embassy. It was not commenced, we understand, till 1845, and is now completed, so that its progress has been very rapid. Its style, as may be seen, is the domestic Italian, after the same model as the Reform Club-house, in Pall Mall. It is built of white stone, with a slated roof, and is wholly fitted up internally with fine mahogany and *papier mâché*. It stands in the Frank quarter, adjacent to the Russian palace.

Mr. Smith, as some of our readers may remember, made the sketches from which Mr. Burford painted his fine panorama of Constantinople.

The illustration, although, through circumstances not under our control, somewhat inferior to those usually given in our pages, is interesting, as affording evidence of the style in which England lodges her representatives in foreign climes.

### ON SOME ANOMALIES OBSERVABLE IN THE EARLIER STYLES OF ENGLISH ARCHITECTURE.

THE current number of "The Archæological Journal" * contains several interesting papers on architectural subjects. By the kindness of the committee and the publisher, we are enabled to transfer to our pages one on some anomalies observable in the earlier styles of English architecture, by the Rev. C. H. Hartshorne. The main object of the writer seems to be, to shew that what is called *long and short work*, taken by itself, furnishes no criterion of early date.

It has been usual, with those who have made inquiries into the style of our early ecclesiastical buildings, to assign all those exhibiting marks of long and short work to the period of the Anglo-Saxons. Yet it may be reasonably doubted whether construction of this nature, taken by itself, affords sufficient evidence to favour such conclusions: and unless this kind of masonry be found united with proofs of another character less ambiguous, there is great room for disbelieving such buildings to have been erected before the Norman conquest.

It is indeed not a little remarkable, that the church of Brixworth, a building whose claims to priority of age are better established than most others by historical inference, is entirely deficient in the marks so universally assumed to be decisive of the question.

This church, as it is well known, does not shew the least fragment of this peculiar kind of construction, yet there is perhaps more extrinsic evidence in favour of its age, than most other buildings that can be adduced. The history of its erection seems simply to have been this: that from its site having been fixed upon close to a great Roman thoroughfare, leading from the Watling-street, at Stoney Stratford, through Northampton to Leicester, as is sufficiently indicated by the direct trending of the line, and the etymologies of the places bordering upon it, such as Potterspurry, Alderton, Barrow Dykes, Lamport, Market Harboro', Stonyland, Stony Gate, &c.; and also being on the very edge of a Roman single walled entrenchment, there were already on the spot most of the materials which the Romans themselves had used for building purposes. Within this entrenchment, some kind of building had existed, and the bricks that were employed were found, when the church was in progress of erection, extremely useful to work up with the bad materials already dug. We are told by William of Malmesbury, that Benedict Bishop, on his return from Rome, introduced a new kind of architecture into this country,—what he calls building *more Romano*. Now, in whatever sense these two words are interpreted, I think they will still be applicable to the masonry of Brixworth Church; and this, coupled with the casual passage quoted in Leland's "Itinerary," will go very far to confirm its Anglo-Saxon pretensions; in fact, it is more evidence of an early practical kind than can be brought to bear upon any other building of a Christian character in England.

It is now some years since I became entirely convinced that Brixworth Church presented no proof whatever of being a Roman building. I have examined its foundations, its construction, and the nature of its cements, all of which are totally unlike the substructions, the masonry, and the mortar so invariably adopted by the Romans.

Whilst, however, its Roman claims are completely untenable, it certainly offers very strong marks in favour of an Anglo-Saxon origin. They are not only as convincing as any we may ever hope to obtain elsewhere, but they are moreover capable of being divided into two periods.

It has already been stated that Brixworth does not present any specimen of long and short work; this peculiarity is not visible in any portion of the building. It is desirable to state this distinctly, because, having presumptive historical evidence of being an Anglo-Saxon church, it is deficient in that feature which is accounted the leading characteristic of Anglo-Saxon architecture.

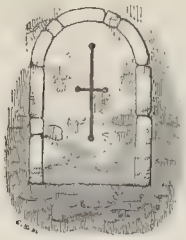
It is not my intention to disprove (for that would be a difficult matter), the title to great antiquity those churches may claim, where long and short coignings are used, but I wish to throw out a caution to inquirers, lest this appearance should lead them to assign all these buildings to the same age.

That they are for the most part early structures there can be no doubt, and this epithet may be even extended above the Norman conquest, if we are justified in applying the words *lapidei tabulatus*, as used by William of Malmesbury in his description of Benedict Bishop's churches, to those towers rising in stages from the perpent blocks of stone that run transversely on their four sides.

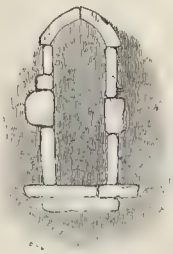
For instance, at Earl's Barton and Barnack,

* Published at the office of the Institute, 12, Haymarket. J. H. Parker, Oxford.

## ILLUSTRATIONS OF ANOMALIES IN EARLY ARCHITECTURE.



WINDOW, OXFORD CASTLE.



WINDOW, HEADBOURN WORTHY.



STANTON LACY CHURCH.



WINDOW, CAISTOR, NORTHAMPTONSHIRE.



DOOR, STANTON LACY.

this system occurs, at both of which places the towers rise in stages, diminishing as they rise, and forming separate divisions or stories, marked also by the horizontal bands of perpent stone, from which the superior portions of the building alternately spring.

This mode of construction was clearly borrowed from the Romans, who, as is sufficiently known, employed bonding courses of brick, running parallel with the ground, to strengthen their walls, so that the inferior materials used in the intervening space might become more effectually tied together.

The Romans, as may be observed in all their military buildings now remaining in England, used their bonding courses horizontally; the Anglo-Saxons used them perpendicularly. At Pevensey there are courses of tile laid flat, at fixed intervals; at Earl's Barton there are perpent stones placed upright, also at fixed intervals. The object of both was the same; namely, to supply the want of good building materials by such materials as would hold them best together; and the English masons, placing these large blocks of Shelly oolite or Barnack rag (for Earl's Barton is supplied with this Shelly oolite from that distance), had merely to fill in the rubble between them, much in the same manner as brickwork is used in timber-framed houses.

The talus table of Colchester castle is geologically of this formation, and, owing to the want of native materials, the architect used the Roman bricks he found in such abundance on the spot, both for coigns and bonds, in the same way as they were used in the castle church at Dover, and in nearly all the town churches of Colchester, and in several of the neighbourhood.

This being, as I conceive, the origin of long and short work, and its primary intention, I come next to consider two varieties that are observable, which shews that, taken by itself, it furnishes no criterion of early date.

Long and short work is, first, that used for coigning; secondly, that used for upright bonding, and appearing like strips on the face of the wall.

Of the former kind there are examples in the towers at Barnack, Earl's Barton, Brigstock, and Green's Norton, and in the nave and chancel at Wittering. Of the latter kind, they may be seen at Barnack, Earl's Barton, and Stowe Nine churches, all in Northamptonshire; also at Sompting, in Sussex, Headbourn Worthy, in Hampshire, and Stanton Lacy, in Shropshire. At each of these four last-mentioned places, the long and short differs from the previous examples at Barnack, Brigstock, Earl's Barton, and Wittering. The difference may be thus described. In the Northamptonshire churches the long and short work is an important member of the angle of the towers, whilst the short stone considerably projects beyond the line of the long one: in the other examples both long and short stones are in the same line.

Of the second kind of long and short, namely, that used for perpendicular bonds,

apparently only ornamental strips, but in reality very essential for the stability of the building, we have numerous examples besides those at Sompting, Headbourn Worthy, and Stanton Lacy. It is to some of these examples that attention shall now be directed.

In the first place, by stating my conviction that the buildings where they occur are not, in reality, churches of so early a period as the preceding ones, although presenting certain marks of resemblance common to each other; and in the next, their resemblance to work of a later, in fact, the early English period, may be readily shewn.

In illustration of this I have selected examples taken from the churches of Headbourn Worthy and Stanton Lacy (see engravings), which shall be contrasted with the masonry of these Northamptonshire churches, as well as with the upper portion of Oxford castle. It will be at once seen that these, although in some measure analogous to parts of Barnack and Earl's Barton, do yet materially differ from them in appearance, whilst they are also the creation of a later time.

For instance, though in Headbourn Worthy we find the perpendicular long and short bonds as at Earl's Barton, they are in conjunction with work belonging to the time of Henry III., or Edward I., that is, long and short work in union with equilateral arches; or as in the uppermost stages of the castle at Oxford, long and short work united with late Norman, or as at Stanton Lacy with earlier Norman.

It might naturally have been supposed that a reference to the Doomsday Survey would have tended to settle a question of so much obscurity as the age of several of these rude and unquestionably early churches. But little that is conclusive is supplied from this source. The precept issued for the direction of the surveyors laid no injunction upon them to make a return of churches, and therefore their notice is extremely irregular, and for this reason no direct conclusion can be drawn, nor can the question be settled by reference to this document. * * *

Two sources of information bearing upon the history of ecclesiastical architecture seem hitherto to have met with little, if indeed any, attention. The abbatial chartularies of Great Britain probably contain a vast amount of matter bearing on this subject that deserves both carefully sifting, and comparing with the buildings to which it relates. This manuscript knowledge might very profitably be brought to bear on churches that are known to have been connected with those great establishments. To the importance of viewing ecclesiastic architecture by the aid of manorial history, as exhibited in the Inquisitiones post mortem, a more decided testimony may be borne. These illustrations may be very briefly, but conclusively, explained by the following examples, where such a method has been pursued. Passing over the noble specimens of regal architecture of a military description at Harlech, Conway, Beaumaris, and Caernarvon, where the identity of styles, age, molds, and architecture must be undisputed, we cannot help being struck with the extraordinary resemblance in certain points of detail existing betwixt the churches of Crick in Northamptonshire, and those of Bilton and Astley in Warwickshire, all built or re-edified by Sir Thomas Astley. The same method of comparison will also be found deserving attention when applied to the churches built or enlarged by Sir Ralph Crumbwell, the lord treasurer to Henry VI., at Colly Weston in Northamptonshire, Lambley in Nottinghamshire, and Tattershall, in the county of Lincoln: and equally so the works of Bishop Burnell at Acton Burnell in Shropshire, and the chancel of the great collegiate church of Wolverhampton in Staffordshire, one of the twenty-eight manors belonging to this talented and wise prelate. The buildings in Sussex marked by the Pelham badge and buckle are well known. The students of William of Wykham's works will probably find no difficulty in detecting at St. George's Chapel, Windsor, at Adderbury and Hanwell, in Oxfordshire, and probably at Wolverhampton, the same kind of analogy. This may, when pursued out fully, also tend to explain further the family likeness that exists between village churches throughout particular parts of a county. It is well known that the Cistercian and Cluniac orders had their own peculiar ritual and monastic arrangements, and is it therefore too unreasonable a supposition, that the friends of those and other orders likewise, should have endeavoured to copy on a smaller scale the ornaments, the decorations, and the mouldings they admiringly observed at the great church of the district? At the present day, the handling of a chisel indicates to his fellow labourers the workman who was employed: the style of a building often shews, by unmistakeable marks in its proportion, its design, or general character, who is the architect; and it is not hoping too much when I express the conviction that we may still obtain, by means of the present practical knowledge so generally diffused on these subjects, if united to a research of the foregoing nature, a clearer insight into, a better classification, and a positive assignment of certain structures to the piety of tenants in capite whose mouldering effigies still lie within the walls themselves, or else to other individuals whose memory may only be preserved by the national archives.

These examples will not unappropriately serve to shew how desirable it is to refrain from drawing crude and hasty generalisations, from attempting to affix precise dates to structures simply because there are found co-existing in them some features in common with similar ones elsewhere. For this reason, then, caution should be observed in coming to conclusions from anomalous or isolated portions of a building, seeing that as yet we have much inquiry to make from careful measurement, as well as from records, knowing that churches were progressive in their erection, built by degrees, as the money could be obtained for the purpose, or as the masons could proceed with their undertaking, frequently commenced by one person and finished by his successor, or built by one, and improved and decorated by another. An instance in proof of this occurs in the church of Stratford in Suffolk; the lower part of the north aisle shewing in the flint-work the name of the builder and the date of 1430, whilst the porch where the inscription terminates is marked 1432. This will at once explain why incongruities so frequently exist, why we see such perpetual modifications and adaptations, and it will supply the reasons for those transitional appearances that exist at Romsey, at St. Alban's, and at many other of our most important edifices. Nor is it undeserving consideration, when chronological difficulties arise, that many of our parish churches were built by country workmen, by men who had little creative genius, and few opportunities of examining the purest ecclesiastical models, and who therefore were constrained to copy the best things near them (which I think will at once help to account for local styles), and whilst they were necessarily to a certain extent imitators, they would often, through negligence or through a want of fully appreciating the merits of the original, disfigure their own works by introducing into them some of its defects, probably reducing the depth of the mouldings, or disregarding the relative proportions on which much of its beauty might depend, or depriving it of those decorations which enchanted the eye, and caused it to dwell with admiration on the harmony that prevailed throughout the whole structure.

There is also another reason why we should be cautious in drawing direct and positive conclusions respecting the age of village churches, namely, that the styles were always in advance in cathedral or collegiate, whilst they were retrograde in parochial buildings. It was with architectural taste as with modern fashions, the rural population were the latest in catching the new mode.

It has, indeed, often excited astonishment, that so many beautiful fabrics should have been erected in the middle ages, when the difficulty of finding resources to build a church at the present day is so well known that the fact only needs stating. But the surprise will be diminished upon considering the altered circumstances of each period. When monastic buildings and parish churches were erected, the ecclesiastics were both influenced by different feelings than what guide them at present, and their condition also was dissimilar. At that earlier time, it is true, they were personally more indigent, especially the parish priests, but they had fewer wants, necessarily fewer from the vow under which many of them lived; they were also more zealous and skilful in carrying on the architectural works that surrounded them; they lived moreover amongst those who were animated by kindred feelings, amongst brethren, equally enthusiastic and self-denying, who sympathized and helped in the labour; thus, whilst it constituted a part of their duty, as it were, it became one of their recreations to decorate the religious house where they worshipped; and this again caused them to infuse the same ardour and the same taste at once into their superiors and their dependants.

The materials that were wanting for the purpose were usually at hand, and cost them little; the stone and the marble and the wood were easily wrought by their own tenants, whose unremitted toil they could always command; or when wages were paid they were extremely low, an opinion which is not to be negatived by urging that human wants must always keep pace with human demands and expectations, and that the difference in this respect between different periods is merely in terms of money. For after all the fact is not true; the wants of these men were the wants of nature, less artificial than those of the same class at present: their fare was coarser and simpler, beans supplied the place of wheaten food, their beverage was less stimulating and expensive, and their general habits of life were disproportionably cheaper than those of a modern artizan; added to which, these poor men believed themselves, whilst occupied in such works, to be serving the cause of God and religion, and therefore they submitted to privations and toil with patience and even joy. * * *

It would be unfair to conceal the results of such a system; its defects were apparent in the popular insurrections that from time to time broke out and marked a progressive extension of liberty, in the gradual emancipation of the human mind, and in the naturally inherent right of following up private conviction by private judgment; it is needless to do more than barely allude to what followed. Yet in concluding the explanation I have offered it would be incomplete if I did not add that the spirit of the age was both warlike and devotional at the same time, and whilst a love of military glory inflamed the mind and aroused the fiercest passions, it was the influence of the religious orders that served to soften and lull them again to rest. * * *

The sight of those sacred buildings which still rear their hoary pinnacles in silent praise to heaven, inspired our countrymen of old, as they should us, with a veneration for holy places. And we discharge no superstitious debt of gratitude by separating the exalted deeds of our forefathers from the lawless confusion that was mixed up with many of their actions, and giving them praise for executing the buildings we must all admire, and but vainly hope to excel.

It was no selfish or sordid spirit that was then so actively at work, no mercenary desire to aggrandise themselves by nicely balanced calculations, no speculative visions of worldly profit, from sharing in which others were excluded, but the motive power impelling them onwards through their earthly journey, was untainted by avaricious love of gain, or private gratification. The rising church absorbed every consideration; within its walls was entombed the love of native home, and family attachment and personal ambition; and thus the strongest affections, being withheld in their natural current, they were poured forth with all the increased energy of impassioned devotion upon the service of God.

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The Architectural School of Design is now in a fair way of being established, in connection with the Society of Architectural Draughtsmen. Mr. Jayne, of 33, Southampton-street, Strand, is the Secretary, and will be happy to afford every information to inquirers. The preliminary meeting will be held in the rooms of the Society of Architectural Draughtsmen on Wednesday evening, the 3rd of March, at half-past eight o'clock, when all who take an interest in the scheme are invited to attend.

More Money to be Wasted.—Are there no members of the Wellington Statue Committee who will interfere to save the subscribers' money? To take down the scaffolding in the face of the decision of the Government, founded on universally expressed opinion, is simply to throw the cost of doing so and of re-erecting it into the kennel. Lord Morpeth is too good-natured.

## THE GAS MOVEMENT.

HAD the present agitation in favour of the nearest possible approximation to the purity and clearness, and the cheapness and diffusion of the light of day arisen as the natural result of some extensive organization, league, or association, for the express and determined purpose, then the motive to, and the reason of, the simultaneous, sudden, and universal interest and effort in the cause would have plainly manifested itself; but, with the exception of our own reiterated efforts, no vis insita within the range of our experience is sufficient to account for this remarkable phenomenon. The subject of gas-light is evidently at this moment undergoing a complete and rapid revolution: it is labouring in the wholesome throes of a new birth, and is destined soon to assume an altogether novel aspect and economy of distribution. Demands for its reduction in price, its improvement in quality, its more diffusive abundance, are everywhere urged and everywhere forcing themselves into successful antagonism with the state of things as they are, and evolving the germs of the state of things as they will be; and now it is found that even the most preposterous expectations and demands for reduction of price are more than justified, by the revealment of the enormity of the profits that must have been already reaped, and the immensity of the reductions that may yet be profitably made. "If the Gas Company are getting a profit still, at 6s. per 1,000 cubic feet," says a witness, whose evidence before the Government Commissioners we may here adduce,—without, however, being at the trouble to specify or instance time or place on a point of evidence far from being solitary or limited to either place or time,—"they must have realized an enormous profit heretofore at 10s. to 12s. per 1,000 cubic feet." And that many a company has realized such profits at 10s. to 12s., and that all may still realize sufficient, and far more than sufficient profits, not only at 6s. or even 4s. but at 3s. or even 2s. per 1,000 feet has already been clearly proved. "Resolved," in public meeting assembled, says one recent formal petition to Parliament, "that we, the inhabitants of Ashton-under-Lyne, being gas consumers, having attentively listened to the evidence tendered before the Government Surveyors, and that evidence showing that gas *can be produced at less than three shillings* per 1,000 cubic feet, pray that the Ashton Gas Company be restricted to 4s. 6d. per 1,000 cubic feet, and that the gas be manufactured from cannel coal." Too liberal by half, as has been already plainly evidenced at Liverpool and elsewhere. "At Exeter," says one witness, in his evidence before the Commissioners at Southampton, "the present price is 6s., and a new company has offered to supply it at 3s. 8d. per 1,000. Mr. Short has told me that at Sheffield *it was supplied at 2s. 6d.* (!) and many manufacturers considering [probably knowing] *even that to be too high*, manufactured their own!" Moreover, we have already adduced corroborative evidence to much more than this effect from before the Government commissioners at Liverpool, and from all of which it appears that in many districts *coke manufactories are likely altogether to supersede mere manufactories of gas.*—As to the manufacture of the article, by the way, we may here note down a piece of rather interesting intelligence derived from the *Hampshire Independent*, which, interested, as who must not be, with the present progress of events towards the light of a new day, says, "We have been gratified by the inspection of a small gas apparatus, calculated for private use, constructed by Mr. D. Snaggs, ironmonger, of Middle Brook-street. It is now in full operation, and Mr. Snaggs states, that *after deducting the value of the coke*, the quantity of coal daily required for the manufacture of gas enough to supply five burners, from five o'clock till ten, does not exceed twopence! The cost of the apparatus would be 25*l.*; but a very trifling addition would enable it to produce gas enough to supply twenty or thirty more burners; the only alteration being an increase in the size of the gasometer, and an additional retort. The apparatus appears to be admirably adapted for railway stations, gentlemen's mansions, or public manufactories, in places where no gas works exist. It appears, too, to be capable of application for shops with great advantage, if the present charge for gas in Winchester is to be continued."——The inquiry at Southampton progresses; and the evidence goes far to prove the absolute necessity of the "fair competition" which is even already, by anticipation as it were, producing its good fruits. Until the proposed new company was started, the old, and only company, was waxing fat and kicking; for it not only persisted in its "enormous profits," but when any one dared to complain of the abominable quality, the provokingly deficient quantity, or the by no means deficient price, of what they pleased to give, he was replied to by "a man to cut off the pipes." No sooner did their incipient antagonist make his appearance, however, than down came the price from 10s. or 12s. to 6s., and up came the quality, and even the quantity, to par; but such amendments are by no means symptomatic of repentance, and they therefore merit no mercy, and none have they met with, for none have they deserved. The case of the new company appears to prosper.——The high price of gas at Cowes, still no less than 12s. 6d. per 1,000 cubic feet, has roused the indignation of the inhabitants, who were led to expect a considerable reduction in the charge for "this indispensable and only lately afforded boon;" and in a numerous meeting they have embodied their feeling on the subject in a series of rather mild resolutions in the meantime, to be laid before the directors of their company.——The diminished price of gas supplied by the present company at Worcester, namely, 6s. per 1,000 feet,—for which the citizens are indebted not to the present but to the prospective company, who have offered to supply it at 4s. 4½d.,—is already, it is said, leading to an increased and extensive consumption.——Another huge gasometer, to hold 200,000 cubic feet, or if made on the telescopic plan to contain even 400,000 cubic feet of gas, is to be forthwith erected at Manchester by the corporation. It was only last year that just such another addition was made to their enormous, and, as it ought to be in the eyes of all other corporations, their *model* establishment; and as to when that corporation mint will reach its full maturity is a question for the multitude of Manchester in future generations, not for those alone to whom it now gives wealth as well as light.——The capital, a bill for which the Liverpool "Guardian" is applying, is 133,000*l.*; and 3s. 8d. is the maximum price, with 7½ per cent. as the maximum dividend. The present Liverpool "Gas Light Company" is also now applying for power to raise 200,000*l.* of additional capital; the maximum price of its gas being 4s. 6d. with an assured dividend of 10 per cent.——At Cambridge, the gas proprietors have condescended to offer the citizens a reduction of 1s. per 1,000 cubic feet with a promise of more *in futuro*.——A reformation has already actually begun at Newcastle, or at least been something more than merely promised. The price has been reduced from 5s. to 4s. 6d. per 1,000 feet, with a scale of discounts from 10 to 20 per cent.; and the *Gateshead Observer* informs us that "an assistant manager of the gas works has been appointed, and a change for the better has been the consequence." The lamps, however, are said to be still too dim to do justice to the improved quality of the gas. The suggestion which appeared in our pages, to line the upper portion of the interior with mirror has been not only received with favour but almost universally quoted by our contemporaries. Perhaps the Newcastle gas, which now, it seems "need not be ashamed to shew itself," might thus be able to bear the reflection of its own more purified aspect now without a dimming blush.——Down to the year 1839, by-the-by, the price of gas at Newcastle was 10s. per 1,000 cubic feet—more than double the price of its present improved quality! The fear of a worse condition of things leads sometimes to a better.

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ISLE OF ALDERNEY: NEW BREAKWATER.—The foundation stone of the new breakwater, or harbour of refuge, was laid on Friday week in the Bay of Crawley. The little island was in universal commotion. A whole ox was roasted for the workmen and the poor in general, and "a splendid banquet" was given by the judge, M. Gaudion, to the rich in general, and to many of their Guernseyite neighbours in particular.

## REMARKS ON STAINED GLASS.

THE chancel of Horfield Church, near Bristol, which has been rebuilt, and was opened for public worship a fortnight ago, is fitted up with stained glass, executed by Mr. M. O'Connor, of Berners-street, London. The principal events in the life of our Saviour, including the Birth and the Ascension, are the subjects represented, and entitle the artist to much credit. These windows display thought as well as skill, and are altogether good specimens of modern imitation. The style of the chancel is the decorated.

At the west end of the same church, we hear, there is a window, by Mr. Bell, of Bristol, representing St. Michael, to whom the church is dedicated, triumphing over the dragon. The former windows we saw in London.

A new stained glass window has been put up in the church of St. Andrew Undershaft, London, but we have not seen it.

At the Decorative Art Society, on the 10th instant, the application of design to stained-glass windows formed the subject for discussion. Mr. Dwyer commenced it by remarking, that in the earlier instances of ecclesiastical embellishments of this kind, the ideal was frequently well expressed. But although the examples of medieval art were generally well appreciated, yet the admirers of it were rarely satisfied with modern imitations. This he attributed to the absence of a peculiar feeling and tone which pervade the more remarkable of the ancient specimens. An acquaintance with precedents, and a clearly defined knowledge of symbolism in form and colour, he considered to be essential to the artist who desired to produce any thing beyond exact imitations. He, however, maintained that ancient art ought not necessarily to be modern art, but that decorative design at the present day ought rather to appeal to and gratify the understanding, than to offer mementos of superstition. He preferred simplicity in the composition at all times to attempts in producing historical pictures; and observed, that the decline of this, as of other arts, had been manifested by endeavours to produce incompatible effects. Geometrical combinations, it was said, are in almost every respect more suitable for windows; but the leading forms should at all times harmonize with the architectural character of the building.

Several kaleidescopes were then examined, which had been arranged by Mr. Cooper for exhibiting geometric design. The pieces of coloured and other glass in circles, squares, and triangles, were variously classified. Several of the developments were very beautiful, closely resembling windows of the thirteenth century; and the counterparts of the contents of a kaleidescope afford simple and ready means of accurately delineating a desired result on paper. Descriptions were given of windows in Germany and at Hampton Court, as also some observations on the extraordinary chemical influences possessed by colours.

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## RAILWAY JOTTINGS.

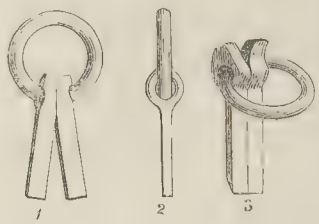
THE "matchless pier" at Southend, whose peculiar merits, or intrinsic value, no one, at the late unsuccessful attempt to get rid of it, appeared to be *able* to appreciate, has at length been taken off the hands of the Public Works Loan Commissioners, who were the mortgagees, by the Eastern Counties Railway Company, who have now become the purchasers of it and its revenues, of the latter of which they doubtless meditate an increase when the projected railway to Southend is completed.——The Secretary of the Great Western, Mr. Saunders, has the very handsome salary, it is said, of 2,500*l.* a year; the locomotive Superintendent, Mr. Gooch, one of 1,000*l.*; another Superintendent, Mr. Clark, 750*l.*; another, the Bristol one, Mr. Clark, 550*l.*; the Exeter, Mr. Ashbee, 325*l.*; and the Gloucester, Mr. Graham, 180*l.* The head accountant, Mr. Pyke, has 550*l.*——The tenders for the construction of the works included in Nos. 1 and 3 contracts on the Birmingham, Wolverhampton, and Dudley line have been disposed of. The first, which embraced that part of the line between Great Charles-street and Vyse-street, Birmingham, was obtained by Mr. G. C. Pawling, of Manchester; the second, which included the line

between the junction at West Bromwich, Staffordshire, to Priestfields, near Wolverhampton, was obtained by Messrs. Frost and Bates, of Wednesfield. Nine tenders were sent in; those accepted are under the parliamentary estimate, and the works are to be completed by the 1st of August, 1848.——The directors and contractors of the North Staffordshire have placed 1,000*l.* at the disposal of the Bishop of Lichfield, to be employed in promoting the spiritual welfare of the labourers engaged in constructing that line.——The works of the Victoria tunnel, at Liverpool, have been recently begun. The Messrs. Holme and Mr. M'Cormick are the contractors. Several acres of land are in process of excavation at Edge Hill, to be added to the present station, where there will thus be abundant space for the thousands who, in the summer season, avail themselves of the "cheap trains." The grand entrance of the tunnel is under the road leading to the Railway Hotel. It is to pass in an oblique direction across the town, being carried in a direct line under the King's Monument, Christ Church, the Friends' meeting-house, the chapel in Byrom-street, the North Dispensary in Vauxhall Road, and then under the Leeds and Liverpool Canal, to a station, comprising several acres, between Great Howard-street and the Waterloo Dock. Considerable progress has been made at the various "eyes," as they are termed, along the whole of the line. The entire costs of this gigantic undertaking, says the *Mail*, will be about 200,000*l.*——The tunnel on the Trent Valley line is driven through and nearly all bricked. All the cuttings on this line are executed, so also are all the bridges, and the whole works will be completed in a few weeks; but to afford time for the consolidation of the works, the opening will not take place till the 1st May, a more commendable course, and likely, *ceteris paribus*, to lead to results much more satisfactory to all, than any to be consistently expected from companies so eager to reap a premature harvest as those are who have lately been offering contractors premiums so tempting to hurry their works with break-neck speed into shape and action.——At the present time, says the *Preston Guardian*, "the number of trains arriving at, and departing from, the North Union Railway Station in this town daily, amounts to no less than 133; surpassed, or even equalled, we think, by no other station in the kingdom."——Many of the Highland labourers hitherto employed on the railways in the Lowlands of Scotland,—thus industriously earning a subsistence for themselves and families,—have, it is said, thrown up their employment and gone home to the distressed districts in the Highlands, where, they boast, that they will now "get plenty of porridge for nothing." The improvident and fearful fruits of such a dependance on the Government for future support are said to be also manifesting themselves in the refusal of men,—who must be without *employment* in these very districts, if there be any real *distress* there at all,—to embrace the opportunity offered them by one of the Edinburgh and Northern Contractors, while on a tour in the counties of Inverness and Argyle, to employ three hundred of them at 2s. 4d. to 3s. a day. He could only obtain from 30 to 40! At Greenock, too, where a number of the "distressed" Highlanders had been provided with work at 10s. a week each in wages, so *independent* of such work and such wages does their debasing dependance on "porridge for nothing" appear to make them feel, that they impudently demanded a rise of wages; and on refusal, "headed by a bagpiper," they "marched away" to their "porridge for nothing," in preference to industrious employment and 10s. a week!——A railway carriage, or wheeled saloon, of gigantic dimensions, is in course of construction at Hamburg for the use of the King of Prussia. It will be 30 feet in length, and from 15 to 16 feet in height. It will be furnished with an antechamber, a bed-chamber [! An unlikely circumstance, surely, that the King of Prussia should be obliged to travel all night by railway, even "in meditatione fugæ"] a dressing-room, a chamber for his majesty's aides-de-camp, and a saloon, the whole fitted up with great magnificence, and adapted to the most improved ideas of comfort.——All the American railway shares are said to be now at a premium.——A line of electric telegraph, says a correspondent of *Galignani's*, has been completed across the Alleghany Mountains, and it has worked admirably between Philadelphia and Pittsburg, a distance of 300 miles. The journals of Pittsburg have published the proceedings of congress of one afternoon on the following morning; and this is the case with all the news from the great cities of the Atlantic coast.——A correspondent of the *Edinburgh Chronicle* states that Mr. Rowland Hill intends to make a new and important use of the electric telegraph for postal communication.

## RUSSELL'S "SPEEDY LEWIS."

Sir,—Through the medium of your valuable and useful journal, I beg to submit a description of the accompanying design for *a lewis*, for the purpose of speedily raising and setting stones prepared for masonry.

The ordinary lewis, so well known and generally used by masons, requires no further description than a reference to the present claims of advantage, at least in its readier application, even where small stones are specified to be lewised, which by this process can be effected in at least one-third the time, as will be seen by the accompanying sketch. Fig. 1 and 2 represent front and side view of the lewis when expanded and carrying the weight, and of which the model of the following dimensions has been tested to five tons without any symptoms of defect or inadequacy. The dowels or prongs are each four inches long, one inch wide, and half an inch thick, with proportionate shoulders to form the eylet (for ring of three-quarter bolt iron), countersunk




on the outer side, so as to form an inclined plane for the ring to act upon, the back edge above the ring of each dowel being champhered with a curved shoulder, to allow the lower ends to spread when the ring is raised, the hole to receive the lewis, as usual, being cut larger at bottom, or as it is termed *dovetailed*. The lewis is simply inserted, as shewn in figure 3, and by raising the ring the lower ends expand, as described above; and upon lowering the same, it is immediately released without the tedious process of knocking out the pin, bolt, shackle, and the centre dowel of the ordinary lewis. Provision is also made in case the lewis hole, by error or *ignorance*, should be cut too large; the ring being of egg form, by reversing the smaller end downwards the dowels or prongs become more extended, by which means the evil is obviated without inserting slips of iron or lead, as usually applied at the risk of flushing the stone or giving out of the lewis.—I am, Sir, &c.,

H. H. Russell.

## RESTORATION OF CHICHESTER CATHEDRAL.

An appeal to the inhabitants of the diocese for assistance in this work has been issued by the dean and chapter, shewing strong claims to their co operation. Much has been done at a heavy cost to the chapter; the estimated sum now required is 22,000*l.* This does not include some alterations in the choir, concerning which the following remark is made in the appeal:—

"The dean and chapter are sensible that the actual choir is not in all respects what might be desired. But they feel the greatest reluctance, at the present time, to propose any definite plan for its alteration. This is a department of cathedral architecture in which much information and experience are yet to be acquired. The dean and chapter at present can do no more than express their entire conviction that the most magnificent church which serves merely to gratify the eye of taste has entirely missed its proper end and object.—And greatly will they rejoice, if, after some longer time for observation, they shall be able to devise a plan, whereby, without violating the rules of architectural fitness, a larger portion of their fabric may be made more directly available toward the great purpose for which every church is designed,—the worship of Almighty God."

We are not quite certain that we understand exactly what this means, we should like to do so.

A large recessed and canopied arch, ordered to be raised by Mr. John Abel Smith, M.P., to the memory of his late father, is now completed, except the effigy, which the sculptor, Mr. E. Richardson, is now engaged upon. It is placed under the great window in the south transept, opposite to St. Richard's shrine and tomb, and near to the recessed canopied tomb of Bishop Langton. It is at length decided to insert a triplet in the Wren mullioned window, so long a disfigurement at the west end of the cathedral.

## KENSINGTON WORKHOUSE COMPETITION.

Sir,—My attention having been drawn to two or three letters in The Builder respecting the competition for building the proposed new workhouse at Kensington, in which the good faith of your correspondent G. H. S. is impugned, I have the honour of forwarding to you the following plain statement of facts respecting the plan now adopted by the guardians.

Mr. Allom estimated the original plan without the chapel at 8,700*l.*; when the tenders were sent in for building the same, they ranged from 13,700*l.* to 17,500*l.* Mr. Allom, who was present when the tenders were opened, then accounted for the difference between those tenders and his own estimate, by stating that he had discovered an error in the quantities of the person employed by the builders to take them out, to the amount of at least 500*l.* in one of the trades, namely, the bricklayer's. It is true that he had communicated this discovery to the guardians before the tenders were sent in; but it is absurd to suppose that your correspondent G. H. S. meant to insinuate that he could have discovered this error only at the moment the amount of the tenders was briefly read over to him. I requested Mr. Allom to inform me what were the other trades concerned in this error, and he replied, "the principal ones are the carpenter and the mason." I then observed, "Allowing 1,500*l.* for these trades, Mr. Allom, the lowest tender will still exceed your estimate by 3,500*l.*"

The guardians, or rather the building committee of the guardians, then concerted with Mr. Allom to reduce the expense of his plan, and in my presence, the vice-chairman of the board assured the Poor-law Commissioners, that Mr. Allom and one of the builders who competed for the work had undertaken to carry the amended plan out for 9,800*l.*, and that that undertaking was so strong, that it was almost as good as a tender. I ridiculed the idea, and appealed to the common sense of the Poor-law Commissioners, whether they could believe such a statement. But the Poor-law Commissioners bowed civilly, and proceeded to adopt it, and to calculate and reason upon it.

When the tenders for the reduced plan were sent in, they ranged, as I expected, from 11,000*l.* to 13,000*l.* in round numbers. Mr. Allom accounts for this now by additions, which are explained to me to be that of 199*l.* for the relieving officer's store-room and office-rooms essential to our parochial provisions for the poor, which must be provided for at a greater expense elsewhere, if not included in the workhouse, and without which the new workhouse would have been inferior to the present one, which is in some measure provided with them.

Besides this addition there was a sum of about 170*l.* or 180*l.* for a superior kind of brick for parts of the building.

I am, Sir, &c.,—John Perceval,
Guardian of the Parish of Kensington.

Campden Cottage, Kensington,
Feb. 20, 1847.

Lectures on Architecture.—Mr. T. L. Donaldson commenced a course of four lectures on architecture at the London Institution, on Thursday last. The works of the Egyptians formed the subject of the first lecture.

## BRUNETTI'S MODEL OF ANCIENT JERUSALEM.

A visit to this very interesting model, in Piccadilly, will be found to give a lasting enjoyment; clear ideas are gained of places and events described in the holy writings; and facts, all-important for mankind, are fixed in the mind more indelibly by an hour's examination of it than would be done by a month's reading. Of all localities Jerusalem has the strongest claims upon our attention,—"that city, where, of old, Jehovah dwelt,—where David sung,—and where Jesus suffered." To have its walls and gates and buildings,—the scene of the crucifixion, the Temple, the pool of Bethesda,—brought tangibly before us at our own doors, is a great advantage for which many thanks are due to the artist who produced this model. Like all similar works, the first view of it disappoints, but after a little time, the mind becomes accustomed to the scale, and the various objects, viewed relatively, grow into importance.

Admitting the difficulty of the work, and recognizing as we have done the ability with which, generally, it is executed, we are nevertheless compelled to find fault with the architectural appearance given to the Temple: it has all the character of a cinquecento Italian building, none of the Temple raised by Herod. Mr. Brunetti would do well to cancel it.

The site of the new protestant church about to be built on Zion, by Mr. Johns, is pointed out by a small block of stone from the spot, placed there by the architect himself.

## ENGRAVINGS.

Mr. George Raphael Ward has just now completed two engravings in mezzotinto, which will tend to advance his reputation. One of the two is of Mr. Mackenzie, the well-known railway contractor, in Paris, and the other of the venerable Archdeacon Thorp, Warden of Durham University.* The first is from a picture painted by Mr. T. H. Illidge, and presented to Mrs. Mackenzie by public subscription in Paris, Dec. 31, 1846. The second is from a painting by Mr. J. R. Swinton, and is to our minds by far the best work. The head is exceedingly well executed, and the general effect artistical and good. They are both rather dark picture prints: when it is remembered, however, that the chief excellence of mezzotinto is exhibited in shadows and not in lights, which present much difficulty, and often appear cold and poor when compared with the lights in a line engraving, even when treated with the greatest skill, the reason is obvious. Most of our readers probably are aware that in mezzotinto engraving, the whole ground of the plate is at first black, and the lights are produced by scraping away and burnishing parts of the surface: whereas, in a line engraving, the ground is white, and the lines and shadows are formed upon it by the "graver."

Fall of more Old Houses.—The metropolis is being gradually purged of its old and crazy edifices, happily without any great fatality. The fall of two of these we had very recently occasion to notice, and since then three more have fallen, one in Ratcliffe and two in Kent-street, Southwark, by which latter, however, seven lives were placed in imminent jeopardy, although they all escaped with almost miraculous impunity. Besides the one at Ratcliffe, four others there have been shored up until razed to the ground, which they are forthwith to be. The two at Southwark, as well as these, have been long under the surveillance of the district surveyors, or at least long known to have been in a very crazy condition, although poverty has tempted many poor people, knowingly, to risk their lives in them, in order to save their rents.

Battersea new Church.—A new Church to hold 800 persons on the ground floor, is about to be built at Battersea, Surrey, near the Princes' Head. The plan is cruciform, with a tower and spire at the north-west angle; the style, decorated gothic of the date Edward III. The builders are now making their estimates, and it will be commenced in about a month. Messrs. Lee and Bury are the architects.

* Published by the Engraver, 31, Fitzroy Square.

## Correspondence.

NEW PLOTTING SCALE FOR SURVEYORS.

Sir,—Perceiving in your number of the 6th instant a communication by Mr. Edward Blake, wherein he gives an explanation and illustration of a surveyor's plotting scale devised by him, I beg to forward you a drawing of one invented by me, and laid before the Committee on Mechanics of the Society of Arts, on the 3rd of April, 1845, to which his scale bears an extraordinary similarity.

Although the invention is not one of very high importance, I am of opinion that it is fair that the inventor should in every case claim his due, and that proper acknowledgment should be made where there is a title to it. However, I should not have troubled you in the matter, but that Mr. Blake's scale appears faulty in several respects as compared with the one previously in use. The most important is the impossibility of using more than one offset scale to the same line scale; whereas in that which I have been in the habit of using, many line scales being marked at the sides, and the groove being left open at the end, the different offset scales necessary from time to time may be introduced into the same frame.

There is a decided objection to the position of the brass pins in Mr. Blake's scale, as the paper is thereby injured in the very place where it should be most perfect, namely, on the measured line.*

Probably these suggestions may be of value to those of your readers who have not already had the original scale in use.

I am, Sir, &c., J. Murray.

H. M.'s Dockyard, Portsmouth,
Feb. 16th, 1847.

* In Murray's scale the ends are elongated to receive a lead weight instead of a pin.—Ed.

## Miscellanea.

Soup-Kitchens for the Poor. — The scheme for the erection of soup-kitchens for the poor, which is considered to have some merit apart from the cheap preparation of soup, lately questioned, is likely to be extensively acted upon, not only in Ireland, where Mr. Soyer is about to superintend the working of his scheme under the direction of Government, but also in London, and many parts of England. The building originally projected by Mr. Soyer, for which the plan first laid before the Government was arranged by Mr. Edward Hall, architect, has a central area, of square form, in which are a boiler, a large pan, tables, and every convenience for preparing the ingredients. The soup is finally made in large oblong pans, ranged round the area, and beyond these is a passage for the attendants, who can thus readily serve out the soup into basins fixed in a frame, which forms the other side of the same passage. The liquid in these pans is heated by steam from the boiler. The building is enclosed on the four sides, a narrow space being left for the poor, and much attention seems to have been paid to prevent confusion. It will be covered with canvass. This plan has since been modified in size, and in some details. The present scarcity renders such schemes worthy of examination, although it may be questioned by many whether they are free from injurious results. At Manchester and Liverpool, soup-kitchens, on an extensive scale, have been sometime in operation.

Effect of Frost on Stone.—Sir,—In passing through Clifton some time since, I observed a circumstance that I think ought to be generally known to builders. It was after the late frosts. Some new balconies had been put up about nine months before, and some of the parties had taken the precaution of painting the bottoms and edges with several coats of paint. The consequence was that the water falling on the top lodged in the stone (the paint preventing an outlet), and froze there, and the result was that it burst the lower part, which fell off, paint and all, in large spawles, very much to the danger of the passers by.—Yours, &c. H.

The Regent's Canal Company's Bill. —The Government having refused assent to this bill, the second reading has been postponed at the request of its promoters, to enable them to submit some modifications to the House.

Projected Works, &c.—Advertisements have been issued for contract-tenders for the various works necessary in erection of church at Congleton; improvement of church in Cornwall; partial razing and rebuilding of church at Wolsingham, and erection of school at Towlaw (extension of time); partial rebuilding and restoring of church at Trowbridge; alteration and erection of farm-offices, cottages, &c., near Edinburgh; excavation, masonry, &c., of aqueduct and main pipes, cast-iron sluices, cocks, and other metal works, and a quantity of 20-inch cast-iron and other pipes, all for Bristol Water Works; the various usual ordnance works in masonry, carpentry, &c. &c. at Dorchester, Weymouth, Trowbridge, and Sheffield barracks, and Portland Castle; the working of limestone, and other quarries or hauling-stone for repair of roads in Herefordshire; 600 cubic yards of good Kentish rock-stone, at Rochester; repair of pavements, for 5 years, at Portsea; large supply of stock bricks at Cowes; various works necessary in formation of 9 miles of Newport and Hereford Railway; 3 miles of Glasgow and Ayr, &c.; 11 miles and 9 miles of London and North-Western; 2¼ miles and 4¾ miles of Glasgow and Dumfries; and for erection of a bridge at Dumbarton; Cast-iron Viaduct at Liverpool; stations, warehouses, 8 cottages and walls, on London and Brighton Railway; also for a quantity of railway bars at York Station, and 6,500 tons of malleable iron rails, 1,850 tons of cast-iron chairs, and 70,000 sleepers, for Caledonian and Dumbarton Junction Railway; for the erection of Archbishop Parker's Grammar Schools at Rochdale; and the Walworth Literary and Scientific Institution; and for building sewers in Camden Town and Whitechapel.

Continental Glass Manufactories.—The first window-glass manufactory in the province of Hainault commenced in 1625, soon after which two others followed, and there are now no fewer than thirty-six houses in full blast: sixteen work eight pots, employing 128 blowers; twenty-six with six pots, and 120 blowers; thirty-six with three stokers; thirty-six glass cutters and fifteen potters—the total cost being 43,384*l.* per annum. There are five new glass-houses being built for 1847, and two new companies forming to commence extensive works in every description of glass. The quantity of coal, charcoal, sand, &c., used in glass manufacture, is immense.

Mr. Collins, R.A.—The death of Mr. Collins must be regarded as a great loss by all lovers of art. His beautiful representations of nature, suffused with tender sentiment, will be missed on the walls of the Royal Academy. He had been twenty-seven years an Academician, and was in the fifty-ninth year of his age.

Competition.—Fifteen pounds, and employment at the usual commission in superintendence of works, are offered for the best plan of a town-hall and other buildings at Yeovil, Somerset.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

Monday, March 1st.—Archæological Institute, 25, Great George-street, 4 P.M.

Tuesday, 2nd.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

Wednesday, 3rd.—Association of Architectural Draughtsmen, 33, Southampton-street, 8½ P.M.; Society of Arts, Adelphi, 8 P.M.

Thursday, 4th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

## TO CORRESPONDENTS.

"*C.R.*"—A reply would occupy more time than we can spare.

"*A Youngster*" will find the information he wants in our present number.

"*B.A.*"—Old travellers say one pound per day will carry you any where but over England. A stay in any one place, of course, lessens the expense. Cost of travelling depends greatly on management.

"*W.A.*" (Rochester).—Mr. Henry Shaw (37, Southampton-row) has published a work containing what our correspondent wants.

"*G.H.*" (New Town.)—We do not know that the details of the window in question are published.

"*E.D.*" (Pimlico).—Will our correspondent send us the extract he alludes to.

"*J.L.C.*"—Shall appear.

"*A Londoner*" is unavoidably postponed till next week.

"*Brickbat*" next week.

"*J.W.*"—Ditto.

*Received.*—"W.G." (Ryde). "W.G.P." "H.T." "M.S." "C.G.G." "Jackplane." "H.H." (Bromley). "H.C.L."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

## ADVERTISEMENTS.

TO BUILDERS, PAINTERS, AND OTHERS.

**MESSRS. WOOD and Co., GRAINERS** and WRITERS to the Trade only,
84, WATERLOO BRIDGE ROAD.
An Apprentice wanted (a country lad would be preferred).

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**PAVING, 2s. 9d. PER SQUARE YARD,** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses and every description of Pavement laid down at the above price, and the work guaranteed. Apply to JOHN PHILLINGTON POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHART ROAD, CITY ROAD. N.B. Country Mains and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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**ARTISTS, DESIGNERS, and Amateurs** are informed that the General PRACTICAL SCHOOL OF DESIGN, 18a, Maddox-street, Hanover-square, Master, J. M. Leigh, Esq., is open daily (except Saturday) from 10 till Ten, for the study of Drawing, Painting, Modelling &c. &c. The Long Mid. Male and Female with Weekly Lectures. Terms, One Guinea per Quarter.
R. W. HERMAN, Hon. Sec.
24, Great Marlborough-street, Regent-street.

**OFFICE for PATENTS of INVENTIONS** and REGISTRATIONS of DESIGNS. Full Information on the above Subject of PATENTS for the United Kingdom or Foreign Countries, the Colonies, and the United States, whether personally or by letter, to JOHN GEDGE, British and Foreign Patent Agent, 4, Wellington-street South, Strand, M.R. Inventors and Patentees are invited to call for Information, free of charge, as to the best mode to secure their Inventions, and to ensure their obtaining the Royal Protection.

**HOWARD'S TRANSPARENT** TRACING PAPER combines the several requisites required by Architects, Engineers, &c., richness of substance, transparency of retaining ink or colour undisturbed on its surface, a high degree of transparency, and every quality from the finest tissue to the thickest drawing paper. Price sold by Retail Stationers, nine sample sheets, 4s., and in rolls, carriage paid to any part of the kingdom —23, GREAT RUSSELL-STREET, BLOOMSBURY.

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TO ARCHITECTS, BUILDERS, AND OTHERS.

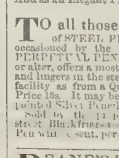
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**TO all those who find a Difficulty in the Use** of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS' PERFECT QUILL PENS, made of Gold, with Polished Iridium nibs, are or alter, offers a most convenient substitute, as Ink, which oxydises and fingers on the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 15s. It may be used with a common holder. With an Improved Silver Pencil Case, with lenses 2 6.

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**DEANE'S TWO-HOLE BLACK PENS,** which are unequalled for their durability and easy action, are supplied to the gentlemen of the Stock Exchange, and our principal bankers, merchants, and public companies of the City of London, leaders of all the Universities, the most eminent Scholastic establishments of the day. Their cheapness and popularity have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser, and disgraceful to the vender. The public are therefore cautioned against accepting any pen not to possess and as DEANE'S GENUINE TWO-HOLE BLACK PENS, unless each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¾ inch to 1¼ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico late C. Moore and Son, and Great Smith-street, Westminster.

**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, corner of Brickhayers Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths, Wheelwrights' Goods. All sawn and prepared goods on the Premises except timber. Sawing charged at mill prices. Very extensive Drying Sheds.



MUIR'S PATENT — PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

**TIMBER of any SIZE, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Box &c., Planed, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.**—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

**SILCOCK and Co.'s PATENT PLANES** may be had at the following places:

Archer, 48, Goodge-street, Tottenham-court-road; Blyth, White chapel; Cock, 424, Oxford-street; Dean, 46, King William-street; Fenn, 105, Newgate-street; Holtzapffel and Co., 64, Charing-cross; and of all ironmongers and tool dealers in the United Kingdom.

STAIRCASES.—To Builders and others, engaged in Building Mr. THOMAS MITCHELL, Carpenter, &c., at 40, Brown's-lane, Spitalfields, begs to inform the Trade generally, that he continues to execute all kinds of Staircases and Hardwood Work, on the most reasonable terms, in town or country. Persons having any of the above description of work to be done will find it to their advantage by applying to the above T. MITCHELL.

**WALLIS'S PATENT LIQUID WOOD** KNOTTING. This newly discovered Liquid Composition, which requires no Mixing, Wallis has the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Resin in Wood, and preventing them exuding through and disfiguring the paint above.

Many thousands have been and have much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on by the work will accomplish it as common putty, can be used in all climates and stopping and painting at once.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 14, Long Acre.

**TODD'S PATENT PROTOXIDE PAINT** manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, PIMLICO.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor flakes, retains its original colour unchanged for years, and is therefore now used for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Verandahs, Iron Roofs for Shipping. Its adhesion is so great to iron and wood, that the hardest fir wood will scarcely bear it. It preserves stonework, decayed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and flows with a smooth surface, and obeys mixture. If blended with other paints it has a softer tone than white lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

By Her Majesty's — Royal Letters Patent

**WILKINS'S "SILENT" WATER-CLOSET.**—To Architects, Surveyors, and Builders.

Gentlemen, Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and the supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, while it remains all that is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The want of a Water-closet more suitable for the present mode of fixing them in the internal parts of Dwelling Houses and Office Premises is acknowledged, and the Patentee is induced to believe that from one that is "Silent" in the action of the Machinery and supply of water, it will both obviate a reason for unnecessary any lengthened comment in its favour.

This Closet is simple in its construction, the whole of the apparatus including the fixed basin completed between the floor of the room and the seat of the closet, which renders it quite easy to remove any noisy Closet and fix a "Silent" one in its place, without interfering without the trap, which is generally imbedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any chance of smell, as to allow of its being fixed in any bed-room (where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least inconvenience whatever.

May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

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A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. K. WILLIAMSON'S Wholesale Warehouse, No. 25, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp

| 3d. | 4d. | 6d. | 8d. | 10d. | 20d. |
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| 6d. | 7d. | 8d. | 1s. | 1s. 6d. | 2s. per 1,000. |

Best Sheet Floor Brads 1s. 6d. per cwt.
Best Town Glue 2s. 8d. per cwt. Do. Best 3s. 2d. per cwt
Best Patent Sash Line.

| 2 | 3 | 4 | 5 | 6 |
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| 4s. 3d. | 5s. | 6s. 6d. | 7s. 6d | 1s. | 12s. per gross. |

Elliptic Stoves, 3d. per inch. Registers, 6d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

| 3 ft., £3. 3s. | 3 ft. 6 in., £3. 12s. 6d. | 4 ft., £4. |
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Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

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R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 ft. 9 in. | 4 ft. |
|---|---|---|---|---|
| £2. 6s. | £2 15s. | £3 10s. | £4 | £4 15s. |

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

| 3 ft. | 3 ft. 3 in. | 3 ft. 6 in. | 3 feet 9 in. | 4 ft. |
|---|---|---|---|---|
| £5 | £5 15s. | £6 8s. | £6 10s | £7. |

Best Register Stoves, at 7d., 8d., and 9d. per inch
Do. Elliptic do., at 8d., and 4d. do.
Manufacturer of WOLFARTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

IRON WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouthpieces: Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash-pit, Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST IRON TABLETS

STOVES, FENDERS, FIRE-IRONS, and KITCHEN RANGES, combining every improvement. A superb choice of Drawing-room and Dining-room Register Stoves. Steel and Bronze Fenders, Steel Fire-Irons of the most elegant and elegant Patterns, adapted for every Grate in the. The improved Cooking Apparatus, so admired for its simplicity and capabilities, viz.—Roasting, Baking, Boiling, Stewing, Steaming, Boiling, and Frying. This Range will generate sufficient steam, with the aid of pipes, to warm a large dwelling and conservatory; is well deserving the notice of the public in general. To be seen in full operation daily, at DEANE, DRAY, and DEANE'S, the Finsbury Iron Works, 89, Chiswell-street.

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BUILDERS, CARPENTERS, and others, are respectfully informed, that they can be supplied with IRON HOT AIRS, GRATES, RAIN WATER PIPES, AREA and TRELLIS GRATINGS, SASH WEIGHTS, RAILING, GATES, and IRON CASTING, BALCONIES, VERANDAHS, CONSERVATORIES, FANCY STAIRCASES, IRON DOORS, STOVES, RANGES, &c.

BAKER'S OVEN WORK always in stock at JONES'S IRON FOUNDRY and MANUFACTORY, 9, Brick-lane, Old-street, St. Luke's. A great variety of Patterns for Lathe-work, &c., &c.

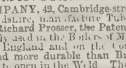
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BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that he will in future carry on the said business on his own account, he has been enabled to make such arrangements and upon such terms that they will at all times have every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.



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LAP-WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under Patent, by License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferrules, and can be tested and retested without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 63, Upper Thames street.

SMOKY CHIMNEYS EFFECTUALLY CURED.

WILSON AND CO.'S

PATENT

VENTILATING CHIMNEY POT.



For the cure of smoky chimneys, has been tested extensively throughout the Kingdom for the last two years, and has proved to be an effectual remedy.

The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

They are now manufactured of artificial Stone Cement.

The trade supplied with them at the Manufactory,

VALE PLACE, HAMMERSMITH GATE, MIDDLESEX.

N.B. Licence granted to Manufacturers.

PATENT VULCANIZED INDIA-RUBBER.—CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are—its uniform elasticity in various temperatures; it does not become hard by exposure to cold. It is of greater strength and less liable to injury from heat than native Caoutchouc. It is insoluble in essential oils. It resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully applied to Waggon Springs, Buffers, Beds, Valves in Water, Gas, and Steam Pipes, and to the Flap and Foot Valves, &c., of Steam Engines; and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of flooring boards.

The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

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PRESIDENT.

H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 25th of May, 1847.—A List of the subjects for which Premiums amounting to 500 Guineas, with 21 Medals, are offered, will be sent by Post to all persons who handed their Names to the Society's House, John-street, Adelphi, London.

2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of admission may be obtained from Members, or the Secretary.

3. A NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on applicant as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.



N.B. The above are also made without the dish, hence it is being turned up inwards.

CHEAP PAN FOR WATER-CLOSETS, With Trap in One or Two Pieces.

DOULTON AND WATTS, LAMBETH POTTERY, HIGH-STREET, LAMBETH, London,

Manufacturers of the annexed in superior GLAZED STONE WARE, Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

CLEANLINESS AND CHEAPNESS.

JAMES BARKER, SASH MAKER and JOINER to the TRADE, 83, Theobald's-road, Bedford-row, respectfully invites the attention of Builders and gentlemen building, to the subjoined list of prices for joiners' work, prepared from the very best materials, in a most superior manner, for ready money.

SASHES, at per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo | 0 | 8 |
| 1½ Ditto | 0 | 5 |
| 2 Lamb's Tongue, or Gothic | 0 | 5½ |
| 2½ Sash Plant | 0 | 6½ |
| 3 Fire-lights, or Skylights | 0 | 7 |
| 2 Ditto | 0 | 8½ |

Framed, Beaded, Squared, and Rebated, and Circular Sashes, &c. &c., made to order at proportionate prices.

SASHES WITH FRAMES, per Superficial Foot.

| Inch | s. | d. |
|---|---|---|
| 1¼ Ovolo, sashes and frames | 0 | 9 |
| 1½ Ditto, both sashes to hang | 0 | 10 |
| 2 Ovolo sashes and frames | 0 | 11 |
| 2 Ditto, both sashes to hang | 1 | 0 |
| 2 Lamb's Tongue, or Gothic, ditto | 1 | 0½ |

Gothic Frames and Sashes, Mullion Windows, Wainscot and Mahogany Sashes

Prices for Architraves, Base Mouldings, &c.; and all kinds of Joiners' Work in Wainscot or Mahogany, TO BE HAD ON APPLICATION.

SHUTTERS, at per Superficial Foot.

| Inch. | s. | d. |
|---|---|---|
| 1¼ Square Sliding Shutters | 0 | 6½ |
| 1½ Ditto, moulded one side | 0 | 7½ |
| 1¾ Moulded, head and butt back | 0 | 8½ |
| 1¾ Boxing Shutters, with front moulded, and back, with 1 inch back flaps, head and butt | 0 | 8 |
| 1¾ Shutters and back flaps, moulded front and head, and flat back | 0 | 9 |

DOORS, at per Superficial Foot.

| Inch. | s. | d. |
|---|---|---|
| 1¼ Dwarf square | 0 | 6½ |
| 1¼ Ditto, moulded front | 0 | 7½ |
| 1½ Four panel square | 0 | 7 |
| 1½ Ditto, moulded front | 0 | 8 |
| 1¾ Ditto, square | 0 | 8½ |
| 1¾ Moulded one side | 0 | 9 |
| 1¾ Ditto, both sides | 0 | 11 |
| 1¾ Ditto, bead, butt, and square back | 0 | 10 |

DOORS, at per Superficial Foot, continued.

| Inch. | s. | d. |
|---|---|---|
| 1¾ Ditto, bead, flush, and ditto | 0 | 11 |
| 1¾ Ditto, ditto, and moulded back | 1 | 0 |
| 1¾ Six panels, square | 0 | 9 |
| 1¾ Ditto, moulded one side | 0 | 10 |
| 1¾ Ditto, ditto, both sides | 1 | 0½ |
| 2 Four panel square | 0 | 10 |
| 2 Ditto, moulded one side | 0 | 11 |
| 2 Ditto ditto, both sides | 1 | 0 |
| 2 Ditto, bead, butt, and square | 0 | 11½ |
| 2 Ditto, bead, flush, and square | 1 | 0½ |
| 2 Ditto, ditto, ditto, and moulded back | 1 | 2 |
| 2 Six panel square | 0 | 11 |
| 2 Ditto, moulded one side | 1 | 0½ |
| 2 Ditto, ditto, both sides | 1 | 2 |
| 2 Ditto, bead, butt, and square | 1 | 1 |
| 2 Ditto, bead, flush, and square | 1 | 2 |

Front pair, and covered doors, to any design.

THOMAS MILLINGTON'S present TARIFF of GLASS, COLOURS, and PAINTS. 87, BISHOPSGATE-STREET, WITHOUT.

WINDOW GLASS

| Foreign Sheet, in 100 feet Boxes | per ft. 2½d. |
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| Do. do. Super 200 " " | 3d. |

Crown squares, 100 feet Boxes.

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|---|---|
| 10 in. by 8 in. and 9 in. by 7 in. | |
| 8 in. by 6 in. and 7 in. by 5 in. | 2d. |
| 6½ in. by 4½ in. and 6 in. by 4 in. | 1½d. |
| 6 in. by 3 in and under | 1d. |

Crates of Crown Window Glass lower than any other House.

COLOURED GLASS FROM BOHEMIA,

of the most brilliant colours, 1s. 6d. per foot

SPLENDID ENGRAVED ROSETTES,

6d per inch,

A ROSSETTE,

4 in. square, 2s.

T. M. has a splendid engraving on glass of the

NEW BOURSE AT HAMBURG,

and will shortly have completed the

LONDON ROYAL EXCHANGE,

NEW HOUSES OF PARLIAMENT,

and has patterns to any design on glass.

Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

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| | per Imp. Gal. s. |
|---|---|
| Super Body Copal, for the bodies of Carriages | 20 |
| This Varnish will stand the sun, and is sure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours | |
| Super Copal Varnish | 16 |
| A fine Varnish for the lighter imitation woods.—Dries in about eight hours | |
| Super Carriage Varnish | 12 |
| Very dark, and well adapted for Coach makers, as put for hind Panels, Footboards, Wainscot, or Mahogany | |
| Varnish | 10 |
| Rendered pale, durable for Ironwork, painters' work, and for all imitation woods | |
| Paler or crystal, and transparent for Gold Size for Gilders | 16 |
| Also as a dryer in ground Colours, which much improves their appearance | 10 |
| Black Japan | 12 |
| A splendid Jet Black, for Coachbuilders' use | |
| Brunswick Black | 4 |
| A Black Varnish for Iron-work, Stoves, &c. It dries immediately | 6 |
| Furniture Varnish for Japanners | 14 |
| Dries in two hours. | |
| White Hard Spirit Varnish, for Cabinet Work | 20 |
| Dries instantly. | |
| Brown Hard ditto, for dark Woods | 20 |
| Radical Lacquer, varying from the above. | |
| Mastic Varnish, pale, for Pictures | 24 |
| Turpentine Varnish | 8 |
| Patent Polish | 16 |
| Naphtha | 16 |
| Patent Liquid Wood Knotting | 16 |

PLUMBERS' BRASS WORK, WARRANTED.

| | £ | s. | d. |
|---|---|---|---|
| 2¼ Inch Lift Pump on Plank | 4 | 0 | 0 |
| 3 " do do | 4 | 16 | 0 |
| 4 " do do | 6 | 6 | 0 |
| 4 " do to | 6 | 10 | 0 |

With Pumps on Square Tails, with Iron Bow, equally low.

| | | | |
|---|---|---|---|
| ½ inch Bib, Ball, or Stop Cocks | 0 | 1 | 8 |
| 5/8th " do do | 0 | 2 | 1 |
| ¾ " do do | 0 | 2 | 6 |

Pan Water Closet, complete, with White basin, round Valve Cranks, Ball, Lever, and Copper Wire | 1 | 10 | 0 |
Blue Basin, extra | 0 | 4 | 0 |
Ditto, with Sunk Handle, extra | 0 | 4 | 0 |
Spring Valve Closet, on Brahma's principle, complete | 3 | 10 | 0 |

Best Machines from 20s. to £3 each more than the above cases.

Stronger Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

PAINTS AND COLOURS.

Best White Lead, 37s.; Seconds, 28s. Thirds, 25s.

Milled sheet Lead and Lead Pipe, 20s.

Linseed Oil, 2s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 3s. 10d. per gallon.

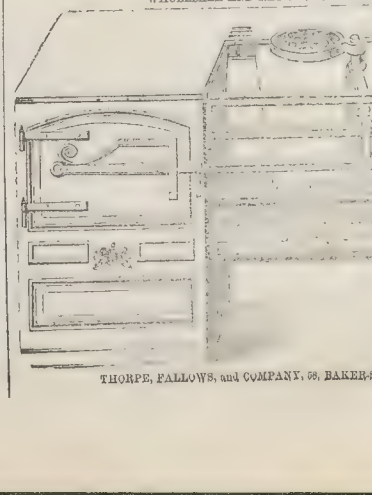
Brunswick and Navy Greens, Chromes, Blacks, Blues, Reds, Patent Dryers.

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Brushes, Tin, Painters and Glaziers' Tools, Patent Diamonds, 12s. each, warranted.

THE PANKLIBANON IRON WORKS,

WHOLESALE AND RETAIL, 68, BAKER-STREET, PORTMAN-SQUARE.



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ARCHITECTS, BUILDERS, AND Others, about to supply STOVES and KITCHEN APPENDAGES, will find at this Establishment the most unique and elegant assortment of Stove-Grates, Fenders, and Fire-Irons, ever offered to the Public, at prices considerably below the usual charge. The Proprietors at the same time beg to invite attention to their extensive stock of Furnishing Ironmongery, Tinned Copper, Tin and Iron Cooking Vessels, Block Tin Dish Covers, Japanned Ware, Table Cutlery, and especially that Sheffield Plate and German Silver Ware, embracing every article suitable for the table, comprising Dish and Plate Covers, Liquor Frames, Liqueurs, &c. The plan adopted by the Proprietors, of affixing the price to each article for cash, enables all purchasers to have the same advantage.

The Patent Thermo Stove is in daily operation. Also,

CUNDY'S IMPROVED HOT AIR STOVES, for heating and ventilating rooms.

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FREEHOLD BUILDING GROUND, in this vicinity, TO LET, for Third and Fourth-rate Houses.—Terms and Particulars may be had of Mr WATSON, 150, Wood-street, Cheapside

TO BUILDERS, BRICK, STONE, LIME, SLATE, OR COAL MERCHANTS

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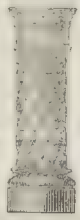
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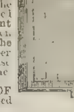
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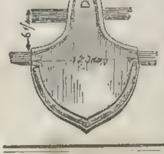
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It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

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The Builder.

No. CCXIII.

SATURDAY, MARCH 6, 1847.

THE force of habit, dislike of change, and inability of men to invent, are strikingly shewn in architectural productions all over the world. The first rude habitations of a country, regulated by the materials at hand, the climate, the wants of the inhabitants, and the means at their disposal, or when obtained from another country, appear to have influenced all after productions. The original type is discoverable to the last; and, even where circumstances have led to the use of another material, or a change in the purpose of the structure, it has been, during a long period, but slightly departed from, and that by slow and almost imperceptible degrees. The buildings of the Chinese, to mention one country, afford a curious and striking illustration of the fact. The tents of their herdsmen-ancestors are to be seen in their houses, palaces, and pagodas of to-day; so much so, that their towns look like encampments; and Hope says, that when Lord Macartney, after crossing the whole of the Chinese empire, from south to north,—from Canton to the great wall, its furthest length,—was received by the emperor in a real tent, he scarcely perceived any difference between that and the thousands of stationary buildings he had viewed during his journey.

Egypt, India, Greece, Rome, would all afford corroboration of the remark if it were needed, although, perhaps, neither so much so as the extraordinary country before named, where progress seems forbidden, and expansion of mind is out of the question. "So far, but no farther," say there the rulers of the people in all things. If a Chinese does not acquire a certain amount of knowledge, he is deemed infamous, and loses certain rights; but if he pass the prescribed bounds, and gains more information than is legally necessary, he is looked upon as dangerous, and loses perhaps his life.

Oh! happy Englishmen, if we would but feel it so; to whose intellectual and moral advancement, no bounds are marked but those raised by our own ignorance, wilfulness, or weakness!

A few days ago we saw a very interesting representation of a Chinese house, made in that country. Immediately after the termination of the late war, Mr. Morson, of Southampton-row, sent to China for accurate drawings and descriptions of the principal druggist's shop in Canton. It was found difficult to obtain drawings which would clearly convey all that was desired, but not so to have a model made; and, accordingly, native artificers were employed to construct, in small, an exact counterpart of a shop and house complete; and this is now in Mr. Morson's possession, and supplies information as to the construction of Chinese dwellings, which was not to be obtained at "The Chinese Exhibition." The house is two stories in height, connected by a step-ladder; it has a room behind the shop, and two rooms on the upper floor, and is covered with an M roof, or roof of two spans from front to back. The upper room is lighted by a series of openings in the front wall, which have perforated wooden shutters. These openings also give light to part of the shop below, by means of a large trap in the upper floor. The upper back room is lighted by a narrow uncovered opening in the roof, at the junction of the two spans (the "valley"), extending the whole width of the house. A similar opening in the floor, protected by a light railing, as is the opening in the front room, gives light and air to the room below. The rudeness and wastefulness (in space) of this mode of lighting are too obvious to need remark. There are, moreover, two small openings on each side of the house to admit air. The frontage is about 20 feet, and the depth of the house about 24 feet.

The shop front is open to the street, but has wooden shutters to close it at night. The construction, even in this case, recalls in the mind of the observer the original type to which we have alluded, and will serve to take us back to the point whence the mention of this model has led us to digress,—the natural adherence of men to forms previously used, their love of precedent, and the deduction it was our purpose to make when we commenced these observations.

The deduction, an obvious one, but nevertheless little attended to, is this,—that nations who appreciate the influence of fine buildings and fine art generally on the character, and would advance in that direction, should keep a most jealous watch upon every public building that is about to be erected, with the view of preventing the increase of bad taste. Each building that is raised influences the appearance of many others; and one weakness or monstrosity begets a thousand. It is impossible to calculate the mischief which may be done to architecture as an art by even one building, or say how long its advance may be retarded by it. The extent to which a design affects the architecture of the time may be seen every day. Nothing is too ugly to be copied when once erected, and every repetition will play its part in further vitiating public taste, and preparing the way for worse.

To compare very small things and very trifling effects with large,—we may mention an exemplification under our eye at this moment. Two or three years ago, in the ordinary course of an every-day practice, we "beautified" with compo the front of an old house, up to that time rejoicing in the unadorned simplicity of brick; and one by one four neighbouring houses have since been made by their various owners to take precisely the same form, its defects, in particular, being scrupulously repeated.

We repeat what we have already said, that the art-loving portion of the public should watch most jealously the erection of every public building, and insist upon having the most satisfactory assurance that what is about to be done will be creditable to the nation, before they suffer the public money to be expended.

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BRITISH EMBASSY IN TURKEY BURNT.—The Constantinopolitan correspondent of the *Daily News* reports that the British Embassy at Pera, in Turkey, is a total wreck, together with no less than ninety houses adjoining it and each other, from fire, originating in a house next to the residence of the *attachés* of the embassy. The terror, as usual in such wooden and combustible food for flames as those consumed, was extreme and universal, being by no means confined to the neighbourhood suffering under the infliction. The embassy itself, however, was of stone, with iron shutters and doors, and so far withstood the flames but the furniture, window woodwork, &c., were destroyed. The Italian theatre, too, and some of the best houses in Pera, are involved in the ruin.

## THE PROFESSION OF THE ARCHITECT CONSIDERED:

### ITS OBJECTS, MODE OF OPERATION, AND OBSTACLES.

THE profession of the architect, and its position, generally, in the world, have afforded matter for comment in our pages on several occasions. We have endeavoured to call the attention of our brethren to the unsatisfactory position of many departments of the art and profession, in the hope that the vague complaints, many of which have found utterance in the letters of correspondents, might be so far analyzed as to induce an accurate conception of the present state of architectural practice, and some determined effort to place architecture in its proper position, as an art, as a science, as a means of success in life, and as a power, capable of conducing to the highest amount of mental gratification and improvement, of conferring benefits of the utmost influence upon general happiness and comfort, in the social state. It is extremely important to the welfare of the professors of architecture, that they should carefully consider the obstacles to which their peculiar profession is exposed, and clear away that opaque medium which seems to interfere between them and the notice of the public. Too often, the hurry of the daily struggle leaves little time for reflection on the means by which many difficulties might be removed, but we are sure, that greater impediments attend the progress of the architect than are ordinarily to be found in other professions, or than are to be classed amongst the difficulties, from which no man's lot is free. It is manifest, if this be the case, as we hope to be able to shew, that it is to the happiness and welfare, not only of architects, but of every member of the community, that these causes should be removed, that well-directed efforts should bring their expected reward to the individual, and not remain, as now, profitless to the public. It is painful in any case, to see the energies of a life wasted in incessant labour without result, when the mere indication of an aid would render the same exertions productive and beneficial; though the world will always supply instances of such circuitous and misapplied labour. But the case is pregnant with matter for deep reflection, when it is that of a whole profession, and one which has legitimate means of exercise, so eminently conducive to the public good.

To expose all the impediments, which beset the progress of architecture, and prevent its attaining its due rank as a study, an art, a science, and a profession, to terminate the reproach, that it is "the only branch of human ingenuity which remains an exception to this century,"—words which have been extensively quoted from our pages,—is a task difficult enough for one pen, yet worthy the effort. We long since reminded our readers, that the "ostensible profession" of architecture did not form the "main pursuit," and that in the actual profession, "valuations, surveys, arbitrations, and other kinds of business less connected with the art" occupied a larger amount of the architect's attention than they might be required to do, did architects exert themselves to diffuse a general knowledge of the value of their time and labours, when employed in the higher branches of their profession. Besides the space we devoted to different features of the subject, other efforts have been made, though not precisely in the same road, and as we considered at the time, somewhat misdirected, however much we concurred in their main intended object. It is essential that the important and leading features of the case should be stated, and that no further errors or misconceptions should be added to those which at present exist to the detriment of architecture. It must be recollected, that we address the public, rather than a profession; and we know well how hard it is to eradicate any erroneous conclusions extensively circulated. A certain degree of infallibility will always be attached by the general public to what has come from the press; and it greatly behoves those who know they are dealing with the vital interests of an art and a profession, to weigh well what will be the translation made of any particular statement.

The impediments to the progress of architecture, exerted mainly through the medium of the practice of its professors, we say, have never yet been enumerated. Perhaps no individual has occupied himself much in tracing to their causes, the obstacles of which from time to time, he

has had personal experience, whilst the full amount of the evils is, we are convinced, hardly suspected or understood, though so far important, if only as a matter of national concern, as to be worthy of attentive examination, even by the government of the country.—The existence of the art and science of architecture is, in brief, the consequence of two of the natural wants, that of providing a habitation, and of delighting the eye by the presence of beautiful forms; and he, the architect, who has made subjects connected therewith his entire study, is the fitting and proper guardian of the interests of those who have not, and the desirable medium between the person having the want, and the individual who supplies it, just as the physician is interposed between the patient and the druggist, who compounds the means of remedy. And to discriminate between the profession of architecture and the trade of building, we conceive to be alike important to the interests of both, though not usually so considered as regards the latter. The builder may otherwise, so readily lie under an accusation of having magnified the amount, or, to increase his profit, of having executed his work in an inferior manner, that it cannot but be his *interest* to relieve himself from such imputations. The vulgar notion, that perishable work is "good for trade," cannot be too soon exploded as fallacious,—whilst it leads to great dishonesty.—The anxiety of the architect to have work well executed, is the very reason, why he is seldom consulted. A speculative builder will always be found to do the work at any price, that may happen to be in hand; and the rashness or inability to estimate, shown in the lists of tenders, which we constantly publish, is the best argument in favour of a change, that we could give. But the existence of an architect to *these* men is fatal. They can no longer make their usual profit, and after defrauding their fellow tradesmen in competitions, and their employers in the work, they generally succeed in defrauding themselves. We have no implicit faith in "proverbs;" but that honesty is the best policy, and that penny wisdom is pounds-folly, we take to be, at least, capable of testimony from builders and householders. The general world, however, will not attend to these points, and draw conclusions from them, as we must; they will continue to send for builders, when they should apply to architects; bad construction will exist in architecture; self-delusion, chicanery, and loss in trade, and large annual expense to every body, until an effort is successfully made, to define the limits of the profession of architecture and the trade of building. What is for the benefit of the one, is certainly for the advantage of the other. The present practices are injurious to those who least deserve to suffer; namely, the builders who are proud of turning out good work, and it is for the interest of this class that an architect should be constantly engaged, and we submit, that the questionable interest of any who deal with less integrity, has no claim to consideration.

But the interest of the public is, indeed, the main argument for a more frequent appeal to the services of architects, and it is our object to urge architects to diffuse extensively the knowledge of the full scope of architecture, and its mode of operation, to make it a matter of popular knowledge, as it is of popular importance and economy. Why an architect should not be consulted in many other matters than those for which he is at present applied to, we are unable to say; for example, in taking a new house, how often might the advice of a competent person prevent the most serious injury to the health of a family, and great expense to the tenant. In nearly all the cases, in which it is now the practice for a householder to send for a builder, we submit that a direct saving of expense would generally follow the employment of an architect. Neither will architecture be valuable as a profession, nor will the profession act as it ought, and might do, for the benefit of the art, until *all* subjects which really are departments of the profession, are referred to the architect, just as now, in the case of each, the services of the medical man and the lawyer are enlisted.

But the more we examine into the causes of general evils, the more we find they become classed under a few heads. Want of information in the public, indifference of architects to the extension of such information, are in one way or other, the causes of every thing, to which we shall have to allude. The iniquitous management in competitions, and its evil results, is but one department of the general loss to the public, through its ignorance of the merits of architecture, though it is one which is so often presented in striking instances, that it cannot remain, as in the case of other matters, unheeded, and had not the general question of fairness in competitions, merged into discussion about the propriety or otherwise, of a few details,—whilst the great grievance remains, and no system could possibly be chosen, worse than the present, which is in fact, none—architects would ere this, have stood in a more favourable position, than that disclosed in a late number. We should regret the rejection of our own views by those who may find it difficult to agree at once with a few details; the great causes of the present unsatisfactory position of the art and the profession, are, as we have said, ignorance in the public, and indifference or want of unanimity in the profession, and no exertions should be diverted from these ends; the general question is too urgent to lose any single effort.

The full definition of the profession and art of architecture, is, we think, worthy of being attentively considered and pointed out. The science, and much of the art, is becoming enveloped in what the world calls "engineering," and the architect is seldom applied to in any thing which is supposed to require scientific construction. They must be up and stirring. During their long sleep, a new class has entered upon the practice of architecture; men not claiming to possess any knowledge of art, who were at one time makers of machinery, and are now called by a new name "civil engineers," have stept in for half their work, because they entered into the spirit of the time, and sought to qualify themselves,—because *they* met, and discussed, and published, and did real benefit to the world, whilst architects did not whisper the word "architecture," and forgot that bridge-building, excavating, embanking, and tunnelling were most important ends of their existence as a profession, and, though the architecture of Vitruvius, including all these, lay open before them, on the table.—We shall have to consider the important particular of education, since that may no doubt be one great cause of the present state, and it may be said, that it is to defects of early professional education or experience, that we owe many of our difficulties, and we may inquire into the propriety of making such an imputation. We do, however, say now, that the deficiencies of architects partly arise out of the want of a full conviction on their parts, of the extensive range of architecture, which would be found to include all that now passes under the name "engineering," and almost every thing that requires the arrangement of materials, and design in form. We long ago urged that, in not seeking the improvement of design in furniture and interior decoration, the architect neglected a most important department of his pursuit, and we have omitted no opportunity of enforcing similar views, though really, they form a very small part of what we contemplate under the general head of "architecture." The education and profession of architects is limited to only a few departments of *architecture*, but were both conducted on sound principles, there is no reason why they should not be made to conduce to the successful exercise of every branch. No good result will follow from an attempt to limit the requirements, necessary for the professional practice. The powers of the human mind are bounded only by the object, and the task, not by inability of comprehension. The study is one of unlimited extent, the profession of very wide range; no course has ever yet been indicated for the first, no good system inculcated in the other: as a profession, architecture has to attain a higher rank, and an increased sphere of benefit. Both require the devotion of the utmost ability, for which the rewards are more mental than pecuniary.

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THE SERPENTINE IN HYDE PARK.—"A Subscriber" wishes us to call the attention of the Chief Commissioner of Woods and Forests to the numerous holes which have been formed in the bottom of the Serpentine river, by removing the gravel at various times, and are extremely dangerous to bathers. If these were filled up so as to obtain a uniform depth of water, many accidents would be prevented.

## THE BOND QUESTION.

IRON *v.* WOOD.

THE letter of Dr. Bromet (p. 84, *ante*) having directed attention to an evil to be apprehended from the expansion and contraction of hoop-iron bond,—or, at least, from the disparity in these respects between it and the masonry or brickwork in which it is inclosed, and that gentleman having a doubt as to thick walls affording to the iron protection against the temperature without, the following memorandum will perhaps be deemed relevant to the point at issue, although not hoop-iron, but a bond of a stronger description, is referred to:—

"The consideration of the linear expansion of iron ties is one of great practical interest, seeing the dangerous influence which that property may exercise under particular circumstances; though, fortunately, its amount is not such as to be at all perilous in ordinary cases. The expansion upon the length of malleable iron by 180° increase of temperature is—

| | | |
|---|---|---|
| According to | Smeaton | 1-794th |
| ,, | Hassler | 1-798th |
| ,, | Faraday | 1-812th |
| ,, | Lavoisier and Laplace | 1-819th |
| ,, | Dulong and Petit | 1-846th |
| ,, | Borda | 1-865th |

The trifling difference here exhibited may be attributed to difference in the density of the material; and if we take the datum afforded by Smeaton's experiments, namely, the greatest, we find that with this increment of heat the gain in length is 1 inch in 66 feet.

During the erection of Girard College, Philadelphia, a few years ago, the architect, Thomas U. Walter, in order to settle some conjectures concerning certain iron bands employed for resisting the lateral pressure of a series of arches, as regarded the effect of their expansion and contraction, instituted experiments as follows:—At a season when the temperature was at 82° of Fahrenheit, a self-registering minimum thermometer was placed on one of the bands, situated in the middle of a wall 5 feet 5 inches thick (which was exposed to the full power of the sun in summer, but was sheltered by a temporary roof in winter); and the opening which had been left for that purpose was then built up. Ten months after, when the temperature was also 82°, the wall being re-opened, the thermometer was found to have descended to 42° during the intermediate winter—the extreme cold of which had been 3° below Zero. Again, during the same winter, but at a time when the temperature was at 24°, a self-registering maximum thermometer was placed on the band in the same wall, on the same level with the other thermometer, but about 60 feet distant from it, and the wall built up compactly, as in the other case: eleven months after, the temperature being also at 24°, the walling was removed, and the thermometer found to have ascended to 61° during the intermediate summer, the extreme heat of which was 94°. Thus it was found that, while the difference between the winter and summer temperatures was so much as 97°, that in the middle of the wall was but 19°, which, according to the datum afforded by Smeaton, gives a linear expansion of 1-7526th, amounting to 1-12th of an inch in 54 feet, the length of the iron bands referred to, and from which has to be deducted the amount of dilatation in the other materials in contact with them."

P.S.—By the way, I do not remember to have seen any reference made to the effect which may be expected to be produced by the action of the solar rays on Mr. Stephenson's great tubular bridge. I am not aware of its proposed geographical bearings; but it appears that 90° difference in temperature would produce about 1 foot of difference in length, and which would be bad enough supposing it alike on both sides, but *worse* if chiefly on one. Some telescopic arrangement over the central pier, I should imagine, would provide for such an exigency. JAMES WYLSON.

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DON'T FEAR A WARM BATH.—An impression being prevalent that the warm bath makes those who use it liable to take cold, the committee for promoting the establishment of baths and wash-houses have published a certificate to the contrary, signed by 144 eminent physicians and surgeons.

## THE BUILDINGS BILL AND THE MASTER CARPENTERS.

A THIRD meeting of the committee on the ıove bill was very fully attended at the Free-asons' Tavern on the 24th ult.—Mr. Biers in ıe chair—when the committee went through ıe present bill from the 40th section to the 73rd. he chairman read several communications ıom parties who considered themselves ggrieved under the provisions of the present ll, and particularly the following letter from ır. J. T. Merrick:—

"Sir,—I beg to call your attention, as hairman of the Committee of the Master arpenters' Society on the Metropolitan Build-ıgs Bill, to that clause of the Act restricting ıe size of factories.

Having occasion to erect a manufactory for aper-hangings, which require a building of ertain dimensions, I contracted with her Iajesty's Commissioners of Woods and orests for the largest plot of ground in New )xford-street, and I have erected thereon a ıanufactory, under the superintendence of my wn surveyor and the surveyor to her Majesty's ommissioners.

I gave instructions to my surveyor to draw is plans for a building suitable for my tables nd machinery, and at the same time to study he health and comfort of a large body of orkmen, by having well-ventilated and lofty orkshops; by so doing the cubical contents xceeded the limits required by the Act. I roceeded with my building under the im-ression that the official referees would modify he Act, as they have power to do, and allow f the improvement I had made. Such, how-ver, has not been the case; and I have the atisfaction of knowing that had I made the tories of my building 2 feet less in height, it ould have been built according to the Act of arliament, and approved: in other words, had I erected low and confined workshops, which ould have been inconvenient for the purpose I was erecting the building, as I require light nd air for the manufacture of paper-hangings, nd endangered the health of the workpeople, he building would have been perfectly in accord-nce with the Act of Parliament, whereas now it s condemned as a nuisance. The total height is ven now less than the limits prescribed, but he superficial area, which is regulated by my ables and machinery, makes the cubical con-ents rather more than the 200,000 feet.

I may add, that my building has been sur-eyed and approved by the surveyor of her Majesty's Woods and Forests; it has also been surveyed and approved by the surveyor to three of the principal insurance offices in London, and is ensured even at a less rate than many workshops in the trade.

I trust that the Committee of the Master Carpenters' Society will endeavour to obtain an amendment for so arbitary and unnecessary an enactment, and one so prejudicial to the manufacturing interest of London. I shall be happy to shew you, or the committee, my premises at any time you may appoint."

A hope was expressed that parties who have really felt an annoyance, or what might, by any reasonable person, be deemed an un-necessary restriction, would forward to this committee such statements as might lead to a consideration of any point that may require amendment.*

Adjourned to Wednesday, the 10th inst.

DEPÔT FOR INVENTIONS CONNECTED WITH BUILDING.—"A Subscriber" says, "I have reason to believe it would prove very advan-tageous, not only to professional men, but also to the inventors and builders, if there was some central exhibition-room for the deposit of all intventions, and every thing connected with architecture and building, that parties could go in and inspect, with the several prices and prospectuses attached to them, rather than have to walk all over London to see what might be found useful or ornamental in a build-ing. Could not a portion of such an edifice as they are now erecting for the Economic and Geological Institution be combined with it, and which will contain so much that is practi-cally useful?"

* On the 1st inst. Mr. M. Forster asked in the House of Commons if it was the intention of the Government to bring in a bill to amend the Buildings Act introduced last session? —Lord Morpeth said, the amendments in the Metropolitan Buildings Act had been for some time under revision, and he was in hopes of being soon able to bring in a bill on the subject.

## WHAT IS DOING IN LONDON, AND WHAT OUGHT TO BE DONE

SIR,—As you kindly inserted my letter on the importance of a general scheme for the entire renovation of the whole of the metro-polis, I take the liberty of again addressing you on the same subject; for really, the more I hear and see of the miscalled improvements that are, and have been, going on in London, and more particularly in the city, the more I become convinced that a different system must be adopted, or (to quote from Mr. Seeley's speech at the late meeting in Farringdon Without) "In ten years London will become like what Bartholomew fair used to be; no-body will go into it that can keep out, and when once in, a man's first effort will be to get out." In proof of this I will just mention some of the streets in the city, the widening of which the corporation have commenced. They are as follows:—Threadneedle-street, Gresham-street, Thames-street, Watling-street, Newgate-street, Butcher-hall-lane, Angel-street, the bottom of Holborn-hill, Fetter-lane, and Chancery-lane. Now, I do not object to any of these on the ground of utility, but simply on account of the great length of time they have all been in hand; and if they are left for the corporation to complete, about the middle of next century will be a moderate calculation of the time when they will all be finished. With the funds at their disposal, one would suppose that it would be the endeavour of the city corporation to carry out speedily what they have commenced, instead of which they are about to attempt two more "crooked lanes," viz., one from the west end of Cannon-street to Queen-street, or rather (which is the real object of the line), to Southwark-bridge, and another (for which an Act was obtained last session) from Tudor-street to Temple-street, across the end of Dorset-street, and which, by the bye, seems to make very little progress, like the rest.

In order that the public should have the benefit of improvements, some of which I grant are good in themselves, they should be carried out in a liberal and spirited manner; and the latter condition, at least, is at present an impossibility within the narrow boundaries of this narrow-minded city. I do not mean to say that outside the city these things are unexceptionally managed, but they are cer-tainly better contrived, and when once com-menced they are carried out within a reason-able time. New Oxford-street, for instance, which is one of the best lines of streets that has been formed in the metropolis, is decidedly too narrow; and an opportunity has also been lost for widening the narrow thoroughfare which runs by St. Giles's Church. Endell-street, too, is so much after the style of the city streets, that one would almost suppose it had been formed by the corporation. But the tardiness with which this street has been carried out is accounted for in some measure by the fact, that the greater portion of the pro-perty through which it runs belongs to the Mercers' Company. Of the improvements (I make use of this term, because it is generally understood to mean new streets, although it is in many cases a misnomer) now going forward in Westminster and Whitechapel, not having been in either neighbourhoods very recently I cannot say much; but that I have not formed a very high opinion of the former scheme, and that the latter is not progressing quite so fast as might be wished. However, the faults in these only shew more clearly the necessity of one efficient directing body, with ample funds at their disposal, and with one definite object in view, viz., the improvement of the whole of London in the best and quickest manner, so that those who pay for the improvements might have the benefit of them.

With regard to the necessary funds, I will again quote from Mr. Seeley's excellent speech at the meeting in Farringdon-without; he says:—"The sum of 20,000*l.* mortgaged by the corporation would not amount to 1,000,000*l* in fifty years. If there was no other way of raising the amount necessary for im-provements, he would rather bear a little tax-ation than allow things to remain as they were." * * * "He would have a large sum to meet a great and comprehensive scheme of improvement, and instead of mortgaging the 20,000*l.* a year which the corporation pro-posed to sacrifice for this plant, he would re-tain that sum for the purpose of effecting small alterations year by year, such as the widening and improvement of streets, courts, and lanes, and other useful and beneficial objects which were constantly requiring atten-tion."

I regret to say that the corporation have ap-plied to Parliament for an Act to carry out their narrow-minded purposes, and that their bill is amongst the list of unopposed bills, so that although their plan when first propounded was so generally condemned, I believe it is not likely to meet with the least opposition in the House, and I am not aware that a single petition has been presented against it. I hope it is not now too late for this. In order to relieve the principal thoroughfares between the City and West-end, I consider that two lines of street are wanted, viz., one from London-bridge to Saint Paul's Church-yard, and the other, already urged in THE BUILDER, from the end of Cheapside to the end of Long-acre; the first would relieve Cheapside, and the second Fleet-street and the Strand. In addition to these, the Poultry should be widened, a viaduct formed from Holborn-hill to Snow-hill, Middle-row pulled down, Fleet-street widened from St. Dunstan's Church to Chancery-lane, and the Strand widened at the back or rather side of St. Mary's Church, somewhat in the same manner as round St. Clement's Church.

It has been often suggested that Temple-bar should be pulled down, but I do not think any good would be attained by that measure, as it would give very little more roadway, and it would be needlessly destroying a remnant of antiquity, whereas if it remains, it might be made of great use to foot passengers (particu-larly to the ladies) as a means of crossing Fleet-street, if a staircase were formed on each side of the street, for which purpose it would only be necessary to pull down the adjoining houses on each side.

When once the improvement of the whole of London is in the hands of one body, I think they may effect a great deal of good by altering the names of some of the streets, the great number of which of the same name causes endless confusion; for instance, King William-street in the City, and King William-street in the Strand, often get confounded, and the same with Russell-street, Covent Garden, and Rus-sell-street, Bloomsbury; Wellington-street, Strand, and Wellington-street, Borough. Per-haps some of your readers may not be aware that there are upwards of seventy John-streets in London, forty-seven James-streets, fifty-two King-streets, forty-four New-streets, forty-six Queen-streets, thirty York-streets, fifteen Wel-lington-streets, twelve Grove-streets, and the like number of many others. These numbers I should say, are not taken from a very recent list, so that they are by this time considerably increased. A general alteration might cer-tainly cause a little temporary inconvenience, but by writing up the old and the new name at first, that would be soon got over, and the great advantage of having only one street of the same name would soon be apparent to every body.

Another project which I think ought to be carried out either by or under the controul of the proposed improvement commission (or by whatever other cognomen they may be dis-tinguished), is the formation of a line of rail-way which should completely encircle London (crossing the Thames twice), so as to connect all the railways which diverge from London. This grand connecting line should be formed at whatever distance from the centre of the metropolis is thought expedient (by the com-mission), say seven, eight, or ten miles. This plan, if acted upon, would do away with the necessity for any of the great variety of zig-zag lines which are continually being proposed (and in some cases carried out) to meet a cry-ing evil.

The proposed railway street through West-minster furnishes a very good idea, which might be very well acted upon in the present case. In this scheme it is proposed to form an open cutting, with four lines of wooden rails, and a double set of rails to each line, one of the broad and the other of the narrow gauge, the whole to be worked on the atmospheric principle, and the banks to be planted with trees, and bridges to be built at the in-tersections of the roads. By these means an almost noiseless railway would be obtained,

and it would not present an eyesore, as most lines at present do.

As I said before, the removal of Smithfield market to Islington, and the formation of a central terminus for the Great Western, Birmingham, London and York, and Eastern Counties railways on its site, should form a leading feature in the scheme, as also the abolition of the tolls on all the bridges, and the completion of the Thames Tunnel (which is at present like the Soane Museum, a "mere useless toy"), and which should be also thrown open to the public without toll, as it is always found that tolls are avoided if possible. There are many other minor points which I should like to allude to, but as I have already extended this to greater length than I intended, I will conclude, hoping that some of your able correspondents will take up this important subject, to which I have not been able to do justice; and that you will also assist the good cause by a few more of your powerful leading articles, and thus awaken your brethren of the press and the public generally, to a sense of the absolute necessity for some change in the present mode of managing these affairs.

Feb., 1847. A LONDONER.

## STEAM POWER WITHOUT FUEL.

A PARAGRAPH in a recent number of THE BUILDER, on the alleged production of glowing red heat by friction of metallic plates, prepared as a machine for the purpose, has excited some interest. That a glowing red heat may be obtained by adequate friction of iron or copper plates properly adjusted, there cannot be the slightest doubt; and as in almost every really great and valuable practical discovery or invention, so in this, the wonder seems to be that machinery has never hitherto been expressly applied to an end not only practical and useful, but already frequently realized, by design as well as by accident, such as this has been.

If the savage Indian can cause a piece of dry cold wood to burst into flames by means of rapid friction alone; if the more civilized son of Vulcan can, with the power of his sturdy arm, and the weight of his rapid hammer, beat a piece of still colder iron into a glowing red hot taper, wherewithal to ignite his smithy furnace; if an iron axle will become red hot, and even be capable of setting fire to a carriage, by means of rapid friction; why should not the obvious possibility of thus evolving heat *ad libitum* by friction, and without fuel, be designedly and extensively applied, through proper machinery, to profitable purposes?

Might not the boilers of steam-engines, for instance, thus be heated, and the steam power generated, by means of *friction-engines and machinery worked by the power of the very steam thus generated*, and a perpetual circle of action thus be engendered, which would realize a much more intelligible and more practically useful form of perpetual motion than has ever hitherto appeared within the bounds of possibility, or at least of practical utility?

Let such an engine be once put in action till a glowing heat be accumulated, and, so long as a supply of water to the boiler is kept up, we do not see why the generation of the steam,—the motion of the friction-engine and machinery,—the friction itself,—and the accumulation of the glowing heat to sustain the steam and the power and the motion,—might not easily go on, and on, so long as the friction-plates and other mechanism are kept in working trim; and the only question then remaining for consideration is the adequacy of the power, thus once generated, to *do more* than merely sustain the friction requisite to keep up the necessary heat. At all events, for the mere domestic purposes of a kitchen or other range of grates, or rather of red-hot friction-plates, a miniature-engine, worked by steam from a copper, heated by the red-hot friction plates themselves, would, it may be thought, supply enough of surplus friction-heat for all the boiling, frying, broiling, and roasting, requisite in even the most extensive cooking establishment in existence; and that, too, without the disagreeable and damaging adjuncts of dust, smoke, sulphur, &c.; no less than without the perpetual expense and trouble and interruption attendant on the alternate supply and waste of fuel.

That friction-machinery on the great scale, however, as a complete substitute for fuel, might be adapted to all manner of steam-engines, whether locomotive or fixed, but with peculiar advantage to locomotive engines, including those of ocean and other steamers, seems possible; and what a vast new field for enterprize and profit, even in the midst of immense reductions of prices, right and left, would thus be opened up; independently altogether of the more immediate advantages attendant on so total a riddance of the clumsy and cumbrous accompaniments of coals and wood! No hindrance, *then*, to the growth of mills, machinery, manufactures, where neither coal-fields, forest-timber, peat-bog, nor water-power exist! No dragging of heavy coal cargoes or tenders along with trains or steamers—no waste of stowage—no drawbacks on extensive trading voyages, or even on voyages of discovery round the globe, or to the poles themselves, by steam! The idea is surely worth serious attention.

Then, too, most truly might steam be said to be *weaned from its infant provender, fuel;* and able, at length, to *walk, or rather to fly, alone;* untramelled and free as the wind! And, in a more and more emphatically "iron age," we might be contented to derive both heat and comfort from that stern "cold iron," whose dread mission heretofore was much rather to deal forth the chilliness of death than to minister so immediately to the warmth of life.

## ON THE EMPLOYMENT AND REMUNERATION OF CLERKS OF WORKS.

IN the employing and remunerating of clerks of works a fearful responsibility rests upon the employer.

In seeking to inculcate this truth, I address myself both to the employers and the employed, for if a responsibility rests upon the employer, it argues some importance in the employed, to establish which this paper is written; and if it should be the means of rescuing a clever and deserving, though under the present system oftentimes a besotted and dishonest, class of men from temptation and moral degradation, it will have answered the end desired.

In order to establish the responsibility of the architect in connection with the clerk of works, it will be necessary to enumerate the qualifications, duties, and responsibilities of the latter, for he has responsibilities as onerous as the former, and this it is which creates responsibility in the employer.

*Qualifications.*—A clerk of works is an artizan, a man of experience, a link connecting the operative with the architect; and as the term architecture is commonly understood, he is a kind of *between*, uniting the architecture of the one and practice of the other,—weighing with experience everything necessary, not only in the construction, but also in the arrangement of edifices. He must be a good accountant, because he has the management of the accounts, and oftentimes the buying of the materials. A measurer, for generally he has the measuring of the works at the conclusion, checking the accounts, and paying the smaller bills.

*Duties.*—His primary duty is the superintendence of the works, to see the drawings are fully carried out in all their dimensions, construction, and details,—that the specification is fully obeyed in all particulars, to prevent the admission of unsound, defective, or improper materials,—that things are of their proper sizes, weights, and qualities. For all these purposes it is absolutely necessary that he should be the first man on the works in the morning, and the last man off at night, and not to leave the building when in his judgment injustice may be done to his employer in his absence.

It is his duty, also, in case of his discovery of any defective construction, to report the same to his employer; for however carefully a set of drawings may be studied, there are generally some points arising in the course of execution that seem not to have been studied at all; in such cases, an instant report to his employer is required.

In measuring up, it is his duty to be strictly honest to his employer, however much his feelings may be in favour of the builder; and in paying bills, the pernicious practice of deducting commission should be especially avoided by the honest clerk of works. To sum up, his duty is honesty, integrity, and uprightness, both to his employer and the tradesman, favouring neither one nor the other; and as such he is in a place of great trust.

*Responsibilities.*—From the foregoing digest of his duties, it will be seen that the responsibilities of the clerk of works are of no ordinary character. His duty to himself, his employers, and, above all, to his Maker, renders it imperative upon him to be honest, to resist the temptations sometimes held out by the builder or his agents, to maintain his independence of mind, to be strictly just, and fear no man.

What is too often the position of the clerk of works now? I am sorry to say that too often the clerk of works is a debased and drunken mechanic, truckling to the builder, shutting his eyes for a consideration to all the dishonesty and injustice practised towards his employer, in allowing unsound and improper materials to be used, and weights, measures, and qualities under the specified value, and in many things in a clerk of works' responsible care, selling himself to a dishonest and cupidical builder.

What is the effect? His self-esteem is degraded, his vices are encouraged, his character destroyed. How can it be expected of such a man that he will perform his duty. Bear all this in mind, ye architects and employers, while I tell you the cause of it, and that you are responsible for that man's state.

I have shewn the responsibility of the clerk of works, his temptation, and too often dangerous fall from duty; and I will now prove that architects and employers are the causes of their clerk of works' dereliction of duty.

Architects have yet to learn the fact, that in all situations of trust, the holder should be well and handsomely salaried. Ask the bankers, merchants, railway contractors, and even builders: they will all answer, that where they place confidence and trust they give an adequate salary; it is not only necessary, but it is imperative. Look at your clerks of works, holding situations of great trust, temptation, and responsibility, what do you give them? Not sufficient to keep themselves and families in respectability, much less from peccability.

Some architects (standing high in the profession too) grind their clerk of works' salary down to the wages of a building mechanic; I have shewn the result in the degradation and abasement of the clerk of works, and I think it requires very little foresight to see that in the end nothing is saved, but a vast deal is lost, not only in the moral but in the monetary point of view. And now let me ask why should such a state of things exist? I call upon architects to do their duty to their clerks of works, to improve their moral condition, but first to improve their salaries; and the natural consequence will be that they will be above want, and consequently more above temptation. The fact is, that architects treat them as common mechanics, pay them as common mechanics, and expect them to be immaculate and honest all the while. Where want oppresses, and temptation offers, it is not in the power of poor human nature to resist. J. L. C.

CARVING BY MACHINERY.—At a meeting of the Society of Arts, on 24th ultimo, Mr. Jordan read a paper "On the New Carving Machinery," erected for the Houses of Parliament, and also employed at the works of Messrs. Taylor, Williams, and Jordan, Belvidere-road, as described by us some time ago, when it was first brought into operation. The author explained to the meeting the mechanism which forms the two floating tables, and which by a universal motion allows the vertical tracer and cutter to perform their work. A perfect pattern of the work to be carved is first modelled by the artist, and afterwards copied by the machine in wood with perfect accuracy, and in such a manner that two or three copies are made simultaneously. The carving thus prepared by the machine is then sent back to the artist, who introduces by hand the finishing touches, and thus the works have the merits of artistic productions at comparatively small cost. The decorations of the House of Lords are the most extensive works yet done by this machine; but groups of flowers and ribbon work, and sculpturing in the round, were exhibited, and covered the walls of the room.

## THE ACOUSTIC CURVE: AND THE RISE OF THE RIVER.

Sir,—Will you allow a non-professional old man, albeit a little acquainted with the subject in former days, to dare set younger and professional men right.

Mr. Russell, at the Institute of Architects, explained a curve which he had *discovered* for the sectional arrangement of seats. Upon searching, he will find that Mr. Brooks arranged the seats of the theatre of the London Institution some thirty years since, upon such, or at least a similar system; and if my jaded memory be not treacherous, Mr. Tite set out the gallery seats of the Scotch church in Sidmouth-street, upon a like principle; and even I, in a fit of amusement, made the *discovery* of the concave line, agreeably to which they ought to be set out.

Is Mr. Russell aware that the Indian wisemen hold, that there is some other medium than air by which the impulses of sound are transmitted? Some yet undiscovered agent, which allows us to hear a shrill bell through a massive wall,—a vast body which if set in motion by the bell at all, would doubtless produce a grave rather than a sharp sound.

Again, Mr. Higgs thinks that he is the first man who has *discovered* that the surface of the water of the Thames, together with its bed, has risen. Some forty years since I read, and I am not quite sure but it was in "Gwynn's Suggestions for the Improvement of London," a similar remark, and among the proofs adduced were the level of Westminster Hall, and the floors of the lime kilns at Nine Elms, at which place the larger portion of the lime was burnt for the rebuilding of London in 1666; those floors having been above the rise of the tide when constructed, but full 4 feet below when that work was published.

I recollect hearing Mr. Brunel say, that the deposit of the river is so thick, that they found one of their shovels had, by its own gravity, penetrated several feet (I am afraid to say twenty-five) below the present surface of the bed, and that they recovered it in their tunnelling. I had given to me an iron ball with a spike through it, which had been brought out from that tunnelling, and been met with at forty feet below the land-surface.

At the foot of the Southwark-bridge, in Upper Thames-street, I saw the remains of an old building with a window opening, of which the splayed jambs and the interior of the walls were plastered with red tile mortar, and which had apparently been fitted for residence, into which the tide then rose six feet, although it is fair to assume that when first constructed it was high and dry.

It has often occurred to me, that the river walls had no original constructor—that is, they were not part of one grand, comprehensive undertaking, under some master mind,—but simply the off-hand expedients of persons under present exigency; but the former president of the Institution of Civil Engineers has said they were Roman works.

Not only has the river risen, but the land has risen, and will continue to rise; and builders ought always to bear in mind the trite maxim of ignorant impudence, "*always take high ground*," and follow it out, in a much better spirit, by taking care to go up one step too many, rather than form one too few,

I am, Sir, &c., Brickbat.

Stoke Newington Institute Competition.—In reply to an advertisement which appeared in our pages, eighteen designs were forwarded to the committee. The committee, having classified them according to their respective merits, invited several gentlemen resident in the neighbourhood to a conference, with the view of making a selection of those best adapted to the object contemplated; three were selected, and ultimately a design by Mr. Francis Cross, architect, of Newington, was chosen. It is a plain but suitable building, with a Grecian Doric hexastyle porch, and includes a lecture-room, 60 feet by 35 feet; reading-room, 28 feet by 22 feet; library, 22 feet by 22 feet, and six other rooms. The estimated cost of the erection and furnishing is 1,500*l.*; but this sum, we fancy, will not be found sufficient. We did not see the designs which were submitted, and therefore can say nothing as to the justice of the selection.

## THE GAS MOVEMENT.

The agitation spreads as it flows, increases as it rolls, and, like the swollen flood or the avalanche, will ere long carry all before it. New towns are ever being smitten with the contagion, leavened with the ferment, that has hitherto been working out a healthy alteration and reduction of the whole system to a normal and consistent state. We hope, says the *Leicester Journal*, transcribing one of our articles on the subject, that the natives of Leicester will be no less enlightened than those of Liverpool have lately been by the evidence adduced. "This is no rash speculation," says the *Preston Guardian*, quoting that very evidence. "The proprietors of the Guardian Gas Company (who it will be remembered offer gas at 3s. 8d. per 1,000 cubic feet, with a profit to themselves of 7½ per cent.), are men of wealth and respectability, and their engineer (Mr. Cox, a practical gas manufacturer, who supplied gas at 1s. 8d. per 1,000 feet, and did not lose by it'—nay who in the profitable manufacture of coke produced it at 'less than nothing,') bears a high reputation." The Guardian therefore calls upon the people of Preston and other Lancashire towns, to bestir themselves in order to obtain gas for at least 4s. 8d. per 1,000 feet, as a set-off to 3s. 8d. in the more extensively consuming, and hence it may be more cheaply provided, districts of Liverpool. The Preston Company, however, have the self-preservative cunning not to impose the "injustice and extortion of which we now complain" upon the few large consumers there, who would otherwise effectually dispose of the usual "exorbitant charges" by making their own gas. ——In Manchester, where the profits derivable from the sale of gas are expended for behoof of the inhabitants themselves in extensive and noble improvements, a pretty smart price is quite justifiable; but even there the price is far more moderate than where the pockets of a few monopolists alone are filled at the expense of a whole community. Under 200,000 cubic feet per year, the charge at Manchester is 6s. per 1,000; above 200,000 and under 400,000 feet per year it is 5s. 9d. per 1,000; and where the quantity used is 800,000 feet or upwards per year, the price is 5s.——The inquiries at Southampton have been further carried out by the examination of engineers and practical gas manufacturers and others. From the evidence, it appears that a suggestion of ours for the obviation of the nuisance of disturbing the carriage ways of roads is intended to be carried out by the new company, namely, to lay the pipes generally under or along the side or footways, wherever that is practicable. Mr. Croll, who has a patent for the use of chloride of manganese in the purification of gas, made some observations, in his evidence, on the metropolitan gas to the following effect:—Gas is becoming very generally used in private houses at the West-end; and within the last six months it has been introduced into several large houses at Tottenham. Several gentlemen have had it introduced into the drawing-room, bed-rooms, &c., of their establishments, and in the neighbourhood of Finsbury-square it has recently been introduced into many large mansions. Since the reduction of price from 9s. to 7s., within the last few years, the rentals of the several works have not diminished, and the use of gas has increased in consequence of the reduction of prices. From 20 to 30 per cent. of the houses at the West-end have had gas introduced into them; and in Finsbury-square twelve houses out of thirty-seven have it introduced into the sitting-rooms. There are a large number of detached houses about a mile from Coventry, in which gas is generally used in all the rooms, and it is frequently used for culinary purposes. Mr. Johnston, whose patent for the purification of gas by the dry way with sulphate of iron we sometime since noticed, was also examined, and in course of his evidence he stated that the residual products of his process, namely, sulphate of ammonia, cyanide of iron, sulphuret of iron, and some oxide of iron, are so valuable, that he has offered to the companies adopting his plan to grant them a free license, and to supply all the purifying materials, on condition of having the residual products.——The usual Government inquiries have been gone into at Dublin relative to the merits of the proposed Consumers' Gas Company there. The opposition by the Hibernian Gas Company was grounded, of course, on the assumption that the proposed bill is unnecessary and uncalled for.

## FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

*Rewards bestowed on Professional Men in Prussia.*—At the late Orders festival (*Ordens Fest*) in Berlin, H. M. conferred on Mr. A. Humboldt the knighthood of the order of the Black Eagle,—a distinction never bestowed on science before. Mr. *Schmidt*, superior building director at Berlin, obtained the second class of the Red Eagle, with the oak wreath. The knighthood of the same order was conferred on Professor *Bekker; Buchhorn*, professor of R. A. of Arts at Berlin; *Ellerts*, superior mining councillor; *Kloden*, director of the Municipal Industrial School at Berlin; *Auer*, superior inspector of Rhine navigation, Mayence; *Veit*, historical painter at Frankfort. The fourth class of R.E. received Mr. *Schadow*, jun., building court councillor at Berlin; *Wolff*, professor of Industrial Institute at Berlin. Besides these, Sir David Brewster, and Professors Le Verrier, Frähn, Mädler, &c., obtained divers honourable distinctions.

*Athletizing of the People in Germany.*—Besides numerous works lately published on physical invigoration (education!)—an especial fortnightly journal has just made its appearance, the *Turn-Zeitung*, or gymnastic journal, published by Prof. Schuch, at Bruchsal. To all such *demolishers* of hospitals, infirmaries, dispensaries, &c., we give a hearty welcome.

*St. Mark, at Venice.*—It is one of the anomalies of our times, that this venerable pile, one of the chief representatives of Occidental and Oriental art, should have been hitherto without illustrations equal to its importance. Mr. and Mrs. *Kreutz* of Vienna, both artists of note, are engaged in accomplishing this desideratum. Twenty-one plates of elephant folio size will comprehend the whole riches, architectural and ornamental, of that cathedral. Amongst the mosaics, the splendid picture of the Virgin in the Grave, which is to be found in the atrium, at the left-hand side of the entrance, claims particular notice, although it is yet doubtful whether it belongs to Titian, Pordenone, or Salviati. H. M. the *Emperor* of Austria has ordered from the artists a coloured copy of all the plates made after the originals. Mr. K. is very accessible to strangers visiting Venice. As Mr. K. has studied St. Mark in all its details, an historical and art-essay written by himself will add to the value of this work.

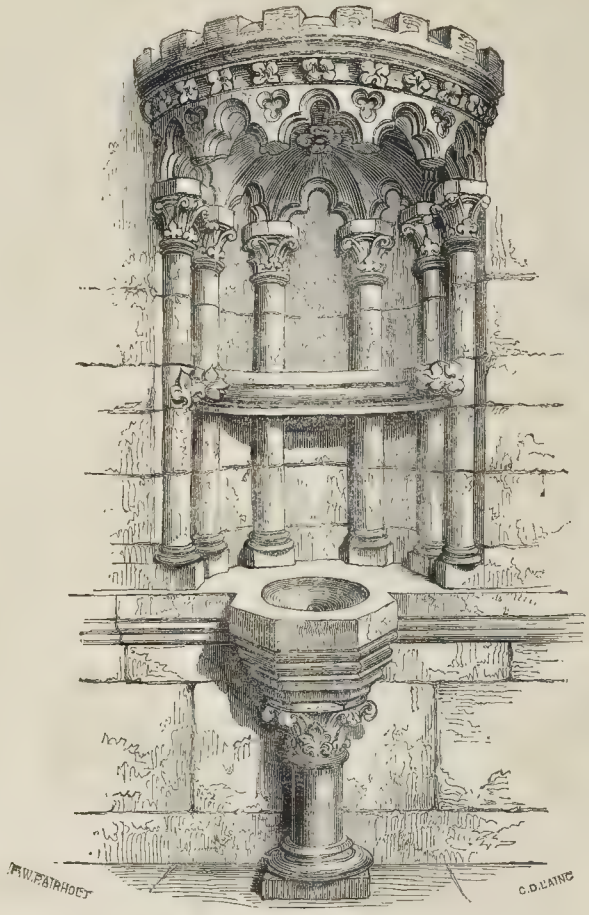
*H. M. the King of Bavaria*—has appointed to the two vacant professorships at the R. A. of Munich, Mr. Charles *Schorn* (known by his great picture—the Anabaptists), and Mr. Maurice Schwind, of Frankfort. It has excited general applause, that these two promising artists (one a foreigner) have been gained for the Munich art-world.

*Art—a Moral Preceptor.*—We are sorry to perceive that our French neighbours have taken from us the subject of a fine work on this topic, just published by Mr. Louis Desouches, under the title "*La Peinture Précepteur Moral.*" Speaking of Greuse, the most magnificent *historical* painter of domestic virtue, our author says, "If ever the works of a moralist, poet, or painter have exceeded his renown and reward, it is the case with Mr. Greuse. Deep reprover in 'the Father's Malediction,' faithful historian in the picture of the Prodigal Son, he becomes an idyllic poet in the *Accordée de village.*"

*Giessen.*—These head-quarters of Liebig—and therefore of German chemistry—will be placed in immediate communication with all parts of Germany, by means of a huge railway terminus to be erected there. The distance from London to Giessen is—*5l.*

*However incredible it may appear*—the Catholic clergy of Rome have taken up the cause of railroads, and a religious periodical of that city has, of late, devoted four columns to the topic—"Quanto alla Morale ed alla Religione giovi il vapore applicato alle strade ferrate e alle navi." Another Roman periodical also, the giant *Contemporaneo* (measuring 3½ Italian palms in length), takes up railways as one of the most important *material* questions of the present epoch.

PISCINA, NOTRE DAME DE SEMUR.




## PISCINA, NOTRE DAME DE SEMUR.

The church of Notre Dame at Semur, was principally constructed in the 13th century, and is remarkably rich in its sculptured decoration, so that it forms a fine study for architectural enrichments of that century, and the two following, during which period it was erected.

The piscina here engraved, and which we copy from a plate in M. Didron's *Annales Archéologiques*, is stated there to be a work of the thirteenth century, and is in one of the chapels of the apse of that church. It has unfortunately not escaped injury, as it has been concealed by wooden panelling, which has partially damaged it in front. The semi-circular shelf or credence-table, half way beneath the canopy, is a curious feature in this design, it is made to project considerably, and is furnished with a ridge to prevent any thing from slipping that is placed on it. It was intended to receive the small vessels termed *burettes*, and made to contain the wine used in the service of the mass, or the water used in washing the sacred utensils. The drain empties itself on the external wall of the church from a gargoyle, shaped like the head of an animal similar to those which surround the choir of the Cathedral of Notre Dame at Paris.

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Tavistock Church.—Mr. Robjohns, of that town, is about to publish three views of the interior of Tavistoc Church, recently restored.

## BRITISH ARCHÆOLOGICAL ASSOCIATION.

On the 26th of last month, the association met at their rooms in Sackville-street, Mr. Pettigrew, V.P., in the chair, and numerous matters of considerable interest were brought before them. Papers flow in, it seems, from all quarters, their provincial members being very active. Amongst the objects of interest exhibited, were two curious gold ornaments from Peru, which had been saved by Mr. W. D. Haggard from the melting pot at the Bank. They each exhibited a rude human figure worked in wire, as some thought, and soldered on to a flat piece of gold; others were of opinion that they were cast entire, and a long and not uninteresting discussion was the consequence, in which Mr. Wright, the Rev. Mr. Nicholay, Mr. White, Mr. Solly, Mr. Newton, and others took part.

Mr. C. Baily read a paper, by Mr. Laing, on the tower of Trinity Church, at Colchester, which has lately, at the suggestion of the association, been stripped of a coating of plaster and whitewash, by the Rev. Mr. Owen, in order to develop its original architectural features, which prove to be Saxon, at all events in part. The foundations the rector considered pure Roman. The door-way has a triangular head, formed of brick or tile. Mr. Vint, of Colchester, communicated an account of the discovery, in his grounds at St. Mary's-lodge, of an extensive Roman burial place. Mr. Roach Smith read a paper by Mr. Lukis, of Guernsey, on the primeval remains recently discovered by him in the Isle of Alderney, which drew forth remarks from Professor Worsaae, of Copenhagen. Some discussion on Saxon architecture ensued, and the importance of obtaining precise means of distinguishing such was urged. Mr. Wright, in connection with the subject said, Saxon MSS. shewed squares in plaster of different colours, and even castles were spoken of as being *painted* of various colours. The meeting passed off with much spirit and general advantage.

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The new number of the Journal of the association contains, amongst other interesting papers, an extended account of the proceedings of the council, a report on an archæological visit to Colchester, and an abstract of the proceedings at Gloucester. At one of the meetings of council Mr. Baily submitted a drawing of a

NORMAN DOOR AT HANSLOPE CHURCH, BUCKS,

afterwards engraved for the Journal, and as this presents peculiarities, we avail ourselves of the kindness of the council, and transfer it to our pages with Mr. Baily's own remarks upon it.

"The priest's door on the south side of the chancel of Hanslope Church, Bucks, although small, is at the same time a fine specimen of Anglo-Norman architecture, and possesses some features which do not appear to be very common. Amongst these, the overlapping the bead of the inner jamb moulding by the series of small-pointed arches is very peculiar, as well as the conical-billeted moulding directly

under the dripstone. These features are met with in some doorways in Norfolk and Yorkshire, which have been published in Cotman's *Etchings*. The south doorway of Thwayt Church, and the south doorway of Framlingham Earl Church, also the south doorway of Mundham Church, all in Norfolk, possess moulded arches, in which appear ornaments with teeth-like points overlapping a large bead, somewhat in the manner as the pointed arches do at Hanslope, but in nothing like so beautiful a manner; and in the arch of the north doorway of Hales Church, Norfolk, appears the double cone ornament, separated by small round patras, as if intended to represent conical and flat beads threaded on a string. The doorway of Heckingham Church, also in Norfolk, has the same feature in the arch, but here the cones are separated by two, and in some cases by three flat beads, instead of one, as at the doorway at Hales Church.

The west door of Barton St. Mary's Church, Norfolk, has both the features which I have noticed at Hanslope Church; the inner shaft with the arch above it is beaded with double cones, and the outer jambs have the large teeth-like portions overlapping the round shafts of the columns from the square jambs. In the same doorway, in the outside arch and above the jambs last mentioned, is the beak-head ornament so common in Norman doors. It may not be impossible that this kind of ornament, and represented by small pointed arches at Hanslope Church, and by blunt teeth in the doorways at Norfolk, and in each case overlapping either a column or a large bead, might have been the origin of the Norman beak-head ornament, more especially as in all the cases above quoted, where it appears, nothing whatever exists of a transition character, but all is in an unaltered Norman architecture, with the exception of the doorway at Barton St. Mary's Church; in which case the style of architecture is most decidedly late Norman, and upon a quick change towards the early English style, for one of the arch mouldings is ornamented with the four-leaved flower so common in early English work, and the same arch also contains the beak-head ornament. The walls of the chancel, with the corbel tables of the same, the doorway which has just been noticed at Hanslope, and the chancel arch, are the only parts of the Norman church which now remain, the present church having been rebuilt in the fifteenth century. It is a good specimen of perpendicular architecture, and has a lofty tower, surmounted by a crocketed spire, at the west end. The Norman doorway is probably as old as the time of King Henry I."

LOUVRE AT COLOGNE.




NORMAN DOOR, HANSLOPE CHURCH, BUCKS.




## LOUVRE AT COLOGNE.

The municipal buildings at Cologne are characterized by the same love of display that was indulged in by other opulent cities in the middle ages, when wealth was derived from the successful commerce in which its principal inhabitants were engaged. The town-hall is in the style of the *renaissance*, when the classic models of Greece and Rome began to be engrafted on the Gothic. The portal is of marble, the *façade* exhibiting a double arcade of Corinthian and composite pillars, the roof and dormer windows preserving the features of the Gothic taste. Exactly opposite the town-hall stands the building whose roof forms the subject of our cut. The elevated louvre is remarkable for the elegance of its lead-work, and the beauty of its proportions. It presents the peculiar features exhibited in the details of Gothic ornament in the low countries; the finials and crockets are much outspread, and the foliation is elaborate. The scale-shaped tiles and ornamental cross on the edge of the roof, as well as the pinnacles over the windows, add considerably to the picturesque effect of the roof, and prevent the harsh irregularity of outline observable in modern buildings, and which was obviated at the period when the one we are now speaking of was constructed by ornamental tracery in iron or lead-work, which has a peculiarly rich and agreeable effect when relieved by the sky, and of which another example is afforded in the town-hall of Cologne.

## NOTES IN THE PROVINCES.

Bills for the consolidation of the various Acts relating to water-works, gas-works, public undertakings, and the construction or regulation of markets, &c., have been introduced to the House of Commons by Mr. Strutt, Sir George Grey, and Mr. Parker.——A licence, or faculty, has been decreed in the Consistory Court for taking down the ancient parish church of St. Nicholas, Loughton, and applying the money arising from the sale of materials towards the completion of the new church of St. John the Baptist, at Loughton, consecrated on 4th of November last.——Orders have been issued for the erection of a new military prison, in lieu of the one at Southsea Castle.——The Newport Water-works Company have just landed a large cast-iron tank at the town quay for a reservoir, and as an earnest of their intention to proceed with their beneficial measures as early as possible.——A bill has been brought into the Commons by Mr. Ward, Admiral Dundas, and Captain Berkeley, to empower the Commissioners of the Treasury to purchase land for the purposes of the projected harbour of refuge and breakwater at the north-eastern side of the isle of Portland. The expense will be defrayed from the 30,000*l.* already granted by Parliament for harbours of refuge.——Mr. Dredge has undertaken to erect a substantial bridge from Weston-super-Mare to the island of Birnbeck for the sum of 10,000*l.*——It is now understood, that the new county gaol at Winchester will be commenced immediately. The contract is said to be taken by a London builder. The work will be very extensive, and afford much employment during the summer. ——During the absence of the royal family from Windsor, many repairs, alterations, and improvements are to be made in and about the castle and its appurtenances. It is said, also, that the drains of the castle are to undergo another inspection and improvement in the course of the present summer, and that another corps of sappers and miners have been ordered up from Woolwich for the purpose. The new passage, in hand so long, from the basement story of the Brunswick Tower through and under the eastern terrace into the orangery, and so on into the Slopes, is now nearly completed. This passage was commenced many months ago, in order that her Majesty might pass from the interior of the castle to walk in the Home Park, without being crowded upon by the people, who almost fill the parterre, and the terrace inclosing it, on "public days." There are also many minor alterations and repairs proposed, which, it is understood, will all be completed before the end of the present spring. ——The question of erecting a new jail for the county of Bedford has been deferred for six months. The proposed building would cost, it is said, about 40,000*l.*, though estimated at a less sum. The original contract for the new model prison, which has been building in the adjoining county of Buckingham, and is fitted to hold about 200 prisoners, was 40,000*l.*; but the extras amounted to 7,000*l.* or 8,000*l.*, and the fittings-up to about 5,000*l.* more.—— A report on the sanative state of the town of Leicester, by "the medical sanatory officers" of the borough, lays bare the numerous sinks of corruption in the shape of filthy and overflowing cesspools, noxious drains, accumulations of night-soil, large uncovered privy-holes, pig-styes and their accumulated litter, slaughter-houses, &c., as the evident foci of fever pervading the borough. The prime necessity, too, of a complete system of drainage, flushing, and trapping, is pointed out, although it is admitted that the very large area which the town covers in proportion to the population—*ceteris paribus*, in itself an important advantage, —presents an expensive obstacle in the way of the accomplishment of so desirable an object. Hoping, however, that a Towns Drainage Bill may speedily compel its realization, the officers suggest the adoption of measures of "a bold and innovating character," for the thorough suppression of the other nuisances, with the noxious miasmata, from which the town and its human life are defiled and injured. ——Sir George Grey has refused to sanction the appointment of the medical officer, at Liverpool, under the sanatory bill, not in reference to the fitness of the officer (Dr. Duncan) himself, but because the Home Office is decidedly of opinion that the medical officer should devote his whole time to the duties of the situation, and refrain altogether from private practice. Of course his salary ought to correspond to these circumstances.——A correspondent of the *Doncaster Gazette* timeously suggests the propriety of considering the proper ventilation of the various rooms, courts, &c., of the new "Guildhall," now fairly begun. "I beg," he says, "to suggest an inexpensive, and, I think, an effective plan for obtaining so desirable an object. In the ceiling of each room there should be apertures—the number depending upon the size of the room—communicating with wooden trunks or spouts to be carried into air flues; such flues to be left in the thickness of the walls, or to be carried up as high or alongside the chimney shafts, and of course communicating with the outer air. The air trunks should be placed between the ceilings and the floors for the lower rooms, and for the upper rooms they should rest upon the ceiling joists. The fresh air to be admitted into the lower parts of the rooms through numerous openings in the plinths, covered with perforated metallic plates, which might be closed when required. By these simple means, the vitiated atmosphere would pass through the trunks and escape by the air flues, and a free circulation of uncontaminated air would thus be carried on, without any inconvenience to the persons assembled." Not so easily as he thinks, perhaps.—— The restoration of the chapel on Wakefield-bridge is progressing, it is said, satisfactorily, but must soon be discontinued, unless a further sum be subscribed. The tracery in the north, south, and east windows, with a cornice over them, has been put up. The estimated cost is 2,000*l.*, exclusive of contingencies, and not half of that sum has yet been subscribed.——It is proposed to form a company in Halifax, in 500 shares of 20*l.* each, for the purpose of building, in some central spot, a Town Hall, and other public buildings, in which may be concentrated the different boards and offices constituting the town's government, accommodation for public companies, &c.——We learn, says the *Glasgow Post*, that the heaviest shaft ever made in Scotland has just been completed at the works of the Monkland Iron and Steel Company. It weighs upwards of 10½ tons, and was made at the Moffat forge of the Monkland works, under the superintendence of Mr. John M'Ara.——At a full meeting of the operative joiners of Edinburgh, lately held in the Roman Eagle Hall, Lawnmarket, Mr. John Connacher in the chair, it was unanimously agreed that, in consequence of the present high price of provisions, and advance of rents, the joiner's wages should be 4½d. per hour in place of 4d., as formerly.

## ANCIENT CHURCH OF ST. MARY AT DONCASTER.

Sir,—Seeing in your valuable journal an account of the proceedings of the Doncaster corporation, with respect to the ancient church they discovered in excavating for the foundations of the new Townhall, I cannot allow the matter to pass by unnoticed. There are now, alas! but too few specimens of our early ecclesiastical architecture, without destroying those we are so fortunate as to discover. Archæology is, I am happy to say, becoming more and more valued; but it would seem that the good people of Doncaster are semi-barbarians, and that they have not the power to comprehend the value of their discovery. In their eyes, perhaps, these ruins appear as mere misshapen masses of crumbling stone; for in spite of the petitions they have received from some of the leading inhabitants of the West Riding, and from the Archæological Institute, they must needs bury their church again in oblivion, and return the consoling answer, "that working drawings shall be made" of it. That this may be the last gothicism of which our country may be guilty, is the sincere hope of your humble servant,

James Stuart Wortley.

Winchester, Feb. 28th, 1847.

*** It has been very appropriately suggested, that the interesting ruins of St. Mary's Church be transplanted into the grounds of the projected cemetery, which must ere long be provided, and where these unique old Norman ruins of a defunct church might, by restoration, be converted into the chapel requisite for the ritual of the dead.

## PROJECTED PUBLIC BUILDINGS IN SHEFFIELD.

We mentioned lately the proposal to erect a building of considerable magnitude in Sheffield, to contain a capacious hall, athenæum, &c. This, however, is but one of many projects now on foot for the improvement of this important town.

Memorials have been presented to the town council praying them, under the Act for establishing museums of art, to take early measures for the purchase of land, and the erection of a suitable building for that purpose. The memorialists justly urge, that it would have the effect of greatly extending the sphere of usefulness of the School of Design, would afford facilities for the *collective display in one building of all the chief Sheffield manufactures*, contribute to the recreation and instruction of the great mass of the population, conduce to the increase of knowledge and refinement of taste among the artisans, and prove an attraction to strangers, and a great ornament to the town.

It is to be hoped that the prayer of the memorial will be carried out forthwith.

New markets of considerable extent are also to be erected on a site bounded by the old Haymarket, the river Sheaf, Dixon-lane, and Castle Folds. The plan comprises three covered avenues, ranging from the Haymarket to the space in front of the Corn Exchange, with three entrances at each end. There will be two cross avenues and entrances in Dixon-lane and Castle Folds. The building will be in the Italian style, covered with an iron roof, and lighted by skylights. Its length will be 300 feet, and its width 120 feet.*

It is intended to erect a fountain in the centre of the open market ground, and the campanile, or clock turret, originally intended to finish the façade of the Corn Exchange, is also to be erected. Messrs. Weightman and Hadfield are the architects.

## RAILWAY JOTTINGS.

The contractors, Messrs. Thornton, who, about five or six years ago, were expelled by the engineers of the Northern and Eastern Railway Company from some works on the line (now united with the Eastern Counties) near Broxbourne, for which they were contractors, have just had an award by arbitration, in a long-pending litigation, pronounced in their favour to the extent, it is said, of about 15,000*l.*, besides costs. A very large counter-claim was negatived by the arbiter, who had been appointed at the suggestion of the railway company themselves.—— The directors of the Great Western, we understand, have declined all the tenders made for the construction of the Hereford and Gloucester line, the contracts for which were lately advertised.——The works on the Gloucester and Forest of Dean will be forthwith commenced. An immense impetus, it is expected, will be given to the trade of Gloucester by the exportation of the almost inexhaustible resources of the Forest of Dean.——The Post-office authorities and the South-Western Railway Company have arranged for the conveyance of the mail to and from Southampton, Gosport, Portsmouth, and towns adjacent to that line, three times a-day. Similar arrangements are in progress with the other railways leaving the metropolis.——The viaduct over the river Barrow, on the line of the Great Southern and Western Railway, at Monasterevan, has been opened. It is nearly 500 feet in length, and consists of a malleable iron framework resting on ten slight stone piers. The width between the parapets is 25 feet. It is the fourth bridge of the kind which has been constructed by Sir John Macneill.——On Monday week, at Heaton Norris, says a contemporary, a detached waggon was caught by the wind, and went at a rapid and accelerated speed down the incline towards Manchester. Steam, seeing this, employed his full power in competition with the wind, and commenced a chase, with his train propelled before him, to recover the waggon so surreptitiously abducted. The odds, however, were too great, and old Boreas was victorious, having reached the winning post at Levensholme in gallant style, and fairly distanced his grunting antagonist.——In accordance with the adver-

* The dimensions of the Green Market at Newcastle are 336 feet by 78 feet.

tisements, the tenders for the new passenger terminus, at Hull, were delivered in on Monday week. The new station is to be in Paragon-street; the south front opposite Ocean-place, with a carriage road for the "outward" trains that way; while from Paragon-street the "inward" trains will land on the north side, thus making Paragon-street the great focus for the transit of passengers. On the east side a large hotel forms part of the plan, having 40 rooms on the first floor, with two entrances, north and south, so placed as to catch "all comers." The two platforms are to be each 500 feet long, and 40 feet wide, and the works are to be finished by the 1st of August next, at a cost of upwards of 50,000*l.* ——At a meeting of the Commissioners of Police, in Edinburgh, on Monday week, Mr. Douglas Campbell moved, "That the stoppage of the Sunday trains on the Edinburgh and Glasgow Railway tends to hinder and obstruct the police officers in the discharge of their duty, and give a new and dangerous advantage to criminals in their attempts to escape. That a memorial by the board in favour of resuming the Sunday trains be immediately forwarded to the directors of the railway, and that petitions be prepared to send to Parliament if found necessary." After considerable discussion the motion was lost; the numbers being, in its favour, 9; against it, 17. It has been already attested by the police that crime has been greatly diminished by the means afforded by Sunday trains, in forwarding the ends of justice, but facts like these are of no avail in the eyes of the objectors.——The railway communication between France and Bavaria is in course of establishment. The engineers on the line from Strasburg to the frontier of Rhenish Bavaria, have terminated the surveys; and the minister of public works has directed the prefect of the Bas Rhine to open the inquiry which must precede the presentation of the *projet de loi* to the chambers.

## ELECTRO-TELEGRAPHIC PROGRESS.

The Electro-telegraphic Company are progressing in a business-like way, and appear to be in downright earnest in the advancement of their vast and enterprising project. Their proceedings towards the telegraphic organization of the metropolitan centrum-commune we have already occasionally noticed; but it now appears that they are simultaneously at work in opening negotiations with all the more important provincial towns for the deposition of telegraphic central plexuses, or ganglia, in the heart of each, to communicate with the great metropolitan head, and with every other centre. Their private, or rather public, wire-nerves are already strung along the lines of several of the great leading railway arteries of the country, on the standards erected by the several companies for their special uses, whereby great facilities cannot but be afforded to the operations of the telegraph; and agents have been sent into the provinces to prepare the way for the immediate establishment of the various centres. At a meeting of the merchants, shipowners, and others of the town of Hull, called by Mr. Cox on the part of this enterprising company on Monday week, to consider the subject of opening a station there, Mr. Cox declared the objects of his constituents to be the telegraphic connection of every important town in the island with every other, and of all with the metropolis; the company proposing, themselves, to undertake and conduct a separate station in every principal town, as near to its business-centre as possible, and to open a subscribers'-room, at which subscribers will have access to all extraordinary advices despatched to it in the course of every day; the telegraph to be also open to private communications at a small charge regulated by scale. The wires of the company, he stated, are already fixed from Rugby to Hull, and from Hull to Leeds, and wires are already fixed at Manchester and Liverpool. Intimations of the state of markets are to be simultaneously and immediately diffused throughout the electro-telegraphic realm, and various other special advantages afforded to the mercantile community. At the meeting in question, it was stated that considerable saving of money as well as time had already been realized by means of electro-telegraphic communication. Thus in insurance and in other ways considerable benefit has already been derived, and in the case of the "Lancaster," 10,000*l.* were redeemed. Between Hull and the Land's-end no less than the metropolis, the means of instantaneous and uninterrupted communication by question and answer will be opened up. The proposal was of course most favourably received, as it will be elsewhere and everywhere, and a subscription was immediately opened, and a sub-committee formed, in order to aid the company in their patriotic no less than profitable exertions.——Thus, as we have just said, this first and foremost association of its novel and interesting kind, is carrying out the electro-telegraphic progress in downright earnest, *et error nullus;* and at no very distant period in the embryotic gestation of our altogether new world, the metropolis of Great Britain will be the organized and vivified head and centre, not only of its own provincial members, but of the civilized world at large, which, so far from being in an advanced stage of maturity, is evidently but in an advanced state of fœtal organization and vivification, preparatory to being launched into a field of new existence, as a world of almost magical wonders; realizing, indeed, in this respect at least, the very idea of ancient magic, entertained in the beautiful old traditionary glimmer of antediluvian light incorporated in the story of two distant friends, who mutually conversed, though separated by empires or by oceans, through the talismanic aid of two magnetical or magical indices, which pointed correspondently to all the alphabetic characters towards which either, in its turn, might be directed. And, strange to say, not only had the ancients thus a distinct and almost literally correct idea, or legendary recollection, of the organism of the electric telegraph, but it can be clearly proved that the ancient chemists of the higher class were perfectly cognizant of the existence and the nature of the electric forces themselves, and of the solar chemical ray, which is so much akin to the electro-negative, and capable of evolving so new and peculiar a world of vegetative and other wonders in itself.——Our American brethren are contributing their quota to the electro-telegraphic organization and vivification of the world with hearty good will. An American printing telegraph is now being exhibited at Liverpool. "It is very clever," says the *Daily Express*, and what Yankee *invention* is not *clever*. "It prints the message which is sent by electric telegraph. Mr. Hyde Clarke has, however, invented an electric telegraph *which sets up type simultaneously* [in different towns!] so that a document can be composed in London and Edinburgh, and any number of copies printed off in each place at one and the same interval of time!"——By the telegraphic apparatus already in use between New York and Albany, the president's message was transmitted on the 5th January last, from the Legislative Assembly at Albany to New York, at the rate of eighty-three alphabetic characters per minute. There were 50,000 words in the message. The reading of it commenced at twelve o'clock, and in exactly three hours after, the entire document was handed, written out, to the newspaper editors one hundred and sixty miles off.——In the Senate, lately, a Mr. Morehead presented a memorial from the editor of a daily Cincinnati paper, asking Congress to invest him with power to form a company to extend the magnetic telegraph *across the Atlantic Ocean!* Referred to the Post-office Committee. Better refer it "to the marines," says an infidel.—Well it is hard to say. We have been taught by repeated experience since the establishment of steam, gas, railway transit, and electro-magical correspondence, to hesitate about denying the possibility of almost anything, however *visionary* or preposterous. All new inventions and discoveries are *visions* ere they come to be *realities*, and food for scoffery ere they are found to be worthy of all acceptation.

Many can do much.—A subscription has been set on foot for the sister of the late John Bonuventure Smith, a young artist prematurely cut off, after many struggles, just as his works were becoming known and appreciated. She and her children were solely dependant on him, and are left without the means of subsistence. Mr. A. J. Woolmer, of 7, Cleveland-street, has undertaken to receive subscriptions.

## DUTCH CANAL-WORKS—BANKS, &c.

At a meeting of the Institution of Civil Engineers on February 23rd, 1847, the president in the chair, a supplement to the papers on the North Holland canal by Mr. Jackson, which were brought forward on the two preceding evenings, was read. It contained a description of the harbour and works at Niewediep, which might be considered as legitimately connected with the Helder canal, inasmuch as they were constructed with a view of affording shelter to vessels of war and merchantmen navigating the North Sea. The banks or shoals situated at the mouth of the Marsdiep channel act in a peculiar manner, they narrow the entrance, resist the undue influx of the tides, thus preventing injury to the coast of the Zuyder zea; they oppose difficulties to the entrance of hostile fleets, as the navigable channels run within range of the protecting forts; and they assist in maintaining the velocity of the currents, which keep the channels at their usual depth. On the coast of Holland, the ebb tides continue to pass off along the Noorder-gat a full hour and a half after the tide has commenced flowing up along the Schulpen-gat; this can only be accounted for by supposing that the tide runs up from the south-west, and enters the Schulpen-gat whilst the ebb still continues, in consequence of the draft of the tide northward along the coast. The Schulpen-gat and Landsdiep may therefore be termed the flood channels, whilst the Noordergat may be considered the ebb channel. Upon these spots, whose preservation was of such consequence to the country, the Dutch have lavished their best care, and exercised their ingenuity. The shoreworks consisted chiefly of groynes, composed of timber piles, and fascines, with stone covering. Their average length was two hundred yards, with slopes of about one in eight or ten. In consequence of the report of the commission appointed in 1780, the engineers, Brunnings and Goudrai, were instructed to proceed with the formation of a warping bank of fascines, 7,360 feet long, with double planking guard to accumulate the sand, in order to fill up the interstices of the fascines, and thus preserve them from decay. A breakwater also, 1,850 feet in length, 73 feet wide, at 3 feet below high water, with slopes of one to one.

This was also formed of fascine beds, weighted with 2,000 pounds of stone and 4,000 pounds of tiles upon every superficial area of 144 square feet. The upper surface was covered with matting and made convex, the centre being one foot, and the sides three feet below the level of high water. Hurdling was then used, and the whole was covered with blocks of stone, weighing from 1,500 pounds to 1,800 pounds each. An additional length of 2,080 feet was subsequently built, and the warping bank being completed, and by means of these works the ebb stream was increased to such an extent as at once to deepen the channel 18 inches, although the bed was of clay. In 1783, dredging was resorted to, and with the action of the stream a depth of 19 feet was arrived at. The whole length of the proposed harbour was then dredged to a depth of 17 feet under high water level. Another warping bank of 3,675 feet in length was then constructed, with numerous groyns to arrest the sand and preserve the coast. A quay wall and jetty were then added; the piles composing the latter were covered with sheet lead between high-water level and one foot below the ground, in order to preserve them from the ravages of the "teredo navalis," which, however, it is the popular opinion, may be also prevented by driving the piles through fascines. A portion, 60 feet in length, of the breakwater, was torn away by a storm; this slip was filled up with large stones, but they were ineffectual, and fascines were ultimately had recourse to for repairing the breach. The depth of the channel was thus increased to nearly 35 feet, so that frigates could pass with safety.

In 1789, 151 vessels were lying there at anchor, fourteen of which were men-of-war, and four were East-Indiamen. The basin is 1,292 feet long and 646 feet wide, with large storehouses, dock buildings, fortifications, &c., of the most solid description, and thoroughly complete for a naval arsenal.

During the discussion which ensued, a description was given of Dymchurch wall, which defends Romney marsh, an extent

[FAÇADE OF THE NEW BUILDING.]




of 24,000 acres, and also of several other sea defences at the mouth of the Thames and elsewhere, in which fascines were extensively used. The new embankments were also described. Specimens were shewn of the "arundo arenarea," a coarse grass, whose roots extend sometimes to a length of upwards of 30 feet, and which is eminently useful in securing the sand of the coast from being blown or washed away.

Among several cases of the failure of protecting walls, one was particularly described, of a nearly vertical sea wall, whose foundations were sunk down full 5 feet below the shingle of the coast. The wall was built with great care and with first-rate materials: it was, however, exposed to the action of a heavy sea in North Wales.

During a severe storm the waves were thrown up in a mass full 40 feet above the wall, and falling from that height with the force due to such a distance and mass, very speedily destroyed the whole wall. In quite as exposed a situation, a slope, which enabled the waves to expend their strength, and broke them up into foam, did not suffer at all. Numerous deductions were drawn from these and many other instances, all unfavourable to the theory of vertical sea walls, which it has recently become fashionable to recommend as a theoretically more correct form, in opposition to the well-tried plan of eminent civil engineers, who have almost universally adopted slopes for resisting the action of the sea.

THE THAMES TUNNEL is to be disposed of, if possible, to some railway company.

## THE ALTERATIONS AT THE INSTITUTION OF CIVIL ENGINEERS.

WE have already noticed the alterations which were made in the house of the Institution during the late recess (p. 48 *ante*).

Above we give a view of the new façade, as executed in Caen stone, under the direction of Messrs. Wyatt and Brandon, so that non-resident members may judge for themselves of the improvement that has been effected externally.

As soon as the works were commenced, it was discovered that the foundation of the south-west, or front wall facing Great George-street, as is the case with most of the houses in Westminster, was laid upon timber, which had decayed. The wall itself was in a very insecure condition, and there were only slight bond timbers across the windows, so that the whole front was in a dangerous state. In order to remedy this, a new foundation of brick and cement, upon a mass of concrete, was put in, arches were turned over, and reversed arches under the windows; wherever it was requisite, the piers were repaired, and one was entirely rebuilt in brick and cement, nearly up to the second floor; above that level they were repaired, but on the third floor and attic, the entire floor fell down on removing the window-frames, and it was necessarily rebuilt. The front casing of Caen stone was carried up simultaneously with these repairs. A portico for the entrance, and balconies for the first and second floor, were added; and the height of the windows was increased, converting them into French casements, for the sake of improving the light and ventilation.

"The size of the new theatre is proposed to be, 45 feet long, 28 feet 9 inches wide, and 22 feet high, affording sitting accommodation to 235 persons, and a gain of space for 97 persons. The ventilation is provided for by a shaft rising from the centre of the ceiling to a large cowl on the roof, and a supply of warm or cold air can be admitted, through apertures in the skirting, from Price's warm-water apparatus, according to the temperature of the theatre."

Previously to the alterations, efforts were made, without effect, to obtain suitable land for a new building. Application was made for a plot in the new street, proposed to be constructed by the Westminster Improvement Company: the following extract from the report of the council, as recording the rent asked for land there may not be uninteresting.

"The Surveyor of the Company, although not at present in a position to quote positive terms, presumed, that for a piece of ground having a frontage of 40 feet in width, at the corner of the new square, opposite the west doors of Westminster Abbey, and 150 feet in depth, fronting the projected new street, the annual ground-rent would be 160*l*., granting a lease of 99 years, but redeemable at 30 years purchase, or 4,800*l*."

## MANUFACTURES AND DECORATIONS AT THE SOCIETY OF ARTS.

ON Wednesday evening the Society of Arts opened an exhibition of select specimens of British manufacture and decorative art, which was attended by a very large number of visitors. Mr. W. Tooke, F.R.S., who has been a staunch friend of the Society, took the chair, and made a judicious appeal for aid in the course they were pursuing. Mr. J. S. Russell, the secretary, then read some introductory remarks, setting forth, that it was the first of a series of annual exhibitions, by means of which the Society hoped to contribute to the progress of those objects for the encouragement of which it was originally instituted; and commenting on some of the articles exhibited. He justly remarked:

"We are quite persuaded that the manufactures of this country can only prosper in so far as they are supported by the many, because the peculiarity of the manufactures of this country, more than abroad, is their wonderful power of multiplying. Foreigners produce an exquisite object of artistic usefulness in china or glass, but it is only one; another would cost the same sum, and that sum is such as to make it attainable only by the emperor or the favoured few. English manufacturers, on the other hand, produce a thousand from one. What a consummate artist has designed, they can multiply by the thousand. It is only, therefore, by the appreciation of the thousands and the millions, that taste, design and high art, applied to our manufactures, can be supported.

We want, therefore, by this exhibition, to place before the public a few selected specimens in some of the decorative arts, of what our artists, manufacturers, and machinery, have done and are doing for the advancement of their various arts to perfection. We wish to make their achievements more widely known and appreciated. We wish to show what they have done that is really good, and what might be still further improved. We are persuaded that if artistic manufactures are not appreciated, it is because they are not widely enough known. We believe that when works of high merit, of British origin, are brought forward, they will be fully appreciated and thoroughly enjoyed. We believe that this exhibition, when thrown open gratuitously to all, will tend to improve the public taste."

And again:—"If it should be objected to some of the articles here, that they are not so good as some that might have been obtained—we would answer, that is possibly true. If our visitors find fault correctly with any thing they see, we shall be as much gratified as if they praise. The one thing we wish them to do is, to praise and appreciate that which is good, and to blame where faults really exist. Let the visiter praise in the right place,—let him blame in the right place,—and the object of our exhibition has been attained."

We must look to the specimens themselves on another occasion.

## Correspondence.

UNION OF MASTERS AND MEN.

SIR,—It has frequently occurred to me, that an association of masters and workmen in all the branches of the building trade (jointly or separately) would be very beneficial to the interests of that community. Under the present system of trades-unions, the master is frequently a severe sufferer, without any actual benefit to the really deserving workman, for his interest is sacrificed to support men inferior both in character and skill. My plan to remedy this evil would be, to form associations in every county, who should from time to time fix the rate of wages to be given to the operative, *classifying each man according to his abilities*, and admitting none of bad character to the benefit of the institution; and to discontenance all attempts to "strike" for advance of wages during the progress of the works for which he has been engaged. The committee to consist of an equal number of masters and workmen, to receive and decide upon all complaints from workman or employer; a register to be kept of the character and qualifications of every workman to be open to the inspection of all other associations throughout the kingdom, and a fund to be formed by subscription for relief during illness. Workmen would by these means have much less delay in obtaining employment, and receive wages in proportion to their merits, instead of the uniform rate demanded by the trades-unions, by which an experienced man is brought down to the level of the most inferior workman.

I am, Sir, &c., JACK-PLANE.

THE DECORATIONS AT THE SOCIETY OF ARTS.

SIR,—In your journal of December 19th, you have given your readers some remarks upon the decoration of the Society of Arts' hall. May I therefore take the liberty of requesting, as a particular favour, that you will now lay before them the opinion of the council of the society itself, contained in the accompanying official letter from its secretary.

Edinburgh, I am, Sir, &c.,
27th Feb. 1847. D. R. HAY.

Society of Arts, Adelphi, London,
12th February, 1847.

SIR,—I have the honour to communicate to you the thanks of the Council of the Society of Arts for your valuable services in the painting and decoration of their great room. They are satisfied that your labours have greatly improved the general appearance of the apartment; more especially, they are satisfied that you have done what they chiefly desired,—that you have not detracted, by your style of decoration, from the effect of the large historical paintings by Barry, which hang on the walls; but the decoration has enhanced the effect of the paintings, and united them in one harmony.

They have also satisfied themselves, and fortified their opinion by the evidence of eminent authorities, that you have judiciously and successfully removed from the pictures the dust and soot which formerly obscured them, without injury to the pictures themselves.

I am therefore now desired to communicate to you their thanks for the manner in which you have fulfilled what you undertook; and as some slight acknowledgment of the esteem in which they hold your services (which so much exceed in value the amount for which you undertook the work), to request, on behalf of the society, that you will accept the accompanying copy of Mr. Barry's etchings of his pictures.—I have the honour to be, Sir, your obedient servant,

J. SCOTT RUSSELL, Secretary.

*** We willingly assist to make public this well-deserved acknowledgment of Mr. Hay's liberality. We need scarcely say it affords no contradiction to the objections to the work, as a work of art, that we felt compelled to make.

THE THEATRE OF THE ROYAL INSTITUTION.

MR. EDITOR,—In your number for Feb. 20, 1847, page 82, I see a note appended to an account of a paper read by Mr. Scott Russell at a meeting of the Institute of Architects, in which Mr. Godwin endeavours to correct the reader, who had stated, that the form of the theatre of the Royal Institution was arranged by "Count Rumford and Sir Humphrey Davy." Mr. Godwin stated, "that the arrangement of the theatre was usually attributed to the late Mr. Webster, the geologist, who built it, he being then an architect." I beg to state the facts. Mr. Webster was a *protegé* of Count Rumford, and, under him, drew out the first ideas of the proposed building, in which I assisted him, and also another young man, of the name of (I believe) Rand, who was afterwards a master carpenter in Poland-street. To Mr. Geo. Sanders, the architect, of Oxford-street, these ideas were submitted; and under his directions, the drawings were altered and perfected, and the theatre built. It was he also, in conjunction with some scientific gentlemen, who made many experiments in sound. The late Mr. Whitehead was the bricklayer, Hamilton, the mason, and Hancock, the carpenter. From the working drawings I made a perspective view of the interior, now hanging in my parlour. No doubt the annals of the Institution will state the facts, and, I think, shew that Sir H. Davy was not known in the matter at all. Mr. Webster assisted the first lecturer in his public duties, in which I have seen him often occupied.

M. C.

P.S. The construction of the roof of this building will richly repay the labour of inspection.

TENDERS FOR HACKNEY UNION.—With reference to the list of tenders for additions to this building, which appeared in THE BUILDER, we are requested by the architect, Mr. Ashpitel, to state that the quantities were not supplied by him, but were taken out by two surveyors, one on the part of the guardians, the other on the part of the builders. Messrs. Mansfield's tender was 5,200*l.*, not 5,500*l.* The circumstance of numerous items in the bills of quantities being for alterations to old works, for which only an approximate estimate could be made, is mentioned as one reason for the great difference between the highest and lowest amounts.

## TO CORRESPONDENTS.

*"Fell."*—Many thousands have been spent uselessly on the construction of locomotives for common roads.

*"H. C. L."*—We have not yet found time to answer his question, but will do so.

*"C. B."*—Notice must be given before beginning to make bricks. The duty, if we remember rightly, is 5*s.* 9*d.* per 1,000.

*"Justitia."*—The statement is too complex to permit us to offer an opinion. We have no sympathy for those who forward designs in competition not in accordance with the instructions given.

*"New Buildings."*—We are thankful for any intimation of buildings in progress.

*"G. F."*—Next week.

*Received.*—"W. S." "J. O." (Albany-road). "T. P." &c. Grey's "Encyclopædia of Civil Engineering" (Longman and Co.). "The Pictorial Gallery of Arts," Part XXVI., completing the work (C. Knight). "The History of Painting in Italy," translated from Lanzi, by Thomas Roscoe. New Edition, Vol. I. (H. G. Bohn).


## ADVERTISEMENTS.

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £1000, or to so much as the property will bear, by applying to Mr BRAY, surveyor, at the offices as above.

N.B. To expedite the preparation, personal application at the office would be desirable in all cases, but better, the party bringing with them the abstract of title, plans, &c

TO BUILDERS.

ELIGIBLE GROUND, near Kentish Town, TO BE LET on Building Leases.—For the terms and particulars apply to Mr. H. A. HUNT, No. 4, Parliament-street, Westminster.

GRAY'S INN ROAD

FREEHOLD BUILDING GROUND, in this vicinity, TO LET, for Third and Fourth-rate Houses.—Terms and Particulars may be had of Mr WATSON, 120, Wood-street, Cheapside

BATTERSEA PARK

MOST eligible Freehold Building Land TO BE LET, in the immediate neighbourhood of the proposed New Park.—Apply to Mr. F. P. THOMPSON, Surveyor, &c., Water Works, Chambers, Orange-street, Trafalgar-square, where Plans may be seen, and particulars obtained.

TO ARCHITECTS AND BUILDERS

HANDSOME STONE FRONT FOR SALE, suitable either for a private residence, tavern, or shop, very recently fixed in one of the principal leading thoroughfares in London, comprising four fluted Doric columns, with semi-arches and carved entablature. TO BE SOLD, a great bargain.—For particulars apply to Mr. W. NORRIS, Builder, Hackney.

TIMBER SAWING FRAME FOR SALE, Well Manufactured, and in complete working order, and only sold in consequence of the room being required for other purposes.—Apply to W. G. WARDLE, Stangate Saw Mills, Paine-road, Lambeth.

STEAM SAW MILLS, TO BE LET, with Canal Frontage and the use of a Crane, capable of doing extensive business; the Mills are of great power, and just erected at considerable expense; it is replete with every description of machinery for cutting timber and deals. The Sawing belonging to the Timber-wharf on which the Mill stands will average more than will pay the Rent. Apply at 29 Wharf, Paddington

DEANE'S TWO-HOLE BLACK PENS, which are unequalled for their durability and easy action, are adopted by the gentlemen of the Stock Exchange, and the principal bankers, merchants, and public companies of the city of London, besides several of her Majesty's judges, the most eminent counsel and the reverend the clergy. Their cheapness and superiority have induced many unprincipled people to put forth imitations of the genuine article, which are equally useless to the purchaser, and discreditable to the vender. The public are therefore cautioned, and respectfully requested to purchase only as DEANE'S GENUINE TWO HOLE BLACK PENS, in which each pen is stamped, "G. and J. Deane, London-bridge," and the box, which contains exactly twelve dozen, has thereon a variously coloured label, inscribed,

"G. and J. DEANE'S 2 Hole Black Pens, 46, King William-street, London-bridge."

DECORATIVE ART SOCIETY, 49, Great Marlborough-street. General Meetings in March, Wednesday, 10th inst. a Paper "On the chemical properties of Timber," by Mr Vicary. Wednesday, 31st inst., Conversazione, "On the influences of Light and Colours." "Attention is solicited to the fact, that the Meetings afford a suitable medium through which, by a free interchange of opinion, and the consequent mutual correction of erroneous ideas, a true appreciation may be formed of those principles which regulate the correct application of Art to its various purposes." Visitors' Tickets may be obtained from E C LAUGHIER, Hon. Sec., 17, Sussex-place, Kensington.

LECTURES on DESCRIPTIVE ASTRONOMY, during Lent, at the ROYAL POLYTECHNIC INSTITUTION, by Dr. Bachhoffner, on the Mornings and Evenings of Mondays, Wednesdays, and Fridays, with ILLUSTRATIONS, in which the Latest Discoveries are included, accompanied with new and appropriate MUSIC, by Dr Wallis LECTURES on the ELECTRO MAGNETIC TELEGRAPH, on the alternate Mornings and Evenings, illustrated by a variety of Models, including those of the recent Patent of Messrs Nott and Gamble. CHEMICAL LECTURES. The OPTICAL EFFECTS include the last beautiful DISSOLVING VIEWS. EXPERIMENTS with the DIVER and DIVING-BELL, &c., &c—Admission, 1*s.*; Schools, Half-price.

LONDON MECHANICS' INSTITUTION, Southampton Buildings, Chancery Lane. PERCY B. ST JOHN, Esq., will Lecture on TEXAS and MEXICO, on Wednesday, 10th and 17th inst.

J. W. ROSE, Esq., will give a MUSICAL ENTERTAINMENT, entitled, MUSIC, MIRTH, and MELANCHOLY, in which he will be aided by persons of professional talent on Friday, 12th instant. The Lectures commence at half-past Eight o'clock. Non-subscribers admitted by Tickets, 6*d.* each

Subscription 6*s.* per quarter, with 2*s.* 6*d.* entrance. Tickets for the quarter just commencing are now issuing.

Prospectuses, containing particulars, may be obtained at the Library A. McFARLANE, Sec

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INVESTMENT for LARGE or SMALL SUMS.

The attention of the public is invited to the following notice.

The Deeds for carrying out the resolutions of the Shareholders in the Guarantee Fund of the BRITISH MUTUAL LIFE ASSURANCE SOCIETY are now ready, and the respective Shareholders are hereby requested to attend at the offices, between the hours of Eleven and Three, to sign and execute the same, when the old shares will be delivered up.

Applications may be addressed to the Secretary for the remaining unappropriated shares entitled to the advantages set forth in the following

RESOLUTIONS.

That for the purpose of extending the usefulness of the British Mutual Life Assurance Society, it is desirable to grant loans in connexion with life assurance, and that a guarantee and loan capital of 100,000*l.*, in shares of 10*l.* each, with a deposit of 1*l.* per share, and further calls not exceeding 4*l.* 10*s.* per share at 30 days' notice, be constituted for the present Guarantee Fund. The Shareholders' liability to be limited to the number of shares they hold.

That all profits accruing from the loans shall be ascertained at the expiration of three years, and afterwards at the end of each year, and held applicable to the payment of the 5 per cent. rent, and profits arising shall be paid as follows, viz., 3-5ths thereof as a bonus to the Shareholders, 2-5ths to be added by way of accumulation to the capital, and the remaining 1-5th to be added to the Assurance Fund of the British Mutual.

That upon such subsequent division of profits, the interest to be paid to the Shareholders shall be at the same rate, not only on the amount paid up on the shares, but also on the capital increased by such accumulations.

And that when the capital, by means of such accumulations, shall have increased to double the amount actually subscribed, it shall be divided and paid to the Shareholders, in discharge of their respective shares.

That in consideration of the anticipated advantages to accrue to the British Mutual by the assurances which will be thus gained, that the British Mutual Society shall never at all times the guarantee of the capital to meet unexpected claims by death, and in consideration also of the 1-5th of the profits from the loans being paid to the Assurance Fund as before mentioned, the British Mutual shall guarantee, from the Society's funds, to the Shareholders the payment of the interest, at the rate of 5*l.* per cent. per annum, payable half-yearly.

By order,
CHARLES JAMES THICKE, Secretary.

17, New Bridge-street, Blackfriars.

FORM OF APPLICATION

To the Directors of the British Mutual Life Assurance Society.

Gentlemen,—I request you will allot me ..... Shares of 10*l.* each, in the Guarantee and Loan Capital of the British Mutual Life Assurance Society, and I hereby undertake to accept the same, or any smaller number that may be allotted to me, to pay the deposit of 1*l.* per Share thereon, and to sign the necessary deed when required

Name .....
Residence .....
Occupation .....
Reference .....
Residence .....

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**MESSRS. F. and J. HARLAND** beg to call the attention of Builders and others to the following list of prices, for cash:—

2-inch Pipe ..... per foot 4½d. | 3½-inch Gutter.... per foot 6½d.
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**PORTLAND CEMENT.**—The peculiar property which this Cement possesses, of entirely resisting the action of frost, renders it the only safe Cement to use at this season for exterior work, either as Brickwork or plastering. Satisfactory proof of the fact can be furnished by the manufacturers.—J. B. WHITE and SONS, Millbank-street, Westminster.

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It is a cheap and efficient substitute in place of wood for skirting, architraves, and other mouldings, in the application of which purposes it is less liable to crack or warp, and is quite fireproof and vermin

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It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

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Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen at the Patentees' Warehouse, also at the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the offices of The Builder, and of MANN and CO., SOLE AGENTS for the Patentees, 5, Manchester, corner of Street, Cheapside, London; of whom also may be had,

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**PAVING, 2s. 9d. PER SQUARE YARD.** Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed. Apply to JOHN PILKINGTON, FOLONCEAU'S BITUMEN PAVEMENT OFFICE, 17, WHARF ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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**CHARLES LONG** begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 2d. per foot run; and having had built two of the largest Kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King street, Portman-square.—Terms, Cash only.

**SOHO PLATE GLASS WAREHOUSE,** 36, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of silvering and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions. Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 36, Soho-square.

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| Crown Glass cut to size from one foot upwards, at 3d. per foot. | Thirds ..... | 4 4 0 | Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot. |
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SHEET GLASS of all descriptions equally low. White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.
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BRITISH CROWN. ROUGH PLATE GLASSES
Coloured and Ornamental Glass. Flatted Crown, and Sheet Plate, for shop fronts, show cases, &c. The largest stock of cheap Glass in London for HORTICULTURAL PURPOSES.
Dry and good Colours of the best quality; Brushes, Dryers, and every article used in the trade warranted
VARNISHES and CEMENTS. WHITE LEAD; MILLED LEAD IN SHEETS, 22s. per cwt.; Lead Pipe, 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.
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**HERRING'S PATENT SAFETY** WINDOW. No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it; repay the cost every two years; abolish all danger to life and limb, cleaning and repairing. It is in full operation four different ways, forms a complete ventilator and sunblind; also simple, cheap, and effective. Apply for licenses and to inspect its real merits, to HERRING'S Patent Steam Bed-Feather Factory, 14, Kings-nate-street, London.

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MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity. N.B. This Establishment is worth the notice of all engaged in building.



SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

**JOHNSON and PASK,**
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Beg to inform the Trade, and the Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiner's work, on the lowest possible scale of prices. All kinds of Mouldings done in the best manner; French polished, and carefully packed for the country.—Full list of prices forwarded by return of post, to any part of the country.



**COMBE VALLEY SLATE COMPANY.** —Capital 5,000l. in 1,000 Shares of 5l. each; deposit 1l. per Share.—Conducted on the Cost Book system. Offices, 5, Whitefriars Street, City

The proprietors of this valuable undertaking, having after several months of persevering industry, now opened up, and cut through a large piece of rich blue rock, have great pleasure in informing the public, that their endeavours have been crowned with complete success. The Slate is of a most superior description, and suited to every purpose, that this material can be applied to. The management of the Company will be vested in the hands of three Trustees and a Committee of thirteen persons, all practical men—merchants, and traders, or otherwise more or less engaged in the Slate Trade. It will be conducted on the entire do-as-you-please system, and shall be placed on the Cost Book Company. The Builders shall present one of most influential members as a second partner in the concern, and will have constant and large manufactured to small quantities, any kind of goods he may require, and to any plan, with the same facility, as if it were a steel and file manufactory, and he were in a workshop. But no more than 5,000 shall be allotted to any one shareholder, at the present can be expected to participate in those exclusive benefits. The quarry is situate in the parish of St. Gluvias, in Cornwall, within 1 mile of the harbour of Cragington, on the Bristol Channel, it consists of 7 acres of land, all one entire bed of Slate 6 feet below the surface, and is held on a lease of 31 years, at the nominal rent of 10l. per annum, with no royalty. Plans and specimens of the quarry, and of the different sections of the workings, and specimens of the slate may be seen at the offices where also prospectuses may be obtained. Application for shares can be made to Mr. JAMES LANE, 7a, Old Broad Street, City; Mr. THOS. SANFORD, Exeter; Messrs. TYETH & LUSCOMBE, Plymouth; Mr. H. MANSELL, Guildford, Surrey; at the Office of the Builder; and at the Company's Office, of the secretary, CHAS. SAML. RICHARDSON.

**GAS.**—The Introduction of Gas into private dwellings is rapidly increasing; it is therefore of the greatest importance not only to the consumer but to the gas company and gas fitter, that the most secure and simple means of regulating it be applied. The patentees of CARTER'S SAFETY GAS VALVE, can from many years' experience and the high testimonials they are daily receiving, confidently recommend it to all persons interested in gas lighting, as being more secure, more durable, and not so liable to get out of order, and in every respect superior to the old plug cock, so frequently leaky or set fast by corrosion. It has the advantage of being inexpensive, and easily adapted to any description of fittings. Manufactured by the patentees, T. LAMBERT and SON, at their Gas and Steam Apparatus and Metal Pipe Works, 30, New-cut, near the Blackfriars-road.

**BUILDERS AND IRONMONGERS** are requested, when writing for JENNINGS'S SHOP SHUTTER SHOP AND FASTENER, to send the finished thickness of the Shutter, and also at which end of the front they commence putting up the Shutters (RIGHT OR LEFT), as they face the front.

**JENNINGS'S SHUTTER FASTENER.** Shop Fronts are more damaged and disfigured by the Shutter Bar than from any other cause. Bars are a trouble to put up and take down, and troublesome when down. JENNINGS'S REGISTERED SHOP SHUTTER FASTENER supersedes the destructive Bar, and answers the purpose also of a shutter shoe. The shoes and fasteners being made of brass, afford greater protection to the corner of the shutter, and leave no rusty deposit on the stall-board in damp weather. Hundreds of shops have been secured by the inventor, and testimonials of their value and efficiency may be obtained from the occupiers. A front, containing eight shutters, secured for 34s., or a new front shod and secured for 40s. A liberal discount allowed to Builders, Ironmongers, and Painters, who introduce it to the notice of persons whose shops they decorate.—To be had of the Inventor, 29, Great Charlotte-street, Blackfriars-road, or of any respectable ironmonger.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS.
Manufactory, 96, Regent-street, and 131, Chancery-lane.

**THE Patentee having fixed a great number** of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being with ut metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the present rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

**REVOLVING SAFETY SHUTTERS,** WITH PATENT CONVEX IRON LATHS
PATENT CORRUGATED WINDOW BLINDS, &c.
The attention of Architects, Builders, and Blind makers is requested to the IMPORTANT IMPROVEMENTS in the above articles, and inspection at the manufactory. The great importance of strength and stiffness in the laths of REVOLVING IRON SHUTTERS, in affording increased security is obvious, and it is only necessary to point out the fact, that the patent convex laths are 12 times stronger than the ordinary flat laths, to insure their general adoption.
The patentee invites attention to his greatly improved gearing, for raising and lowering his patent shutters, which, possessing all the advantages of the endless screw (worm and wheel) cannot, even by wear, be liable to get out of order, and entirely avoids the necessity of using the ratchet-wheel; and is at once simple and thoroughly effective, and is SAFER and MORE DURABLE than any plan yet adopted for that purpose, thus rendering his Patent Revolving Shutters the SAFEST and MOST EFFECTIVE in use. These shutters are fixed horizontally (either above or below the window or door) or vertically, for which position the greatly increased strength of the convex laths renders them peculiarly suitable. THE PATENTEE IS THE SOLE MANUFACTURER OF REVOLVING SHUTTERS, WITH CONVEX IRON LATHS. Engravings and estimates forwarded on application. IMPROVED DRAWN METALLIC SASH BARS, ASTRIGALS, MOULDINGS, STALL-BOARD PLATES, &c.—Patentee and Manufacturer, JOHN HARCOURT QUINCEY. 115, Old-street, London.

INJUNCTION.

**BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.** Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.
THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters as secured by this Patent is the only safe and durable mode of effecting that object. In large shutters it is indispensable.
Some thousands of Bunnett and Corpe's Shutters have now been put up, with not a single complaint of their want of strength or security, and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.
B. and C. also manufacture REVOLVING WOOD SHUTTERS (the Patent for which has expired), on the same principle as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.
BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.
Shop fronts fitted with Iron Shutters, Patent Brass or Zinc Sashes, Plain or Ornamental, handsomely Engraved, Moulded, Stall-board Plates, best Plate Glass, and Internal Brass Fittings of all kinds, superior in quality and workmanship, and lower in price than any other house. Contracts taken in Town or Country.
Metal Drawing and Stamping for the Trade.
Office at No. 26, Lombard-street, London; Works, at Deptford, Kent.
Steam engines, Sawing, Planing, and Moulding, Cutting-machines on Improved Plans, especially adapted for Builders' purposes, may be seen in operation at the Works.

By Her Majesty's Royal Letters Patent

**WILKINS'S "SILENT" WATER-CLOSET.**—To Architects, Surveyors, and Builders
Gentlemen,—Your attention is respectfully invited to the above "Closet," the peculiar qualities of which are, that it is perfectly silent in the action of the Machinery and supply of Water, and may be fixed in any convenient place in the House, without communicating the sound of a Water-closet to any of the adjoining Apartments, which is useful in the ordinary Closets, it does away with the Ball Levers, Wire, Cranks, &c., which cause much of the noise to which the old closets are liable. The usual fix Water-closet more effectually than the present mode of fixing them in the inferior parts of Dwelling Houses and Office Apartments, has long been felt, and the benefit to be derived from one that is "Silent" in the action of the Machinery and supply of water, is sufficiently obvious to render unnecessary any lengthened comment in its favour
This Closet is simple in its construction, the whole of the apparatus including the trap, being completed between the floor of the room and the seat of the Closet, thereby rendering it quite easy to remove any Closet pan fix the "Silent" one in its place, without interfering without the trap, which is generally embedded between the floor and ceiling below the Closet. The "Silent" Closet is also clean, and so free from any effluvia, as to allow of its being fixed in any bed-room where there is a convenience of fixing a pipe down the outer wall of the house) without occasioning the least unpleasantness whatever.
May be viewed Daily, and Orders taken at No. 26, Gower-place, University College, London.

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**ALWAYS on SALE, a Large Assortment** of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ½ inch to 1½ inch thick.
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Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

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**ALWAYS ON SALE at A. ROSLING'S,** SOUTHWARK BRIDGE-WHARF, BANKSIDE, at Old-Barge Wharf, Upper Ground-street, Blackfriars, a large, very general, and well seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.
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**T. ADAMS (from Byron and Co.), late S.** Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

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**TIMBER of any Size, PLANK, DEALS,** and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
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N.B. Estimates given for Sawing and Planing.

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TIMBER AND DEAL SAWING AND PLANING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge.

**THE GENERAL WOOD CUTTING** COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or groving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

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DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

**TO THE TRADE.—Parties desirous of** delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

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**P. FOUCARD and W. TUCKWELL,** Caen Stone Importers, beg to inform Architects, Sculptors, Masons, and others, that they have a large stock of superior dry seasoned Caen Stone on their Wharf (imported July last), exclusively from their quarries, at Allemagne, which, for present uses, is superior to any now imported. Orders received by Mr. TUCKWELL, at the Wharf, and at the offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where any information and samples may be obtained.
Caen Stone shipped direct to any port by Monsieur Foucard, at Caen.

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**LUARD and BEEDHAM beg to inform** Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.
Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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**SAMUEL CUNDY begs to inform Archi**tects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.
BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.
Box Chimney pieces from 12s. upwards.
THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney pieces and FONTS.
Estimates given for building generally.

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**THE ARCHITECTURAL CARVING** COMPANY (Irvine's Patent), beg to inform Builders, that they are now manufacturing beautifully ornamented chimney pieces in stone and marble, from one pound and upwards. Specimens may be seen at their works in Eccleston-place, Pimlico, leading out of Ebury-street. Gothic windows and mouldings executed to any pattern, at greatly reduced prices.

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**CARVINGS IN WOOD.—The unrivalled** perfection at length attained by the Patent process of Carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of Carved Wood for external and internal ornaments, thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory.
Mouldings and Carvings of all kinds are thus supplied, adapted for Church or Library Fittings, Altar Chairs, Picture Frames, Chimney-pieces, and every description of Gothic or Elizabethan Furniture.
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**PATENT VULCANIZED INDIA-RUBBER,** CHARLES MACINTOSH and Co., Manchester, PATENTEES and SOLE MANUFACTURERS. The distinguishing properties of the PATENT VULCANIZED INDIA-RUBBER are—its uniform elasticity in various temperatures; it does not become hard by exposure to cold. It is of greater strength and less liable to injury from heat than native Caoutchouc. It is insoluble in essential oils. It resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured. Vulcanized India-Rubber has been successfully used for Washers for Joints in Water, Gas, and Steam Pipes, and for the Flap and Foot Valves, &c., of Steam Engines; and it may be used with considerable advantage in the joints of iron gutters, and in the grooves of flooring boards.
The VULCANIZED RUBBER is sold in sheets of various thicknesses, from one inch to the fiftieth part of an inch, and in blocks of any size or figure.

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**SOCIETY OF ARTS.**

PRESIDENT.
H.R.H. PRINCE ALBERT, D.C.L. F.R.S. &c.

1. PREMIUMS for Works of Merit in DECORATIVE ART and MANUFACTURES to be delivered on or before the 5th of May, 1847.—A List of the subjects for which Premiums amounting to 300 Guineas, with 40 Medals, are offered, will be sent by Post to all persons who furnish their Names to the Society's House, John-street, Adelphi, London.
2. An EXHIBITION of Select Specimens of RECENT BRITISH MANUFACTURES is about to be opened in the Society's House. Cards of free admission may be obtained from Members, or the Secretary.
3. NATIONAL GALLERY OF BRITISH ART to be formed by public voluntary contribution. Details of this plan may be had on application as above directed. The EXHIBITION OF PICTURES in aid of this object will take place in JUNE.

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By Her Majesty's Royal Letters Patent.

**F. McNEILL and Co. of Lamb's Buildings, Bunhill Row, London, Manufacturers and** ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by

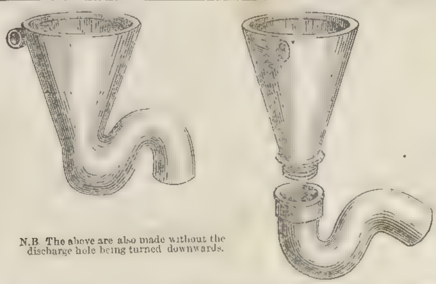
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| HER MAJESTY'S WOODS AND FORESTS, | HONOURABLE BOARD OF ORDNANCE, |
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And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S BUILDINGS, BUNHILL-ROW, LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

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N.B. The above are also made without the discharge hole being turned downwards.

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With Trap in One or Two Pieces.

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Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, on account of their

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| Foreign Sheet, in 100 feet Boxes .. | 2½d. |
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| 10 in. by 8 in. and 9 in. by 7 in. | |
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COLOURED GLASS FROM BOHEMIA,
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SPLENDID ENGRAVED ROSETTES,
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A ROSETTE, 4 in. square, 2s.

T. M. has a splendid engraving on glass of the
NEW BOURSE AT HAMBURG,
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Best Foreign Sheet Glass superior to English, and nearly equal to Plate, in 100 feet case, 8d. per foot.

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| This Varnish will not crack by exposure to the weather, and will preserve its brilliancy for years.—Dries in about ten hours. | |
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| White Hard Spirit Varnish, for Cabinet Work .............. | 20 |
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|---|---|---|---|
| 2½ inch Lift Pump on Plank .... | 4 | 0 | 0 |
| 3 „ do. do. .......... | 4 | 16 | 0 |
| 3½ „ do. do. .......... | 6 | 0 | 0 |
| 4 „ do. do. .......... | 6 | 10 | 0 |
| Well Pumps on Square Tails, with Iron Bow, equally low. | | | |
| ½ inch Bib, Ball, or Stop Cocks. | 0 | 1 | 8 |
| 5-8th „ do. do. | 0 | 2 | 1 |
| ¾ „ do. do. | 0 | 3 | 6 |
| Pan Water Closet, complete, with White Basin, round Valve Cranks, Ball, Lever, and Copper Wire .. | 1 | 10 | 0 |
| Blue Basin, extra.................. | 0 | 4 | 0 |
| Ditto, with Sunk Handle, extra .. | 0 | 4 | 6 |
| Spring Valve Closet, on Bramah's principle, complete .............. | 3 | 10 | 0 |
| Beer Machines, from one to six motions, in handsome cases. | | | |

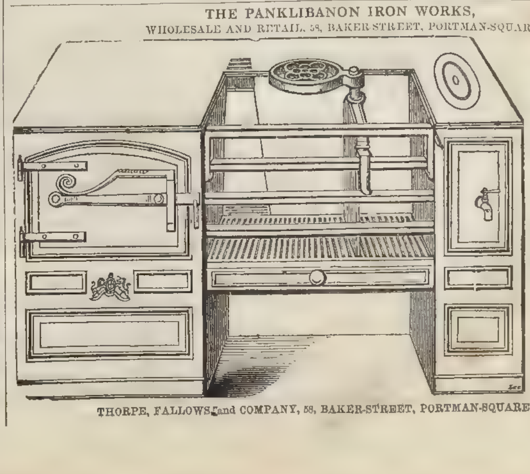
Strong Gun-Metal Steam Cocks, with Unions, and every article in the Trade made to order.

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Best White Lead, 27s.; Seconds, 25s. Thirds 23s.
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Linseed Oil, 2s. 4d. per gallon; Turpentine, 4s. per gallon; Boiled Oil, 2s. 10d. per gallon.
Brunswick and Navy Greens, Cromes, Blacks, Blues, Reds, Patent Dryers.
Best Town Glue 40s. per cwt.
Brushes and Plumbers' and Glaziers' Tools. Patent Diamonds, 12s. each, warranted.

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The Patent Thermo Stove is in daily operation. Also,
CUNDY'S IMPROVED HOT-AIR STOVES,
for heating and ventilating rooms.

## CONTRACTS.

CITY OF WESTMINSTER LITERARY, SCIENTIFIC, AND MECHANICS' INSTITUTION.

**TENDERS for Painters', Plasterers', Carpenters',** and other works, will be received by the Committee of the above Institution on or before Monday, March 22nd, at Six o'clock, p.m. Specifications and Plans may be seen on application to Mr. TRAICE, at the Institution, Great Smith street, on and after the 8th inst., between the hours of Ten a.m. and 6 p.m. The Committee do not engage to accept the Lowest Tender.

TO BUILDERS.

**THE Committee of the Parish of Warnham,** near Horsham, Sussex, are desirous of receiving TENDERS from Builders for the sundry works to be done in the enlargement, alteration, and repair of the church. The Plans and Specification will be at the Oak Inn, Warnham, from the 1st to the 22nd March instant, for the purpose of such Estimates being prepared; and any further particulars may be obtained, and copies of the drawings seen, on application at Mr. MOSELEY'S Office, 42A, Upper Albany Street, London. The Committee do not bind themselves to accept the Lowest Tender. The Tenders to be sent in on or before 25th March instant, post-paid, addressed to W. H. MANN, Secretary, to the Church Building Committee, Warnham Sussex.

TO BUILDERS.

**THE Committee appointed for erecting a** New Church in the district of St. Luke Leek, Staffordshire, are ready to receive TENDERS from Builders desirous of contracting for the same. The Plans, Specifications and Conditions of Contract have been prepared by Mr. F. J. FRANCIS, Architect, 2, Cork street, Burlington Gardens, London, and will lay for the inspection of Builders at the Rev. B. PIDCOCK'S, Leek, from Monday, March the 8th, to Saturday, March the 20th. The Tenders are to be forwarded to the Rev. B. PIDCOCK, on or before Friday, the 26th of March at Twelve o'clock. The Committee do not bind themselves to accept the Lowest Tender, and proper sureties will be required for the due performance of the works.

Leek, March 2nd, 1847.

TO CONTRACTORS, BRICKLAYERS, AND OTHERS. COURT OF SEWERS, TOWER HAMLETS.

**NOTICE IS HEREBY GIVEN, that the** Commissioners of Sewers for the Tower Hamlets' (excluding Saint Katharine's and Blackwall Marsh), at their meeting to be held on WEDNESDAY, the 10th day of March, at Three o'clock in the afternoon precisely, at the Office of Sewers, No. 15, Great Alie-street, Goodman's-fields, will be ready to receive Tenders (sealed up) from any persons or person willing to enter into contract for the works necessary in extending the Sewer from Glass House-street along New Martin street and Blue Anchor yard being a length of 650 feet or thereabouts, and also in Lambeth street, across Hooper's square to Leman street, being a length of [illegible] feet or thereabouts, in the parish of Saint Mary Whitechapel. Plans and specifications of the said several works, with the forms of Tender, may be inspected at the Office of Sewers, daily, between the hours of Eleven and Three o'clock. Separate contracts will be required for each of the said works respectively. The contractor will be required to sign provisional agreements to secure the due execution of the said contracts, and to give the names and addresses of two sureties to become bound in a sufficient penalty for the due performance of the said works. The expense of the deeds will be borne by the Commissioners. No Tender will be received after the hour of meeting, nor in any other form than that prescribed by the Commissioners, nor unless the party tendering, or some person duly authorised, attend on his behalf to answer when called upon. Dated this 25th day of February, 1847.

JOHN WILLIAM UNWIN, Clerk to the Commissioners.

N.B. The Commissioners do not pledge themselves to accept the Lowest Tender.

**GAS TAR.—The Phœnix Gas Light and** Coke Company are ready to receive TENDERS for the Tar to be made in the next year at their Bankside and Greenwich stations. The tar to be delivered into the purchaser's tank-barges laying alongside the Company's wharfs in the Thames, and to be paid for monthly, and the quantity or quality of the tar to be objected to, in case of need, by the lighterman before quitting the wharf. The purchasers to enter into an agreement, under a penalty, not to allow more than [illegible] gallons to remain in stock at any one time; and the Company reserve to themselves the right of selling 20,000 gallons to other parties. The tender to state the price per butt of 108 gallons, and to be marked with the words "Tar Tender," in the corner, and to be delivered at their office, at Bankside, on or before Twelve o'clock on Wednesday the 17th March.

64, Bankside, 3rd March, 1847. CHARLES PRIDDEN, Secy.

BUILDING GROUND, BROOK GREEN, HAMMERSMITH.

**TO BE LET by TENDER, by the Worshipful** Company of Girdlers, an eligible site for building consisting of about Three Acres of Ground at the above place. A plan for laying out the ground, and an elevation and plan of the houses to be erected thereon may be inspected, and further particulars obtained at E. WOODTHORPE'S, Esq., 80, Guildhall street, and at the office of the clerk of the Company, Girdlers' Hall, 39, Basinghall-street. Sealed Tenders for renting the ground to be sent to the Company's Hall previously to the 15th of March.

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**BUILDING PLOTS TO BE LET in this** most desirable and salubrious situation !! commanding picturesque views of the SURROUNDING BEAUTIFUL NEIGHBOURHOOD, and elevated within a few feet of the summit of the Monument, with the best approaches of any suburban district near the metropolis, and greatest facilities of access to all the fashionable resorts and promenades of the West End and the City !—For particulars and plans, apply to W. H. TWENTYMAN, Esq., 14, Regent's-villas, Avenue-road, Regent's park.

To Engineers, Boat Builders, and Others, requiring extensive Water-side Premises a few miles from London.

**THE LEASE TO BE SOLD of a Capital** Wharf with 123 feet Water Frontage by a depth of 211 feet, on which are erected engineers' and carpenters' shops, foundry, dwelling-house and stabling, a steam-engine, and lot of engineers' tools. May be taken by valuation. For particulars apply to Messrs. J. C. and S. STEVENS, Auctioneers and Agents, 38, King-street, Covent-garden.

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**TO BE SOLD, from 3 to 400 feet of CAST** IRON PIPING, four inches in diameter, with BOILER, FURNACE, and the complete fittings of an Apparatus for heating a large building, by means of hot water. The whole are in excellent repair, having been erected at a large outlay but a few years since. May be viewed on application to the Governor of the Workhouse at Caxton, any day from 10 to 4. Parties who may be desirous of purchasing, are requested to send in their Tenders, sealed and addressed to the Clerk to the Guardians.—By order of the Board, HENRY MORTLOCK, Clerk of the Union.

Caxton, 23rd February, 1847.

ELIGIBLE INVESTMENT NEAR THE INTENDED NEW PARK, BATTERSEA.

**TO BE SOLD by Private Contract, a capitally** built, well-arranged House, with building ground attached. It is at present occupied as an old-established beer house, and it is well calculated for that or any other business requiring prominency of situation, or for a private dwelling. The great improvements that are taking place in the vicinity will shortly insure a vast increase of value to this property, held on a long lease, at a low ground-rent. For particulars and cards to view, apply to Messrs. LIVERMORE and BERRY, estate and house agents, 1, Sloane-street, Knightsbridge, and 32, Beaufort-street, Chelsea.

TO TIMBER MERCHANTS, &c.—HAMPTON, MIDDLESEX.

**TO BE SOLD, by TENDER, Fifty Oak** Trees and Five Elms, with their Lop, Top, and Bark, now standing in the Boundary Hedges of Two Fields abutting on Hampton Lanes, to be felled and the stools grubbed up by the purchaser. Also Eighteen Logs now felled, [illegible] Rails, and Fencing. For view, &c., apply to Messrs. LAWRENCE, Lion Inn, Hampton.

TO SCULPTORS AND MASONS.

**BUSINESS TO BE DISPOSED OF.—** An opportunity rarely to be met with in the above line, is now offered in a Country Town, about 100 miles from London. Situation good, neighbourhood large, respectable and increasing. The concern may be greatly extended, and a persevering man of business cannot fail of success. Stock and fixtures about 500*l*.—Address A. B. B., Church-street, Hackney.

TO STATUARY AND MARBLE MASONS.

**TO BE DISPOSED OF immediately, a** First-rate Old Established Business in the above line, situated in one of the First-rate Watering Towns in England, offering a first-rate opportunity to any speculative man. Stock and fixtures about 800*l*.—Apply to B. MATHEWS and SON, 3, Norfolk-street, New Road, Commercial Road, East.

BUILDER'S BUSINESS OF FIRST CHARACTER.

**MR. H. BIERS has been instructed to dispose** of by PRIVATE CONTRACT, a BUILDER'S BUSINESS of FIRST RATE PRACTICE, declining health of the proprietor is the sole reason for parting with the same. No consideration required for good-will, but merely that the Stock and Fixtures be taken at a Valuation. Any person wishing to enter into a business of this description will find this an opportunity of rare occurrence. No one need apply who cannot command a capital of from 1,500*l*. to 2,000*l*. Further particulars and cards to view may be obtained on application to Mr. H. BIERS, 13, Broad-street, Golden square, between the hours of One and Three. Written applications cannot be attended to.

## SALES BY AUCTION.

STONE MERCHANT'S STOCK.

**MR. H. BIERS has received the directions** of Messrs. MOWLEM, FREEMAN, and BURT to SELL by AUCTION, on MONDAY, the 8th, and TUESDAY, the 9th of March, upon their present PREMISES, they being about to REMOVE to No. 13, South Wharf Road. This very VALUABLE STOCK COMPRISES SEVERAL THOUSAND FEET OF YORK PAVING, LANDINGS, STEPS, KIRB, and COPING, Portland, Mansfield, and Bramley Fall, in Block, Slab, Steps, and Landings. Purbeck, Portland Sinks of superior quality, Granite Kirb and Spur Stones, a Portland Stone Staircase in good condition, a small quantity of Sienna and other Marbles, a Powerful Stone Truck with Patent Boxes, capable of Carrying Ten Tons, and many useful articles. Catalogues when ready, will be sent post free, to any part of the kingdom; and an unusual facility presents for Water-carriage, the stock being close to the Grand Junction Canal. APPROVED BILLS at Three and Four Months.—13, Broad street, Golden-square.

TO PAPERHANGERS, BUILDERS, HOUSE DECORATORS, AND OTHERS.

**MR. BRAY, Jun., has received instructions** to remove for peremptory Sale, to his Rooms, 259, High Holborn, on Thursday, March 11, at 12, an entire new STOCK, comprising upwards of 3,700 pieces of paperhangings of excellent workmanship and modern design, including drawing, dining, parlour, bed room, staircase, and other papers, in rich crimson tones, embossed satins, Morpeth, Elizabethan, scaglio and other marbles. The stock is lotted to suit the trade and private buyers. May be viewed one day prior and morning of sale, and catalogues had at the Rooms.

TO COACHMAKERS AND MANUFACTURERS.

**MESSRS. LESLIE and SON beg to announce** that they have received instructions to dispose of the Valuable Lease of No. 56, South Audley Street, on Wednesday, 10th March at 1, by order of the proprietor, who is retiring from business. The premises comprise an extensive Coach Manufactory, having long frontages in South Audley Street and Mount Street, with large workshops lofts, open yards, &c. extending to Reeve's Mews, also an excellent Dwelling house, in South Audley Street. They are held under a Lease, of which 12 years are unexpired, at the very low rent for premises of such extent and situation of 120*l*. May be viewed, and particulars had upon the premises of Messrs. HARRISON, Solicitors, 19, Bedford Row; and of Messrs. LESLIE and SON, Auctioneers, 45, Margaret Place, Cavendish Square.

KENNINGTON-ROAD, opposite Walcot-place, LAMBETH.—Valuable Leasehold Estate, desirable for Occupation or Investment.—By

**MESSRS. BLAKE, at Garraway's Coffee-house,** on FRIDAY, March 12th, at Twelve o'clock, a very neat, genteel RESIDENCE of Five Stories, and containing Ten commodious Living Rooms, besides other conveniencies; having a spacious fore-court, and deep-walled garden, with an outlet in the rear (in hand), being No. 19, East-place, a fine open situation, where the road and footways are particularly wide, forming one of a handsome and well-occupied Row of Houses facing the east. The premises are in good order, and are held for an unexpired term of 59 years from Midsummer last, at a ground-rent of 4*l*. 6s. 8d. per annum. May be viewed six days before the sale by application at the premises, where particulars may be had; also of CHARLES FORD, Esq., Solicitor, No. 5, Bloomsbury-square, at Garraway's Coffee-house, Change-alley; at the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

TOOTING, SURREY.—Timber Merchants and Builders' Stock in Trade, the property of Messrs. HICKS, relinquishing business at that place.—By

**MESSRS. BLAKE, on the Premises, on** WEDNESDAY, March 10th, and following day, at Eleven for Twelve o'clock, the Stock in Trade, Implements, &c., of the above old-established Firm, consisting of oak, elm, and other round timber, oak plank, scantling, and fence stuff, fir timber and quartering, whole deals, sawn deals, [illegible] boards, stocks of coffin boards and the usual variety of carpenter's converted stuff; a good assortment of nails, and carpenter's ironmongery. The implements embrace timber carriages, trucks, chains, carts, harness, capital scaffolding, ladders, gin poles, jacks, and timber gear; work-benches, bricklayers' utensils and building materials of every description; large stone landings, some marble chimney-pieces, a pair of handsome wrought-iron gates and piers, suitable for a church or lodge-entrance; a large well-constructed Barn Building, a compact Granary on piers, and several tiled Sheds, iron hurdles, rick and stump of meadow hay, &c. &c.—May be viewed three days prior to the sale, and Catalogues had on the premises; at the Castle Inn, Tooting; Plough, Clapham; Spread Eagle, Wandsworth; Bells, Putney; Griffin, Kingston; Spread Eagle, Epsom; Greyhound, Sutton; Red Lion, Dorking; White Hart, Reigate; Greyhound, Streatham; Messrs. HICKS, 30, Nicholas-lane, Lombard-street, and Stangate; at Garraway's; the Artichoke Inn, Newington-causeway, and of Messrs. BLAKE, Croydon, Surrey.

TO CONTRACTORS AND OTHERS.—Near Rochford, Essex. 600 Elm Trees, 120 ditto pollards, 40 Ash Trees, lot of Elm and Ash Spears, &c., to be Sold by Auction by

**W. H. JACKSON, on Tuesday and Wednesday** next, March 9th and 10th. At Prittlewell (by order of D. R. Scratton, Esq., the proprietor), 372 elm trees, 15 ditto pollards, 34 ash trees, lot of spears now lying on the Priory and Polman's farm, within 2 miles of Southend, where the same may be shipped. At Great Stanbridge:—100 elm trees, 100 pollards, now lying at Hampton Barns farm. Also, by order of M. C. Import, Esq., the proprietor, 14 elm trees, 25 spears, 800 faggots, & rub wood, &c., lately felled on Finch's Farm, and lying in a meadow on the adjoining farm, called Barton Hall. There is a wharf on the farm, where the same may be shipped. Also 6 elms and 1 pollard, near the Oak Inn, and 13 elms on Barber's Farm, in the parish of Canewdon. The timber may be viewed till the sale, and will be sold without regard to admeasurement. The Company are requested to meet on the first day at the Oak Inn, Great Stambridge; on the second day at the Spread Eagle, Prittlewell, at 11 for 12 o'clock. Catalogues may be had, five days prior, at the usual Inns; of H. FLOWER, Esq., Architect, 29, Regent-square, London; and of the Auctioneers, Rochford, Essex.

**SIR CHRISTOPHER WREN.—FOR** SALE, a FINE PORTRAIT of this eminent architect.—For terms and to view apply to Mr. SHEPPARD, East Sheen, near the Coach-makers.

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"The Builder," Nov. 7, 1846.

THE BUILDER'S FRIEND.—Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices of plank, deals, battens, and timber, bear to each other, from 2*l*. to 5*l*. the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. The information is given in a concise form, so as to fit the pocket-book.

"Herapath's Journal," Nov. 28th, 1846.

THE BUILDER'S FRIEND.—We have received a copy of a useful little Manual, under this title, that ought to be in the hands of every one in the building business. It shews at one view the relative prices plank, deals, battens, and timber bear to each other, and will save an immensity of calculation.

"Sunday Times," Dec. 6th, 1846.

This is a very concise but useful work; it shews in one line the relative prices of planks, deals, battens, and timber. The author has certainly contrived to put the greatest amount of information in the smallest possible space.

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LONDON: Printed by CHARLES WYMAN, of 49, Cumming-street, Pentonville, in the County of Middlesex, Printer, at the Printing-office of J. & H. Cox, Brothers, 74 & 75, Great Queen street, Lincoln's-Inn Fields, in the Parish of St Giles-in-the-Fields, in the same County; and published by the said CHARLES WYMAN, at the Office of "THE BUILDER," 2, York-street, Covent-Garden, in the Parish of Saint Paul, Covent-Garden, in the said County.—Saturday, March 6, 1847.

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